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JUDITH M. ESPINOSA
SECRETARY

RON CURRY
DEPUTY SECRETARY

file

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

May 28, 1992

Colonel David E. Benson
Commander
Cannon Air Force Base
Cannon Air Force Base, NM 88103

Dear Colonel Benson,

This is to inform you that the Class II permit modification request for the Hazardous Waste Storage Facility at Cannon Air Force Base (Number NM7572124454-1) has been approved. This approval takes effect immediately and extends for the stated duration of the permit, which expires on October 16, 1999.

This permit modification adds several hazardous waste codes, listed on pages 18A and 20A of the operating permit, to the list of hazardous wastes allowed for storage at Cannon Air Force Base, and updates several waste streams associated with aircraft maintenance activities. Pages reflecting changes in waste streams have been inserted into the existing permit as revised pages (dated 5/1/92) C-4, C-5, C-5a, C-5b, C-5c, C-5d, C-10, C-10a, C-14, C-16, C-17, C-19, A-2, D-13a, G-29, and G-33. These modified pages have also been placed in the facility administrative record. This decision also recognizes your satisfying NMHWMR-6, section 270.42 requirements for public notice.

The New Mexico Hazardous Waste Fee Regulations require us to assess a fee of $1,000.00 for minor permit modifications of this type. Payment of this fee is due within 30 days of approval of the permit modification. Please make the check payable to:

New Mexico Environment Department Hazardous Waste Program

Please indicate on the remittance the following information:

Activity 50, Rev. Code 169, Deferred Rev. Code 280075 (A 50-RC 169-DRC 280075)

Thank you for your cooperation and attentiveness to the regulations. If you have any questions, please contact D. Herb Grover at (505) 827-4300.

Sincerely,

Kathleen Sisneros
Director, Water and Waste Management Division

cc: William H. Honker, EPA Region VI
Benito Garcia, Chief, HRMB
Edward L. Horst, RCRA Program Manager, HRMB
Herb Grover, RCRA Permit Supervisor
Coby Muckelroy, RCRA Enforcement Supervisor

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NEW MEXICO ENVIRONMENT DEPARTMENT

HAZARDOUS WASTE FACILITY PERMIT

PERMIT MODIFICATION AUTHORIZATION

PERMITTEE:	CANNON AIR FORCE BASE
LOCATION:	CANNON AIR FORCE BASE NEW MEXICO, 88103
I.D. NUMBER:	NM7572124454
EFFECTIVE DATE:	MAY 28, 1992
EXPIRATION DATE:	OCTOBER 16, 1999

This modification applies to the Permit issued to said Permittee in accordance with the Resource Conservation and Recovery Act (RCRA), as amended (42 U.S.C. 6901, et seq.), and the New Mexico Hazardous Waste Act (sections 74-4-1 et seq. NMSA 1978). Said modification is specified in inserted pages affected by the approved modification.

Modification of this permit was carried out in accordance with HWMR-6, section 270.42 and all modifications are subject to the regulations of HWMR-6. This modification of the Permit shall be effective May 28, 1992, and shall remain in effect until October 16, 1999, unless modified, revoked and reissued, or terminated in accordance with HWMR-6, sections 270.41, 270.42, or 270.43.

Issued this 28th day of May, 1992.

by Kathleen M. Sisneros
Kathleen Sisneros
Director
Water and Waste Management Division
New Mexico Environment Department

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NEW MEXICO ENVIRONMENT DEPARTMENT

CANNON AIR FORCE BASE

HAZARDOUS WASTE FACILITY PERMIT

NM7572124454

OCTOBER 16, 1989

New Mexico Health and Environment Department

GARREY CARRUTHERS
Governor

DENNIS BOYD
Secretary

MICHAEL J. BURKHART
Deputy Secretary

RICHARD MITZELFELT
Director

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

October 16, 1989

Colonel David Benson
Commander
27th CSG/CC
Cannon Air Force Base, New Mexico 88103

RE: NMD 7572124454
RCRA Operating Permit

Dear Colonel Benson:

Enclosed for your use is the operating permit for the Cannon Air Force Base Defense Reutilization and Marketing Office hazardous waste storage facility as required by the New Mexico Hazardous Waste Management Act (Sections 74-4-1 et. seq., NMSA, 1978). Also enclosed with this letter are the revisions to the draft permit incorporated into the final permit in response to comments received from CAFB and the U.S. Environmental Protection Agency during the public comment period.

The permit will become effective thirty (30) days after your receipt of the permit unless you appeal the permit to the Environmental Improvement Board in accordance with the New Mexico Hazardous Waste Management Regulations, (HWMR-5), Part IX, 40CFR sections 902.F. and G.

If you have any questions on the technical content of the permit, please contact Mr. Gian Bacigalupa on my staff at (505) 827-2929. Questions of a legal nature may be addressed to Mr. Louis Rose of the Office of General Counsel at (505) 827-2983.

Sincerely,

Richard Mitzelfelt
Director

RM/GB
cc: Lynn Prince, USEPA-Region VI (6H-HS), w/encls.
David Tanner, EID District IV, w/out encls.

— ENVIRONMENTAL IMPROVEMENT DIVISION —
Harold Runnels Building
1190 St. Francis Dr.
Santa Fe, New Mexico 87503

Cannon Air Force Base
Hazardous Waste Storage Permit

Public Comment Responses and Changes to Permit

Comments received from CAFB concerning changes to the permit (correspondence, Sept. 11, 1989)

1. III.B. Pg. 18. III.B.1 The third sentence should be changed. "Per Year" should be changed to "at any one given time." The sentence would then read "The amount of any waste code in storage, at any one given time, shall never exceed the maximum quantity for the waste code as listed.

- The New Mexico Hazardous Waste Management Regulations, (HWMR-5), specify that the amount of wastes listed on the Part A application contains "an estimate of the quantity of such wastes to be treated, stored or disposed annually...", [HWMR-5, Part IX, 40CFR section 270.13(j)]. The inventory values for wastes in the permit have been based upon the figures given in the Part A form of June 7, 1989.

  The permit has been amended to require that a report be submitted to the New Mexico Environmental Improvement Division (EID) when the Part A waste amounts are exceeded. This reflects EID's position that 1. the Part A application is the primary source of information on hazardous waste activities at the DRMO and 2. that a knowledge of CAFB's waste activities and total waste generation is critical to the proper management of hazardous wastes. Therefore, the report provides information to the EID without unduly restricting CAFB's ability to process all wastes in the event that there is a need to expand the DRMO's through-put capacity. The wording of the addition to Permit Condition III.B.1. is as follows:

  > "In the event that the amount of any waste code stored, per year, shall exceed the maximum quantity shown in the following table, the Permittee shall submit a written report to the Director for approval. This report shall also be included in the Operating Record as described by Permit Condition II.K.1."

- Permit Condition III.B.2. has been added to strengthen the discussion of design capacity in Permit Section III.A.3. and 4. This also addresses CAFB's suggestion for modification. The grouping of the EPA Hazardous Waste Numbers is taken from the classifications of these wastes given in HWMR-5, Pt. II, subpart C:

"III.B.2. The maximum amount of hazardous waste which will be stored in any one 13-foot by 20-foot storage bay will be 1320 gallons at any one time. The maximum amount of hazardous waste which will be stored in any one 6-foot by 9-foot storage bay will be 350 gallons at any one time. The following wastes, identified by EPA Hazardous Waste Number, shall be stored in the appropriate bays only up to the total volume indicated for each bay:

Ignitable Waste	Corrosive Waste	Toxic Waste
D001	D002	D016
F003	D006	F001
F005	D007	F002
U002		U151
U154		U210
U159		U220
U239		U226
		U228
		U249"

2. Permit Attachment A-1 Waste Analysis Plan, should be changed to reflect the following:

Page C-4:

(1) Corrosion Control no longer generates wipe down material consisting of methyl ethyl ketone and toluene.

The reference to Corrosion Control has been deleted.

(2) The Munitions Maintenance Area is a satellite accumulation point for waste paint material; Munitions does not take their waste product to the Corrosion Control Accumulations Point.

"...stored in a satellite accumulation point for later transfer to the DRMO." has been added to the last line of paragraph 3.

(3) The Transportation Paint Shop is a satellite accumulation point for waste paint material; Trans Paint Shop does not take their waste product to the Corrosion Control Accumulation Point.

"...at a satellite accumulation point." has been added to the last line of paragraph 4.

(4) The Jet Engine Shop no longer uses B&B 3100 solvent.

The reference to B&B 3100 solvent has been deleted.

Page C-5A: The old analysis that is in the Permit should be replaced with the more current analysis.

The more recent waste analysis for Corrosion Control slop paint waste has been added to the permit.

Page C-10: Appendix C-1 not included in the Permit.

The reference to Appendix C-1 in the second paragraph has been deleted.

Page C-16: The fifth paragraph references Group II wastes which were identified in Appendix C-2 in the draft permit submitted- this appendix is not included.

The reference to Group II wastes has been deleted. A note specifying the shipment size as hazardous waste containers has been added to Table C-6.

Page C-18:

(1) Section C.2.c. (2) references Appendix C-3 and C-5 which were included in the draft permit submitted-these appendices are not included.

The reference to Appendix C-3 in the first paragraph has been deleted. Appendix C-5, referenced in the first paragraph, has been added to the permit at the end of Attachment A-1.

(2) Section C.2.e. (1): SGPB uses disposable glass Coliwasa samplers presently.

The references to PVC Coliwasa samplers and decontamination procedures has been deleted. "SGPB uses disposable glass coliwasa type samplers to collect all drum samples. No decontamination procedure is needed as they are not reused for sampling." has been added to Section C.2.e.(1) based upon the information provided in the comment letter.

3. Permit Attachment A-3 does not include the Fig. 2. referenced.

Figure 2. of Permit Attachment A-3 has been added.

4. Section F, Page F-5, Table F.1.a.: Delete fire blankets. They are not used.

The reference to fire blankets on page F-5 of the General Inspection Schedule has been deleted.

5. Section G, second paragraph, second sentence: an estimated 10,620 gallons...Change to 10,720 gallons.

The figure 10,620 gallons has been amended to 10,720 gallons.

6. Section G, G-22, 6a. Third sentence. A backup copy of this list...EMCS is manning the service call desk twenty-four hours a day; suggest: A backup copy of this list will be posted at the Fire Department desk. (period) then delete the rest od the sentence.

The sentence was amended in this manner.

7. Clarification of the next to last paragraph was needed.

"DRMO will have in stock five eighty-five gallon overpack containers. 27 CSG/DEV or the Fire Department Spill kit will contain twenty fifty-five gallon drums and twenty thirty gallon drums in stock at all times. These drums will be the types approved under DOT and military container specifications." was added based on the information given in the comment letter.

<u>Comments received from U.S. Environmental Protection Agency concerning changes to the permit. (correspondence, Sept. 13,1989)</u>

1. Page 9 or 10:Module I.I: Condition needed for annual adjustment of closure cost estimates.

Not applicable. 40CFR Section 264.140(c) states that federal government facilities are exempt from the financial requirements of Section 264 subpart H.

2. Page 11, Module II.B.1.: If the permittee does not presently receive wastes from a foreign source (it is not listed in the Part A), then this provision should be changed to read as follows:

This Permit does not allow the Permittee to accept wastes from a foreign source. If the Permittee is to receive hazardous waste from a foreign source, he shall apply for and receive a permit modification in accordance with HWMR-5, Part IX, Section 270.41 or 270.42 prior to accepting such

waste.

The Permit has been changed to read as suggested.

3. Page 11; Module II.B: There should be a condition placed in the draft permit requiring the permittee to notify the new owner or operator in writing of the requirements of 264 and 270 before transferring ownership or operators of a facility.

This condition is covered in Permit Module I, Section E.12.

4. Page I-6, Closure Plan: The page should be revised to state that all soil sampling results, (the full investigation) should be sent to the NMEID for review.

"All soil sampling results, (the full investigation) will be sent to the NMEID for review." has been added to paragraph 3 of page I-6.

CANNON AIR FORCE BASE

Defense Reutilization and Marketing Office
Hazardous Waste Container Storage Facility

Resource Conservation and Recovery Act
Permit NMD 7572124454-1

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Hazardous Waste Facility Permit

PERMITTEE: Cannon Air Force Base

ID NUMBER: NM 7572124454

LOCATION: Cannon Air Force Base, NM 88103

PERMIT NUMBER: NM 7572124454-1

Pursuant to the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act (RCRA), as amended (42 U.S.C. 6901, *et seq.*), and the New Mexico Hazardous Waste Act (§§ 74-4-1 *et seq.* NMSA), a permit is issued to the Cannon Air Force Base (hereafter called the Permittee) to operate a hazardous waste container storage facility at the location stated above.

The Permittee must comply with all the terms and conditions of this permit. This permit consists of the conditions contained herein including the attachments. Applicable provisions of regulations cited are those which are in effect on the effective date of this permit, New Mexico Hazardous Waste Management Regulations (HWMR-5, as amended 1989). This permit shall become effective in accordance with HWMR-5, Part IX, sections 902.F. and 902.G. and shall run for a period of ten years.

This permit is based on the provisions of HWMR-5. This permit is also based on the assumption that all information contained in the permit application is accurate and that the facility will be operated as specified in the application. The permit application consists of information submitted February 7, 1985, and revised on October 23, 1985, November 8, 1985, October 21, 1986 and May 31, 1989.

Any inaccuracies found in the information may be grounds for the termination or modification of this permit and potential enforcement action.

Signed this 16th day of October, 1989

by _____
Richard Mitzelfelt, Director, N.M.E.I.D.

New Mexico
Health and Environment Department
Environmental Improvement Division

MODULE I - GENERAL PERMIT CONDITIONS

I.A. EFFECT OF PERMIT

The Permittee is allowed to store hazardous waste in accordance with the conditions of this Permit. Any storage of hazardous waste not authorized in this Permit is prohibited. Compliance with this Permit during its term constitutes compliance, for the purposes of enforcement, with the New Mexico Hazardous Waste Act (40CFR Sections 74-4-1 et seq. NMSA 1978, (as replaced 1989)) and the New Mexico Hazardous Waste Management Regulations (HWMR-5), Parts V, VII, and IX only for those management practices specifically authorized by this Permit. The Permittee is also required to comply with HWMR-5, Parts I, II, III, and IV to the extent that the requirements of those Parts are applicable. The Permittee must also comply with all applicable self-implementing provisions imposed by the Resource Conservation and Recovery Act (RCRA) statute or the HWMR-5, Part VIII. A complete (RCRA) permit consists of this Permit and a US EPA Permit issued under the provisions of the Hazardous and Solid Waste Amendments of 1984 (HSWA) which addresses the portion of the RCRA program for which the State is not authorized. Issuance of this Permit does not convey any property rights of any sort or any exclusive privilege; nor does it authorize any injury to persons or property, any invasion of other private rights, or any infringement of state or local law or regulations. Compliance with the terms of this Permit does not constitute a defense to any order issued or any action brought under Sections 3008(a), 3008(h), 3013, or 7003 of RCRA; Sections 106(a), 104 or 107 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (42 U.S.C. 9601 et seq., commonly known as CERCLA), Sections 74-4-1 et seq. NMSA, 1978, (as replaced 1989), or any other law providing for protection of public health or the environment. (HWMR-5, Part IX, 40CFR Sections 270.4, 270.30(g))

I.B. PERMIT ACTIONS

I.B.1. Permit Modification, Revocation and Reissuance, and Termination

This Permit may be modified, revoked and reissued, or terminated for cause, as specified in HWMR-5, Part IX, 40CFR Sections 270.41, 270.42, and 270.43. The filing of a request for a permit modification, revocation and reissuance, or termination, or the notification of planned changes or anticipated noncompliance on the part of the Permittee, does not stay the applicability

or enforceability of any permit condition. [HWMR-5, Part IX, 40CFR Sections 270.4(a) and 270.30(f)].

I.B.2. Permit Renewal

This Permit may be renewed as specified in HWMR-5, Part IX, 40CFR Section 270.30(b) and Permit Condition I.E.2. Review of any application for a Permit renewal shall consider improvements in the state of control and measurement technology, as well as changes in applicable regulations. [HWMR-5, Part IX, 40CFR Section 270.30(b)].

I.C. SEVERABILITY

The provisions of this Permit are severable, and if any provision of this Permit, or the application of any provision of this Permit to any circumstance is held invalid, the application of such provision to other circumstances and the remainder of this Permit shall not be affected thereby. [HWMR-5, Part X, 40CFR Section 1003].

I.D. DEFINITIONS

For purposes of this Permit, terms used herein shall have the same meaning as those in HWMR-5, Parts I, V, VII, VIII, IX, and X, unless this Permit specifically provides otherwise; where terms are not defined in the regulations or the Permit, the meaning associated with such terms shall be defined by a standard dictionary reference or the generally accepted scientific or industrial meaning of the term. "Director" means the Director of the New Mexico Environmental Improvement Agency, or his designee or authorized representative.

I.E. DUTIES AND REQUIREMENTS

I.E.1. Duty to Comply

The Permittee shall comply with all conditions of this Permit, except to the extent and for the duration such noncompliance is authorized by an emergency Permit. Any Permit noncompliance, other than noncompliance authorized by an emergency Permit, constitutes a violation of RCRA and is grounds for enforcement action; for Permit termination, revocation and reissuance, or modification; or for denial of a Permit renewal application. [HWMR-5, Part IX, 40CFR Section 270.30(a)].

I.E.2. Duty to Reapply

If the Permittee wishes to continue an activity allowed by this Permit after the expiration date of this Permit, the Permittee shall submit a complete application for a new Permit at least 180 days prior to Permit expiration. [HWMR-5, Part IX, 40CFR Sections 270.10(h) and 270.30(b)].

I.E.3. Permit Expiration

Pursuant to HWMR-5, Part IX, 40CFR Section 270.50, this Permit shall be effective for a fixed term not to exceed ten years. As long as the State is the Permit-issuing authority, this Permit and all conditions herein will remain in effect beyond the Permit's expiration date, if the Permittee has submitted a timely, complete application (see HWMR-5, Part IX, 40CFR Sections 270.10, 270.13 through 270.29) and, through no fault of the Permittee, the Director has not issued a new Permit, as set forth in HWMR-5, Part IX, 40CFR Section 270.51.

I.E.4. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for the Permittee, in an enforcement action that it would have been necessary, to halt or reduce the Permitted activity in order to maintain compliance with the conditions of this Permit. [HWMR-5, Part IX, 40CFR Section 270.30(c)].

I.E.5. Duty to Mitigate

In the event of noncompliance with this Permit, the Permittee shall take all reasonable steps to minimize releases to the environment and shall carry out such measures, as are reasonable, to prevent significant adverse impacts on human health or the environment. [HWMR-5, Part IX, 40CFR Section 270.30(d)].

I.E.6. Proper Operation and Maintenance

The Permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Permittee to achieve compliance with the conditions of this Permit. Proper operation and maintenance includes

effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance/quality control procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of this Permit. [HWMR-5, Part IX, 40CFR Section 270.30(e)].

I.E.7. Duty to Provide Information

The Permittee shall furnish to the Director, within a reasonable time, any relevant information which the Director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Permit, or to determine compliance with this Permit. The Permittee shall also furnish to the Director, upon request, copies of records required to be kept by this Permit. [HWMR-5, Part V, 40CFR Section 264.74(a) and Part IX, 40CFR Section 270.30(h)].

I.E.8. Inspection and Entry

Pursuant to HWMR-5, Part IX, 40CFR Section 270.30(i), the Permittee shall allow the Director, or an authorized representative, upon the presentation of credentials and other documents, as may be required by law, to:

I.E.8.a. Enter at reasonable times upon the Permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this Permit;

I.E.8.b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Permit;

I.E.8.c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Permit; and

I.E.8.d. Sample or monitor, at reasonable times, for the purposes of assuring Permit compliance or as otherwise authorized by RCRA, any substances or parameters at any location.

I.E.9. Monitoring and Records

I.E.9.a. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. The method used to obtain a representative sample of the waste to be analyzed must be the appropriate method from Appendix I of HWMR-5, Part II, 40CFR Section 261 or an equivalent method approved by the Director. Laboratory methods must be those specified in Test Methods for Evaluating Solid Waste: Physical/Chemical Methods SW-846, Standard Methods of Wastewater Analysis, or an equivalent method, as specified in the Waste Analysis Plan (See Permit Attachment A-1 and A-2). [HWMR-5, Part IX, 40CFR Section 270.30(j)(1)].

I.E.9.b. The Permittee shall retain records of all monitoring information, all calibration and maintenance records, copies of all reports and records required by this Permit, the certification required by HWMR-5, Part V, 40CFR Section 264.73(b)(9), and records of all data used to complete the application for this Permit for a period of at least 3 years from the date of the sample, measurement, report, record, certification, or application. These periods may be extended by request of the Director at any time and are automatically extended during the course of any unresolved enforcement action regarding this facility.

I.E.9.c. Pursuant to HWMR-5, Part IX, 40CFR Section 270.30(j)(3), records of monitoring information shall specify:

i. The dates, exact place, and times of sampling or measurements;

ii. The individuals who performed the sampling or measurements;

iii. The dates analyses were performed;

iv. The individuals who performed the analyses;

v. The analytical techniques or methods used; and

vi. The results of such analyses.

I.E.10. Reporting Planned Changes

The Permittee shall give notice to the Director, as soon as possible, of any planned physical alterations or additions to the Permitted facility. [HWMR-5, Part IX, 40CFR Section 270.30(l)(1)].

I.E.11. Reporting Anticipated Noncompliance

The Permittee shall give advance notice to the Director of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements. [HWMR-5, Part IX, 40CFR Section 270.30(l)(2)].

I.E.12. Transfer of Permits

This Permit is not transferable to any person, except after notice to the Director. The Director may require modification or revocation and reissuance of the Permit pursuant to HWMR-5, Part IX, 40CFR Section 270.40. Before transferring ownership or operation of the facility during its operating life, the Permittee shall notify the new owner or operator in writing of the requirements of HWMR-5, Parts V and IX and this Permit. [HWMR-5, Part V, 40CFR Section 264.12(c) and Part IX, 40CFR Section 270.30(l)(3)].

I.E.13. Twenty-Four Hour Reporting

I.E.13.a. The Permittee shall report to the Director any noncompliance which may endanger health or the environment. Any such information shall be reported orally within 24 hours from the time the Permittee becomes aware of the circumstances. The report shall include the following:

i. Information concerning release of any hazardous waste that may cause an endangerment to public drinking water supplies.

ii. Any information of a release or discharge of hazardous waste, or of a fire or explosion from the hazardous waste management facility which could

threaten the environment or human health outside the facility.

I.E.13.b. The description of the occurrence and its cause shall include:

i. Name, address, and telephone number of the owner or operator;

ii. Name, address, and telephone number of the facility;

iii. Date, time, and type of incident;

iv. Name and quantity of materials involved;

v. The extent of injuries, if any;

vi. An assessment of actual or potential hazards to the environment and human health outside the facility, where this is applicable; and

vii. Estimated quantity and disposition of recovered material that resulted from the incident.

I.E.13.c. A written submission shall also be provided within five days of the time the Permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period(s) of noncompliance (including exact dates and times); whether the noncompliance has been corrected; and, if not, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance. The Director may waive the five-day written notice requirement in favor of a written report within 15 days. [HWMR-5, Part IX, 40CFR Section 270.30(l)(6)].

I.E.14. <u>Other Noncompliance</u>

The Permittee shall report all other instances of noncompliance not otherwise required to be reported above, (Permit Conditions I.E.10. - 15.), at the time monitoring reports are submitted. The reports shall contain the information listed in

Permit Condition I.E.13. [HWMR-5, Part IX, 40CFR Section 270.30(l)(10)].

I.E.15. Other Information

Whenever the Permittee becomes aware that it failed to submit any relevant facts in the Permit application, or submitted incorrect information in a Permit application or in any report to the Director, the Permittee shall promptly submit such facts or information. [HWMR-5, Part IX, 40CFR Section 270.30(l)(11)].

I.F. SIGNATORY REQUIREMENT

All applications, reports, or information submitted to or requested by the Director, his designee, or authorized representative, shall be signed and certified in accordance with HWMR-5, Part IX, 40CFR Sections 270.11 and 270.30(k).

I.G. REPORTS, NOTIFICATIONS, AND SUBMISSIONS TO THE DIRECTOR

All reports, notifications, or other submissions which are required by this Permit to be sent or given to the Director should be sent by certified mail or given to:

EID Director
Harold Runnels Building
1190 St. Francis Drive
Santa Fe, NM 87503

I.H. CONFIDENTIAL INFORMATION

In accordance with HWMR-5, Part IX, 40CFR Section 270.12, the Permittee may claim confidential any information required to be submitted by this Permit.

I.I. DOCUMENTS TO BE MAINTAINED AT THE FACILITY

The Permittee shall maintain at the facility, until closure is completed and certified by an independent, registered professional engineer, the following documents and all amendments, revisions and modifications to these documents:

1. Waste Analysis Plan, as required by HWMR-5, Part V, 40CFR Section 264.13 and this Permit.

2. Inspection schedules, as required by HWMR-5, Part V, 40CFR Section 264.15(b)(2) and this Permit.

3. Personnel training documents and records, as required by HWMR-5, Part V, 40CFR Section 264.16(d) and this Permit.

4. Contingency Plan, as required by HWMR-5, Part V, 40CFR Section 264.53(a) and this Permit.

5. Operating record, as required by HWMR-5, Part V, 40CFR Section 264.73 and this Permit.

6. Closure Plan, as required by HWMR-5, Part V, 40CFR Section 264.112(a) and this Permit.

7. All other documents required by Module I, Permit Condition E.9., Module II, Permit Condition L., and Module III, Permit Conditions G. and H.

MODULE II - GENERAL FACILITY CONDITIONS

II.A. DESIGN AND OPERATION OF FACILITY

The Permittee shall construct, maintain and operate the facility to minimize the possibility of a fire, explosion, or any unplanned, sudden or nonsudden release of hazardous waste constituents to air, soil, or surface water which could threaten human health or the environment, as required by HWMR-5, Part V, 40CFR Section 264.31.

II.B. REQUIRED NOTICES

II.B.1. Hazardous Waste Imports

This Permit does not allow the Permittee to accept wastes from a foreign source. If the Permittee is to receive hazardous waste from a foreign source, he shall apply for and receive a permit modification in accordance with HWMR-5, Part IX, Section 40CFR 270.41 or 270.42 prior to accepting such waste.

II.B.2. Hazardous Waste from Off-Site Sources

When the Permittee is to receive hazardous waste from an off-site source (except where the Permittee is also the generator), he must inform the generator in writing that he has the appropriate Permits, and will accept the waste the generator is shipping. The Permittee must keep a copy of this written notice as part of the operating record. [HWMR-5, Part V, 40CFR Section 264.12(b)].

II.C. GENERAL WASTE ANALYSIS

The Permittee shall follow the waste analysis procedures required by HWMR-5, Part V, 40CFR Section 264.13, as described in the attached Waste Analysis Plan, Permit Attachment A-1 and A-2.

The Permittee shall verify the analysis of each waste stream annually as part of its quality assurance program, in accordance with Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, EPA Publication SW-846, or equivalent methods approved by the Director. At a minimum, the Permittee shall maintain proper functional instruments, use approved sampling and analytical methods, verify the validity of sampling and analytical procedures, and perform correct calculations. If the Permittee uses a contract laboratory to perform analyses, then

the Permittee shall inform the laboratory in writing that it must operate under the waste analysis conditions set forth in this Permit. The method used to obtain a representative sample of the waste to be analyzed must be the appropriate method from Appendix I of HWMR-5, Part II, 40CFR Section 261 or an equivalent method approved by the Director. Waste containers are to be selected for sampling based upon the method set forth in Permit Attachment A-3 or an equivalent method approved by the Director.

II.D. SECURITY

The Permittee shall comply with the security provisions of HWMR-5, Part V, 40CFR Section 264.14(b) and (c) and Permit Attachment B.

II.E. GENERAL INSPECTION REQUIREMENTS

The Permittee shall follow the inspection schedule set out in Permit Attachment C. The Permittee shall remedy any deterioration or malfunction discovered by an inspection, as required by HWMR-5, Part V, 40CFR Section 264.15(c). Records of inspection shall be kept, as required by HWMR-5, Part V, 40CFR Section 264.15(d).

II.F. PERSONNEL TRAINING

The Permittee shall conduct personnel training, as required by HWMR-5, Part V, 40CFR Section 264.16. This training program shall follow the attached outline, Permit Attachment D. The Permittee shall maintain training documents and records, as required by HWMR-5, Part V, 40CFR Section 264.16(d) and (e).

II.G. SPECIAL PROVISIONS FOR IGNITABLE, REACTIVE, OR INCOMPATIBLE WASTE

The Permittee shall comply with the requirements of HWMR-5, Part V, 40CFR Section 264.17(a). The Permittee shall follow the procedures for handling ignitable, reactive, and incompatible wastes set forth in Permit Attachment E-1.

II.H. PREPAREDNESS AND PREVENTION

II.H.1. Required Equipment

At a minimum, the Permittee shall maintain at the facility the equipment set forth in the Contingency Plan, Permit Attachment F, as required by HWMR-5, Part V, 40CFR Section 264.32.

II.H.2. Testing and Maintenance of Equipment

The Permittee shall test and maintain the equipment specified in Permit Condition II.H.1, as necessary, to assure its proper operation in time of emergency, as required by HWMR-5, Part V, 40CFR Section 264.33.

II.H.3. Access to Communications or Alarm System

The Permittee shall maintain access to the communications or alarm system, as required by HWMR-5, Part V, 40CFR Section 264.34.

II.H.4. Required Aisle Space

At a minimum, the Permittee shall maintain aisle space, as required by HWMR-5, Part V, 40CFR Section 264.35 and the attached plans and specifications, Permit Attachment G.

II.H.5. Arrangements with Local Authorities

The Permittee shall maintain arrangements with state and local authorities, as required by HWMR-5, Part V, 40CFR Section 264.37. If state or local officials do not enter into preparedness and prevention arrangements with the Permittee, the Permittee must document this in the operating record.

II.I. CONTINGENCY PLAN

II.I.1. Implementation of Plan

The Permittee shall immediately carry out the provisions of the Contingency Plan, Permit Attachment F, whenever there is a fire, explosion, or release of hazardous waste or constituents which could threaten human health or the environment.

II.I.2. Copies of Plan

The Permittee shall comply with the requirements of HWMR-5, Part V, 40CFR Section 264.53.

II.I.3. Amendments to Plan

The Permittee shall review and immediately amend,

if necessary, the Contingency Plan, as required by HWMR-5, Part V, 40CFR Section 264.54.

II.I.4. Emergency Coordinator

A trained emergency coordinator shall be available at all times in case of an emergency, as required by HWMR-5, Part V, 40CFR Section 264.55. The names, addresses, and phone numbers of all persons qualified to act as emergency coordinators shall be supplied to the Director at the time of certification. [HWMR-5, Part V, 40CFR Section 264.52(d)].

II.J. MANIFEST SYSTEM

The Permittee shall comply with the manifest requirements of HWMR-5, Part V, 40CFR Sections 264.71, 264.72, and 264.76.

II.K. RECORDKEEPING AND REPORTING

In addition to the recordkeeping and reporting requirements specified elsewhere in this Permit, the Permittee shall do the following:

II.K.1. Operating Record

The Permittee shall maintain a written operating record at the facility, in accordance with HWMR-5, Part V, 40CFR Section 264.73.

II.K.2. Biennial Report

The Permittee shall comply with the biennial reporting requirements of HWMR-5, Part V, 40CFR Section 264.75.

II.L. GENERAL CLOSURE REQUIREMENTS

II.L.1. Performance Standard

The Permittee shall close the facility, as required by HWMR-5, Part V, 40CFR Section 264.111 and in accordance with the Closure Plan, Permit Attachment H.

II.L.2. Amendment to Closure Plan

The Permittee shall amend the Closure Plan, in accordance with HWMR-5, Part V, 40CFR Section 264.112(c), whenever necessary.

II.L.3. Notification of Closure

The Permittee shall notify the Director in writing at least 45 days prior to the date on which he expects to begin final closure of the facility, as required by HWMR-5, Part V, 40CFR Section 264.112(d).

II.L.4. Time Allowed For Closure

After receiving the final volume of hazardous waste, the Permittee shall treat, remove from the unit or facility, or dispose of on site all hazardous waste and shall complete closure activities, in accordance with HWMR-5, Part V, 40CFR Section 264.113 and the schedules specified in the Closure Plan, Permit Attachment H.

II.L.5. Disposal or Decontamination of Equipment, Structures, and Soils

The Permittee shall decontaminate and/or dispose of all contaminated equipment, structures, and soils, as required by HWMR-5, Part V, 40CFR Section 264.114 and the Closure Plan, Permit Attachment H.

II.L.6. Certification of Closure

The Permittee shall submit, by registered mail, a certification made by an independent registered professional engineer, that the facility has been closed in accordance with the specifications in the Closure Plan, as required by HWMR-5, Part V, 40CFR Section 264.115.

II.L.7. Final Closure Report

Upon completion of the closure activities, the Permittee shall submit, by registered mail, a Final Closure Report to the Director. The report shall document the final closure and contain, at a minimum, the following:

II.L.7.a. The certification described in Permit Condition II.L.6. containing the documentation necessary to comply with HWMR-5, Part V, 40CFR Section 264.115.

II.L.7.b. Any variance from the approved activities and the reason for the variance.

II.L.7.c. A tabular summary of all sampling results, showing:

i. Sample identification;

ii. Sampling location;

iii. The datum reported;

iv. Detection limit for each datum;

v. A measure of analytical precision (e.g. uncertainty, range, variance)

vi. Identification of the analytical procedure, and

vii. Identification of the analytical laboratory.

II.L.7.d. A QA/QC statement on the adequacy of the analyses and the decontamination determination.

II.L.7.e. The location of the file of supporting documentation:

i. Field log books;

ii. Laboratory sample analysis reports;

iii. The QA/QC documentation, and

iv. Chain of custody records.

II.L.7.f. The disposal location of all regulated and nonregulated residues.

II.L.7.g. A certification of the accuracy of the report.

MODULE III - CONTAINERS

III.A. MODULE HIGHLIGHTS

III.A.1. The Permit is for the container storage of hazardous wastes in Building 226 at Cannon AFB, operated by the Defense Reutilization and Marketing Office (DRMO-Cannon). DRMO-Cannon accepts wastes associated with aircraft maintenance from accumulation points on CAFB and from Reese AFB in Lubbock, Texas. In addition, hazardous materials to be reused or sold are stored within Building 226. Hazardous wastes and hazardous materials will be separated and a labelling system (yellow and orange hazardous waste labels) must be used to identify waste items. Restrictions for hazardous material storage in the container storage facility are described in Permit Section III.L.

III.A.2. The containment building is an enclosed steel structure built upon a concrete pad of approximately 4000 square feet. There are three sections, a flammable/combustible storage area of 2400 square feet separated from a toxic and reactive waste area of 800 square feet by a loading and unloading bay of approximately 800 square feet. The concrete floor has no joints and is sealed with a chemically resistant epoxy material. The perimeter of the foundation and the internal bay dividers are 6" concrete curbs. Each storage bay is enclosed by the curbs on three sides.

III.A.3. In the combustible storage area, there are six storage bays, 13-foot by 20-foot, three to a side with a 10.5 foot aisle space down the center. On the open side or front of each storage bay is a 150-gallon grated containment trench toward which the floor is sloped. The maximum amount of wastes which will be stored in one of the bays is 1320 gallons in 55-gallon (24 drums) or smaller containers.

III.A.4. The toxic and reactive waste storage area contains eight 6-foot by 9-foot bays with 4 feet of aisle space. The bays are divided for the storage of bases, acids, toxic and reactive wastes, pesticides, oxidants and low hazard materials. Hazardous wastes and materials stored in the bays

will be separated and prominently marked. Each bay slopes to an 82.5 gallon capacity containment trench. The maximum amount of materials and wastes which will be stored in each of these bays is 350 gallons in 55-gallon (6 drums) or smaller containers.

III.A.5. The loading and unloading center area slopes to a 150 gallon collection trench in the center. Outside the area's overhead steel door, a paved area slopes away from the building to prevent run-on.

III.A.6. The containers for free liquids are new drums which are no larger than 55 gallons and will meet the DOT 174 specifications or military container specifications as described in Table D-1 of Permit Attachment E-2. The containers will not be stacked over two high. Overpack drums are allowed only to contain damaged drums. They must be dated and the incident requiring their use recorded and reported.

III.B. PERMITTED AND PROHIBITED WASTE IDENTIFICATION

III.B.1. The Permittee may store the following wastes in containers at the facility, subject to the terms of this Permit. The Permittee shall apply for and receive a permit modification prior to storing any additional waste codes. In the event that the amount of any waste code stored, per year, shall exceed the maximum quantity shown in the following table, the Permittee shall submit a written report to the Director for approval. This report shall also be included in the Operating Record as described by Permit Condition II.K.1.

Description of Hazardous Waste	EPA Hazardous Waste Number	Maximum Amount	Maximum Number and Type of Containers
Characteristic for ignitability	D001	5,000lbs. 650gals.	12 55-gal. drums
Characteristic for corrosivity	D002	10,000lbs. 1200gals.	22 55-gal. drums
Cadmium containing wastes	D006	1,125lbs. 135 gals.	3 55-gal. drums
Chromium wastes	D007	3,000lbs. 360 gals.	7 55-gal. drums

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Class II modification to Module III.B.1.

Add the following wastes:

Characteristic for Reactivity	D003	1,000 lbs.	
Lead Wastes	D008	1,300 lbs. 115 gals.	3 55-gal drums
Mercury Wastes	D009	250 lbs	
Lindane Wastes	D013	10 gals.	
Methyl Ethyl Ketone Wastes	D035	1,300 lbs. 115 gals.	3 55-gal. drums
Discarded Chlorophenol formulations	F027	1,000 lbs.	
Epinephrine	P042	10 gals.	
Formaldehyde	U122	10 gals.	
Phenol	U188	10 gals.	
Warfarin	U248	10 gals.	

2,4-D Herbicide	D016	800lbs.	
Spent halogenated solvents	F001	7700lbs. 621 gals.	11 55-gal. drums
Spent halogenated solvents	F002	5,500lbs. 440gals.	8 55-gal. drums
Non-halogenated spent solvents	F003	1,125lbs. 160gals.	3 55-gal. drums
Non-halogenated spent solvents	F005	25,000lbs. 3,570gals.	65 55-gal. drums
Acetone	U002	10lbs. 1.5gals.	
Mercury	U151	100lbs.	
Methanol	U154	10lbs. 1.5gals.	
Methyl Ethyl Ketone	U159	10lbs. 1.5gals.	
Tetrachloroethylene	U210	10lbs. 0.8gals.	
Toluene	U220	10lbs. 1.4gals.	
1,1,1-Trichloro-ethylene	U226	10lbs. 0.8gals.	
Trichloroethene	U228	10lbs. 0.8gals.	
Xylene	U239	10lbs. 1.4gals.	
Zinc Phosphide <10% concentration	U249	10lbs.	

III.B.2. The maximum amount of hazardous waste which will be stored in any one 13-foot by 20-foot storage bay will be 1320 gallons at any one time. The maximum amount of hazardous waste which will be stored in any one 6-foot by 9-foot storage bay will be 350 gallons at any one time. The

5/1/92

Class II Modification to Module III.B.2.

Add the following wastes:

Ignitable Waste	Acute Hazardous Waste	Toxic Waste
D035	F027	D008
U122	P042	D009
		D013
		U188
		U248

Reactive Waste

D003

following wastes, identified by EPA Hazardous Waste Number, shall be stored in the appropriate bays only up to the total volume indicated for each bay:

Ignitable Waste	Corrosive Waste	Toxic Waste
D001	D002	D016
F003	D006	F001
F005	D007	F002
U002		U151
U154		U210
U159		U220
U239		U226
		U228
		U249

III.B.3. The Permittee is prohibited from storing or treating hazardous waste that is not identified in Permit Condition III.B.1.

III.B.4. The Permittee must also comply with the following conditions regarding storage of wastes in containers which are presently prohibited from land disposal. These restrictions are imposed on any waste as it becomes prohibited from land disposal. (HWMR-5, Part VIII, 40CFR Section 268.50).

III.B.4.a. Time period.

i. A storage period of one year is permitted.

ii. A storage period beyond one year is permitted provided there is proof that such storage is solely for the purpose of accumulation of such quantities as are necessary to facilitate proper recovery, treatment or disposal.

III.B.4.b. Each container must be clearly marked as to its contents and the date each period of accumulation begins.

III.B.4.c. Nullification of the prohibition.

i. Hazardous wastes meeting the treatment standards in HWMR-5, Part VIII, 40CFR Sections 268.41, 268.42, 268.43 are not subject to the storage prohibition.

ii. Hazardous wastes meeting the treatment standards specified under the variance in HWMR-5, Part VIII, 40CFR Section 268.44 are not subject to the storage prohibition.

III.C. CONDITION OF CONTAINERS

If a container holding hazardous waste is not in good condition (e.g., severe rusting, apparent structural defects) or if it begins to leak, the Permittee shall transfer the hazardous waste from such container to a container that is in good condition or otherwise manage the waste in compliance with the conditions of this Permit. [HWMR-5, Part V, 40CFR Section 264.171].

III.D. COMPATIBILITY OF WASTE WITH CONTAINERS

The Permittee shall assure that the ability of the container to contain the waste is not impaired, as required. [HWMR-5, Part V, 40CFR Section 264.172].

III.E. MANAGEMENT OF CONTAINERS

The Permittee shall keep all containers closed during storage, except when it is necessary to add or remove waste, and shall not open, handle, or store containers in a manner which may rupture the container or cause it to leak. [HWMR-5, Part V, 40CFR Section 264.173].

III.F. CONTAINMENT SYSTEMS

The Permittee shall maintain the containment system in accordance with the attached plans and specifications, contained in Permit Attachment I. [HWMR-5, Part V, 40CFR Section 264.175].

III.G. INSPECTION SCHEDULES AND PROCEDURES

The Permittee shall inspect the container area weekly, in accordance with the Inspection Schedule, Permit Attachment C, to detect leaking containers and deterioration of containers and the containment system caused by corrosion and other factors. [HWMR-5, Part V, 40CFR Section 264.174].

III.H. RECORDKEEPING

The Permittee shall place the results of all waste analyses and trial tests and any other documentation showing compliance with the requirements of Permit Condition III.K. and HWMR-5, Part V, 40CFR Sections 264.17(b) and 264.177 in the facility operating record. [HWMR-5, Part V, 40CFR Section 264.73].

III.I. CLOSURE

At closure of the container area, the Permittee shall remove all hazardous waste and hazardous waste residues from the containment system, in accordance with the procedures in the Closure Plan, Permit Attachment H. [HWMR-5, Part V, 40CFR Section 264.178].

III.J. SPECIAL CONTAINER PROVISIONS FOR IGNITABLE OR REACTIVE WASTE

III.J.1. The Permittee shall not locate containers holding ignitable or reactive waste within 15 meters (50 feet) of the facility's property line. [HWMR-5, Part V, 40CFR Section 264.176].

III.J.2. The Permittee shall take precautions to prevent accidental ignition or reaction of ignitable or reactive waste and follow the procedures specified in Permit Attachment E-1. [HWMR-5, Part V, 40CFR Sections 264.17(a) and 264.176].

III.K. SPECIAL CONTAINER PROVISIONS FOR INCOMPATIBLE WASTE

III.K.1. The Permittee shall not place incompatible wastes, or incompatible wastes and materials, in the same container unless the procedures in Permit Attachment E-1 are followed. [HWMR-5, Part V, 40CFR Section 264.177(a)].

III.K.2. The Permittee shall not place hazardous waste in an unwashed container that previously held an incompatible waste or material. [HWMR-5, Part V, 40CFR Section 264.177(b)].

III.K.3. The Permittee shall separate containers of incompatible wastes. [HWMR-5, Part V, 40CFR Section 264.177(c)].

III.L. STORAGE OF HAZARDOUS MATERIALS

The Permittee may store hazardous materials in the permitted storage units, provided the following criteria are met:

III.L.1. Hazardous materials are segregated and stored in bays appropriate to their hazardous classification.

III.L.2. A separate and marked location within each storage bay is used for the storage of hazardous materials.

III.L.3. At all times, hazardous materials must be clearly identifiable as materials rather than wastes both through the waste label identification system described in Permit Attachment E-1 and storage location.

III.L.4. The Permittee adheres to the provisions of Permit Conditions III.C., III.D. and III.E., substituting the word "materials" for the word "wastes" when handling hazardous materials.

PERMIT ATTACHMENT A-1.

Waste Analysis Plan

C.2 Waste Analysis Plan [40 CFR 264.13(b) and (c) and 264.341;

Cannon Air Force Base generates, stores and treats hazardous wastes in the course of routine aircraft maintenance operations. The intent of this waste analysis plan is to summarize the manner in which hazardous materials

will be tracked, once they are purchased for use, and how they will be analyzed for chemical/physical characteristics to insure proper handling, storage and treatment in accordance with New Mexico Hazardous Waste Management Regulations.

Corrosion Control is a aircraft spray painting operation that uses several types of paints and solvents in the process of maintaining the exterior finish of aircraft and some aircraft ground equipment. The facility consists of a hangar area where painting is accomplished, an administrative area and an outdoor accumulation point.

The Munitions Maintenance area uses small amounts of paint and thinner to paint the exterior of practice bombs. A paint booth is installed in a building in the Munitions area for painting. Wastes are collected and stored in a satellite accumulation point for later transfer to the DRMO.

The Transportation Paint Shop uses materials similar to Corrosion Control to paint Air Force vehicles. Vehicles are painted inside a paint booth. Wastes are collected at a satellite accumulation point.

The Jet Engine Shop performs maintenance on the F-111D jet engines. They use Carbon Remover.

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The Wheel and Tire shop, the Metals Technology shop and the Propulsion shop each have a bead blaster whose dust is characteristically hazardous due to metals such as lead, cadmium, silver and chromium. Wastes are collected at a satellite accumulation point in the respective shops for later transfer to DRMO.

The Auto Hobby shop and Civil Engineering paint shop generate small quantities (5-10 gallons per year) of paint related waste in the course of routine operations. Wastes are collected at a satellite accumulation point in the respective shops for later transfer to DRMO.

The base hospital generates small quantities (less than 1 gallon per year) of phenol, lindane, and formaldehyde in the course of routine operations. On occasion outdated or off specification phenol, warfarin, epinephrine and formaldehyde must also be turned in as hazardous waste. All wastes are collected at satellite accumulation points in the hospital for later transfer to DRMO.

Corrosion Control accumulates their wastes (slop paint and wipe down material) in an outdoor storage area. They also accumulate minute amounts of paint and thinner (MEK and/or toluene) from the Munitions Maintenance area and from the Transportation Squadron Paint Shop.

The Jet Engine Shop (Bldg 680) also accumulates wastes in an outdoor storage area. They segregate and accumulate waste Freon 113, Carbon Remover and B & B 3100. See page C-5a thru C-5d for waste analysis concentrations generated by the above hazardous waste generators.

The DRMO on Cannon AFB disposes of the waste accumulated at Corrosion Control and any other wastes generated on Cannon AFB. The DRMO may accept, upon written request, hazardous waste from Reese AFB, near Lubbock, Texas. Waste streams and processes are identified in Appendix C-2.

DRMO-Cannon will only accept hazardous wastes for which it is permitted. Periodically, DRMO-Cannon will inform each generating activity of the hazardous wastes it is permitted to receive and store. DOD has issued specific regulations that govern the transfer of hazardous wastes and are applicable to all generators of hazardous wastes that transfer such wastes to DRMOs. These

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ATTACHMENT A-2

Waste Paint Material - Corrosion Control

Sample #GT880280

Major Components: Paint Components & MEK (F005) - 50%
Water - 48%
Paint Solids - 2%

Ignitability: Yes; ignitable at 75 F
Corrosivity and/or Reactivity: None pH 7

EP Toxicity Metals:		
	Arsenic	<0.1 mg/L
	Barium	<1.0 mg/L
	Cadmium	0.28 mg/L
	Chromium	79.0 mg/L
	Lead	<0.3 mg/L
	Mercury	<0.01 mg/L
	Selenium	<0.01 mg/L
	Silver	<0.1 mg/L

Total Organics Halides (TOX): 2600 ug/L

Date: 5/1/92
Revision No.: 4
Section: C
Cannon

WASTE ANALYSIS

27EMS CORROSION CONTROL BLDG. 196, 27th TRANSPORTATION PAINT SHOP, 27th CIVIL ENGINEERING PAINT SHOP AND AUTO HOBBY SHOP. CANNON AFB. NM
WASTE STREAM-RESTRICTED LAND BAN SOLVENT

Generation of Slop paint and wipe down material consisting of methyl ethyl ketone. toluene. paint thinner. and paint resins. EPA WASTE CODE: D001. D007. D006. D008. F003 AND F005; NON-HALOGENATED

BULK CONCENTRATION	% BULK CONCENTRATION	COMMENTS	EPA
EPA IGNITABLE		27C	D001
PETROLEUM HYDROCARBONS	7	PH	
METHYL ETHYL KETONE	20		F005
ISOBUTYL ACETATE	4		
TOLUENE	2		F005
ISOBUTANOL	3		F005
XYLENES	3		F003
CELLOSOLVE ACETATE	1		
BENZENE. TOLUENE. XYLENES	<1	PH --	
WATER	60	PH 6.9	
EP TOXICITY-METALS:			
ARSENIC	0.5 mg/l		
BARRUM	10.0 mg/l		
CADMIUM	5.0 mg/l		D006
CHROMIUM	193.0 mg/l		D007
LEAD	11.5 mg/l		D008
MERCURY	0.02 mg/l		
SELENIUM	0.1 mg/l		
SILVER	0.5 mg/l		

WASTE ANALYSIS

27EMS/MAEBW JET ENGINES MAINTENANCE. BLDO. 680. CANNON AFB. NM
WASTE STREAM

Generation of B & B 3100 Cleaning Solvent to perform maintenance on the F-111D jet engines. EP Toxicity Test - Metals; EPA WASTE CODES D006 and D008 (NSN: 6850-00-181-7597)

BULK CONCENTRATION	% BULK CONCENTRATION	COMMENTS	EPA CODE:
EPA IGNITABLE		> 140	
PARAMETERS:			
ARSENIC	< 0.5 mg/l		
BARIUM	<10 . mg/l		
CADMIUM	4.0 mg/l		D006
CHROMIUM	2.3 mg/l		
LEAD	20 mg/l		D008
MERCURY	< 0.02mg/l		
SELENIUM	< 0.1 mg/l		
SILVER	< 0.5 mg/l		
PH, UNITS		8.3	

SAMPLE TYPE: AQUEOUS

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WASTE ANALYSIS

27 EMS/MAEA Aerospace Ground Equipment. Bldg 18, 27 EMS/MAEBW WHEEL & TIRE SHOP. BLDG. 194, 27 EMS/MAEFM METALS TECHNOLOGY. BLDG 680 AND 27 CRS/MACP PROPULSION SHOP. BLDG 680. CANNON AFB, NM
WASTE STREAM - RESTRICTED LAND BAN SOLVENT

Generation of Bead Blaster Residue to perform maintenance on the F-111 wheel and engine components. EP Toxicity test - Metals; EPA WASTE CODES D006 and D007

BULK CONCENTRATION	% BULK CONCENTRATION	COMMENTS	EPA
EPA 1GNITABLE			
PARAMETERS:			
ARSENIC	< 0.5 mg/l		
BARIUM	<10.0 mg/l		
CADMIUM	8.1 mg/l		D006
CHROMIUM	6.0 mg/l		D007
LEAD	< 0.5 mg/l		
MERCURY	< 0.02mg/l		
SELENIUM	< 0.1 mg/l		
SILVER	< 0.5 mg/l		
PH, UNITS		8.3	

SAMPLE TYPE: SOLID

WASTE ANALYSIS

27EMS/MAEBW JET ENGINE MAINTENANCE. BLDG. 680. CANNON AFB. NEW MEXICO
WASTE STREAM - RESTRICTED LAND BAN SOLVENT

Generation of Freon 113 (1,1,2, Trichloro-1,2,2 Trifluoroethane Halogenated Hydrocarbon) Cleaner, also known as Trichlorotrifluoroethane. Mixture of 98% silicone fluid. freon 113 solvent and 2% water. NSN: 6850-00-033-8851; EPA WASTE CODE F002

BULK CONCENTRATION	% BULK CONCENTRATIOM	COMMENTS	EPA CODE:
EPA IGNITABLE		NO	
CORROSIVITY		NO	
HALIDES		YES	F002
EP TOXICITY		N/A	

Tested for: Infrared Spectrograph; pH measurement and closed cup flash point.

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WASTE ANALYSIS

27 CRS/MACA AVIONICS MAINTENANCE. BLDG. 680. CANNON AFB. NM
WASTE STREAM - RESTRICTED LAND BAN SOLVENT

Generation of Freon 113 (1,1,2, Trichloro-1,2,2 Trifluoroethane Halogenated Hydrocarbon) Cleaner, also known as Trichlorotrifluoroethane. Mixture of 98% silicone fluid, freon 113 solvent and 2% water. NSN: 6850-00-033-8851; EPA WASTE CODE F002

BULK CONCENTRATION	% BULK CONCENTRATION	COMMENTS	EPA CODE:
EPA IGNITABLE		NO	
CORROSIVITY		NO	
HALIDES		YES	F002
EP TOXICITY		N/A	

Tested for: Infrared Spectrograph; pH measurement and closed cup flash point.

WASTE ANALYSIS

27EMS/MAEBW JET ENGINE MAINTENANCE. BLDG. 680. CANNON AFB. NM
WASTE STREAM - RESTRICTED LAND BAN SOLVENT

Generation of Carbon Remover containing perchloroethylene (Tetrachloroethylene); Major compounds consist of 95% paint remover

(NSN: 8010-01-040-1059) and 5% Mineral Oil. EPA WASTE CODE F001

BULK CONCENTRATION	% BULK CONCEMTRATION	COMMEMTS	EPA CODE:
EPA IGNITABILITY		NOT < 140 F	N/A
CORROSIVE		NO	N/A
REACTIVE		NO	
HALIDES (TOX)	1,000 ppm	0.1	

Tested for: Infrared Spectro.graph: pH measurement and closed cup flash point.

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WASTE ANALYSIS

27 CRS/MACP JET ENGINE MAINTENANCE. BLDG. 680. CANNON AFB. NM
WASTE STREAM - RESTRICTED LAND BAN SOLVENT

Generation of Carbon Remover containing perchloroethylene (Tetrachloroethylene); Major compounds consist of 95% paint remover

(NSN: 8010-01-040-1059) and 5% Mineral Oil. EPA WASTE CODE F001

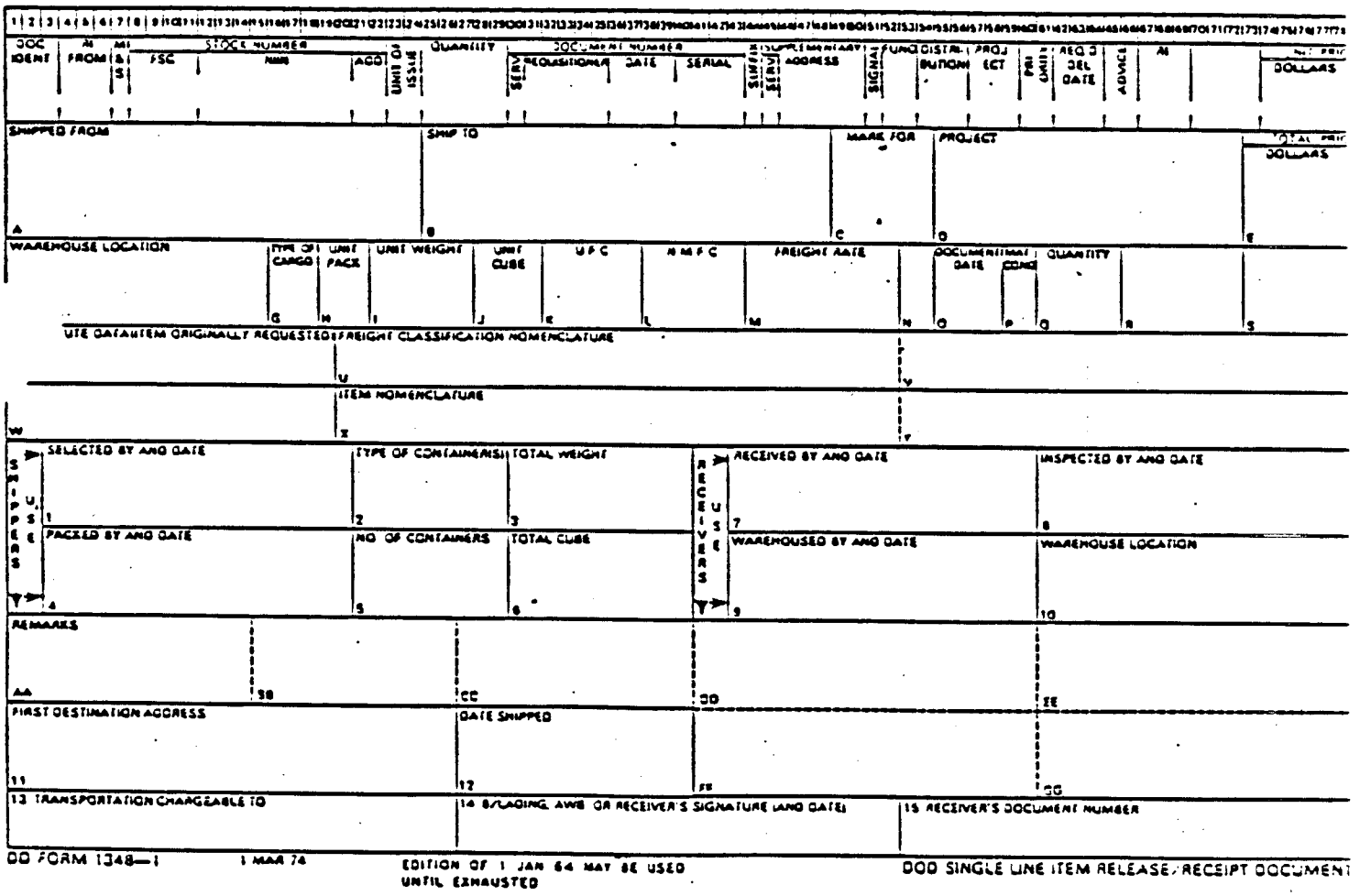
BULK CONCENTRATION	% BULK CONCEMTRATION	COMMEMTS	EPA CODE:
EPA IGNITABILITY		NOT < 140 F	N/A
CORROSIVE		NO	N/A
REACTIVE		NO	
HALIDES (TOX)	1,000 ppm	0.1	

Tested for: Infrared Spectro.graph: pH measurement and closed cup flash point.

regulations require that activities transferring hazardous wastes to a DRMO must properly identify the property so that the hazardous characteristics of the waste are immediately apparent to the receiving personnel. Each different waste must be accompanied by a completed Disposal Turn-In Document (DD Form 1348-1, Figure C-1) that includes a proper item identification. The DOD regulation state that proper identification of a hazardous waste identified by a National Stock Number (NSN), a unique 13 digit code assigned to each item in the Federal Supply System, will include the following:

Figure C-1

Example of the Disposal Turn-in Document for Generators of Hazardous Materials and Hazardous wastes



(i) the noun name; as catalogued in the Federal Supply System.

(ii) the chemical name of the hazardous contaminants and the noun name of nonhazardous contaminants.

Proper identification of hazardous waste without an NSN will include:

(i) the chemical name of the hazardous components.

(ii) the chemical names of hazardous contaminants and noun name of nonhazardous contaminants.

This information allows DRMO-Cannon personnel to utilize standard references in order to determine the chemical characteristics and proper Storage procedures for the hazardous wastes. Additionally, many Group I waste containers will have the original manufacturer's label affixed. Often information supplied on the label can assist in determining hazardous characteristics and proper storage for the item.

For items with an NSN, DRMO-Cannon will then determine the hazardous characteristics by accessing DOD's Hazardous Materials Information System (HMIS). The HMIS is a computerized source of information which can cross-reference many NSNs to their particular chemical characteristics such as flash point, specific gravity, special handling precautions, and the hazardous ingredients contained within the NSN item.

For locally purchased items a Material Safety Data sheet (MSDS) (See Appendix C-6) will be obtained from the manufacturer in accordance with Federal Standard 313B, dated 14 April 1983. A copy will be maintained at Bioenvironmental Engineering (SGPB) and record keeping practices will be employed in the shop using the material linking the MSDS to the material.

For other items, DRMO personnel have the following references to determine the hazardous characteristics:

(i) NFPA Books (Fire protection Guide on Hazardous Materials).

(ii) Chemical Dictionary.

(iii) Navy "CHIL" Manual.

(iv) DOT Guide (Emergency Response Guide Mo. DOT P. 5800.2).

(v) NIOSH/OSHA: (1) pocket Guide to Chemical Hazards; (2) Occupational Health Guidelines for Chemical Hazards.

(vi) Industrial Chart for Toxic and Hazardous Chemicals in Industry.

(vii) EPA Document: "A Method for Determining the Compatibility of Hazardous Wastes."

(viii) Environmental Considerations in the DPDS Disposal Process, DPDS-M 6050.1.

(IX) Regional Environmental Specialist (Who has more reference documents on hand).

Figure C-2 is an example of the data output obtained from the HazardouS Materials Information System for acetone.

It provides an example of the detail of information which can be obtained through HMIS. without requiring a sample of the item to undergo laboratory analysis. The NSN for this item is 6810-00-184-4796, and it consists of 100 percent acetone. DRMO-Cannon can identify this compound as ignitable. The handling and storage information indicates that acetone should be stored in an area away from heat, sparks, and open flames, and separated from strong oxidizers, nitric/sulfuric acid mixtures, and chloroform. To fight fires involving this chemical, a type of dry chemical extinguisher should be used. Small spills can be removed with absorbent materials, while large spills should be contained and pumped into appropriate containers.

The above discussion of Group I waste items is intended to meet the requirements of paragraph 40 CFR 264.13(a)(2), which indicates that existing published or documented data on the hazardous waste may be used to meet the general waste analysis requirements.

Hazardous material/waste generators will segregate all materials/wastes as much as possible so as to maintain identity of the materials. Corrosion Control, for instance, will segregate wipe down material (50% toluene and 50% MEK) from unused and slop paint.

Any material that is not mixed with other materials (solvents used to clean Parts, for example) will be returned to its original container

(1X) Regional Environmental Specialist (Who has more reference documents on hand).

Figure C-2 is an example of the data output obtained from the Hazardous Materials Information System for acetone, a Group I item listed in Appendix C-1. It provides an example of the detail of information which can be obtained through HMIS, without requiring a sample of the item to undergo laboratory analysis. The NSN for this item is 6810-00-184-4796, and it consists of 100 percent acetone. DRMO-Cannon can identify this compound as ignitable. The handling and storage information indicates that acetone should be stored in an area away from heat, sparks, and open flames, and separated from strong oxidizers, nitric/sulfuric acid mixtures, and chloroform. To fight fires involving this chemical, a type of dry chemical extinguisher should be used. Small spills can be removed with absorbent materials, while large spills should be contained and pumped into appropriate containers.

The above discussion of Group I waste items is intended to meet the requirements of paragraph 40 CFR 264.13(a)(2), which indicates that existing published or documented data on the hazardous waste may be used to meet the general waste analysis requirements.

Hazardous material/waste generators will segregate all materials/wastes as much as possible so as to maintain identity of the materials. Corrosion Control, for instance, will segregate wipe down material (50% toluene and 50% MEK) from unused and slop paint.

Any material that is not mixed with other materials (solvents used to clean Parts, for example) will be returned to its original container.

In accordance with 40 CFR 268 Land Disposal Restrictions, Cannon will notify the receiving facility of all restricted and prohibited wastes requiring treatment prior to land disposal with the following reference, "These wastes should be treated to the standards set by 40 CFR 268 Subpart D as applicable." Additionally, a completed "Restricted Waste Notification" form as shown in Figure C-1a will accompany all restricted wastes. Test results or knowledge of process may be used to determine if the waste is restricted from land disposal.

Figure C-1a

Date: 5/1/92
Revision No.: 4
Section: C
Cannon

RESTRICTED WASTE NOTIFICATION	MANIFEST NUMBER

INSTRUCTIONS

1. *Fill in corresponding manifest number.*
2. *Fill in EPA waste number, Treatment subcategory, Treatability group, Treatment standard or 40 CFR reference.*
3. *Sign and date form below.*
4. *Attach waste analysis data, where available.*
5. *Retain one copy with the manifest.*

NOTIFICATION STATEMENT

This notification is provided IAW 40 CFR Part 268.7(a)(1). The above numbered manifest includes the following wastes which are prohibited from land disposal (except injection wells) unless an exemption has been granted pursuant to a petition under 268.6 or the applicable treatment standards have been met. Wastes that have a capacity variance as established by EPA may be land disposed in facilities that meet EPA minimum technological requirements for land disposal units.

EPA NO.	TREATMENT SUBCATEGORY	TREATABILITY GROUP	STANDARD OR REFERENCE	VARIANCE DATE

TYPED OR PRINTED NAME	SIGNATURE	DATE

ORMS Form Jun 90 1851 (Previous edition is obsolete)

NSN 7540-00-LO1851

FIGURE C-2

Hazardous Materials Information

System Data for Acetone

```
GLC016                  013
     N I N              FSCM     NSN    F P INO  PM INO    * * * HAZARDOUS ITEM   BASIC PUBLICATION * * *
                                                                  PART NUMBER/TRADE NAME                ACT CD  DATE   PAGE NO
 6810-00-184-4794       34527    CK      D        A     31125                                            81082        1
                                                          * * * * GENERAL INFORMATION * * * *
PROPRIETARY                          MANUFACTURER                          EMERGENCY TELE NO
   NO        SHELL OIL CO.(NICKEL & PELTON COMPANY)                        713-473-9461
                     ITEM NAME                          UI   UI CONTAINER QTY   TYPE OF CONT    NET UNIT WT   MAG/MILGAUS   EXEMPTION NO
ACETONE,TECHNICAL                                       CN    3 GAL
                                                   AEROSOL PROPELLANT                                          SPECIFICATION
                                                                                                                 8-4-51
RADIOACTIVITY      FORM     TB OP    NAC LIC NUMBER        CHEMICAL NAME              CHEMICAL FAMILY              FORMULA
                                                          DMK,DIMETHYL KETONE      KETONE
                                                   * * * * * HAZARDOUS COMPONENTS * * * * *
NIOSH NO                                                CHEMICAL NAME                                          PCT          T L V
AL3150000     ACETONE(C.A.S.NO. 67-64-1).                                                                      100      1000 PPM


                                                   * * * * * * TRANSPORTATION DATA * * * * * *
   DOT SHIPPING NAME: ACETONE
CLASS: FLAMMABLE LIQUID          LABEL: FLAMMABLE LIQUID              MODE:        ID NO: UN1090    RQ:
  WATER SHIPPING NAME: ACETONE
CLASS: FLAMMABLE LIQUID          LABEL: FLAMMABLE LIQUID          UN NO: 1090  UN CLASS: 3.:  CON SPT        DOT: TEE  INCO  TEE
  TARIFF 6-9 SHIPPING: N/A. REFER TO 49 CFR
CLASS:                           LABEL:
   IATA SHIPPING NAME: ACETONE
CLASS: FLAMMABLE LIQUID          LABEL: FLAMMABLE LIQUID          IATA ARTICLE NO: 1090
AFR 71-4 SHIPPING NAME: ACETONE
CLASS: FLAMMABLE LIQUID          LABEL: FLAMMABLE LIQUID          NMAC:
                                                   * * * * * * ADDITIONAL DATA * * * * * *
```

FIGURE C-2 (Continued)

Hazardous Materials Information

System Data for Acetone

A14
N I N
6810-00-184-4796

ACT CD DATE PAGE NR
83032 2

* * * * HEALTH AND PHYSICAL PROPERTY DATA * * * *

BOILING POINT 133F | VAP DEN/AIR=1/ 2.0 | SOL IN H2O COMPLETE | FLASH POINT -18C TCC(0F). | VAP PRESS/MM HG/70 F/ 18 | TLV-MIXTURE 1000 PPM | STORAGE CODE F2

APPEARANCE AND ODOR
COLORLESS,MOBILE LIQUID.MILD ODOR

LEL/PCT/ 2.6 | UEL/PCT/ 12.8 | IP EV 9.69 | PCT VOLT BY VOL 100 | EVAP RATE PER REFERENCE 5.6,BUTYL ACETATE

EFFECTS OF OVEREXPOSURE
IRRITATING TO THE EYES.DRYNESS & IRRITATION TO SKIN.SORE THROAT.HEADACHE,DIZZINESS.DULLNESS.

NET PROP WT-AMMO NEW LB

STABLE
YES

CONDITIONS TO AVOID
HEAT.SPARKS & OPEN FLAMES.

MATERIALS TO AVOID
STRONG OXIDIZERS.CONC.HNO*3 & SULFURIC ACID MIXTURES.CHCL*3

MAY POLYMERIZATION OCCUR
NO

CONDITIONS TO AVOID

AUTO IGN TEMP | VISCOSITY | CS AMMO CD

HAZARDOUS DECOMPOSITION PRODUCTS
CARBON MONOXIDE CAN FORM UPON INCOMPLETE COMBUSTION.

* * * * SAFETY STORAGE HANDLING AND FIRE FIGHTING PROCEDURES * * * *

EXTINGUISHING MEDIA
DRY CHEMICAL,ALCOHOL FOAM.CO*2,H*2O SPRAY OR FOG.HALONS.CO*2

SPECIAL FIRE FIGHTING PROCEDURES
USE NIOSH APPROVED SELF-CONTAINED BREATHING APPARATUS.

UNUSUAL FIRE / EXPLOSION HAZARDS
REACTION WITH CHLOROFORM CAUSES FIRE & EXPLOSION.DIST.IGNITION POSSIBLE/VAPOR MAY FLASH BACK.

PROTECTIVE GLOVES
IMPERVIOUS

EMERGENCY FIRST AID PROCEDURES
INHALATION:REMOVE VICTIM TO FRESH AIR.GIVE CPR IF NOT BREATHING.GET MEDICAL ATTENTION.SKIN:WASH WITH SOAP & WATER.REMOVE CONTA
AMINATED CLOTHING & DO NOT REUSE UNTIL THEY ARE DRY.INGESTION:GIVE LARGE AMOUNTS OF WATER.THEN INDUCE VOMITING.SEE DOCTOR.

TYPE OF RESPIRATORY PROTECTION
USE NIOSH APPROVED RESPIRATORY PROTECTION EQUIP TO STOP OVEREXPOSURE

VENTILATION
LOCAL EXHAUST IS PREFERRED

EYE PROTECTION
SAFETY GOGGLES

PROTECTIVE CLOTHING
TAINERS.USE SPARK-RESISTANT ELECTRIC APPLIANCES.KEEP AWAY FROM OXIDIZING SUBSTANCES.KEEP AWAY FROM IGN.SOURCES.

OTHER PROTECTIVE EQUIPMENT

HANDLING / STORAGE PRECAUTIONS
PROTECT AGAINST PHYSICAL DAMAGE TO CON

* * * * SPILL AND LEAK PROCEDURES * * * *

SPILL AND LEAK CONTROL
ELIMINATE ALL SOURCES OF IGNITION IMMEDIATELY & EVACUATE THE AREA.BE PREPARED FOR FIRE.WEAR APPROPRIATE PROTECTIVE CLOTHING & RESPIRATORY PROTECTION EQUIPMENT WHEN ENTERING SPILL AREA.SHUT OFF LK.VENTILATE.DIKE & PUMP INTO SALVAGE CANS.ABSORB IN SPLS

WASTE ELIMINATION
DISPOSE IAW STATE,FEDERAL & LOCAL REGULATIONS.HANDLE WASTE MATERIAL IAW RCRA REQUIREMENTS.OR WHEN IN HIGH CONCENTRATION,SPRAY AS SUCH OR AFTER MIXING WITH A SOLVENT & BURN IN AN INCINERATOR.WHEN IN LOW CONC.,TREAT W/ACTIVATED SLUDGE IN PUBLIC WKS PLT

OTHER PRECAUTIONS
GROUND ALL CONTAINERS WHEN POURING OR TRANSFERRING LIQUID.STORE IN TIGHTLY CLOSED CONTAINERS IN A COOL,WELL VENTILATED AREA.DO N OT EAT OR SMOKE IN THE AREA.USE GOOD PERSONAL HYGIENE.

SUPPLEMENTAL DATA
EMERGENCY & FIRST AID PROCEDURES(CONTD):EYES:FLUSH EYES IMMEDIAT ELY WITH LARGE AMOUNTS OF WATER FOR AT LEAST 15 MINS.GET MEDICAL ATTENTION.

C.2.(a) General Discussion of Analysis

1. Identity known. Percentages of constituents will be calculated based on MSDS/HMIS information and a knowledge of the process.

(a) Material Safety Data Sheets. Identity of the material will be maintained by employing one of the following procedures:

(1) Locally Purchased Items. A Material Safety Data sheet (MSDS) (see appendix C-6) will be obtained from the manufacturer IAW Federal Standard 313B, dated 14 April 1983. A copy will be maintained at Bioenvironmental Engineering (SGPB) and by the Environmental Coordinator (DEEV) and record keeping practices will be employed in the shop using the material linking the MSDS to the material.

(2) Federally Stock Listed Items. The latest version of DOD 6050.5-LR - Hazardous Materials Information System (HMIS) will be maintained by SGPB (see figure C-2). A copy will be made of each HMIS sheet containing information used in a quantitative analysis and sent to DEEV for inclusion in their records.

Any material that is not mixed with other materials (solvents used to clean parts, for example) will be returned to its original container if the container meets DOT specifications. Federal Stock Number and nomenclature will be visible and legible on the container.

(b) Material/Waste Segregation. Hazardous material/waste generators will segregate all materials/wastes as much as possible so as to maintain any possible recycle value of the materials. Corrosion Control, for instance, will segregate wipe down material (50% Toluene and 50% MEK) for unused and slop paint.

Copies of the current quantitative analysis will be maintained at SGPB and copies will be kept by the Environmental Coordinator (DEEV), the Defense Reutilization Marketing Office (DRMO) and by the waste generator in accordance with Section XIII (Record Keeping Requirements) of the base Hazardous Waste Management Plan.

2. Identity Unknown. If the identity of a material/waste is unknown, the material will be tested for the parameters listed in Section C.2.c.(1). Sampling procedures outlined in Section C.2.e. will be followed.

(a) SGPB will verify the chemical composition of the materials by obtaining a sample of the material and request qualitative analysis by USAF Occupational and Environmental Health Laboratory (OEHL), Brooks AFB, Texas. Unused unopened materials will not require analysis as long as the container has not been opened and the identity is visible and legible on the container label.

(b) Samples will be preserved and packaged according to instructions in the USAF OEHL Recommended Sampling Procedures manual. Reusable cold packs will be used for temperature control. The containers will be made of insulated material and sealed.

C.2.b. <u>Additional Requirements for Wastes Generated Off-Site [40 CFR 264.13(c);]</u>

DRMO-Cannon may, on written request, accept waste from Reese AFB in Lubbock, Texas. These shipments and any other waste received at the facility through a Memorandum of Understanding will be inspected by DRMO-Cannon in order to assure proper identification by the generator.

Copies of the current quantitative analysis will be maintained at SGPB and copies will be kept by the Environmental Coordinator (DEV), the Defense Reutilization Marketing Office (DRMO) and by the waste generator in accordance with Section XIII (Record Keeping Requirements) of the base Hazardous Waste Management Plan.

2. Identity Unknown. If the identity of a material/waste is unknown, the material will be tested for the parameters listed in Section C.2.c.(1). Sampling procedures outlined in Section C.2.e. will be followed.

(a) SGPB will verify the chemical composition of the materials by obtaining a sample of the material and request qualitative analysis by USAF Occupational and Environmental Health Laboratory (OEHL), Brooks AFB, Texas or another lab which employs current SW-846 methods and can obtain the detection limits specified in that document. Unused unopened materials will not require analysis as long as the container has not been opened and the identity is visible and legible on the container label.

(b) Samples will be preserved and packaged according to instructions in the USAF OEHL Recommended Sampling Procedures manual. Reusable cold packs will be used for temperature control. The containers will be made of insulated material and sealed.

C.2.b. <u>Additional Requirements for Wastes Generated Off-Site [40 CFR 264.13(c)]</u>

DRMO-Cannon may, on written request, accept waste from Reese AFB in Lubbock, Texas. These shipments and any other waste received at the facility through a Memorandum of Understanding will be inspected by DRMO-Cannon in order to assure proper identification by the generator.

The off-site facility will provide sampling results in accordance with this waste analysis plan. If DRMO-Cannon finds discrepancies between manifests and containers shipped, DRMO will verify waste shipped off site IAW 40 CFR 264.13(c). DRMS has contracted with the Defense Industrial Supply Center (DISC) to perform testing of waste turned into DRMOs/OSBs from off site generators. If DRMO-Cannon finds discrepancies between manifests and containers shipped, the waste will be rejected back to the generator and not received into the HWSF. The sampling parameters outlined below will be used.

C.2.c Parameters and Rationale [40 CFR 264.13(b)(1);]

C.2.c.(1) Analysis Parameters (Identity Unknown)

All samples submitted will first be screened using infrared identification. This test will give major components and classify the waste as solvent or non-solvent. If the substance is identified as a solvent, one of two methods will be used. Gas Chromatograph/infrared separation analysis will be used for mixtures IAW Section 8.1 of EPA Publication SW 846 "Test Methods for evaluating Solid Waste, Physical/Chemical Methods" followed by infrared confirmation. Section 8.2 (Gas Chromatograph/Mass Spectrometry) methods will be used on other solvents.

Ignitability will also be performed on all wastes (solvent and non-solvent) using a Fisher tag closed cup tester (Pensky- Martens type) according to method 1010 listed in SW 846, Section 2.1.1.

If the infrared screen indicates that the waste material is acid or base, Corrosivity (ph) tests will be performed on the substance in accordance with Section 2.1.1. of SW 846.

Tests for reactivity will be performed on all wastes IAW SW 846 Section 2.1.3.

A Toxicity Characteristic Leaching Procedure (TCLP), metals only, will be performed on all wastes IAW SW 846 Section 2.1.4.

If the infrared identification test does not adequately quantify the Waste constituents a sample will be resubmitted. An EPA approved method for further quantification will then be performed. Refer to Figure C-3 for flow chart description of the identification process.

C.2c(1)(a) Frequency of. Analysis (40 CFR 264.13(b)(4)]

Frequency of analysis will be as follows:

1) For offbase turn-in activities transferring property to the DRMO once or more per month sampling will be performed once per month. Number of samples are determined by number of containers received from a generator (each generator has a separate EPA Id number). (See Table C-6)

2) For offbase turn-in activities transferring property to the DRMO less than once per month, sampling will be performed at each turn-in.

Table C-6 will be used to determine the number of samples to be taken. Shipment size is the number of containers (whatever size) which hold Group II wastes. Containers to be sampled and selected at the discretion of the environmental specialist or other person designated by the DRMO Chief.

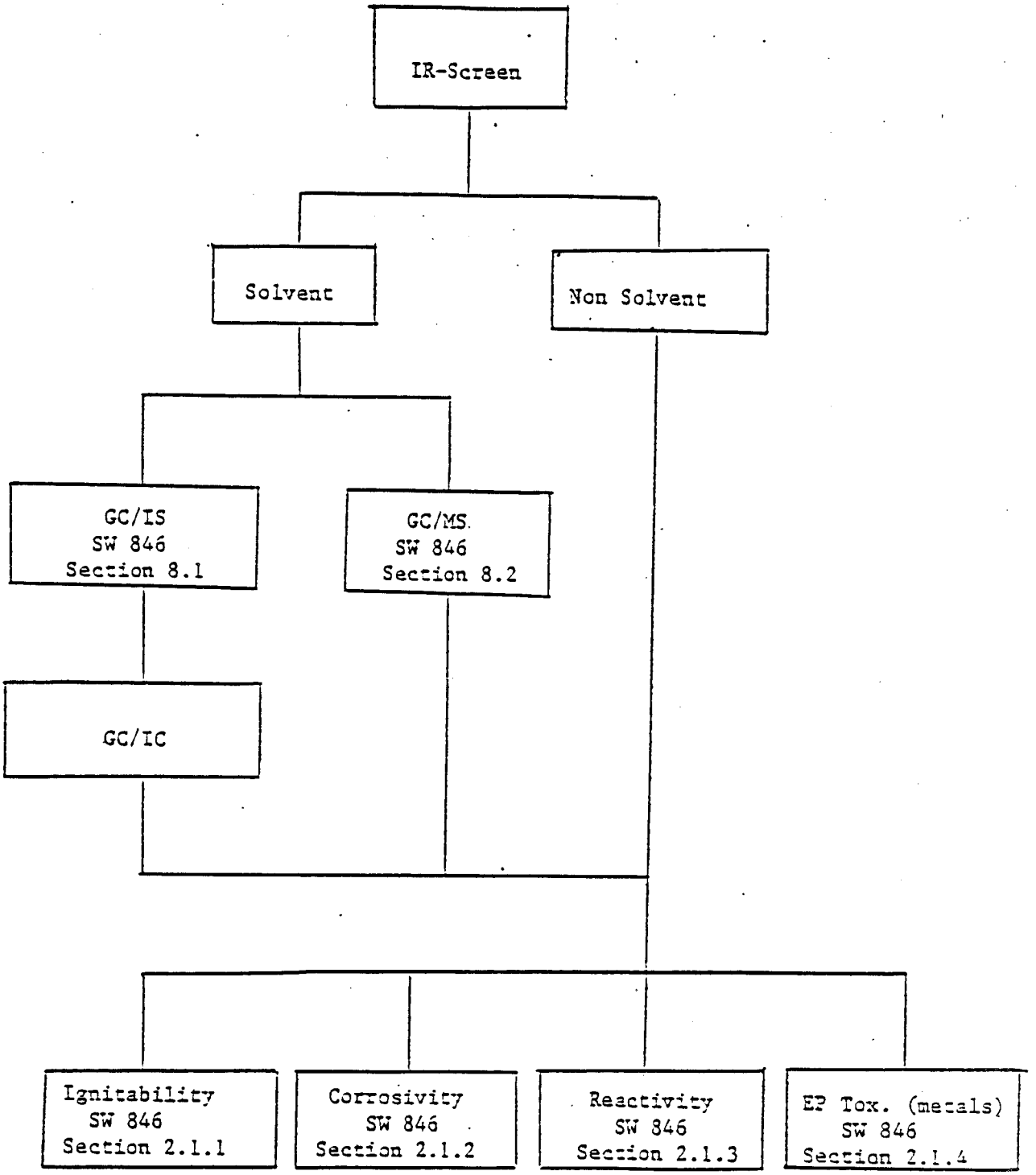
Table C-6. Number of Samples To be Collected As a Function of the Number of Items in the Shipments.

SCHEDULE A - Military Standard 105D Normal Inspection

Shipment Size	Number of Samples To Be Collected
2 to 8	2
9 to 15	3
16 to 25	5
26 to 50	8
51 to 90	13
91 to 150	20

FIGURE C-3

IDENTIFICATION PROCESS FLOW CHART

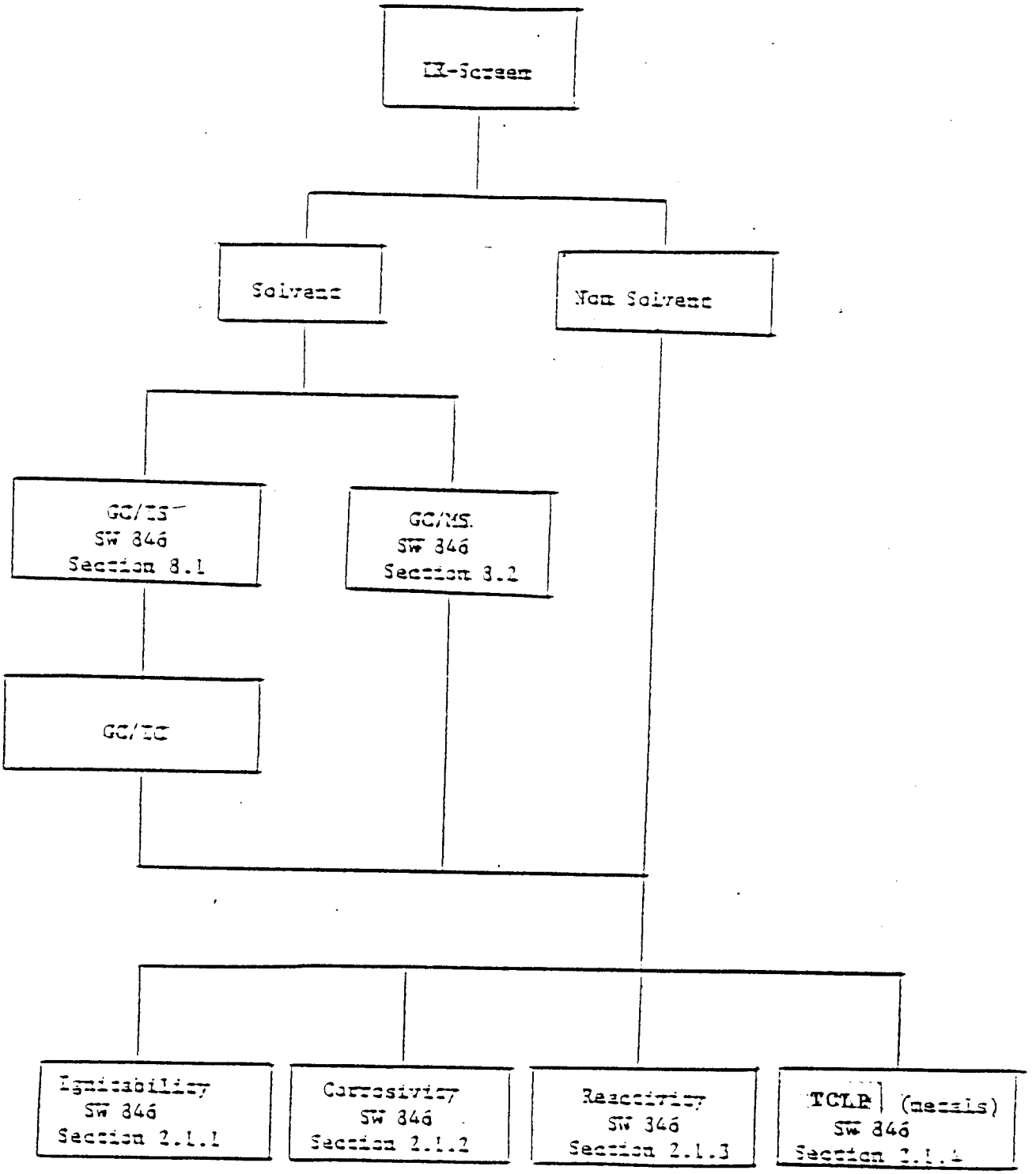


NOTE: Updated SW-846 method numbers included in Permit Attachment II-1A.

5/1/92

FIGURE C-1

IDENTIFICATION PROCESS FLOW CHART



NOTE: Updated SW-846 method numbers included in Permit Attachment II-1A.

C.2.c.(2) Analysis Parameters (Known). The analysis parameters will be determined based upon the quantitative analysis outlined in Section A above. Appendix C-5 shows the sampling parameters and the rationale for those parameters for specific operations which generate wastes that require analysis.

C.2.d. Test Methods. Specific methods for analysis of wastes generated by base organizations are listed in Appendix C-5 and Permit Attachment A-2.

C.2.e. Sampling Methods.

C.2.e.(1) Drums -

SGPB uses disposable glass coliwasa type samplers to collect all drum samples. No decontamination procedure is needed as they are not reused for sampling.

C.2.e(2) Small Containers. Because there is a possible explosive hazard when dealing with an unknown chemical, the container will not be shaken to ensure constituents are evenly mixed. Instead, the container will be inverted one time then a sample will be poured into a clean glass container with teflon

lined lid. Although this will not ensure a representative sample, it will identify all possible constituents.

C.2.f. Sampling Frequency.

C.2.f.(1) Continuous processes will be sampled annually. C.2.f.(2) Intermitent processes will be sampled upon request for turn-in to DRMO.

C.2.f.(3) Process Changes requiring a change in chemical useage will be reported to SGPB by all organization on Cannon Air Force Base whereupon SGPB will determine new sampling requirements.

C.2.g. Chain of Custody. Samples will be sent to USAF OEHL in a sealed container. A Chain-of-custody record (figure C-4) will be filled out, signed and placed in a plastic bag along with the usual sample submission form (see figure C-5) and sealed in the shipping container. A duplicate will be kept by SGPB with the duplicates of the sample submission forms. OEHL personnel will acknowledge receipt of the samples in good condition by signing the Chain-of-Custody form and returning it to Cannon AFB. If the container is damaged in any way or not sealed when the lab receives the package, the technician will so annotate on the form.

C. 2.h Record Keeping. Sample results (along with Chain-of-Custody forms) will be maintained at SGPB and copies will be kept by the generator, Environmental Coordinator (DEEV), and by the Defense Reutilization and Marketing Office (DRMO) in accordance with Section XIII (Record Keeping Requirements) of the base Hazardous Waste Management Plan.

lined lid. Although this will not ensure a representative sample, it will identify all possible constituents.

C.2.f. Sampling Frequency.

C.2.f.(1) Continuous processes will be sampled annually. C.2.f.(2) Intermittent processes will be sampled upon request for turn-in to DRMO.

C.2.f.(3) Process Changes requiring a change in chemical useage will be reported to SGPB by all organization on Cannon Air Force Base whereupon SGPB will determine new sampling requirements.

C.2.g. Chain of Custody. Samples will be sent to an approved lab in a sealed container. A Chain-of-custody record (figure C-4) will be filled out, signed and placed in a plastic bag along with the usual sample submission form (see figure C-5) and sealed in the shipping container. A duplicate will be kept by SGPB with the duplicates of the sample submission forms. Lab personnel will acknowledge receipt of the samples in good condition by signing the Chain-of-Custody form and returning it to Cannon AFB. If the container is damaged in any way or not sealed when the lab receives the package, the technician will so annotate on the form.

2. Record Keeping. Sample results (along with Chain-of-Custody forms) will be maintained at SGPB and copies will be kept by the generator, Environmental Coordinator (DEV), and by the Defense Reutilization and Marketing Office (DRMO) in accordance with Section XIII (Record Keeping Requirements) of the base Hazardous Waste Management Plan.

Figure C-4

Chain-of-Custody Record

Figure A-2 Chain-of-Custody Record

Survey	Samplers: *Signature*

Station Number	Station Location	Date	Time	Sample Type: Water Comp	Sample Type: Water Grab	Sample Type: Air	Seq. No	No. of Containers	Analyses Required

Relinquished by: *Signature*	Received by: *Signature*	Date/Time
Relinquished by: *Signature*	Received by: *Signature*	Date/Time
Relinquished by: *Signature*	Received by: *Signature*	Date/Time
Relinquished by: *Signature*	Received by Mobile Laboratory for Field analysis: *Signature*	Date/Time
Dispatched by: *Signature* — Date/Time	Received for Laboratory by:	Date/Time

Method of Shipment:

Distribution: Orig.—Accompany Shipment
1 Copy—Survey Coordinator Field Files

Figure C- 5

Sample Submission Form

BULK MATERIAL SAMPLING DATA

GENL AREC CHET

WORKPLACE OR SITE IDENTIFIER

BASE

ORGANIZATION

WORKPLACE OR SITE

DATE COLLECTED (YYMMDD)

BLDG NO/LOCATION

ROOM/AREA

MAIL REPORTS TO (check all boxes)

ORIGINAL

COPY 1

COPY 2

SAMPLE COLLECTED BY (Name, Grade, AFSC)

SIGNATURE

AUTOVON

REASON FOR SUBMISSION

A-ACCIDENT/INCIDENT C-COMPLAINT F-FOLLOWUP/CLEANUP

B-ROUTINE BACKGROUND/PERIODIC SURVEY D-OTHER

GENL REF

SOURCE BEING SAMPLED

EXISTING CONTROLS (Personal protective equipment, Engineering, Administrative)

SAMPLE COLLECTION DATA

GENL SAMPLE NUMBER

BASE SAMPLE NUMBER

ANALYSES REQUESTED

A CHECK FOR — MAJOR COMPONENTS — MAJOR COMPONENTS

B NAME

HIOSH NO

C NAME

HIOSH NO

D NAME

HIOSH NO

E CHECK FOR — HAZARDOUS/TOXIC WASTE — HAZARDOUS/TOXIC WASTE

MATERIAL NAME

LOT NUMBER

NSN / FSN

SPECIFICATION (MIL or FED)

MANUFACTURER'S NAME

DESCRIPTION OF MATERIAL USAGE (Mixed, Blended, Removed, etc)

SUPPORTING SAMPLES

GENL SAMPLE NO

BASE SAMPLE NO

SAMPLE TYPE

COMMENTS

AF FORM JAN 81 2751

C.2. i. Additional Requirements for Facilities Handling Ignitables, Reactive, or Incompatible Waste [40 CFR 264.13(b)(6) and 264.17;]

No additional testing of ignitable, reactive, or incompatible hazardous waste is necessary because DOD turn-in requirements and the Waste Analysis Plan (as described in Section C-2) provide the necessary information to properly store ignitable and reactive wastes and prevent the mixing of incompatible wastes. Precautions to prevent the accidental ignition or reaction of ignitable, reactive, or incompatible wastes are described in Section F-5 of this permit application.

APPENDIX C

HOW TO USE A RANDOM NUMBERS TABLE FOR WASTE SAMPLING

This appendix has been developed to demonstrate how hazardous waste can be sampled without any bias by the sampler. It is important that the sample you obtain is representative of the actual waste's chemical and physical characteristics. To avoid taking many samples that are expensive and tedious, you can, with the aid of a random numbers table, select areas in a waste collection that should be just as representative of the waste.

The following example explains how to use a random numbers table.

Let us assume that we have 30 drums stored. We assign a two digit number to each drum ranging from "01" to "30". Now refer to Table 1, "Random Numbers". We will use these numbers to decide which of our 30 drums to sample. We select the point at which to begin in the table by using our date of sampling. For example, if we sample on October 14, 1983, we move to the 10th horizontal set of numbers. (October is the 10th month of the year.) We then move to the 14th set of vertical numbers (the 14th day of the month). Next we use the years, "83". We start with the first number on the first row of this set of 10 digits and count 8 digits to the right. At the eigth digit, we then count down 3 digits. This is our starting point. We read the numbers from left to right in sets of two digits since the maximum number of barrels (30) has two digits. Any number greater than 30 is ignored. If any number is repeated, each repeat is ignored. If we come to the end of a row on the page, we return to the far left on that same page and begin reading numbers left to right in the next row below it. We continue selecting two digit numbers between "01" and "30", inclusive, until the number of drum samples required has been fulfilled.

If we wanted six samples, we would begin with --

			248	83533	25440
17803	18184	10510			

[Six was chosen as a sample number only for the purpose of this demonstration. It does not mean that everyone should sample six out of every thirty drums.] Therefore, drums numbered 24, 25, 01, 03, 18 and 05 will be sampled. Figure 1 displays the barrel numbers selected.

This random numbers method can also be used for other waste sampling scenarios, e.g., surface impoundments. These other scenarios may entail dividing your waste collection into a three-dimensional grid. Figure 2 displays how such an area could be numbered for three levels of depths. The number of levels required depends on the waste and on the facility design. "Test Methods for Evaluating Solid Wastes" (SW-846) should be reviewed for EPA's latest guidance on determining the total number of points to sample.

TABLE 1. RANDOM NUMBERS

Day	1(21)	2(22)	3(23)	4(24)	5(25)	6(26)	7(27)	8(28)	9(29)	10(30)
Month 1	53872 34774	19087 81775	71440 12082	75092 34608	75448 13148	16972 42181	87945 94104	95701 00743	75411 51930	54869 98991
	04226 62404	71377 00984	56056 32404	87641 33392	92561 33388	74938 79042	38473 89672	45752 35715	89537 78155	09851 24983
	28666 44190	75524 62038	21423 46281	92238 96306	72606 80601	78075 53671	81047 92759	94519 59473	91679 90536	41676 35230
	63817 30279	14088 86434	16183 06501	90386 80292	54555 47371	76744 26190	21649 79753	21287 17698	39490 00533	34823 08134
	22359 16442	83879 47486	19838 32252	39560 95851	36758 36141	82273 69293	23383 59365	18258 54530	47274 69686	55081 28731
2	50968 28728	83525 16031	77583 65578	84794 51367	32535 83834	30239 23081	09576 26055	87099 41372	55542 32754	87317 94638
	39652 24248	96617 91200	10769 52386	39559 75921	49375 22847	41177 77163	38252 10349	49511 17540	61781 32769	51662 55606
	35493 00529	69632 29684	80284 87828	72418 80950	86311 34016	07715 88600	69730 78912	19642 39764	47146 19472	84012 08887
	45687 53919	80439 20534	96185 72345	96391 52625	50866 45132	16855 47454	98638 15189	87345 80509	33392 50866	17629 28208
	31509 93521	10681 44124	88345 84969	88768 48819	22311 41235	2983 61979	02979 98092	41184 73815	57939 91057	04860 66667
3	40389 76282	37506 60661	23295 67357	95419 10864	87833 09152	77411 98433	42302 86602	26596 64175	64359 97570	64437 55592
	59244 54664	63424 97899	44153 69251	08781 18604	02312 21658	19453 18731	01039 18933	92188 83767	56148 56261	79920 78514
	99876 17075	40934 08912	96196 58503	63613 24486	98092 45672	03381 35119	30355 08287	00448 32800	24106 04054	70572 71063
	06457 50072	18060 71023	84349 40984	59487 77782	32107 53770	11659 27315	09204 26213	57325 51470	56108 23141	16121 53925
	14297 07687	05517 10362	35783 62236	63764 45542	68889 03862	35032 14283	20642 15311	36238 12079	67596 00017	51789 90737
4	51661 57130	97442 29590	21634 79772	73801 70122	46467 47152	32061 51250	39825 08554	88716 40945	68579 33784	62025 32535
	5545 11788	16117 09698	24409 05079	76603 57363	33461 46791	81855 16888	24630 15077	47256 08529	54837 24161	95621 53483
	4508 81512	62819 27689	63744 11023	11184 87679	22218 70139	48422 09247	43406 16093	01168 28523	31406 49360	99243 85090
	1910 01602	96950 41536	39974 88287	83546 69187	45539 78263	86190 56195	31409 88248	52436 70161	98500 74702	99546 74570
	39001 77727	33095 58785	29179 45421	71416 20418	38558 78700	90627 37048	50285 69189	97489 83007	31477 13908	97472 74448
5	72346 55617	14714 21930	14851 38209	52202 03979	05970 74483	60103 76739	57644 56746	63005 08804	47081 65928	65045 58629
	19094 64359	89829 10942	53101 37758	29583 26792	42840 45872	09606 69465	16536 94055	86328 56533	16670 57295	26249 18524
	82247 77127	01652 50774	04970 83300	33760 22172	67516 62135	-62479 29610	03235 51050	15855 66828	08115 16166	32854 74206
	75968 18386	31874 52249	21015 20365	57475 32756	58268 75739	40232 52840	02512 99258	09327 55073	86030 29933	00528 67359
	01963 38095	99960 91307	99654 74279	80145 53303	11870 50485	10690 55550	81275 78369	33658 47000	89425 60573	81137 25474
6	64828 15817	80923 55226	51893 93362	15757 47430	84855 95822	73958 38949	99568 72713	22665 03244	17399 83950	66820 03704
	64347 61578	44160 06266	35118 52558	56436 96155	10293 67506	56554 57926	41529 00619	51972 09442	60298 81066	28362 41165
	54746 52337	84826 39012	59118 19851	10156 78167	41473 99025	35676 20333	77622 93718	57255 09780	26798 60083	58959 45691
	22241 41501	02993 99340	91044 67268	51088 12751	74008 33773	01383 85677	96572 16401	31379 88519	41325 33938	36342 03327
	11906 20043	10415 44425	31712 54831	85591 62237	88797 14382	29448 88487	05814 82402	42132 85708	89754 57495	57655 78644
7	76637 07609	95378 95550	86909 50609	99008 99042	50364 36664	56863 94737	68661 43498	33376 81659	07422 58435	24855 15523
	93896 47120	98926 30516	28136 49458	84145 79205	79517 93446	20269 34456	48608 11787	86056 88290	17463 66628	03033 80771
	75292 88232	14360 12455	13656 65736	70428 66917	64412 38502	06790 99803	86439 94235	48560 62912	82302 43198	97087 97104
	98792 29828	10577 48184	29433 98278	22543 76155	82107 22066	73690 79726	06492 77431	49864 69775	46450 02122	09083 92746
	65751 91049	94127 47558	99880 79667	86254 72797	67117 44699	76222 20006	98660 88690	01190 05588	76651 83461	11987 80756
8	72064 62102	39155 79462	82975 02638	00302 79476	72656 84003	18434 21893	80472 19499	80423 58643	27088 66458	78358 56606
	01227 35821	80607 61734	02600 45564	72344 71034	48370 96826	20463 75133	41713 84279	56045 79079	20212 91560	60548 95128
	44768 56504	13993 59701	88238 92483	09497 66058	36651 37927	27105 77095	72016 23683	01386 40381	74673 11811	36625 62958
	69838 91226	85736 72247	64099 86305	49877 76215	66980 30228	47736 56338	07546 36084	73126 33364	78730 47212	76795 95719
	01800 39313	57730 84410	47637 81369	51830 43536	58937 91901	60938 13970	90288 79457	50343 92054	12541 93216	58624 37392
9	11756 45441	59948 57975	92422 70057	50210 30345	55912 31638	02743 59982	92806 62853	39755 42550	31081 38860	35712 78632
	39056 86614	53643 62909	27198 04454	33789 86463	66603 48083	74802 59354	91213 26293	18112 93831	01473 10728	-18229 18642
	88085 93172	68311 39164	42012 10447	45933 28844	36844 57684	06933 78651	45636 77509	28610 34307	68045 15107	62935 34149
	12648 27948	76750 19915	66815 34015	43011 27150	94264 89516	40345 80092	50587 18535	19001 82179	12572 77589	33459 35130
	16254 87661	66181 68609	58626 58428	75051 27558	49463 66646	70055 98685	10246 11760	21952 73985	68903 66934	42442 07608
October 10	69682 19109	94189 94626	09299 10649	55405 54571	57855 54921	34552 76373	40928 93696	97711 15818	31004 03263	05626 07460
	61336 86663	13010 40412	50139 30769	13048 61407	41056 60510	45253 86947	42417 28778	14936 94099	90775 42001	86675 62770
	65727 66488	12304 70011	93324 58764	87274 43103	96002 06984	71558 21692	84077 17814	33316 49494	31817 90127	39485 92302
	55705 34418	99410 32635	42984 40981	91750 27431	05142 77950	95474 76468	12019 04274	01893 23930	88771 31142	65859 28948
	95402 51746	98184 38830	97590 00066	82770 42325	28778 83571	34619 91898	28499 00279	35351 87736	83909 43736	19258 93068
11	79228 94510	57711 64366	89040 43278	69072 22003	89465 61483	44546 75524	68533 77434	18543 15479	58850 73802	10636 82735
	48103 56760	82564 33649	35176 32278	51357 05489	47462 55931	22917 96024	04784 03809	52788 83577	02269 68632	23310 46261
	70969 27677	99621 63065	73194 70462	19316 77945	45004 39895	33043 31433	47833 75234	74539 38529	57893 45997	71749 28666
	69931 20237	75246 59124	12484 22012	79731 82435	56301 99752	99357 54593	21688 64216	85938 51742	12898 09737	61504 18946
	37208 22741	41946 74109	03760 24094	40210 76617	52317 50643	01072 31679	80961 34029	56463 09394	11939 51777	64796 52452
12	60151 92327	85150 27728	64813 47667	66078 03628	95240 03808	90838 50179	42064 62987	13072 84227	24060 59438	05695 38136
	46210 47674	53747 95354	67757 75477	26396 09592	96239 50354	35914 39441	90149 67957	16955 39960	26142 45600	75486 74103
	55399 48142	12284 95298	56399 61358	87541 12998	79639 63633	87047 77284	12753 45644	47843 53781	06672 57548	84706 25453
	23677 64950	97041 43088	80143 34294	91468 01066	90350 78891	93727 46613	48045 49635	28383 37200	98473 56808	86774 07305
	41947 70066	90311 17133	11674 00826	75760 37536	33621 14199	37439 50362	44171 18495	57370 77691	28006 55318	39723 25299

Source: *Statistics with Applications to the Biological and Health Sciences.* R. D. Remington and M. A. Schork, 1970.

TABLE 1. RANDOM NUMBERS (con.)

Day	11(31)	12	13	*14*	15	16	17	18	19	20
Month 1	98892 53633	33909 81674	91956 84531	60422 55574	31670 61059	30807 55558	96026 97398	21723 86560	52617 07771	61886 48234
	95358 77381	21912 24873	26372 12044	43234 08503	86716 08095	75104 23482	78756 72728	85940 57290	75507 78715	01426 02310
	28982 24582	88896 31137	87512 33216	29665 26014	02919 17639	06180 62724	36835 80288	25075 32609	33312 21348	27710 55457
	31203 70209	42174 10757	98531 35725	68208 61239	26705 43916	22098 34834	66117 36252	82717 50583	43639 79999	07414 84003
	08457 10085	35741 79416	72457 59502	46086 09051	70963 19759	13173 64783	20[illegible]34 11929	18849 26211	77375 49561	96747 67007
2	30698 80918	90073 78320	83675 78361	49929 70495	92247 04318	75273 36108	55265 15653	82270 99216	27805 60088	06056 97377
	27142 41188	37273 81087	67398 16798	98342 83820	48765 24164	89849 65736	44454 04602	14292 74458	57777 35934	05160 26359
	36775 63628	70856 43164	88426 51413	37514 24870	55665 05311	91108 43562	18883 16569	49599 73891	67101 12034	58492 15981
	02560 51679	79600 23297	36434 17174	00109 07731	05909 58959	31843 01542	17281 12954	94913 39583	94969 61146	35907 72184
	36744 66697	08331 50201	56303 09171	55995 60232	31305 30689	02644 23564	85464 62947	92571 89377	85004 84654	20465 86212
3	66482 04302	29770 46201	04588 42575	99318 84406	83405 21186	38605 83374	74032 62183	08740 05279	30455 31032	71512 16476
	76375 41539	65940 57820	29283 94564	96598 00619	60468 97375	43164 28709	88624 14992	85359 10193	32491 14769	63694 92640
	95772 72925	19454 63712	21401 96665	77750 21218	02790 30796	80933 52950	45646 36635	05085 28053	27596 54873	68476 65823
	59013 81632	85000 39180	99975 73253	46534 59083	60243 27664	67690 96765	69250 19344	47859 43489	72479 62418	54079 40069
	52392 04440	45628 34976	92012 16596	28596 15493	30754 48760	68579 17014	25362 15114	30782 27230	29052 71115	83369 46776
4	08027 07629	04339 77570	47155 77128	24498 67455	06320 82004	46353 39733	44677 50133	26623 15979	10651 04263	34087 67005
	27284 39416	57313 03508	71443 42543	73335 68670	87559 77927	30039 09532	52215 09164	20930 88230	43403 63230	83525 93550
	20513 38581	82309 69931	82658 60958	18290 60334	30741 89647	89200 92772	42195 91634	39272 46462	76833 27755	03151 75692
	36076 17821	68723 37934	62818 64157	54590 98263	70109 06755	58118 57942	14307 68214	76093 47484	24468 91764	52907 16675
	60679 43862	43675 03653	21060 81096	71332 28930	44207 03354	97230 33027	70166 43232	98802 70715	30216 35586	18909 79658
5	49416 58370	63738 87515	39290 87656	36130 23490	30963 57350					
	65757 39149	11750 92494	41335 35835	69882 56431	08091 01981					
	17379 77731	65133 44979	90939 29184	76634 58007	34873 83816					
	00757 13129	09648 07644	81689 68088	34882 04971	27565 66377					
	48276 79035	78273 83412	97328 81003	65938 85510	78367 29316					
6	64716 91696	45448 92281	73854 67452	52145 41582	81549 82434					
	83695 11496	57066 48153	74754 56383	09253 65456	32438 96357					
	58275 66797	35380 41155	44389 94560	42074 31178	27967 12666					
	58005 84170	29999 23631	93032 41592	35688 78599	59902 21568					
	99993 80083	03810 07214	42067 76669	89686 64064	67141 80520					
7	31692 51607	89056 74472	91284 20263	16039 94191	33767 73915					
	82997 58320	04852 52595	95514 56543	06636 61291	67504 57205					
	05043 40582	46051 60261	04926 82256	47375 87507	05112 88439					
	75781 35768	70475 00601	18378 32077	36523 30843	07057 78326					
	21033 15175	30741 45814	92222 16704	00197 51267	33224 40276					
8	99092 60991	12571 71753	65214 33885	82939 50723	38987 69761					
	07204 93373	85112 29610	30375 64836	13459 02235	67650 72930					
	88859 97254	07771 21393	64657 47013	12753 03028	24224 24918					
	30497 91407	72900 15699	58653 38053	25072 48698	88083 48040					
	09725 18075	45832 54968	43743 82050	78412 79456	95032 10984					
9	95330 01935	24128 60514	42539 91907	25694 37097	39566 24043					
	09760 32388	05601 49923	66126 54146	67213 52234	48381 89442					
	01534 81967	15337 95831	84643 40792	47562 95494	62087 18064					
	11234 59350	48368 57195	36287 03046	87136 36057	93913 70080					
	71656 48762	80221 59683	27504 21121	94711 11807	80382 48339					
October 10	34208 05374	60304 43178	97247 24875	26259 67622	14657 80354					
	47132 62839	82198 92445	60650 76219	02772 48651	66449 89213					
	55285 93302	43019 45861	95493 16106	12783 37248	83533 25430					
	17203 18184	10510 27159	83008 20544	41665 99439	70606 28974					
	55045 17219	66737 59080	78489 12626	60661 53733	70062 14289					
11	01923 33647	98442 59293	83318 33425	76412 87062	01295 11083					
	07202 76476	71888 54845	17468 41964	68694 59662	55905 26898					
	68825 68242	95750 11033	58634 78411	08523 19313	29327 47526					
	63525 06496	17446 41378	32368 82019	66101 56733	43308 82641					
	80319 33515	97373 43064	16221 99697	37951 07947	12935 49391					
12	64700 96929	26044 49283	56545 67200	21325 85056	51345 06309					
	30156 29121	75874 42399	41121 50643	19585 06364	47203 19579					
	50467 14232	89098 66717	14753 73356	47781 34165	82842 00121					
	53764 83212	26675 64184	64455 29023	03181 13674	08838 83829					
	81727 35572	95469 36825	81882 95083	68323 14965	34166 32351					

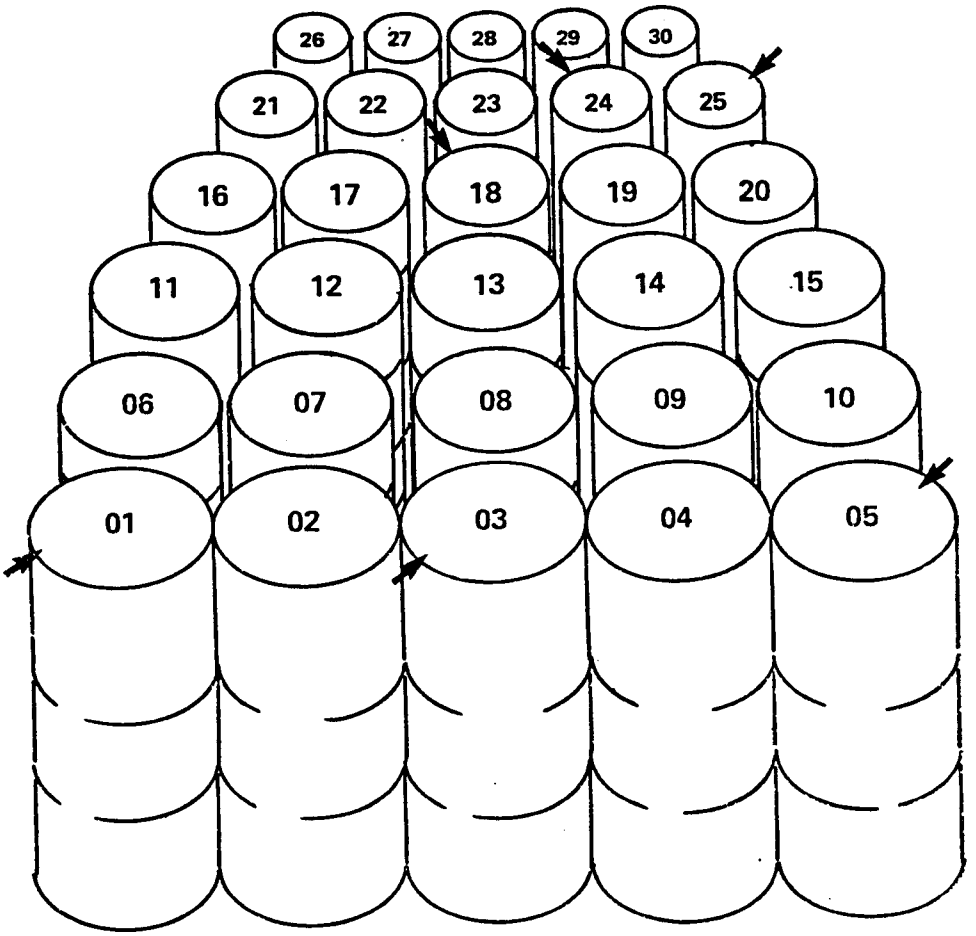


Figure 1. Display of drums selected for sampling based on a random numbers table.

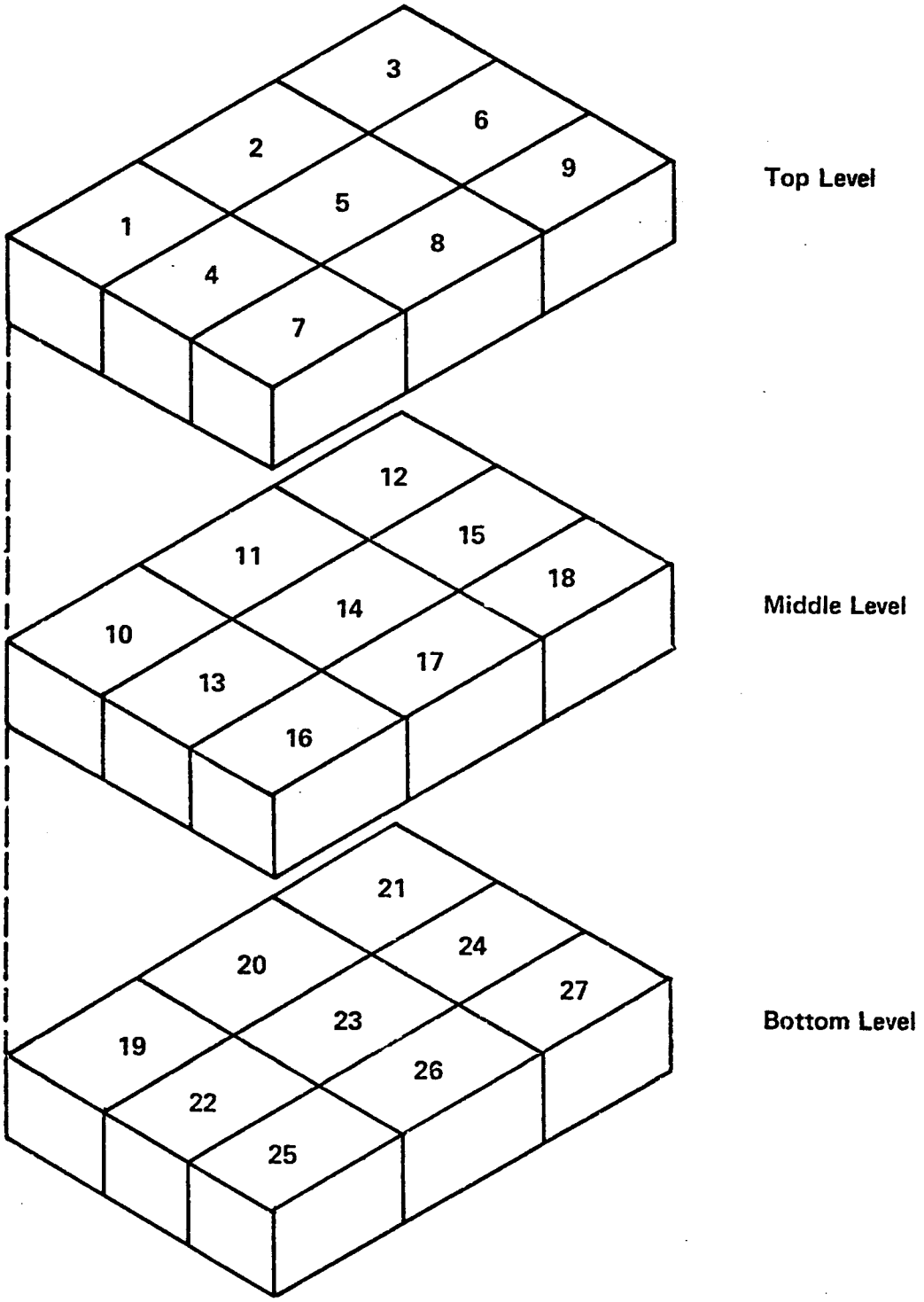


Figure 2. Three dimensional grid for selecting sampling cells.

PERMIT ATTACHMENT A-2.

SW-846, "Test Methods for Evaluating Solid Waste"
Method Number Updates

SW-846, "Test Methods for Evaluating Solid Waste", 3rd. edition
Method Number Updates for CAFB Waste Analysis Plan

Description of Hazardous Waste	EPA Hazardous Waste Number	SW-846, 3rd ed. Method Number
Characteristic for ignitability	D001	1010
Characteristic for corrosivity	D002	9040 1110
Cadmium containing waste	D006	7130 7131
Chromium containing waste	D007	7190 7191
2,4-D Herbicide	D016	8150
Spent halogenated solvents	F001 F002	8010
Non-halogenated spent solvents	F003 F005	8015 8020
Extraction Procedure (EP) Toxicity Method		1310
Arsenic	D004	7060,7061
Barium	D005	7080
Cadmium	D006	7130,7131
Chromium	D007	7190,7191
Lead	D008	7420,7421
Mercury	D009	7470
Selenium	D010	7740,7741
Silver	D011	7760
Gas chromatography/mass spectrometry methods for organics		8240 8250

5/1/92

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2,4-D Herbicide	D016	8150
Spent halogenated solvents	F001 F002	8010
Non-halogenated spent solvents	F003 F005	8015 8020
Toxicity Characteristic Leaching Procedure (TCLP)		1310
Arsenic	D004	7060,7061
Barium	D005	7080
Cadmium	D006	7130,7131
Chromium	D007	7190,7191
Lead	D008	7420,7421
Mercury	D009	7470
Selenium	D010	7740,7741
Silver	D011	7760
Gas chromatography/mass spectrometry methods for organics		8240 8250

PERMIT ATTACHMENT A-3.

Waste Sampling Random Numbers Table

EPA/530-SW-84-012
October, 1984
"Waste Analysis Plans"

PERMIT ATTACHMENT B.

Security Plan

PERMIT ATTACHMENT C.

Inspection Schedule

PERMIT ATTACHMENT D.

Personnel Training Outline

Table D-1 (Continued)

Description of Containers To Be Used to Store Hazardous Wastes at DRMO - Cannon

Hazardous Materials To Be Stored at DRMO - Cannon Which Are Specifically Regulated by DOT

Hazardous Material	DOT Container Code	Applicable DOT Regulatory Section	Container Description
Sulfuric Acid	6D. 37m	178.102. 178.131	Cylindrical steel overpacks with an inside specification 2S, 2SL, or 2T (178.35, 178.35a, 178.21) polyethylene container. Overpack of 30-gallon capacity must be constructed of at least 16-gauge steel throughout when used for sulfuric acid 93% or greater concentration.
	16D	178.187	Wirebound wooden overwrap, with an inside specification 2T, 2TL, 2S, or 2 SL [178.21, 178.27. 178.35, 178.35a] polyethylene container.

Table D-1 (Continued)

Description of Containers To Be Used to Store
Hazardous Wastes at DRMO - Cannon

Hazardous Materials To be Stored at
DRMO - Cannon Which Are Specifically
Regulated by DOT

Hazardous Material	DOT Container Code	Applicable DOT Regulatory Section	Container Description
Sulfuric Acid	21P	178.225	Fiber drum overpack with an inside specification 2T or 2U [178.21, 178.24] polyethylene container not over 15 gallon capacity.
	34	178.19	Polyethylene container without overpack, not over 30-gallon capacity.
	1A, 1K	178.1, 178.14	Carboys in boxes
	1D. 1M	178.4, 178.17	Glass carboys in boxes or expanded polystyrene packagings.

Table D-1 (Continued)

Description of Containers To Be Used to Store Hazardous Wastes at DRMO-Cannon

Hazardous Materials To Be Stored at DRMO - Cannon Which Are Specifically Regulated by DOT

Hazardous Material	DOT Container Code	Applicable DOT Regulatory Section	Container Description
Potassium hydroxide	15A, 15B, 15c, 16A, 19A, 19B	178.168, 178.169, 178.170, 178.185, 178.190, 178.191	Wooden boxes with inside glass or earthenware containers not over 2 gallons each, or with metal containers, not over 5 gallons each.
	5	178.80	Metal drums. Openings must not exceed 2.3 inches in diameter.
	1H	178.13	Metal crate with inside polyethylene container spec. 2T (178.21)
	12B	178.205	Fiberboard box with inside metal containers. Not more than four 1-gallon or six 1-quart containers per box. Maximum gross weight 65 pounds. Must meet test requirements of 178.210 - 10.

Table D-1 (Continued)

Description of Containers To Be Used to Store
Hazardous Wastes at DRMO-Cannon

Hazardous Materials To Be Stored at
DRMO Cannon Which Are Specifically
Regulated by DOT

Hazardous Material	DOT Container Code	Applicable DOT Regulatory Section	Container Description
Hydrochloric acid	15A, 15B, 15C, 16A, 19A, 19B	178.168, 178.169, 178.170, 178.185, 178.190, 178.191	Wooden boxes with inside glass, earthenware, polyethylene or other nonfragile plastic containers resistant to the lading (bags are not authorized), not over 1-gallon each, except that inside containers not over 3 gallons each are authorized when only one as packed in each outside box.
	1A, 1K	178.1, 178.14	Carboys in boxes. Not authorized for transportation by aircraft.

Table D-1 (ContInued)

Description of Containers To Be Used to Store Hazardous Wastes at DRMO-Cannon

Hazardous Materials To Be Stored at DRMO - Cannon Which Are Specifically Regulated by DOT

Hazardous Material	DOT Container Code	Applicable DOT Regulatory Section	Container Description
Hydrochlorlc acid	12A, 12B	178.210, 178.205	Fiberboard boxes with inside containers of polyethylene, or other nonfragile plastic material resistant to the lading (bags are not authorized), not over 1-gallon capacity each, or not more than one of 3-gallon capacity, suitably cushioned to prevent movement. Gross weight must not exceed 65 pounds.
	6D, 37m	178.102, 178.134	Cylindrical steel overpacks with inside specifications 2S, 2SL, 2T, 2TL. or 2U (178.35, 178.35 a. 178.21, 178.27, 178.24) polyethylene container.

Table D-1 (Continued)

Description of Containers To Be Used to Store Hazardous Wastes at DRMO-Cannon

Hazardous Materials To Be Stored at DRMO - Cannon Which Are Specifically Regulated by DOT

Hazardous Material	DOT Container Code	Applicable DOT Regulatory Section	Container Description
Hydrochloric acid	37P	178.133	Steel drums constructed of at least 24-gauge metal for drums capacity, with polyethylene liner (nonreusable container). Not authorized for transportation by air.
	16D	178.187	Wirebound wooden overwrap, with inside spec. 2T, 2TL, 2S, or 2SL (178.21, 178.27, 178.35, or 178.35a) Polyethylene container.
	12C	178.206	Fiberboard boxes with inside 5-gallon nominal capacity polyethylene-bottles having minimum wall thickness of 0.015 inch and constructed with screw-type closures. Gross weight not over 65 pounds.

Table D-1 (Continued)

Description of Containers To Be Used to Store
Hazardous Wastes at DRMO-Cannon

Hazardous Materials To Be Stored at
DRMO - Cannon Which Are Specifically
Regulated by DOT

Hazardous Material	DOT Container Code	Applicable DOT Regulatorv Section	Container Description
Hydrochloric Acid	21P	178.225	Fiber drum overpack with inside spec. 2T, 2S, 2SL, or 2U polyethylene container.
	22C	178.198	Plywood drum [(178.198-2(b)., with inside spec. 2TL polyethylene container not over 5 gallon capacity.
Calcium hypochlorite	6B, 6C 17E, 17H 37A, 37B	178.98, 178.99 178.116, 178.118, 178.131, 178.132	Metal barrels or drums Metal drums (single trip)
	35	178.16	Non-reusable, removable head polyethylene drum for use without overpack and not over 7 gallons capacity
	12B	178.205	Fiberboard box with not more than two inside minimum 30-gauge thick steel pails containing not over 26 pounds net weight each. Each cover must be gasketed.

Table D-1 (Continued)

Description of Containers To Be Used to Store
Hazardous Wastes at DRMO-Cannon

Hazardous Materials To Be Stored at
DRMO - Cannon Which Are Specifically
Regulated by DOT

Hazardous Material	DOT Container Code	Applicable DOT Regulatory Section	Container Description
Chromic acid Solution	1A	178.1	Glass carboy in a box. Not authorized for transportation by air.
	5,5A,5B	178.80, 178.81, 178.82	Metal barrel or drum with openings not exceeding 2-3 inches in diameter. Authorized for solutions containing chromic acid only.
	17E	178.116	Steel drum. Authorized for solutions containing chromic acid only.
(Not exceeding 35 percent by weight	21P	178.225	Fiber drum overpack with inside specification 25 or 25L polyethylene container.

Table D-1 (Continued)

Description of Containers To Be Used to Store
Hazardous Wastes at DRMO-Cannon

Flammable Liquids Not Specifically Provided For [49 CFR, 173.119]

Hazardous waste streams to be stored at DRMO-Cannon that fall within this broad category of hazardous materials include:

Waste paint, enamel, lacquer
Waste thinners
Methyl ethyl ketone
Acetone
Methyl alcohol
Toluene
Xylene
Sealing compound
Adhesive
Cleaning compound.

Approved containers to be used for storage of this material include:

DOT Container Code	Applicable DOT Regulatory Section	Container Description
5A, 5C	178.81, 178.83	Steel barrels or drums without removable heads
5B	178.82	Steel barrels or drums with removable heads
5M	178.90	Monel drums
17C	178.115	Single trip steel drums without removable heads
17E	178.116	Single trip steel drums without removable heads
6D	178.102	Cylindrical steel overpack, straight sided, for inside plastic container
2S	178.35	Polyethylene containers

Table D-1 (Continued)

Description of Containers To Be Used to Store
Hazardous Wastes at DRMO-Cannon

Corrosive Liquids Not Specifically Provided For [49 CFR 173.245]

Hazardous waste streams to be stored at DRMO-Cannon that fall within this broad category include:

Corrosion resistant
Carbon remover
Paint stripper
Bromochloromethane
2,4,5 Trichlorophenoxy acetic acid
Paint remover

Approved containers to be used for storage of this material include:

DOT Container Code	Applicable DOT Regulatory Section	Container Description
5A, 5C	178.81, 178.83	Steel barrels or drums without removable heads
5B	178.82	Steel barrels or drums with removable heads
5M	178.90	Monel drums
17C	178.115	Single trip steel drums without removable heads

Table D-1 (Continued)

Description of Containers To Be Used to Store
Hazardous Wastes at DRMO-Cannon

Corrosive Liquids Not Specifically Provided For [49 CFR 173.245]

Hazardous Waste streams to be stored at DRMO-Cannon that fall Within this broad category include:

DOT Container Code	Applicable DOT Regulatory Section	Container Description
17E	178.116	Single trip steel drums without removable heads
17F	178.117, 178.118	Single trip steel drums with removable heads
6D	178.102	Cylindrical steel overpack, straight sided, for inside plastic container
2S	178.35	Polyethylene containers
2SL	178.35a	Molded or thermoformed polyethylene containers
2U	178.24	Molded or thermoformed polyethylene containers having rated capacity of over 1 gallon, removable head containers, etc.

TABLE D-1 (Continued)

HAZARDOUS MATERIAL	DOT CONTAINER CODE	APPLICABLE DOT REGULATION SECTION	CONTAINER DESCRIPTION GENERAL PACKING REQUIREMENT
Trichloro-ethylene, Tetrachloro-ethylene, 1,1,1 Tri-chloroethane	None	173.805	IAW 49 CFR 173.605
Naptha Methyl alchol, Petroleum ether	Metal Drums 17C Various	173.119	IAW 49 CFR 173.119
Mercury	Various	173.860	IAW 49 CFR 173.860
Potassium dichromate, DDT	None	173.510	IAW 49 CFR 173.510
Zinc phos-phide	Various	173.365	IAW 49 CFR 173.365

TABLE D-1 (Continued)

HAZARDOUS MATERIAL	DOT CONTAINER CODE	APPLICABLE DOT REGULATION SECTION	CONTAINER DESCRIPTION GENERAL PACKING REQUIREMENT
Trichloro-ethylene, Tetrachloro-ethylene, 1,1,1 Tri-chloroethane	None	173.805	IAW 49 CFR 173.605
Naptha Methyl alchol, Petroleum ether	Metal Drums 17C Various	173.119	IAW 49 CFR 173.119
Mercury	Various	173.860	IAW 49 CFR 173.860
Potassium dichromate, DDT, Chloroform Formaldehyde, Epinephrine, Lindane and Warfarin	None	173.510	IAW 49 CFR 173.510
Zinc phos-phide	Various	173.365	IAW 49 CFR 173.365
Phenol	Various	173.349	IAW 49 CFR 173.349

D.1.b(2) Description of Storage Area Design and Operation to Drain and Remove Liquids or How Containers are Kept from Contact With Standing Liquids [40 CFR 270.15(b)(2), 264.175(c)(1) and (2):]

Not applicable. Facility handles all containers as if they contain free liquids.

D.1.c Requirements for Ignitable or Reactive Wastes and Incompatible Wastes [40 CFR 270.15(c)]

(1) Appendix B-2 demonstrates compliance with 40 CFR 264.176. Containers holding ignitable and reactive wastes will be stored in separate bays. The facility is located 2000 feet south of the nearest property line of Cannon AFB.

(2) Containers holding hazardous wastes that are incompatible with any waste or other materials stored nearby in other containers will be separated and protected by means of a berm [40 CFR 264.177(c)].

The identity and characteristics of all hazardous wastes are identified at the time they are received (refer to Section C.2), allowing the DRMO to store the wastes compatibly. Storage according to compatibility will serve as a precaution to prevent reactions which could (i) generate extreme heat, pressure, fire, explosions or violent reactions; (ii) produce uncontrolled toxic mists, fumes, dusts, or gases in sufficient quantities to threaten human health or the environment; (iii) produce uncontrolled flammable fumes or gases in sufficient quantities to pose a risk of fire or explosions;

(iv) damage the structural integrity of the device or facility; or (v) threaten human health through other means [40 CFR 264.17(b) and (c)]. Appendix D-3 presents a summary of potentially incompatible waste materials/waste components and the adverse consequences which could result from mixing one group with another.

(3) Hazardous wastes will not be placed in unwashed containers that previously held incompatible waste or material [40 CFR 264.177(a)]. Any leaking containers will be repackaged in accordance with DOT regulations (49CFR) using new, unused containers.

Appendices C-1 and C-2 indicate the hazardous characteristics of the wastes based upon material safety data sheets and OSHA data sheets for chemicals which have been submitted to DRMO-Cannon. These lists are representative of hazardous materials and wastes which may be stored at the HWSF.

D.1.d Container Management [40 CFR 264.171-173:

No leaking or damaged containers will be accepted for storage at DRMO-Cannon. If a container holding hazardous wastes should begin rusting or leaking during storage at this facility, its contents will be transferred to another container which will be compatible with the requirements of 40 CFR 264.170: Use and Management of Containers. Containers holding waste are kept closed during storage, except when sampling is being performed. A container will not be opened, handled, or stored in a manner which may cause it to be ruptured or otherwise damaged.

Small containers are stored on the shelves in each bay. Drums are stored on wooden pallets and placed in a bay using a forklift. An aisle space of 10 feet in the larger bays and 4 feet in the smaller bays is provided. An aisle space of 10 feet between bays will be provided, which allows ample room for the operation of a fork-lift. The fork-lift used will be equipped with a spark-arrestor.

An 18" aisle space between pallets is maintained in order to inspect all containers for deterioration caused by corrosion or other factors. A maximum of three (3) drums (55 gal. size) will be stored on each wooden pallet. A storage plan is shown in Figure D-1.

Table D-1 lists the DOT packaging requirements for some of the chemicals listed in Appendix C-2 that will be stored at the HWSF.

D.2 Tanks 40 CFR 270.16;

No tanks will be used for hazardous waste storage at DRMO-Cannon; there- fore Section D-2 is not applicable.

D.3 Waste Piles 40 CFR 270.18;

No waste piles will be used at this facility; therefore, Section D.3 is not applicable.

D.4 Surface Impoundments 40 CFR 270.17;

Section D.4 is not applicable.

ANNEX VIII

COMPATIBILITY OF WASTES

1. COMPATIBILITY OF WASTES

a. Paragraph 2 below lists compatilility groups extracted from Federal regulations and Air Force Engineering and Services Center draft guidance. The authors of these groupings caution that the listings are not exhaustive. The groupings provide, however, a sound guide to precautions.

b. Most drummed wastes produced on base for disposal by service contract are in compatibility group 4A. Accordingly, any organization producting wastes in drums which fall into compatibility group 1-A, 1-B, 2-A, or 6-A will notify the Base Hazardous Waste Facility Manager when the drums are transported to the facility, so that they may be physically separated from the rest of the wastes.

c. No Group 3-B waste will be poured into the sanitary sewer.

2. COMPATIBILITY AND INCOMPATIBILITY TABLES:

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
Caustic wastewater	Electrolyte, Acid
Lime sludge and other	Etching acid liquid or solvent
Corrosive alkalines	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 Berylium Calcium Lithium Magnesium Potassium Sodium Zinc Powder Other reactive metals and metal hydrides	Any waste in Group 1-A or 1-B

Potential Consequences: Fire 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, $SOCl_2$, PCR_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 Consequeces: Generation of toxic hydrogen cyanide, cyanogen, chloride or hydorgen sulfide gas.

GROUP 6-A	GROUP 6-B
Chlorates	Acetic acid and other organic acids
Chlorine	Concentrated mineral acids
Chlorites	Group 2-A wastes
Chromic acid	Group 4-A wastes
Hypocholorites	Other flammable and combustible wastes
Nitrates	
Nitric acid, fuming	
Perchlorates	
Permanganates	
Peroxides	
Other strong oxidizers	

Potential Consequence: Fire, explosion or violent reaction.

PERMIT ATTACHMENT E-2.

DOT Container Tables

Table D-1

Description of Containers To Be Used to Store Hazardous Wastes at DRMO-Cannon

Hazardous Materials To Be Stored at DRMO-Cannon That Are Specifically Regulated by DOT

Hazardous Material	DOT Container Code	Applicable DOT Regulatory Section	Container Description
Sulfuric Acid	15A, 15B, 15C, 16A, 19A, or 19B	178.168, 178.169, 178.170, 178.185, 178.190, 178.191	Wooden boxes with inside glass containers, not over 1-gallon capacity each (3-gallon capacity when only one container per box).
	33A	178.150	Polystyrene cases (nonreusable container) with inside glass bottles. Capacity not more than four 5-pint bottles per container.
	1H, 15P, 22C	178.13, 178.182, 178.198	Metal crate with an inside polyethylene carboy; or glued plywood or wooden box, or plywood drum [178.198-2(a). with inside specification 2T or 2TL [178.21, 178.27] polyethylene container.

Small containers are stored on the shelves in each bay. Drums are stored on wooden pallets and placed in a bay using a forklift. An aisle space of 10 feet in the larger bays and 4 feet in the smaller bays is provided. An aisle space of 10 feet between bays will be provided, which allows ample room for the operation of a fork-lift. The fork-lift used will be equipped with a spark-arrestor.

An 18" aisle space between pallets is maintained in order to inspect all containers for deterioration caused by corrosion or other factors. A maximum of three (3) drums (55 gal. size) will be stored on each wooden pallet. A storage plan is shown in Figure D-1.

FIGURE D-1

CANNON AFB, NM (NM7572124454) TSDF, DRMO-CANNON BLDG. 226

FLOOR PLAN NOT TO SCALE

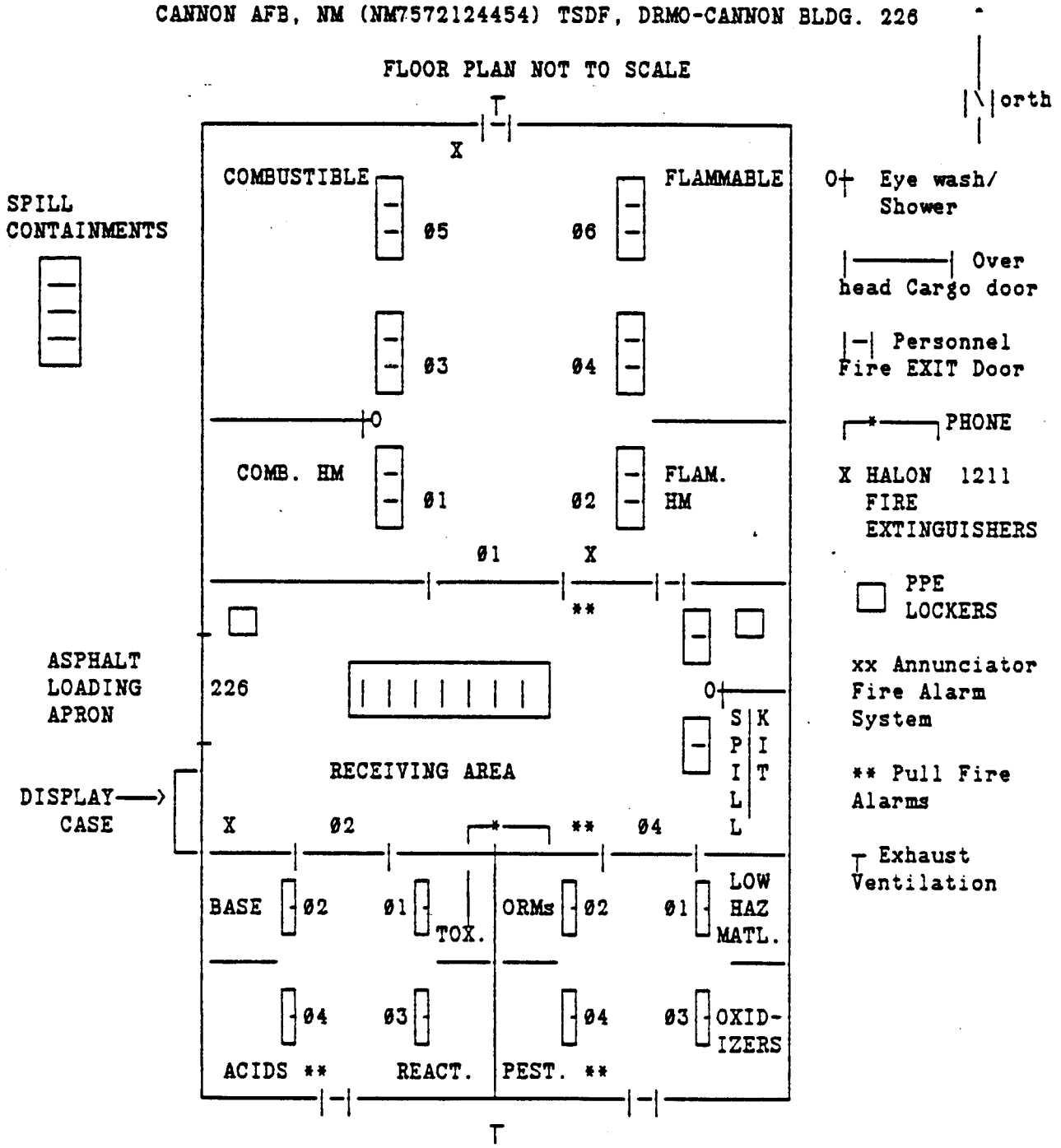
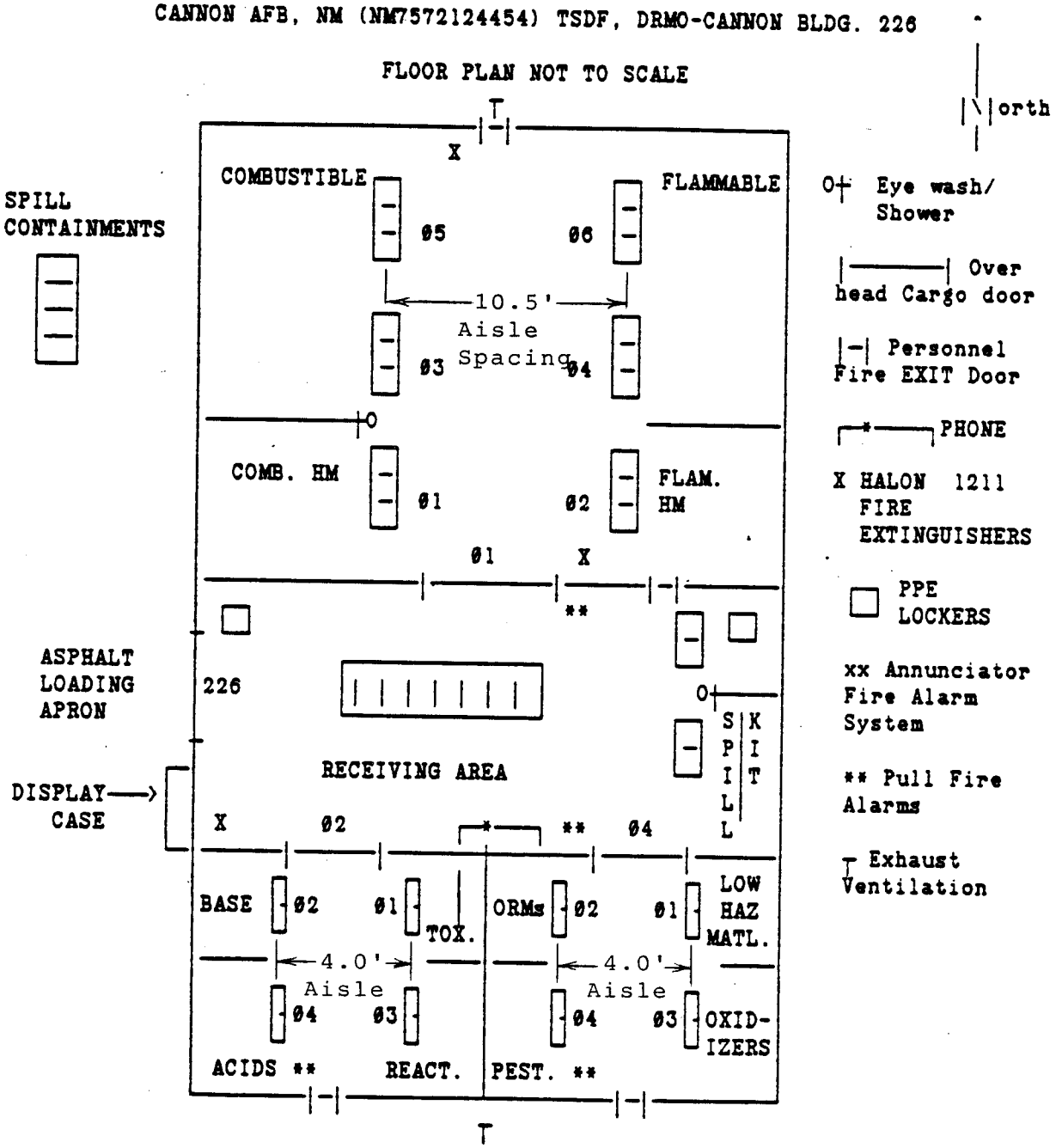


FIGURE D-1

CANNON AFB, NM (NM7572124454) TSDF, DRMO-CANNON BLDG. 226

FLOOR PLAN NOT TO SCALE



PERMIT ATTACHMENT E-1.

Procedures for Handling Ignitable, Reactive or Incompatible Waste

B.5 Separation of Hazardous Material and Hazardous Waste

The DRMO receives both hazardous material and hazardous waste at this facility. Reuse of the hazardous material is sought within the DOD community. Failing any reuse the property is then available for sale to the general public. Failing any sale, the property is then deemed a hazardous waste and is labelled and handled as such by DRMO personnel.

All hazardous materials undergoing review for reuse or sale will be identified in the storage facility as items without the yellow and orange hazardous waste labels.

Hazardous waste items will have a yellow and orange hazardous waste label.

Physical separation of waste and material by space will be provided when room permits. Should the volume in storage not allow physical separation then the waste label will allow for proper identification.

F.4.d Equipment and Power Failure [40 CFR 270.14(b)(8)(iv);

No automatic waste feed system will exist at either facility. In the event of a brief power interruption all storage activities will cease until power can be restored.

F.4.e Personnel Protection Equipment [40 CFR 270.14(b)(8)(v);

A description of available protective equipment is presented in Section G. The use of protective equipment is covered in the Property Disposal Hazardous Materials Coarse (Section H). The information in these two sections indicates that any operations such as bulking and consolidation of hazardous wastes will only be accomplished by personnel wearing the appropriate protective equipment. Equipment will include, but not be limited to protective gloves, eye and face guards, overalls, and boots. Depending on the hazard associated with the particular material being handled and its volatility, appropriate respiratory protection will also be required.

Prior to handling any hazardous wastes at the storage facility, the Disposal Turn-in Document (Figure C-1), HMIS data, chemical analysis, MSDS and/or other reference will be reviewed by the Fire Department, Bioenvironmental Engineer, and Safety for the particular waste stream in question to determine which safety equipment will be utilized.

F.5 Prevention of Reaction of Ignitable, Reactive, and Incompatible Wastes

F.5.a Precautions to Prevent Ignition or Reaction of Ignitable or Reactive Wastes [40 CFR 270.14(b)(9) and 264.17(a) and (c);]

Containers, as discussed in Section D.1, will be compatible with the contained wastes; therefore, the only source of ignition will be external to the containers.

Hazardous wastes received at the HWSF will be in non-leaking containers, safe to handle, and will comply with DOT container regulations (49 CFR Parts 173, 178 and 179). This will further minimize the potential for ignition and reaction of hazardous wastes.

Wastes will be separated at the storage facility and protected from sources of ignition or reaction, such as open flames, smoking, cutting and welding, hot surfaces, frictional heat, and sparks (static, electrical, or mechanical). Wastes will be classified as ignitables, reactives, corrosives, toxics, acids and bases. These determinations will be based upon HMIS .nformation, other standard hazardous material reference data, and/or lab analyses. (Refer to Section C.2 for more detail.) In order to prevent a possible source of external ignition, areas with drums containinq ignitable and reactive wastes will prominently display a sign clearly marked with the legend "No Smokinq." Spark-proof tools (brass hammers, wrenches, etc.) will be used on all containers storing ignitable materials.

Grounding cables will be used when transferring or pouring flammable liquids into or from containers to containers to prevent ignition by sparks.

F.5.b General Precautions for Handling Ignitable or Reactive Wastes and Mixing of Incompatible Wastes [40 CFR 264.17(b) and (c) and 270.14(b)(9);]

General precautions for handling ignitable or reactive wastes were discussed previously in Section F.5.a. Wastes are not mixed at the storage facility. Furthermore, incompatible wastes with the same hazardous waste characteristic will not be stored in the same bay.

The publication #DPDS-M 6050.1, Environmental Considerations in the DRMS Disposal Process, Change 10, added Chapter 11, "Storage Compatibility." This publication is at the DRMO to assist personnel in determining the compatibility of wastes. Appendix F-1, which is from this manual, presents a list of ·hemical substances and their hazardous characteristics.

F.5.c Management of Ignitable or Reactive Wastes in Containers [40 CFR 270.15(c) and 264.176:]

The maps presented in Section B of this permit application illustrate that the HWSF will be located 2000 feet south of the nearest property line of Cannon AFB and, therefore, will be in compliance with the National Fire Code Standards for container storage holding ignitable or reactive wastes.

F.5.d Management of Incompatible Wastes in Containers [40 CFR 270.15(d) and 264.177(a);]

Incompatible wastes or materials will not be mixed at the DRMO. Containers will be segregated by waste type (Sections C.2.a and F.5.a) and stored in the appropriate storaqe bays containing similar waste types. Each bay will have a bermed containment system to prevent mixing of spilled or leaked material or runoff containing waste residues from other storage bays. Wooden pallets with containers will not be stacked. Containers will normally remain in the HWSF until removed by a contractor for disposal. Aisle space will be maintained to allow access for a forklift in the event removal is required at and time due to corrosion, leakage, etc.
Hazardous materials and wastes must be separated within each storage bay and the storage containers labelled to prevent or minimize the possibility of any mixing of known or unknown constituents in the event of a spill or emergency.

PERMIT ATTACHMENT F.

Contingency Plan

F.1 Security

Security procedures to be implemented in order to prevent hazards are described below.

F.1.a Security Procedures and Equipment
[40 CFR 270.11(b)(:) and 264.14;

A waiver of the security requirements is not requested.

F.1.a(1) 24-Hour Surveillance System [40 CFR 264.14(b)(1);

Cannon AFB is responsible for onsite security to control entry at all times through the gates or other entrances to the active portion of the entire installation. All entrances are manned 24 hours per day or are locked. Proper identification is required for entry.

The 27th Tactical Fighter Wing Security Police will continuously monitor the DRMO facility during hours of non-operation (1630-0730 hours). The procedures and personnel used will be determined by the Security Police.

A copy of the agreement and arrangements between the Security Police and the DRMO will be kept in the facility Operating Record.

F.1.a(2) Barrier and Means to Control Entry [40 CFR 264.14(b)(2)(i) and (ii);

F.1.a(2)(a) Barrier

A 6-foot-high metal chain-link fence, topped with three strands of barbed wire, will encircle the property of the DRMO and be equipped with two lockable gates.

F.1.a(2)(b) Means to Control Entry [40 CFR 264.14(b)(2)(ii)]

The DRMO facility has two gates which are locked except during hours of operation (0730-1630 hours). The gate from W Street has been designated for use by hazardous waste generators.

DRMO personnel control entry to the facility. Visitors and contractors are required to sign in. Doors to the facility are locked during nonduty hours and when not being used to gain entrance into the facility.

F.1.a(3) Warning Signs [40 CFR Section 264.14(c);

Warning signs with the legend "Danger Unauthorized Personnel Keep Out" will be posted at each gate to the DRMO and on the storage facility. These signs will be visible from 25 feet and will be printed in English and Spanish.

F.1.b Walver [40 CFR 264.14(a);]

Cannon AFB does not request a waiver.

F.2 Inspection Schedule [40 CFR 270.14(b)(5) and 264.15;]

Table F.1.a presents the General Inspection Schedule for inspecting safety and emergency equipment, security devices, operating and structural equipment, monitoring equipment, communication equipment, and mobile equipment at the HWSF. Items listed in Table F-1a are important because of their role in preventing, detecting, or responding to environmental or human health hazards.

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TABLE F-1a

GENERAL INSPECTION SCHEDULE

Area/Equipment	Specific Item	Types of Problems	Frequency of Inspection
Safety and Emergency Equipment	Standard industrial absorbents (Sorb-all, vermiculite, etc.)	Out of stock, saturated with water	weekly
	Absorbent containment boom	Worn out, saturated with water	weekly
	Flexible hoses with quick couple fittings	Cracks or holes, fittings stick	Monthly
	55-gallon drums (steel, stainless steel)	Corrosion, structural damage	weekly
	Emergency shower and eyewash	Water pressure, leaking, drainage	Weekly
	Face shields and extra protective eyeglasses	Broken or dirty equipment	weekly
	Disposable respirators	Out of stock, not designed to filter types of materials being stored	Monthly/as needed
	Portable sump pump	Power, clogging, not explosion-proof	Monthly
	Fire extinguishers	In need of recharging	Monthly/after each use

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Cannon

TABLE F-1a (Continued)

GENERAL INSPECTION SCHEDULE

Area/Equipment	Specific Item	Types of Problems	Frequency of Inspection
	Telephone system	Power failure	monthly
	Generators	Fuel supply, spark plugs, oil	monthly
	Emergency lighting system	Battery failure, lights	monthly
	First aid equipment and supplies	Items out of stock or inoperative	monthly
	Protective clothing (impermeable full body coveralls, gloves, and foot coverings)	Holes, normal wear and tear	monthly
Security devices	Facility fence	Corrosion, damage to chain-link fence or barbed wire	Weekly
	Signs	Illegible	Weekly
	Container storage building doors	Locks missing	Weekly
	Main gate	Locking mechanism jammed	Daily
	Lighting	Burned out	weekly
Operating and structural equipment	Berms around storage bays	Cracks, deterioration	Weekly
	Floor or foundation	Erosion; uneven settlement; cracks and spalling in concrete pads, base rings and piers; wet spots	Weekly
	Loading/Unloading dock	Erosion; uneven settlement; cracks and spalling in concrete	Weekly
	Containment bays	Erosion; uneven settlement; cracks and spalling in concrete; wet spots	Weekly

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TABLE F-1a (Continued)

GENERAL INSPECTION SCHEDULE

Area/Equipment	Specific Item	Types of Problems	Frequency of Inspection
	Roofs	Leaks	Weekly
	Walls	Cracks	Weekly
	Containment Tank	Leaks	Weekly
Monitoring Equipment	Fire Detection System	Power failure	Weekly
Communication	Telephones	Power failure	monthly
	Radios	Power failure	monthly
	Fire Alarms	Power failure	monthly
Mobile Equipment	Brakes	Worn, pads, rotors	weekly
	Hydraulics	Leaking	Weekly
	Trailer Hitches	Loose, missing safety chains	Prior to each use
	Lights-Running/Emergency	Burned out	weekly
	Horns/Sirens	Inoperative	weekly

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TABLE F-1b

SPECIFIC PROCESS INSPECTION SCHEDULE

Area/Equipment	Specific Item	Types of Problems	Frequency of Inspection
Container Storage Area	Container placement and stacking	Aisle space, height of stacks	Weekly
	Sealing of containers	Open lids	Weekly
	Labeling of containers	Improper identification, data missing	Weekly
	Containers	Corrosion, leakage, structural defects	Weekly
	Segregation of incompatible wastes	Storage of incompatible wastes in same area	Weekly
	Pallets	Damaged (e.g., broken wood, warping, nails missing)	Weekly
	Fence, gate and lock	Corrosion, damage to chain-link fence; sticking or corroding lock	Weekly
	Base or foundation	Cracks, spalling, uneven settlement	Weekly
	Dikes around containment bays	Cracks, deterioration	Weekly
	Debris and refuse	Aesthetics, possible reaction with leaks	Weekly
	Loading/Unloading dock	Cracks, spalling, uneven settlement, erosion	Weekly
	Warning signs	Damaged, illegible	Weekly
	Containment tank	Leaks	Weekly

Section G

CONTINGENCY PLAN

The information contained herein is submitted in accordance with the requirements for a Contingency Plan, as contained in 40 CFR 270.14(b)(7), 264 Subpart D and 264.50 - 264.56.

G.1 General Information [40 CFR 264.52;]

This Contingency Plan is for the Defense Reutilization and Marketing Office (DRMO) located on Cannon Air Force Base Clovis, New Mexico. The DRMO is owned by the United States Air Force and operated by the Defense Reutilization and Marketing Service (DRMS).

DRMO-Cannon will only store containerized wastes in a metal, enclosed building. An estimated 10,720 Gallons in 55-Gallon drums and smaller containers will be the maximum storage capacity at the HWSF. A general site plan and a full description of the facility are contained in Section B. A description of the wastes to be stored is provided in Section C, and the containment system is described in Section D.

G.2 Emergency Coordinators [40 CFR 264.52 (d) and 264.55;]-

For spills or other emergency situations on Cannon AFB, an On-Scene Coordinator (OSC) and a Spill Response Team (SRT) will be deployed sequentially to the site, as required, to effectively carry out this plan.

A list of emergency coordinators is shown in Table G-1.

The On-Scene Coordinator (OSC) is the individual assigned the responsibility for directing and coordinating all spill response actions. The OSC will have the authority to utilize the expertise and resources of the Spill Response Team (SRT) in determining and performing response actions. Deployment of the SRT will be activated only if called by the OSC or his/her designate. The deployment of the SRT is effected to provide a coordinated response to contain, control, recover and restore the environment for all spills. Members of the SRT are shown in Table G-2. If necessary, the OSC will also contact the outside organizations and agencies that are listed in Table G-3.

TABLE G-1

Emergency Coordinators

Name and Title	Work Address	Home Address
On-Scene Coordinator: Commander, 27 CSG Col David E. Benson	27 CSG/CC Cannon AFB, NM 88103 (505)784-2761	1689 Crossbow Cir Cannon AFB, NM 88103 (505) 784-3102
First Alternate: Base Civil Engineer Lt Col Garry Earls	27 CSG/DED Cannon AFB, NM 88103 (505)784-2008	7726 Oklahoma Ct Cannon AFB, 88103 (505) 784-3694
Second Alternate: Base Fire Chief William W. Thomas	27 CSG/DEF Cannon AFB, NM 88103 (505) 784-4076	2101 Glenarm Clovis, NM 88101 (505) 762-4855
Environmental Coordinator Jimmie N. Richards	27 CSG/DEEV Cannon AFB, NM 88103 (505) 784-4639	Route 3 Box 538 Portales, NM 88130 (505) 356-4830
DRMO Environmentalist Vera Wood	DRMO Cannon Bldg 215 Cannon AFB, NM 88103 (505) 784-2435	324 Sandia Dr Clovis, NM 88101 (505) 763-5722

TABLE G-2

Spill Response Team

	SRT Organizations and Personnel	On-Duty Extension
1.	Commander 27th Combat Support Group (Primary OSC) Col David E. Benson	2761
2.	Base Civil Enqineer (1st Alternate OSC) Lt Col Garry Earls	2008
	CE Service Desk	2001
3.	Base Fire Department	On-base 4117 Off-base 784-4117
	Base Fire Chief (2nd Alternate OSC)	4076
4.	Environmental Coordinator	4639
5.	Bioenvironmental Engineer	4063
6.	Disaster Preparedness Office	4177
7.	Security Police	4111
8.	Liquid Fuels Maintenance Technician	2112
9.	Staff Judge Advocate and Legal Office	2211
10.	Public Affairs Office	4131
11.	Safety Office	2811
12.	Base Hospital (Emergency)	4033
13.	Transportation Squadron	2641
14.	Weather Squadron	2748
15.	Photographic Laboratory	2765
16.	DRMO Cannon	2435

TABLE G-3

Local, State, and Federal
Emergency Contacts

Clovis Police Department	769-1921
Clovis Fire Department	769-2185
National Response Center	(800) 424-8802
EPA Region VI	(214) 767-3274
New Mexico Health and Environment Department: 24-hour emergency number	(505) 827-9329
Hazardous Waste Section Mew Mexico Environmental Improvement Division	(505) 827-2929
CHEMTREC	(800) 424-9300
ETIS	Autovon - 970-6167 Comm. No. (904) 283-6167
Assoc. of American Railroads (Emergency Response Division)	(202) 293-4048
DOW Chemical Company (Emergency Division)	(517) 636-4400
Dupont (Emergency Response)	(302) 774-1000
Monsanto (Safety Office)	(618) 271-5835
National Foam Center (Emergency)	(215) 363-1400
Poison Control Center	(800) 432-6866
EPA Emergency Response Team	(201) 321-6660
HQ TAC Langley AFB VA/DEEV Environmental Coordinator	Duty Hours Autovon - 432-4430 Non-Duty Hours Autovon - 432-2224/2225

The personnel assigned to the SRT and their designated responsibilities are discussed in the following paragraphs.

(1) Commander 27CSG will:

Act as Primary On-Scene Coordinator responsible for directing and coordinating all spill response actions.

(2) Base Civil Engineer (BCE) will:

a. Act as first Alternate On-Scene Coordinator in the event the Commander, 27CSG is unavailable or delegates his/her responsibility to the BCE.

b. Provide an Environmental Coordinator to furnish technical expertise relative to pollution control techniques.

c. Within his capability, provide personnel, transportation and equipment for containment, cleanup, and restoration of landscape due to spills of oils and hazardous substances that exceed the capability of the base agency responsible for the spill.

d. Notify the Commander, 27CSG of personnel and equipment requirements that exceed base capability.

e. Plan, program, and construct interception devices, such as sawdust, and effective plugs for sewer-connected drains to prevent potential sources of pollution from emptying directly into the Cannon AFB sewage lagoons and Playa Lake next to Munitions Storage.

f. Provide suitable inventory and storage for pollution controlling chemical agent, absorbent materials, and control equipment not otherwise specified to be furnished by other units that are employed in combating pollution.

g. Provide a Liquid Fuels Maintenance technician to supply explosion hazard technical assistance to the OSC.

(3) Base Fire Chief will:

a. Act as the On-Scene Coordinator until the Commander 27CSG or BCE, or a desiqnated OSC, arrives at the spill scene. He/she will serve as second Alternate On-Scene Coordinator in the event the Commander 27CSG (the primary OSC), or the BCE (the 1st alternate OSC) is unavailable.

b. Direct Fire Department to record all spill reports received on a designated telephone log.

c. Immediately respond to spills as necessary to protect life and property with due regard for the environment.

d. Activate Disaster Preparedness, OPLAN 355-1, as necessary. This plan establishes procedures for response to major accidents, enemy attack and natural disasters affecting Cannon AFB. Major accidents include those involving nuclear or chemical munitions, biological research agents, and destruction or serious damage to an aircraft, components, materials, agents, or other dangerous material.

e. Direct emergency dispatch operator to notify Base Hospital if injuries are reported. The Base Civil Engineer or Environmental Coordinator will also be notified of the spill occurrence.

f. Provide technical assistance to the OSC concerning response to and handling of combustible or flammable substances.

(4) The Environmental Coordinator will:

a. Report to scene of spill immediately upon notification.

b. Evaluate the severity of spill and determine the response necessary for containment and recovery.

c. Advise the Commander 27CSG (OSC) and BCE as to the necessity for activation of the SRT.

d. On the authorization of the OSC, notify specifically requested members of the SRT or instruct the CE-Service Desk (Fire Department, non-duty hours) to notify these members to assemble at a designated area within 15 minutes of notification.

e. Furnish the OSC technical expertise relative to pollution control techniques.

(5) Bioenvironmental Engineer will:

a. Take periodic samples of all on-base waterways for background information.

b. Upon notification of a spill, and at the direction of the OSC, sample and test the Cannon AFB sewage lagoons for spill contaminants, if needed.

c. Provide technical assistance and advice to the OSC and the hospital with respect to the health hazards associated with oils and hazardous substances.

(6) Disaster Preparedness Officer will:

Ensure that the Cannon AFB Disaster Preparedness OPLAN 355-1 is coordinated with the SPR Plan in the event of a hazardous substance spill requiring the implementation of the OPLAN.

(7) Chief of Security Police will:

a. Instruct his organization to immediately respond to an actual or potential oil or hazardous substance spill, to isolate the spill area, and control traffic when and where necessary as directed by the OSC.

b. Insure that while individuals in the security force are on normal patrols, they are continuously aware of oil and hazardous substance spills and report all areas that appear to be suspect.

(8) The Liquid Fuels Maintenance Technician will report to the scene at the request of the OSC to measure explosive vapor concentrations, and determine where explosion hazards exist. This information will be provided to the OSC for use in establishing the cordon.

(9) Staff Judge Advocate will:

a. Respond to all oil and hazardous substance pollution spills at the request of the OSC to ensure that information, records, and samples adequate for legal purposes are obtained and safeguarded for future use.

b. Advise the OSC on the legal aspects of spill response when parties other than the Air Force are responsible for the spill.

(10) Public Affairs Officer will:

a. Respond to all oil or hazardous substance spills when requested by the OSC.

b. Keep abreast of all base actions during a spill so as to be able to provide prompt and accurate news releases on the nature of the discharge and the steps being taken to correct the problem. This policy must be followed to obtain understanding from the public, ensure cooperation from all interested parties, and to check the spread of misinformation.

c. Coordinate all news media releases involving base actions with the Wing Commander.

d. If the Regional Response Teams' News Office is activated, coordinate all news releases with them. If a Regional Response Team News Office is not activated, the EPA's Public Information Office can be contacted, if deemed appropriate (214) 767-3274.

(11) Safety Officer will:

Provide technical assistance to the OSC with respect to the safety of personnel.

(12) Base Hospital Commander will:

a. Insure that medical personnel and ambulance(s) are dispatched to the site of the spill as directed.

b. Insure that emergency treatment is rendered and injured personnel are removed to the Base Hospital for treatment.

c. Insure current and follow-up information on injured personnel is provided to the OSC as soon as possible.

d. Insure that hospital staff is familiar with health effects of hazardous substances present on the base.

(13) Transportation Officer will:

Provide OSC with transportation as required for spill response personnel and equipment.

(14) Weather Squadron Officer will:

Insure that the OSC is provided with up-to-date weather information as requested.

(15) Chief of Operations and Training will:

Insure that a photographer will document with photographs the extent of the spill and the containment, countermeasures, and restoration procedures utilized, as directed by the OSC.

(16) DRMO Environmentalist:

For spills occuring at the DRMO storage facility will furnish the Environmental Coordinator with information concerning type of material spilled and other property currently stored at the facility.

(17) In addition to the base organizations and personnel assigned to the response effort, provisions have been made for including off-base organizations in the response organization when on-base spill response resources and expertise are insufficient, and when off-base water, land, or air are adversely affected. Some of the significant off-base spill response resources that can be incorporated into the SRT are discussed below. Current telephone numbers to contact these organizations are listed in Table G-3.

a. Tactical Air command (TAC/DEEV):

MAJCOM office responsible for ensuring environmental compliance of Cannon AFB. This office provides advice and staff assistance in all areas of environmental protection including spill response matters. HQ TAC/DEEV is located at Langley AFB, VA and can be reached at AV 432-4430 or 804-764-4430.

b. Air Force Engineering and Services Center (AFESC): AFESC provides technical guidance and assistance to major commands and bases in contingency operations and environmental planning. The AFESC/DEVP is located at Tyndall AFB, Florida and can be contacted as follows: AV 970-6167 or Commercial (904) 283-6167.

c. Regional Response Team:

The Cannon AFB area is under the jurisdiction of the Region 6 US EPA Regional Response Team. The team can be reached by calling the Region 6 EPA Public Information Office at (214) 767-3274.

d. State of New Mexico Response Team:

The State OSC will be briefed fully by the Base OSC on the actual spill response. The State OSC will be familiar with the available sources of spill response equipment within the State of New Mexico. The State 24-hour reporting number is (505) 827-9329.

e. Clovis Area Contact:

The State Environmental Improvement Division Office in Clovis should be notified in case of a spill. The office representative is Mr. David Tanner (505) 762-3728.

f. CHEMTREC:

CHEMTREC, the Chemical Transportation Emergency Center, is a 24-hour hot line that provides warnings and limited guidance to the OSC when a spill product can be identified by either chemical or trade name. CHEMTREC will also assist the OSC in contacting the manufacturer or shipper for additional information. This service should be used whenever adequate spill response information is not available. The telephone number for CHEMTREC is 1-800-424-9300.

g. CHRIS MANUAL-Chemical Hazards Response Information System:

The CHRIS Manual is an official publication of the US Coast Guard that currently provides technical information and appropriate response procedures for over 1000 different substances. The manual contains four volumes which are periodically updated.

h. ETIS-Environmental Technical Information System: ETIS is a computerized information system which contains Federal and State environmental regulations, directories of Federal and State environmental contacts and computer modeling capabilities. The ETIS overall system manager is the U.S. Army Construction Engineering Research Laboratory, located at Champaign, Ill. The

Environmental Planning Directorate at AFESC manages Air Force use of the system. Additional information on the system and how to access it can be obtained by calling AV 970-6167 or Commercial (904) 283-1667.

i. "USAF Occupational and Environmental Health Laboratory" (OEHL):

The OEHL is assigned responsibility for providing consulting services on spill sampling contaminant treatment methods, as well as analytical support during response and recovery operations. For complex spill problems, onsite support may be provided. In CONUS, call AV 240-3305 (consulting) or AV 240-3626 (analytical support).

G.3 Implementation of the Contingency Plan [40 CFR 264.52(a) and 264.56(d);]

The decision to implement the contingency plan depends upon whether or not an imminent or actual incident could threaten human health or the environment. The purpose of this section is to provide guidance to the emergency coordinator in making this decision by providing decision-making criteria.

The contingency plan will be implemented in the following situations:

1. Fire and/or Explosion

   a. A fire causes the release of toxic vapors.

   b. The fire spreads and could possibly ignite materials at other locations onsite or could cause heat-induced explosions.

   c. The fire could possibly spread to offsite areas.

   d. Use of water or water and chemical fire suppressant could result in contaminated runoff.

   e. An imminent danger exists that an explosion could occur, causing a safety hazard because of flying fragments or shock waves.

   f. An imminent danger exists that an explosion could ignite other hazardous waste at the facility.

   g. An imminent danger exists that an explosion could result in the release of toxic material.

   h. An explosion has occurred.

2. Spills or Material Release

   a. The spill could result in the release of flammable liquids or vapors, thus causing a fire or gas explosion hazard.

   b. The spill could cause the release of toxic liquid or vapors.

   c. The spill can be contained onsite, but the potential exists for groundwater contamination.

d. The spill cannot be contained onsite, resulting in offsite soil contamination and/or ground or surface water pollution.

3. Floods

The potential exists for surface water contamination.

G.4 Emergency Response Procedures

G.4.a Notification [40 CFR 264.56(a);

The on-base notification system is described in Section G-4.d. Off-base notification will initially be made by the OSC to headquarters at Langley AFB, VA. Appropriate local, state, and Federal agencies will be notified as discussed In Section G-4d.

G.4.b Identification of Hazardous Materials [40 CFR 264.56(b);

The manager of the HWSF, the DRMO Chief, will immediately identify the character, exact source, amount and area/extent of a release from that facility. This will be accomplished by visual observation and/or review of records.

All wastes received by the DRMO will be stored in bays according to their hazardous characteristics. Generally, the contents of a drum can be determined through a check of the operating record.

G.4.c Hazard Assessment [40 CFR 264.56(c) and (d);

The Base Environmental Coordinator and the Base Civil Engineer will assess possible direct and indirect hazards to human health or to the environment that may result from a chemical release, fire, or explosion. Factors which will be considered are the materials involved, their toxicity, the amount involved, and what decomposition products may result. Wind direction and weather conditions will be assessed to determine area of possible contamination. The danger of contamination of surface or groundwater will also be considered.

G.4.d Control Procedures [40 CFR 264.52 (a);

The initial response to any emergency will be to protect human health and safety and then the environment. Identification, containment, treatment, and disposal assessment will be the secondary response.

In the event of a major emergency involving a chemical spill, the person(s) discovering the spill is/are responsible for providing initial defensive actions without undue risk of personal injury.

1. The following actions will be implemented as necessary upon discovery of a spill. The order of the actions will depend on existing conditions.

   - Initiate evacuation, if necessary.

   - Notify Base Fire Department, On-Base Ext 4117, Off-Base Telephone Number 781-4117.

- Stop source of spill when possible without undue risk of personal injury; to include use of onsite spill containment equipment and materials.
- Make spill scene OFF LIMITS to unauthorized personnel.
- Restrict all sources of ignition when flammable substances are involved.
- Report to on-scene coordinator upon arrival.

2. When notifying the Fire Department of the spill occurrence, the following information should be provided if known or can reasonably be determined.

   - Name of individual reporting spill
   - Location of individual reporting spill
   - Number of injured personnel and nature of injuries (if applicable)
   - Substance spilled
   - Amount of spill (estimated)
   - Rate material currently spilling (estimated)
   - Time spill occurred (estimated)
   - Extent which spill has traveled
   - Any additional pertinent information (i.e., other potential hazards)

3. Base personnel other than the Fire Department receiving reports of spills shall aid in channeling the report to the Fire Department who will respond as outlined.

4. The Fire Department will:

a. Record spill reports on a Spill Incident Checklist Log designed to record the information listed in the above paragraph (1)b along with the time of the report.

b. Immediately respond as necessary to protect life and property with due regard for the environment.

c. Notify the Fire Chief and Base Environmental Coordinator (or Base Civil engineer if Environmental Coordinator cannot be contacted) as well as the Base Hospital if injuries are reported. The Spill Incident Checklist Log will contain a notice instructing the dispatch operator to immediately institute these notifications. The checklist will include the duty and non-duty telephone numbers for the above-mentioned personnel.

5. The Base Environmental Coordinator or Civil Engineer will:

a. Immediately proceed to the spill site and evaluate the severity of the spill and determine the response necessary for containment and recovery.

b. Advise the OSC as to the necessity for activation of Spill Response Team (SRT).

c. On the authorization of the OSC, notify specifically requested members of the SRT or instruct the CE Service Desk (Fire Department non-duty hours) to notify these members to assemble at the area designated by the OSC or the Environmental Coordinator within 15 minutes of notification.

d. Respond with appropriate men, equipment and materials.

6. The CE Service Desk will:

a. Maintain a current list of all members of the Spill Response Team (SRT) along with their duty telephone numbers as well as non-duty telephone numbers. A backup copy of this list will be posted at the Fire Department dispatch desk.

b. Contact the SRT members designated by the OSC or the Environmental Coordinator and inform them to assemble within 15 minutes at a specified location.

(i) Fire and/or Explosion

The HWSF can easlly be accessed by firefighting and other emergency vehicles and equipment via W Street. The Cannon Fire Department is available 24 hours a day to respond to any emerqency. Until the Fire Department personnel arrive, the fire containment effort will be carried out by DRMO personnel.

In the event of a fire and/or explosion involving hazardous materials, the following actions will be taken:

1. The Base Fire Department will be notified. The OSC and Civil Engineering Service Desk will be contacted by the Fire Department.

2. Work in all areas will immediately cease.

3. All personnel not actively fighting the fire will be evacuated according to instruction from the OSC.

4. All doors in the HWSF will be closed during evacuation and any ignition sources will be extinguished and secured.

5. All injured persons will be transferred to medical facilities for treatment.

If a highly flamable material is released, the following action will be taken:

1. All persons within a 1/4-mile radius will be notified.

2. All ignition sources will be eliminated.

3. Motor vehicles will be restricted or eliminated to avoid ignition of the vapor.

4. All persons within a 2000-foot radius of the source will be evacuated if the likelihood of an impending explosion is determined.

The Fire Chief will determine when the fire has been controlled and consult with the ERT and OSC to determine when activities in the area can resume.

(ii) Release of Hazardous Waste to Air, Land, or Water

In the event of a spill of oil or hazardous substances, the OSC will be responsible for directing and coordinating all spill response actions. The OSC or his/her designee will maintain an Incident Loq detailing all actions taken during the course of the pollution spill response. The log

will include a description of pollutant, the actions taken to recover the pollutant and restore the environment, and any additional significant information. Spill response actions under the responsibility of the OSC are:

1. Activate or authorize action of appropriate members of the Spill Response Team (SRT) based on information relayed during initial notification or information provided by the Environmental Coordinator, and immediately investigate the reported spill.

2. Determine source, type and approximate quantity of spill substance.

3. Evaluate magnitude and severity of the threat to public health, welfare and natural resources. The Material Safety Data Sheets and other information sources should be utilized as required to determine potential health, fire and pollution effects associated with the spill material.

4. Take appropriate safety precautions to protect response personnel and any additional personnel located in close proximity to the probable spill route. Base Security Police will be utilized for implementing evacuation or traffic control measures.

5. Determine the party responsible for spill, if other than the Air Force. The responsible party should be informed of the spill and if their response actions are inadequate in the judqement of the OSC, they should first be informed of their financial liability. If their spill response actions remain inadequate, the Base OSC should assume control of the spill response. In all response actions involving parties other than the Air Force, the Base Judge Advocate should be informed. If a contractor is involved with a spill, the contracting office should be notified. (EXT. 2941) BLDG. 150

6. Determine cause of spill and institute appropriate action to stop the source of spill if still occurring.

7. Institute spill containment procedures. The primary concern is to confine spills as close to their source as practical and if at all possible prevent spills from exiting base property. Portable skimmers, temporary dikes or booms, absorbent material and sandbags will be used to contain spills.

If the chemical spill is not contained within the bermed areas or grated trenches, then an area of isolation will be established around the spill. The size of this area will generally depend upon the size of the spill and the chemicals involved. If the spill results in the formation of a toxic vapor cloud (by reaction with surrounding materials or by outbreak of fire) and its release (due to high vapor pressures under ambient conditions), then further evacuation efforts will be enforced. An assessment of meteorological

conditions and the calculated toxic corridor will be provided by the Weather Squadron, extension 2748.

When any spill occurs, only those persons involved in overseeing or performing emergency operations will be allowed within the designated hazard area. If possible, the area will be roped or otherwise blocked off.

8. Contact TAC/DEEV by telecon (AUTOVON 574-4430/7844), even if base personnel are uncertain of the spill classification. The purpose of the telecon is to verify the spill classification or aid in the classification when uncertainty exists, and to gather available information on reportable spills to support the initial command telecon report of USAF/LEEV. For spills occurring after normal duty hours or on weekends, the TAC/DE alert duty officer should be contacted through the TAC Command Post (AUTOVON 574-2224/2225). As much of the following information as can be reasonably determined should be initially reported.

- Name of installation
- Location of incident and geography
- OSC name and telephone number
- Time of spill

- Type and estimated quantity of spill substance
- Magnitude and severity of the threat to public health, welfare and natural resources
- Weather conditions at spill site
- Cause of incident
- Anticipated containment and clean-up action and effectiveness
- Need for assistance by national, regional or state response teams
- Any other pertinent information

9. Determine if a reportable spill has occurred. If so, a confirming message containing the available information identified above must be released and transmitted to TAC LANGLEY AFB VA/DEEV/SGPAE with information copies to HQ USAF WASH DC/LEEV/SGES, HQ AFESC TYNDALL AFB FL/DEVP/PA/DEMM, HQ AFMSC BROOKS AFB TX/SGP, USAF OEHL BROOKS AFB TX/ECW, HQ USAF WASH DC/LEYF (when POL is involved) and HQ USAF WASH DC/RDCM (when industrial facilities are involved). This message should be transmitted within 4 hours of the telecon notification to TAC/DEEV. If the telecon notification is made after 1500 hours local, the message will be transmitted no later than 1000 hours the following day.

10. Telephonic and message notification of other Federal and state agencies must be made promptly following telecon notification of reportable spill to TAC/DEEV. These agencies (New Mexico Environmental Improvement Division, Santa Fe, New Mexico (505) 827-9329) will be notified within 24 hours of any hazardous substance spill, regardless of quantity.

Most waste spills and leaks at the HWSF are easily contained within the berms and grated trenches, and can be collected with absorbent materials or pumped into a container. The contaminated area can then be flushed with water, or some other appropriate solvent. The rinsate and any contaminated absorbents will also be containerized for disposal.

DRMO will have in stock five eighty-five gallon overpack containers. 27 CSG/DEV or the Fire Department Spill kit will contain twenty fifty-five gallon drums and twenty thirty gallon drums in stock at all times. These drums will be the types approved under DOT and military container specifications.

The final rinsate of equipment and the facility will be analyzed for appropriate parameters (see Section C), depending on materials involved in the spill. A minimum of four samples will be taken.

PERMIT ATTACHMENT G.

Plans and Specifications Showing the Spacing of Aisles

10. Telephonic and message notification of other Federal and state agencies must be made promptly following telecon notification of reportable spill to TAC/DEV. These agencies (New Mexico Environment Department), Santa Fe, New Mexico (505) 827-9329) will be notified within 24 hours of any hazardous substance spill, regardless of quantity.

Most waste spills and leaks at the HWSF are easily contained within the berms and grated trenches, and can be collected with absorbent materials or pumped into a container. The contaminated area can then be flushed with water, or some other appropriate solvent. The rinsate and any contaminated absorbents will also be containerized for disposal.

DRMO will have in stock five eighty-five gallon overpack containers. 27 CSG/DEV or the Fire Department Spill kit will contain twenty fifty-five gallon drums and twenty eighty-five gallon drums in stock at all times. These drums will be the types approved under DOT and military container specifications.

The final rinsate of equipment and the facility will be analyzed for appropriate parameters (see Section C), depending on materials involved in the spill. A minimum of four samples will be taken.

G.4.e Prevention of Recurrence or Spread of Fires, Explosions, or Releases [40 CFR 264.56(e);]

Procedures which will be followed to prevent the spread of fires, explosions, or releases were discussed in Section G-4d.

The Environmental Coordinator will prepare a Pollution Incident Report which will assess the cause of the fire, explosion, or spill. This report will also indicate remedial actions which will be taken to prevent any recurrence of the hazardous situation.

G.f Storage and Treatment of Released Material [40 CFR 264.56 (f)and (g)];)

Any hazardous waste resulting from a spill, fire, or explosion will be placed in overpack drums, labeled, and turned in to DRMO-Cannon for Storage until eventual disposal at a state/EPA approved site. The Chemical Hazards Response Information System (CHRIS), Hazardous Chemical Data Sheets and Material Safety Data Forms will be consulted with regard to special procedures and precautions.

In the event that hazardous materials or wastes mix during a spill, mix with fire control water, produce a chemical reaction, initiate a health hazard or run-off from the facility, the Base Bioenvironmental Engineer will take samples to determine the chemical nature, pollutant concentration and extent of the spill as required for response actions and documentation.

Sampling and analysis methods will be in accordance with Test Methods for Evaluating Solid Waste, SW-846, or an equivalent method as specified in the Waste Analysis Plan (See Permit Attachments A-1 and A-2). In the event of a spill, samples will also be taken to determine that site decontamination is complete and waste residues are at background levels.

G.4.g Incompatible Waste [40 CFR 264.56 (h)(1):]

The On-Scene Coordinator will ensure that no wastes which may be incompatible with the released material are accepted at the DRMO until cleanup procedures are completed.

G.4.h Post-Emergency Equipment Maintenance [40 CFR 264.56(h)(2) and (i);]

After an emergency event, all emergency equipment that was utilized for clean-up purposes will be cleaned or replaced so that it will be fit for its intended use. Equipment will be triple-rinsed using water or an appropriate solvent. All rinses will be containerized. The third rinse will be analyzed for appropriate parameters, based on materials involved. An inspection of all safety equipment will be conducted as discussed in Section F-2 before operations are resumed [40 CFR 264.56 (i)]. The Regional U.S. EPA Administrator, state, and local authorities will be notified that post-emergency equipment maintenance has been performed and operations will resume.

G.4.i Container Spills and Leakage [40 CFR 264.56(g) and 264.171;]

Refer to Section G-4d for a discussion of emergency response procedures for container spills and leaks.

G.4.j Tank Spills and Leakage [40 CFR 264.194(c) and 264.56(g):]

No tanks will be utilized at this facility.

G.4.k Waste Piles Spills and Leakage [40 CFR 270.14(b)(7), 264.252 and 264.253;]

No waste piles wlll be maintained at this facility.

G.4.1 Surface Impoundments Spills and Leakage and Sudden Drops [40 CFR 270.14(b)(7), 264.222 and 264.227;]

No surface impoundments will be maintained at this facility. This section is not applicable.

G.4.m Landfill Leakage 40 CFR 264.302(b);

Sections G-4m(1) and (2) do not apply because this facility will not maintain a landfill for hazardous wastes.

G.5 Emergency Equipment [40 CFR Section 264.52(e);]

Two fire hydrants are located approximately 400 feet from the entrance to the storage facility. Also, a freeze-proof hydrant is located 300 feet southeast of the facility. Three portable fire extinguishers will be placed in strategic locations inside the facility.

Two emergency eyewash/shower stations will be located in the HWSF: one in the flammable/combustible storage area, and one in the loading/unloading area just outside the toxic/reactive storage area. A telephone and fire alarm will be located in the facility. Personnel protective equipment available at the HWSF is listed in Table G-4.

Other equipment available at Cannon AFB for emergency response is shown in Table G-5. This equipment is stored in Buildlng 323 and will be used to respond to any major spill on Cannon AFB. In addition, Table G-6 lists equipment stored at each accumulation point for hazardous wastes.

TABLE G-4
DRMO EMERGENCY EQUIPMENT LIST
TSDF BUILDING 226 CAFB,NM

EQUIPMENT	LOCATION	PHY. DESCRIPTION
YALE 'EE' Electirc Forklift	Bldg. 226	Good
Manual Drum lift	Bldg. 226	Good
Manual Pallet Jack	Bldg. 226	Good
Safe Step (AD)Sorbent	Bldg. 226	Good
85-Gallon Over Pack Drums	Bldg. 226	Good
Broom	Bldg. 226	Good
Nonsparking Shovel	Bldg. 226	Good
Bronze Bung Wrench	Bldg. 226	Good
Every Ready First Aid Kit	Bldg. 226	Good
4'X 4' Plastic Bags	Bldg. 226	Good
Chemical Resistant		
Plaxtic Footwear Covers	Bldg. 226	Good
Disposal Shoe Slip Clovers	Bldg. 226 & 215	Good
Rubber Over Boots, Black	Bldg. 226 & 215	Good
Short unlined rubber gloves	Bldg. 226 & 215	Good
Lined rubber gloves	Bldg. 226 & 215	Good
Sol-vex Long, Blue gloves	Bldg. 226 & 215	Good
Neoprene Chemical Protective pioneer style	Bldg. 226	Good
Leather gloves by Ketch All Company	Bldg. 226	Good
Aural (Ear) protector	Bldg. 226	Good
Goggles, Cesco	Bldg. 226	Good
Goggles, Splash, sun, wind	Bldg. 226	Good
Eye protection glasses w/side shields	Bldg. 226	Good
Apron, Rubber, White	Bldg. 226	Good
Acid Protection Suit, Yellow, Rubber Rain Coat and pants	Bldg. 215	Good
Snap Button Type Rain Boots	Bldg. 215	Good
Coveralls, Yellow, Disposal	Bldg. 226	Good
1 piece Coveralls, White Disposal	Bldg. 215	Good
MSA Ultra Twin Respirator and cartridges	Bldg. 226	Good
Face Shield, Industrial	Bldg. 226	Good
White Safety Hat, Sentry	Bldg. 226	Good

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DATE:
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Section G
Cannon

TABLE G-4
DRMO EMERGENCY EQUIPMENT LIST
TSDF BUILDING 226 CAFB,NM

EQUIPMENT	LOCATION	PHY. DESCRIPT
YALE 'EE' Electric Forklift	Bldg. 226	Good
Manual Drum lift	Bldg. 226	Good
Manual Pallet Jack	Bldg. 226	Good
Safe Step (AD)Sorbent	Bldg. 226	Good
85-Gallon Over Pack Drums	Bldg. 226	Good
Broom	Bldg. 226	Good
Nonsparking Shovel	Bldg. 226	Good
Bronze Bung Wrench	Bldg. 226	Good
Every Ready First Aid Kit	Bldg. 226	Good
4'X 4' Plastic Bags	Bldg. 226	Good
Chemical Resistant		
Plaxtic Footwear Covers	Bldg. 226	Good
Disposal Shoe Slip Clovers	Bldg. 226 & 215	Good
Rubber Over Boots, Black	Bldg. 226 & 215	Good
Short unlined rubber gloves	Bldg. 226 & 215	Good
Lined rubber gloves	Bldg. 226 & 215	Good
Sol-vex Long, Blue gloves	Bldg. 226 & 215	Good
Neoprene Chemical Protective pioneer style	Bldg. 226	Good
Leather gloves by Ketch All Company	Bldg. 226	Good
Aural (Ear) protector	Bldg. 226	Good
Goggles, Cesco	Bldg. 226	Good
Goggles, Splash, sun, wind	Bldg. 226	Good
Eye protection glasses w/side shields	Bldg. 226	Good
Apron, Rubber, White	Bldg. 226	Good
Acid Protection Suit, Yellow, Rubber Rain Coat and pants	Bldg. 215	Good
Snap Button Type Rain Boots	Bldg. 215	Good
Coveralls, Yellow, Disposal	Bldg. 226	Good
1 piece Coveralls, White Disposal	Bldg. 215	Good
Face Shield, Industrial	Bldg. 226	Good
White Safety Hat, Sentry	Bldg. 226	Good

TABLE G-5

EMERGENCY RESPONSE EQUIPMENT

ITEM	AMOUNT ON HAND
85 gal drum	48
55 gal drum (OH)	48
55 gal drum (CH)	48
Rags	12 bundles
Neoprene Gloves	60 pair
Unvented Goggles	60
Tyvek Suits	60
Coveralls	60
Hard Hats	60
Rubber Aprons	60
Face Shields	60
Shovels	6
Plastic Bags	12 boxes
Detergent	100 gallons
Bleach	100 gallons
Vermiculite	12 bags
1/2" Tubing	60 feet
Bung Wrench	2
Rubber Boots	60 pair
Plastic Sheets	36 rolls
Absorbent Pads	200
Sodium Bicarbonate	5 100-lb. bags
Freon-11	6 35 gal. drums
Handpump	2
Respiration w/ Cartridges	30

TABLE G-6

CONTENTS OF SPILL KIT

(ACCUMULATION POINTS)

One 55 gallon open-head drum
Four pair neoprene gloves
Two pair unvented goggles
Two respirators and pesticide cartridges
Two chemical resistant aprons
Two pair rubber boots
Two pair 100% cotton overalls
One dust pan
One shop brush
One square point "D" handle shovel
One dozen polyethylene bags with ties (Heavy duty - 2 mil)
One 18-inch pushbroom, synthetic fibers
One gallon liquid detergent
Three gallons household bleach
80 pounds absorbent material
One bung wrench
One drum spigot
One 1-3/8" open-end wrench
One drum pump (manual)
30 foot 1/2 " polyethylene tubing
One wrench bung 2-1/2"
One wrench bung 3/4"
One first aid kit
Blank labels

G.6 Coordination Agreements [40 CFR 264.52(c), 264.53(b), and 264.37(b);]

The Curry and Roosevelt County Hospitals, and the City of Clovis Fire Department will provide services to the AFB in an emergency situation. These coordination agreements are shown in Appendix G-1. Copies of any correspondence with these organizations will be added to this appendix. A copy of this contingency plan will be provided to these organizations.

The agreement between fire departments states that the requesting party (in this case, the Cannon AFB Fire Department) will be in charge of all operations. The Disaster Preparedness Plan (OPLAN 355-1) assigns the responsibility of Medical Disaster Operations to USAF Hospital, Cannon AFB.

Documentation will also be kept of the refusal of an organization to enter into such an agreement.

G.7 Evacuation Plan [40 CFR 264.52(f);]

All emergencies require prompt and deliberate action. In the event of any major emergency, it will be necessary to follow an established set of procedures. Such established procedures will be followed as closely as possible; however, in specific emergency situations, the On-Scene Co-ordinator (OSC) may deviate from the procedures to provide a more effective plan for bringing the situation under control. The OSC is responsible for determining which emergency situations require plant evacuation.

In the event an evacuation from the HWSF is necessary, the following actions will be taken:

1. The signal for evacuation will be activated. On Cannon AFB, military police inform all personnel using loudspeakers.

2. No further entry of visitors, contractors, or trucks will be permitted. All vehicle traffic within the DRMO-property will cease to allow the safe exit of personnel and movement of emergency equipment.

3. ALL personnel, visitors, and contractors will immediately leave through the exit gate.

4. No persons shall remain or re-enter the location unless specifically authorized by the person or persons calling for the evacuation. In allowing this, the person in charge assumes responsibility for those persons within the perimeter. Those within the fenced area will normally only include fire brigade personnel or emergency teams.

5. ALL persons will be accounted for by their immediate supervisors, who will ensure that personnel stay together and proceed to a safe location.

The primary evacuation route for the HWSF is north on W Street to Perimeter Road. The alternate route is south on W Street to Torch Boulevard, and southwest on Torch. The second alternate route is south on W Street to Torch Boulevard, southwest on Torch to Argentia. and northwest on Argentia to Overlord Boulevard.

6. Re-entry into the facility will be made only after clearance is given by the OSC.

The On-Scene Coordinator will determine the need for evacuation of additional personnel in the vicinity of the facility.

All personnel are trained in evacuation procedures and means of exit from their respective work areas. Drills are held regularly to practice these procedures.

G.8 Required Reports [40 CFR 264.56(j);]

Any emergency event (e.g., fire, explosion, etc.) that requires implementation of the Contingency Plan will be reported in writing within 15 days to the New Mexico Environmental Improvement Division and/or the Region VI Administrator of EPA. This report must include the information items listed in Figure G-1.

In addition, the DRMO as a tenant on Cannon AFB has internal reporting requirements. The following incidents require that a report be filed:

- All fires
- Chemical spills of more than 5 gallons (or smaller volumes if highly toxic materials are involved)
- All injuries except minor cuts and bruises
- All burns and chemical irritations
- All equipment damage due to malfunction or operating error
- All "near misses" of the above that could have had serious consequences

A form similar to that shown in Figure G-2 will be used for this purpose and will be sent to DRMR, Ogden and DRMS, Battle Creek.

Figure G-1

POLLUTION INCIDENT REPORT

- Name and address of installation and/or owner
- Name and telephone number of OSC
- Incident report (initial, second, third, final)
- Date and Item of incident
- Time of official spill notification to the National Response Center and other regional and state officials
- Location of incident and the nature of the terrain at the location, to include surface and subsurface drainage characteristics and relationships to water bodies (estimate extent of area affected such as miles of stream or acres of lake)
- Weather conditions and how they affected response action
- Cause of incident
- Type and estimated amount (barrels, gallons, pounds) of pollutant and the official size classification (minor, medium, major)
- Actual damage and/or potential threat to human life, to property (private, state, or Federal), and to plant or animal life
- Corrective action taken to eliminate pollution source
- Corrective action taken to remove pollutant
- Assistance required

Figure G-1 (Continued)

POLLUTION INCIDENT REPORT

- Estimated completion date of remedial actions and anticipated effectiveness
- Estimated quantity and disposition of spill material and contaminated soil
- Confirmation that emergency response equipment is back in operation before resuming operating activities
- Description of any problems encountered during implementation of the SPR plan and an explanation of how the Spill Prevention and Response Plan was, or will be, modified to prevent the recurrence of the spill event
- Anticipated or actual reaction by the news media and public to the incident (specify potential for liability in the internal Air Force reports only)

FIGURE G-2

REPORTING FORM FOR EMERGENCY EVENTS

Name, address, and phone number of owner or operator

Name, address, and phone number of facility

Date, time, and type of incident (e.g., fire, explosion, etc.)

Name and quantity of material(s) involved

Extent of injuries (if any)

Assessment of actual or potential hazards to human health or the environment (if applicable)

Estimated quantity and disposition of material recovered from the incident

Send to: New Mexico Environmental Improvement Division
Hazardous Waste Management Section
Groundwater and Hazardous Waste Bureau
Crown Bldg., 725 St. Michael's Drive
P.O. Box 968
Santa Fe, NM 87504-0968

hazardous substances. Elements and compounds are listed first, in alphabetical sequence. Following the listing of elements and compounds is a listing of waste streams and their corresponding "F numbers". They are listed in numerical sequence by "F number". Column 2 of the list, entitled *"Synonyms"*, contains the names of synonyms for certain of the elements and are listed for waste streams. Synonyms are useful in identifying hazardous substances and in selecting proper shipping names. Column 3 of the list, entitled *"Reportable quantity (RQ)"*, contains the reportable quantity (RQ), in pounds and kilograms, for each hazardous substance listed in Column 1.

3. The procedure for selecting a proper compounds listed in Column 1. No synonyms shipping name for a hazardous substance is set forth in § 172.101(c)(9).

4. A series of notes is used throughout the list to provide additional information concerning certain hazardous materials. These notes are explained at the end of the list.

BILLING CODE 4910-60-M

LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES

Hazardous Substance	Synonyms	Reportable Quantity(RQ) Pounds(Kilograms)
Acenaphthene		100 (45.4)
Acenaphthylene		5000 (2270)
Acetaldehyde *	Ethanal	1000 (454)
Acetaldehyde, chloro-	Chloroacetaldehyde	1000 (454)
Acetaldehyde, trichloro-	Chloral	1 (0.454)
Acetamide, N-(aminothioxomethyl)-	1-Acetyl-2-thiourea	1000 (454)
Acetamide, N-(4-ethoxyphenyl)-	Phenacetin	1 (0.454)
Acetamide, N-fluoren-2-yl-	2-Acetylaminofluorene	1 (0.454)
Acetamide, 2-fluoro-	Fluoroacetamide	100 (45.4)
Acetic acid *		5000 (2270)
Acetic acid, ethyl ester	Ethyl acetate	5000 (2270)
Acetic acid, fluoro-, sodium salt	Fluoroacetic acid, sodium salt	10 (4.54)
Acetic acid, lead salt	Lead acetate	5000 (2270)
Acetic acid, thallium(I) salt	Thallium(I) acetate	100 (45.4)
Acetic anhydride *		5000 (2270)
Acetimidic acid, N-[(methylcarbamoyl)oxy]thio-methyl ester	Methomyl	100 (45.4)
Acetone *	2-Propanone	5000 (2270)
Acetone cyanohydrin *	Propanenitrile, 2-hydroxy-2-methyl-	10 (4.54)
	2-Methyllactonitrile	
Acetonitrile *	Ethanenitrile	5000 (2270)
3-(alpha-Acetonylbenzyl)-4-hydroxycoumarin and salts	Warfarin	100 (45.4)
Acetophenone	Ethanone, 1-phenyl-	5000 (2270)
2-Acetylaminofluorene	Acetamide, N-fluoren-2-yl-	1 (0.454)
Acetyl bromide *		5000 (2270)
Acetyl chloride *	Ethanoyl chloride	5000 (2270)
1-Acetyl-2-thiourea	Acetamide, N-(aminothioxomethyl)-	1000 (454)
Acrolein *	2-Propenal	1 (0.454)
Acrylamide	2-Propenamide	5000 (2270)
Acrylic acid *	2-Propenoic acid	5000 (2270)
Acrylonitrile *	2-Propenenitrile	100 (45.4)
Adipic acid		5000 (2270)
Alanine, 3-[p-bis(2-chloroethyl)amino]phenyl-, L-	Melphalan	1 (0.454)
Aldicarb	Propanal, 2-methyl-2-(methylthio)-, O-[(methylamino)carbonyl]oxime	1 (0.454)
Aldrin *	1,2,3,4,10-10-Hexachloro-1,4,4a,5,8,8a-hexahydro-1,4:5,8-endo,exo-dimethanonaphthalene	1 (0.454)
Allyl alcohol *	2-Propen-1-ol	100 (45.4)
Allyl chloride *		1000 (454)
Aluminum phosphide *		100 (45.4)
Aluminum sulfate *		5000 (2270)
2-Amino-1-methyl benzene	o-Toluidine	1 (0.454)
4-Amino-1-methyl benzene	p-Toluidine	1 (0.454)
5-(Aminomethyl)-3-isoxazolol	3(2H)-Isoxazolone, 5-(aminomethyl)-	1000 (454)
4-Aminopyridine	4-Pyridinamine	1000 (454)
Amitrole	1H-1,2,4-Triazol-3-amine	1 (0.454)
Ammonia *		100 (45.4)
Ammonium acetate		5000 (2270)
Ammonium benzoate		5000 (2270)
Ammonium bicarbonate		5000 (2270)
Ammonium bichromate	Ammonium dichromate @	1000 (454)
Ammonium bifluoride *		100 (45.4)
Ammonium bisulfite *		5000 (2270)
Ammonium carbamate *		5000 (2270)
Ammonium carbonate *		5000 (2270)
Ammonium chloride		5000 (2270)
Ammonium chromate		1000 (454)
Ammonium citrate, dibasic		5000 (2270)
Ammonium dichromate @	Ammonium bichromate	1000 (454)
Ammonium fluoborate *		5000 (2270)
Ammonium fluoride *		100 (45.4)
Ammonium hydroxide *		1000 (454)
Ammonium oxalate *		5000 (2270)
Ammonium picrate *	Phenol, 2,4,6-trinitro-, ammonium salt	10 (4.54)
Ammonium silicofluoride *		1000 (454)
Ammonium sulfamate		5000 (2270)
Ammonium sulfide *		100 (45.4)
Ammonium sulfite		5000 (2270)
Ammonium tartrate		5000 (2270)
Ammonium thiocyanate		5000 (2270)
Ammonium thiosulfate		5000 (2270)
Ammonium vanadate	Vanadic acid, ammonium salt	1000 (454)
Amyl acetate *		5000 (2270)
iso-Amyl acetate		
sec-Amyl acetate		
tert-Amyl acetate		
Aniline *	Benzenamine	5000 (2270)
Anthracene		5000 (2270)

LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

Hazardous Substance	Synonyms	Reportable Quantity (RQ) Pounds (Kilograms)
Antimony c		5000 (2270)
ANTIMONY AND COMPOUNDS		**
Antimony pentachloride *		1000 (454)
Antimony potassium tartrate *		100 (45.4)
Antimony tribromide *		1000 (454)
Antimony trichloride *		1000 (454)
Antimony trifluoride *		1000 (454)
Antimony trioxide		1000 (454)
Aroclor 1016	POLYCHLORINATED BIPHENYLS (PCBs)	10 (4.54)
Aroclor 1221	POLYCHLORINATED BIPHENYLS (PCBs)	10 (4.54)
Aroclor 1232	POLYCHLORINATED BIPHENYLS (PCBs)	10 (4.54)
Aroclor 1242	POLYCHLORINATED BIPHENYLS (PCBs)	10 (4.54)
Aroclor 1248	POLYCHLORINATED BIPHENYLS (PCBs)	10 (4.54)
Aroclor 1254	POLYCHLORINATED BIPHENYLS (PCBs)	10 (4.54)
Aroclor 1260	POLYCHLORINATED BIPHENYLS (PCBs)	10 (4.54)
Arsenic * c		1 (0.454)
Arsenic acid *		1 (0.454)
ARSENIC AND COMPOUNDS		**
Arsenic disulfide *		5000 (2270)
Arsenic(III) oxide	Arsenic trioxide *	5000 (2270)
Arsenic(V) oxide	Arsenic pentoxide *	5000 (2270)
Arsenic pentoxide *	Arsenic(V) oxide	5000 (2270)
Arsenic trichloride *		5000 (2270)
Arsenic trioxide *	Arsenic(III) oxide	5000 (2270)
Arsenic trisulfide *		5000 (2270)
Arsine, diethyl-	Diethylarsine	1 (0.454)
Asbestos * cc		1 (0.454)
Auramine	Benzenamine, 4,4'-carbonimidoylbis (N,N-dimethyl-	1 (0.454)
Azaserine	L-Serine, diazoacetate (ester)	1 (0.454)
Aziridine	Ethylenimine	1 (0.454)
Azinphos methyl @	Guthion *	1 (0.454)
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-	Mitomycin C	1 (0.454)
Barium cyanide *		10 (4.54)
Benz[j]aceanthrylene, 1,2-dihydro-3-methyl-	3-Methylcholanthrene	1 (0.454)
Benz[c]acridine	3,4-Benzacridine	1 (0.454)
3,4-Benzacridine	Benz[c]acridine	1 (0.454)
Benzal chloride	Benzene, dichloromethyl-	5000 (2270)
Benz[a]anthracene	Benzo[a]anthracene	1 (0.454)
1,2-Benzanthracene	1,2-Benzanthracene	1 (0.454)
	Benz[a]anthracene	1 (0.454)
1,2-Benzanthracene, 7,12-dimethyl-	Benzo[a]anthracene	1 (0.454)
Benzenamine	7,12-Dimethylbenz[a]anthracene	5000 (2270)
Benzenamine, 4,4'-carbonimidoylbis (N,N-dimethyl-	Aniline *	1 (0.454)
Benzenamine 4-chloro-	Auramine	1000 (454)
Benzenamine, 4-chloro-2-methyl-, hydrochloride	p-Chloroaniline	1 (0.454)
Benzenamine, N,N-dimethyl-4-phenylazo-	4-Chloro-o-toluidine, hydrochloride	1 (0.454)
Benzenamine, 4,4'-methylenebis(2-chloro-	Dimethylaminoazobenzene	1 (0.454)
Benzenamine, 2-methyl-, hydrochloride	4,4'-Methylenebis(2-chloroaniline)	1 (0.454)
Benzenamine, 2-methyl-5-nitro-	o-Toluidine hydrochloride	1 (0.454)
Benzenamine, 4-nitro-	5-Nitro-o-toluidine	1 (0.454)
Benzene *	p-Nitroaniline	5000 (2270)
Benzene, 1-bromo-4-phenoxy-	4-Bromophenyl phenyl ether	1000 (454)
Benzene, chloro-	Chlorobenzene *	100 (45.4)
Benzene, chloromethyl-	Benzyl chloride *	100 (45.4)
Benzene, 1,2-dichloro-	o-Dichlorobenzene *	100 (45.4)
Benzene, 1,3-dichloro-	1,2-Dichlorobenzene	100 (45.4)
	m-Dichlorobenzene	100 (45.4)
Benzene, 1,4-dichloro-	1,3-Dichlorobenzene	100 (45.4)
	p-Dichlorobenzene *	100 (45.4)
Benzene, dichloromethyl-	1,4-Dichlorobenzene	5000 (2270)
Benzene, 2,4-diisocyanatomethyl-	Benzal chloride	100 (45.4)
Benzene, dimethyl	Toluene diisocyanate *	1000 (454)
m-Benzene, dimethyl	Xylene * (mixed)	
o-Benzene, dimethyl	m-Xylene	
p-Benzene, dimethyl	o-Xylene	
Benzene, hexachloro-	p-Xylene	1 (0.454)
Benzene, hexahydro-	Hexachlorobenzene	1000 (454)
Benzene, hydroxy-	Cyclohexane *	1000 (454)
Benzene, methyl-	Phenol *	1000 (454)
Benzene, 1-methyl-2,4-dinitro-	Toluene *	1000 (454)
Benzene, 1-methyl-2,6-dinitro-	2,4-Dinitrotoluene *	1000 (454)
Benzene, 1,2-methylenedioxy-4-allyl-	2,6-Dinitrotoluene *	1000 (454)
Benzene, 1,2-methylenedioxy-4-propenyl-	Safrole	1 (0.454)
Benzene, 1,2-methylenedioxy-4-propyl-	Isosafrole	1 (0.454)
Benzene, 1-methylethyl-	Dihydrosafrole	1 (0.454)
Benzene, nitro-	Cumene	5000 (2270)
Benzene, pentachloro-	Nitrobenzene *	1000 (454)
Benzene, pentachloronitro-	Pentachlorobenzene	10 (4.54)
Benzene, 1,2,4,5-tetrachloro-	Pentachloronitrobenzene	1 (0.454)
Benzene, trichloromethyl-	1,2,4,5-Tetrachlorobenzene	5000 (2270)
Benzene, 1,3,5-trinitro-	Benzotrichloride	1 (0.454)
Benzeneacetic acid, 4-chloro-alpha-(4-chlorophenyl)-alpha-hydroxy-, ethyl ester	sym-Trinitrobenzene *	10 (4.54)
1,2-Benzenedicarboxylic acid anhydride	Ethyl 4,4'-dichlorobenzilate	1 (0.454)
1,2-Benzenedicarboxylic acid, [bis(2-ethylhexyl)] ester	Phthalic anhydride	5000 (2270)
1,2-Benzenedicarboxylic acid, dibutyl ester	Bis(2-ethylhexyl)phthalate	1 (0.454)
	Di-n-butyl phthalate	10 (4.54)
	Dibutyl phthalate	
1,2-Benzenedicarboxylic acid, diethyl ester	n-Butyl phthalate *	
	Diethyl phthalate	1000 (454)

LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

Hazardous Substance	Synonyms	Reportable Quantity (RQ) Pounds (kilograms)
1,2-Benzenedicarboxylic acid, dimethyl ester	Dimethyl phthalate	5000 (2270)
1,2-Benzenedicarboxylic acid, di-n-octyl ester	Di-n-octyl phthalate	5000 (2270)
1,3-Benzenediol	Resorcinol *	5000 (2270)
1,2-Benzenediol, 4-[1-hydroxy-2-(methylamino)ethyl]-	Epinephrine	1000 (454)
Benzenesulfonic acid chloride	Benzenesulfonyl chloride	100 (45.4)
Benzenesulfonyl chloride	Benzenesulfonic acid chloride	100 (45.4)
Benzenethiol	Phenyl mercaptan @	100 (45.4)
Benzidine *	Thiophenol	
1,2-Benzisothiazol-3-one, 1,1-dioxide, and salts	(1,1'-Biphenyl)-4,4'-diamine	1 (0.454)
Benzo(a)anthracene	Saccharin and salts	1 (0.454)
Benzo(b)fluoranthene	Benz(a)anthracene	1 (0.454)
Benzo(k)fluoranthene	1,2-Benzanthracene	1 (0.454)
Benzo(rst)fluorene		1 (0.454)
Benzoic acid	Fluoranthene	100 (45.4)
Benzonitrile *		5000 (2270)
Benzo(ghi)perylene		5000 (2270)
Benzo(a)pyrene	3,4-Benzopyrene	5000 (2270)
3,4-Benzopyrene	Benzo(a)pyrene	1 (0.454)
p-Benzoquinone	1,4-Cyclohexadienedione	1 (0.454)
Benzotrichloride	Benzene, trichloromethyl-	10 (4.54)
Benzoyl chloride *		1 (0.454)
1,2-Benzphenanthrene	Chrysene	1000 (454)
Benzyl chloride *	Benzene, chloromethyl-	1 (0.454)
Beryllium c	Beryllium dust c	100 (45.4)
BERYLLIUM AND COMPOUNDS		1 (0.454)
Beryllium chloride *		**
Beryllium dust c	Beryllium c	5000 (2270)
Beryllium fluoride *		1 (0.454)
Beryllium nitrate *		5000 (2270)
alpha - BHC		5000 (2270)
beta - BHC		1 (0.454)
delta - BHC		1 (0.454)
gamma - BHC		1 (0.454)
2,2'-Bioxirane	Hexachlorocyclohexane (gamma isomer)	1 (0.454)
(1,1'-Biphenyl)-4,4'-diamine	Lindane *	1 (0.454)
(1,1'-Biphenyl)-4,4'-diamine,3,3'-dimethyl-	1,2,3,4-Diepoxybutane	1 (0.454)
(1,1'-Biphenyl)-4,4'-diamine,3,3'-dichloro-	Benzidine *	1 (0.454)
(1,1'-Biphenyl)-4,4'-diamine,3,3'-dimethoxy-	3,3'-Dimethylbenzidine	1 (0.454)
Bis(2-chloroethoxy) methane	3,3'-Dichlorobenzidine	1 (0.454)
Bis(2-chloroethyl) ether	3,3'-Dimethoxybenzidine	1 (0.454)
Bis(2-chloroisopropyl) ether	Ethane, 1,1'-(methylenebis(oxy))bis(2-chloro-	1000 (454)
Bis(chloromethyl) ether	Dichloroethyl ether	1 (0.454)
Bis(dimethylthiocarbamoyl) disulfide	Ethane, 1,1'-oxybis(2-chloro-	
Bis(2-ethylhexyl)maleate	Propane, 2,2'-oxybis(2-chloro-	1000 (454)
Bromine cyanide	Methane, oxybis(chloro-	1 (0.454)
Bromoacetone *	Thiram	10 (4.54)
Bromoform	1,2-Benzenedicarboxylic acid, bis(2-ethylhexyl) ester	1 (0.454)
4-Bromophenyl phenyl ether	Cyanogen bromide *	1000 (454)
Brucine	2-Propanone, 1-bromo-	1000 (454)
1,3-Butadiene, 1,1,2,3,4,4-hexachloro-	Methane, tribromo-	100 (45.4)
1-Butanamine, N-butyl-N-nitroso-	Benzene, 1-bromo-4-phenoxy-	100 (45.4)
Butanoic acid, 4-[bis(2-chloroethyl)amino]benzene-	Strychnidin-10-one, 2,3-dimethoxy-	100 (45.4)
1-Butanol	Hexachlorobutadiene *	1 (0.454)
2-Butanone	N-Nitrosodi-n-butylamine	1 (0.454)
2-Butanone peroxide	Chlorambucil	1 (0.454)
2-Butene-cis	n-Butyl alcohol *	1 (0.454)
2-Butene, 1,4-dichloro-	Ethyl methyl ketone @	5000 (2270)
Butyl acetate *	Methyl ethyl ketone *	5000 (2270)
sec-Butyl acetate	Methyl ethyl ketone peroxide *	
tert-Butyl acetate	Crotonaldehyde *	10 (4.54)
n-Butyl alcohol *	1,4-Dichloro-2-butene *	100 (45.4)
Butylamine *		1 (0.454)
iso-Butylamine	1-Butanol	5000 (2270)
sec-Butylamine		1000 (454)
tert-Butylamine		
Butyl benzyl phthalate		
n-Butyl phthalate *	Di-n-butyl phthalate	100 (45.4)
Butyric acid *	Dibutyl phthalate	10 (4.54)
iso-Butyric acid	1,2-Benzenedicarboxylic acid, dibutyl ester	
Cacodylic acid	Hydroxydimethylarsine oxide	5000 (2270)
Cadmium c		1 (0.454)
Cadmium acetate		1 (0.454)
CADMIUM AND COMPOUNDS		100 (45.4)
Cadmium bromide		**
Cadmium chloride		100 (45.4)
Calcium arsenate *		100 (45.4)
Calcium arsenite *		1000 (454)
Calcium carbide *		1000 (454)
Calcium chromate		10 (4.54)
Calcium cyanide *	Chromic acid, calcium salt	1000 (454)
Calcium dodecylbenzene sulfonate		10 (4.54)
Calcium hypochlorite *		1000 (454)
Camphene, octachloro-	Toxaphene *	10 (4.54)
		1 (0.454)

List of Hazardous Substances and Reportable Quantities—Continued

Hazardous Substance	Synonyms	Reportable Quantity(RQ) Pounds(Kilograms)
Captan		
Carbamic acid, ethyl ester	Ethyl carbamate (Urethan)	10 (4.54)
Carbamic acid, methylnitroso-, ethyl ester	N-Nitroso-N-methylurethane	1 (0.454)
Carbamide, N-ethyl-N-nitroso-	N-Nitroso-N-ethylurea	1 (0.454)
Carbamide, N-methyl-N-nitroso-	N-Nitroso-N-methylurea	1 (0.454)
Carbamide, thio-	Thiourea	1 (0.454)
Carbamimidoselenoic acid	Selenourea	1 (0.454)
Carbamoyl chloride, dimethyl-	Dimethylcarbamoyl chloride	1000 (454)
Carbaryl *		1 (0.454)
Carbofuran *		100 (45.4)
Carbon bisulfide *	Carbon disulfide *	10 (4.54)
Carbon disulfide *	Carbon bisulfide *	100 (45.4)
Carbonic acid, dithallium (I) salt	Thallium(I) carbonate	100 (45.4)
Carbonochloridic acid, methyl ester	Methyl chlorocarbonate	100(45.4)
Carbon oxyfluoride	Carbonyl fluoride	1000 (454)
Carbon tetrachloride *	Methane, tetrachloro-	1000 (454)
Carbonyl chloride	Phosgene *	5000 (2270)
Carbonyl fluoride	Carbon oxyfluoride	1000 (454)
Chloral	Acetaldehyde, trichloro-	1000 (454)
Chlorambucil	Butanoic acid, 4-[bis(2-chloroethyl)amino]benzene-	1 (0.454)
Chlordane *	Chlordane, technical *	1 (0.454)
CHLORDANE (TECHNICAL MIXTURE AND METABOLITES)	4,7-Methanoindan, 1,2,4,5,6,7,8,8-octachloro-3a,4,7,7a-tetrahydro-	1 (0.454)
Chlordane, technical *		**
CHLORINATED BENZENES	Chlordane *	1 (0.454)
CHLORINATED ETHANES	4,7-Methanoindan, 1,2,4,5,6,7,8,8-octachloro-3a,4,7,7a-tetrahydro-	**
CHLORINATED NAPHTHALENE		**
CHLORINATED PHENOLS		**
Chlorine *		**
Chlorine cyanide	Cyanogen chloride *	10 (4.54)
Chlornaphazine	2-Naphthylamine, N,N-bis(2-chloroethyl)-	10 (4.54)
Chloroacetaldehyde	Acetaldehyde, chloro-	1 (0.454)
CHLOROALKYL ETHERS		1000 (454)
p-Chloroaniline	Benzenamine, 4-chloro-	**
Chlorobenzene *	Benzene, chloro-	1000 (454)
4-Chloro-m-cresol	p-Chloro-m-cresol	100 (45.4)
p-Chloro-m-cresol	Phenol, 4-chloro-3-methyl-	5000 (2270)
Chlorobromomethane	Phenol, 4-chloro-3-methyl-	5000 (2270)
1-Chloro-2,3-epoxypropane	4-Chloro-m-cresol	100 (45.4)
Chloroethane	Epichlorohydrin *	1000 (454)
2-Chloroethyl vinyl ether	Oxirane, 2-(chloromethyl)-	1 (0.454)
Chloroform *	Ethyl chloride @	1000 (454)
Chloromethane	Ethene, 2-chloroethoxy-	5000 (2270)
Chloromethyl methyl ether	Methane, trichloro-	1 (0.454)
beta-Chloronaphthalene	Methane, chloro-	1 (0.454)
2-Chloronaphthalene	Methyl chloride	1 (0.454)
2-Chlorophenol	Methane, chloromethoxy-	5000 (2270)
o-Chlorophenol	Methylchloromethyl ether @	5000 (2270)
4-Chlorophenyl phenyl ether	Naphthalene, 2-chloro-	100 (45.4)
1-(o-Chlorophenyl)thiourea	2-Chloronaphthalene	100 (45.4)
3-Chloropropionitrile	beta-Chloronaphthalene	5000 (2270)
Chlorosulfonic acid *	Naphthalene, 2-chloro-	5000 (2270)
4-Chloro-o-toluidine, hydrochloride	o-Chlorophenol	100 (45.4)
Chlorpyrifos *	Phenol, 2-chloro-	100 (45.4)
Chromic acetate	Phenol, 2-chloro-	100 (45.4)
Chromic acid *	2-Chlorophenol	5000 (2270)
Chromic acid, calcium salt	Benzenamine, 4-chloro-2-methyl-, hydrochloride	1 (0.454)
Chromic sulfate *		1 (0.454)
Chromium c		1000 (454)
CHROMIUM AND COMPOUNDS	Calcium chromate	1000 (454)
Chromous chloride		1000 (454)
Chrysene		1000 (454)
Cobaltous bromide		1 (0.454)
Cobaltous formate	1,2-Benzphenanthrene	1000 (454)
Cobaltous sulfamate		1000 (454)
Coke Oven Emissions		1000 (454)
Copper c		1000 (454)
COPPER AND COMPOUNDS		1 (0.454)
Copper cyanide *		5000 (2270)
Coumaphos *		**
Creosote		10 (4.54)
Cresols *		10 (4.54)
m-Cresols	Cresylic acid	1 (0.454)
o-Cresols	m-Cresylic acid	1000 (454)
p-Cresols	o-Cresylic acid	
Cresylic acid	p-Cresylic acid	
m-Cresols	Cresols *	1000 (454)
o-Cresols	m-Cresylic acid	
p-Cresols	o-Cresylic acid	
Crotonaldehyde *	p-Cresylic acid	
Cumene	2-Butenal	100 (45.4)
	Benzene, 1-methylethyl-	5000 (2270)

LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

Hazardous Substance	Synonyms	Reportable Quantity(RQ) Pounds(Kilograms)
Cupric acetate		100 (45.4)
Cupric acetoarsenite *		100 (45.4)
Cupric chloride *		10 (4.54)
Cupric nitrate *		100 (45.4)
Cupric oxalate		100 (45.4)
Cupric sulfate		10 (4.54)
Cupric sulfate ammoniated		100 (45.4)
Cupric tartrate		100 (45.4)
CYANIDES		**
Cyanides (soluble cyanide salts), not elsewhere specified *		10 (4.54)
Cyanogen *		100 (45.4)
Cyanogen bromide *	Bromine cyanide	1000 (454)
Cyanogen chloride *	Chlorine cyanide	10 (4.54)
1,4-Cyclohexadienedione	p-Benzoquinone	10 (4.54)
Cyclohexane *	Benzene, hexahydro-	1000 (454)
Cyclohexanone		5000 (2270)
1,3-Cyclopentadiene, 1,2,3,4,5,5-hexachloro-	Hexachlorocyclopentadiene *	1 (0.454)
Cyclophosphamide	2H-1,3,2-Oxazaphosphorine,2-[bis(2-chloroethyl)amino] tetrahydro-2-oxide	1 (0.454)
2,4-D Acid	2,4-D *, salts and esters *	100 (45.4)
	2,4-Dichlorophenoxyacetic acid, salts and esters	
2,4-D Esters *		100 (45.4)
2,4-D *, salts and esters *	2,4-D Acid	100 (45.4)
	2,4-Dichlorophenoxyacetic acid *, salts and esters *	
Daunomycin	5,12-Naphthacenedione, (8S-cis)-8-acetyl-10-[3-amino-2,3,6-trideoxy-alpha-L-lyxo-hexopyranosyl)oxy]-7,8,9,10-tetrahydro-6,8,11-trihydroxy-1-methoxy-.	1 (0.454)
DDD	Dichlorodiphenyl dichloroethane	1(0.454)
	TDE *	
	4,4' DDD	
4,4' DDD	DDD	1(0.454)
	Dichlorodiphenyl dichloroethane	
	TDE *	
DDE	4,4' DDE	1 (0.454)
4,4' DDE	DDE	1 (0.454)
DDT *	Dichlorodiphenyl trichloroethane *	1 (0.454)
	4,4'DDT	
4,4'DDT	DDT *	1 (0.454)
	Dichlorodiphenyl trichloroethane *	
DDT AND METABOLITES		**
Decachlorooctahydro-1,3,4-metheno-2H-cyclobuta(c,d)-pentalen-2-one	Kepone *	1 (0.454)
Diallate	S-(2,3-Dichloroallyl) diisopropylthiocarbamate	1 (0.454)
Diamine	Hydrazine *	1 (0.454)
2,4-Diaminotoluene	2,4-Toluenediamine *	1 (0.454)
	Toluene-2,4-diamine	
Diazinon *		1 (0.454)
Dibenz(a,h)anthracene	Dibenzo(a,h)anthracene	1 (0.454)
	1,2:5,6-Dibenzanthracene	
1,2:5,6-Dibenzanthracene	Dibenz(a,h)anthracene	1 (0.454)
	Dibenzo(a,h)anthracene	
Dibenzo(a,h)anthracene	Dibenz(a,h)anthracene	1 (0.454)
	1,2:5,6-Dibenzanthracene	
1,2,7,8-Dibenzopyrene	Dibenz(a,i)pyrene	1 (0.454)
Dibenz(a,i)pyrene	1,2:7,8-Dibenzopyrene	1 (0.454)
1,2-Dibromo-3-chloropropane	Propane, 1,2-dibromo-3-chloro-	1(0.454)
Dibutyl phthalate	Di-n-butyl phthalate	10 (4.54)
	n-Butyl phthalate *	
	1,2-Benzenedicarboxylic acid, dibutyl ester	
Di-n-butyl phthalate	Dibutyl phthalate	10 (4.54)
	n-Butyl phthalate *	
	1,2-Benzenedicarboxylic acid, dibutyl ester	
Dicamba		1000 (454)
Dichobenil		100 (45.4)
Dichlone		1 (0.454)
S-(2,3-Dichloroallyl) diisopropylthiocarbamate	Diallate	1 (0.454)
3,5-Dichloro-N-(1,1-dimethyl-2-propynyl)benzamide	Pronamide	5000 (2270)
Dichlorobenzene (mixed)		100 (45.4)
1,2-Dichlorobenzene	Benzene, 1,2-dichloro-	100 (45.4)
	o-Dichlorobenzene *	
1,3-Dichlorobenzene	Benzene, 1,3-dichloro-	100 (45.4)
	m-Dichlorobenzene	
1,4-Dichlorobenzene	Benzene, 1,4-dichloro-	100 (45.4)
	p-Dichlorobenzene *	
m-Dichlorobenzene	Benzene, 1,3-dichloro-	100 (45.4)
	1,3-Dichlorobenzene	
o-Dichlorobenzene *	Benzene, 1,2-dichloro-	100 (45.4)
	1,2-Dichlorobenzene	
p-Dichlorobenzene *	Benzene, 1,4-dichloro-	100 (45.4)
	1,4-Dichlorobenzene	
DICHLOROBENZIDINE		**
3,3'-Dichlorobenzidine	(1,1'-Biphenyl)-4,4'diamine,3,3'dichloro-	1 (0.454)
Dichlorobromomethane		5000 (2270)
1,4-Dichloro-2-butene *	2-Butene, 1,4-dichloro-	1 (0.454)
Dichlorodifluoromethane *	Methane, dichlorodifluoro-	5000 (2270)
Dichlorodiphenyl dichloroethane	DDD	1(0.454)
	TDE *	
	4,4' DDD	
Dichlorodiphenyl trichloroethane *	DDT *	1 (0.454)
	4,4'DDT	
1,1-Dichloroethane	Ethane, 1,1-dichloro-	1000 (454)
	Ethylidene dichloride	
1,2-Dichloroethane	Ethane, 1,2-dichloro-	5000 (2270)
	Ethylene dichloride *	

LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

Hazardous Substance	Synonyms	Reportable Quantity(RQ) Pounds(Kilograms)
1,1-Dichloroethylene	Ethene, 1,1-dichloro-	5000 (2270)
1,2-trans-Dichloroethylene *	Vinylidene chloride *	
Dichloroethyl ether	Ethene, trans-1,2-dichloro-	1000 (454)
	Bis (2-chloroethyl) ether	1 (0.454)
2,4-Dichlorophenol	Ethane, 1,1'-oxybis(2-chloro-	
2,6-Dichlorophenol	Phenol, 2,4-dichloro-	100 (45.4)
2,4-Dichlorophenoxyacetic acid *, salts and esters *	Phenol, 2,6-dichloro-	100 (45.4)
	2,4-D Acid	100 (45.4)
Dichlorophenylarsine	2,4-D *, salts and esters *	
Dichloropropane *	Phenyl dichloroarsine *	1 (0.454)
1,1-Dichloropropane		1000 (454)
1,3-Dichloropropane		1000 (454)
1,2-Dichloropropane	Propylene dichloride *	1000 (454)
Dichloropropene - Dichloropropene (mixture)		1000 (454)
Dichloropropene *		100 (45.4)
2,3-Dichloropropene		100 (45.4)
1,3-Dichloropropene *	Propene, 1,3-dichloro-	
2,2-Dichloropropionic acid *		100 (45.4)
Dichlorvos *		5000 (2270)
Dieldrin *	1,2,3,4,10,10-Hexachloro-6,7-epoxy-1,4,4a,5,6,7,8,8a-octahydro-endo,exo-1,4:5,8-dimethanonaphthalene.	10 (4.54)
1,2,3,4-Diepoxybutane	2,2'-Bioxirane	1 (0.454)
Diethylamine *		1 (0.454)
Diethylarsine	Arsine, diethyl-	1000 (454)
1,4-Diethylene dioxide	1,4-Dioxane *	1 (0.454)
O,O-Diethyl S-[2-(ethylthio)ethyl] phosphorodithioate	Disulfoton *	1 (0.454)
N,N'-Diethylhydrazine	Hydrazine, 1,2-diethyl-	1 (0.454)
O,O-Diethyl S-methyl dithiophosphate	Phosphorodithioic acid, O,O-diethyl S-methyl ester	1 (0.454)
Diethyl-p-nitrophenyl phosphate	Phosphonic acid, diethyl p-nitrophenyl ester	5000 (2270)
Diethyl phthalate	1,2-Benzenedicarboxylic acid, diethyl ester	100 (45.4)
O,O-Diethyl O-pyrazinyl phosphorothioate	Phosphorothioic acid, O,O-diethyl O-pyrazinyl ester	1000 (454)
Diethylstilbestrol	4,4'-Stilbenediol, alpha,alpha'-diethyl-	100 (45.4)
1,2-Dihydro-3,6-pyridazinedione	Maleic hydrazide	1 (0.454)
Dihydrosafrole	Benzene, 1,2-methylenedioxy-4-propyl-	5000 (2270)
Diisopropyl fluorophosphate	Phosphorofluoridic acid, bis(1-methylethyl) ester	1 (0.454)
Dimethoate	Phosphorodithioic acid, O,O-dimethyl S-[2(methylamino)-2-oxoethyl] ester	100 (45.4)
3,3'-Dimethoxybenzidine	(1,1'-Biphenyl)-4,4'diamine,3,3'dimethoxy-	10 (4.54)
Dimethylamine *	Methanamine, N-methyl-	1 (0.454)
Dimethylaminoazobenzene	Benzenamine, N,N-dimethyl-4-phenylazo-	1000 (454)
7,12-Dimethylbenz(a)anthracene	1,2-Benzanthracene, 7,12-dimethyl-	1 (0.454)
3,3'-Dimethylbenzidine	(1,1'Biphenyl)-4,4'-diamine,3,3'-dimethyl-	1 (0.454)
alpha,alpha-Dimethylbenzylhydroperoxide	Hydroperoxide, 1-methyl-1-phenylethyl-	1 (0.454)
3,3-Dimethyl-1-(methylthio)-2-butanone, O-[(methylamino)carbonyl] oxime	Thiofanox	10 (4.54)
Dimethylcarbamoyl chloride	Carbamoyl chloride, dimethyl-	100 (45.4)
1,1-Dimethylhydrazine *	Hydrazine, 1,1-dimethyl-	1 (0.454)
1,2-Dimethylhydrazine	Hydrazine, 1,2-dimethyl-	1 (0.454)
O,O-Dimethyl O-p-nitrophenyl phosphorothioate	Methyl parathion *	1 (0.454)
Dimethylnitrosamine	N-Nitrosodimethylamine	100 (45.4)
alpha,alpha-Dimethylphenethylamine	Ethanamine, 1,1-dimethyl-2-phenyl-	1 (0.454)
2,4-Dimethylphenol	Phenol, 2,4-dimethyl-	5000 (2270)
Dimethyl phthalate	2,4-Xylenol @	100 (45.4)
Dimethyl sulfate *	1,2-Benzenedicarboxylic acid, dimethyl ester	5000 (2270)
Dinitrobenzene * (mixed)	Sulfuric acid, dimethyl ester	1 (0.454)
m-Dinitrobenzene		100 (45.4)
o-Dinitrobenzene		100 (45.4)
p-Dinitrobenzene		100 (45.4)
4,6-Dinitro-o-cresol and salts		100 (45.4)
4,6-Dinitro-o-cyclohexylphenol *	Phenol, 2,4-dinitro-6-methyl-, and salts	10 (4.54)
Dinitrophenol *	Phenol, 2-cyclohexyl-4,6-dinitro-	100 (45.4)
2,5-Dinitrophenol		10 (4.54)
2,6-Dinitrophenol		10 (4.54)
2,4-Dinitrophenol *		10 (4.54)
Dinitrotoluene *	Phenol, 2,4-dinitro-	10 (4.54)
3,4-Dinitrotoluene		1000 (454)
2,4-Dinitrotoluene *		
2,6-Dinitrotoluene *	Benzene, 1-methyl-2,4-dinitro-	1000 (454)
Dinoseb	Benzene, 1-methyl-2,6-dinitro-	1000 (454)
Di-n-octyl phthalate	Phenol, 2,4-dinitro-6-(1-methylpropyl)-	1000 (454)
1,4-Dioxane *	1,2-Benzenedicarboxylic acid, di-n-octyl ester	5000 (2270)
DIPHENYLHYDRAZINE	1,4-Diethylene dioxide	1 (0.454)
1,2-Diphenylhydrazine		**
Diphosphoramide, octamethyl-	Hydrazine, 1,2-diphenyl-	1 (0.454)
Dipropylamine	Octamethylpyrophosphoramide	100(45.4)
Di-n-propylnitrosamine	1-Propanamine, N-propyl-	5000 (2270)
Diquat	N-Nitrosodi-n-propylamine	1 (0.454)
Disulfoton *		1000 (454)
2,4-Dithiobiuret	O,O-Diethyl S-[2-(ethylthio)ethyl]phosphorodithioate	1 (0.454)
Dithiopyrophosphonic acid, tetraethyl ester	Thiomidodicarbonic diamide	100 (45.4)
Diuron	Tetraethylidithiopyrophosphate	100 (45.4)
Dodecylbenzenesulfonic acid *		100 (45.4)
Endosulfan *	5-Norbornene-2,3-dimethanol,1,4,5,6,7,7-hexachloro,cyclic sulfite	1000 (454)
alpha - Endosulfan		1 (0.454)
beta - Endosulfan		1 (0.454)
ENDOSULFAN AND METABOLITES		1 (0.454)
Endosulfan sulfate		**
Endothal	7-Oxabicyclo[2.2.1]heptane-2,3-dicarboxylic acid	1 (0.454)
Endrin *	1,2,3,4,10,10-Hexachloro-6,7-epoxy-1,4,4a,5,6,7,8,8a-octahydro-endo,endo-1,4:5,8-dimethanonaphthalene.	1000 (454)
Endrin aldehyde		1 (0.454)
		1 (0.454)

LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

Hazardous Substance	Synonyms	Reportable Quantity(RQ) Pounds(Kilograms)
ENDRIN AND METABOLITES		**
Epichlorohydrin *	1-Chloro-2,3-epoxypropane	1000 (454)
	Oxirane, 2-(chloromethyl)-	
Epinephrine	1,2-Benzenediol,4-[1-hydroxy-2-(methylamino)ethyl]	1000 (454)
Ethanal	Acetaldehyde *	1000 (454)
Ethanamine, 1,1-dimethyl-2-phenyl-	alpha,alpha-Dimethylphenethylamine	5000 (2270)
Ethanamine, N-ethyl-N-nitroso-	N-Nitrosodiethylamine	1 (0.454)
Ethane, 1,2-dibromo-	Ethylene dibromide *	1000 (454)
Ethane, 1,1-dichloro-	Ethylidene dichloride	1000 (454)
	1,1-Dichloroethane	
Ethane, 1,2-dichloro-	Ethylene dichloride *	5000 (2270)
	1,2-Dichloroethane	
Ethane, 1,1,1,2,2,2-hexachloro-	Hexachloroethane *	1 (0.454)
Ethane, 1,1'-[methylenebis(oxy)]bis(2-chloro-	Bis(2-chloroethoxy)methane	1000 (454)
Ethane, 1,1'-oxybis-	Ethyl ether *	100 (45.4)
Ethane, 1,1'-oxybis(2-chloro-	Bis(2-chloroethyl) ether	1 (0.454)
	Dichloroethyl ether	
Ethane, pentachloro-	Pentachloroethane	1 (0.454)
Ethane, 1,1,1,2-tetrachloro-	1,1,1,2-Tetrachloroethane *	1 (0.454)
Ethane, 1,1,2,2-tetrachloro-	1,1,2,2-Tetrachloroethane *	1 (0.454)
Ethane, 1,1,2-trichloro-	1,1,2-Trichloroethane	1 (0.454)
Ethane, 1,1,1-trichloro-2,2-bis(p-methoxyphenyl)-	Methoxychlor	1 (0.454)
1,2-Ethanediylbiscarbamodithioic acid	Ethylenebis(dithiocarbamic acid)	5000 (2270)
Ethanenitrile	Acetonitrile *	5000 (2270)
Ethanethioamide	Thioacetamide	1 (0.454)
Ethanol, 2,2'-(nitrosoimino)bis-	N-Nitrosodiethanolamine	1 (0.454)
Ethanone, 1-phenyl-	Acetophenone	5000 (2270)
Ethanoyl chloride	Acetyl chloride *	5000 (2270)
Ethenamine, N-methyl-N-nitroso-	N-Nitrosomethylvinylamine	1 (0.454)
Ethene, chloro-	Vinyl chloride *	1 (0.454)
Ethene, 2-chloroethoxy-	2-Chloroethyl vinyl ether	1000 (454)
Ethene, 1,1-dichloro-	Vinylidene chloride *	5000 (2270)
	1,1-Dichloroethylene	
Ethene, 1,1,2,2-tetrachloro-		1 (0.454)
	Perchloroethylene	
	Tetrachloroethene	
	Tetrachloroethylene	
Ethene, trans-1,2-dichloro-	1,2-trans-Dichloroethylene *	1000 (454)
Ethion *		10 (4.54)
2-Ethoxyethanol	Ethylene glycol monoethyl ether *	1 (0.454)
Ethyl acetate	Acetic acid, ethyl ester	5000 (2270)
Ethyl acrylate *	2-Propenoic acid, ethyl ester	1000 (454)
Ethylbenzene *		1000 (454)
Ethyl carbamate (Urethan)	Carbamic acid, ethyl ester	1 (0.454)
Ethyl chloride @	Chloroethane	1 (0.454)
Ethyl cyanide	Propanenitrile	10 (4.54)
Ethyl 4,4'-dichlorobenzilate	Benzeneacetic acid, 4-chloro-alpha-(4-chlorophenyl)-alpha-hydroxy-, ethyl ester	1 (0.454)
Ethylene dibromide *	Ethane, 1,2-dibromo-	1000 (454)
Ethylene dichloride *	1,2-Dichloroethane	5000 (2270)
	Ethane, 1,2-dichloro-	
Ethylene glycol monoethyl ether *	2-Ethoxyethanol	1 (0.454)
Ethylene oxide *	Oxirane	1 (0.454)
Ethylenebis(dithiocarbamic acid)	1,2-Ethanediylbiscarbamodithioic acid	5000 (2270)
Ethylenediamine *		5000 (2270)
Ethylenediamine tetraacetic acid (EDTA)		5000 (2270)
Ethylenethiourea	2-Imidazolidinethione	1 (0.454)
Ethylenimine	Aziridine	1 (0.454)
Ethyl ether *	Ethane, 1,1'-oxybis-	100 (45.4)
Ethylidene dichloride	Ethane, 1,1-dichloro-	1000 (454)
	1,1-Dichloroethane	
Ethyl methacrylate	2-Propenoic acid, 2-methyl-, ethyl ester	1000 (454)
Ethyl methanesulfonate	Methanesulfonic acid, ethyl ester	1 (0.454)
Ethyl methyl ketone @	2-Butanone	5000 (2270)
	Methyl ethyl ketone *	
Famphur	Phosphorothioic acid, O,O-dimethyl O-[p-[(dimethylamino)-sulfonyl] phenyl] ester	1000 (454)
Ferric ammonium citrate		1000 (454)
Ferric ammonium oxalate		1000 (454)
Ferric chloride		1000 (454)
Ferric dextran ***	Iron dextran ***	5000 (2270)
Ferric fluoride		100 (45.4)
Ferric nitrate *		1000 (454)
Ferric sulfate		1000 (454)
Ferrous ammonium sulfate		1000 (454)
Ferrous chloride *		100 (45.4)
Ferrous sulfate		1000 (454)
Fluoranthene	Benzo[j,k]fluorene	100 (45.4)
Fluorene		500 (2270)
Fluorine *		10 (4.54)
Fluoroacetamide	Acetamide, 2-fluoro-	100 (45.4)
Fluoroacetic acid, sodium salt	Acetic acid, fluoro-, sodium salt	10 (4.54)
Formaldehyde *	Methylene oxide	1000 (454)
Formic acid *	Methanoic acid	5000 (2270)
Fulminic acid, mercury(II)salt	Mercury fulminate	10 (4.54)
Fumaric acid		5000 (2270)
Furan *	Furfuran	100 (45.4)
Furan, tetrahydro-	Tetrahydrofuran *	1000 (454)
2-Furancarboxaldehyde	Furfural *	5000 (2270)
2,5-Furandione	Maleic anhydride *	5000 (2270)
Furfural *	2-Furancarboxaldehyde	5000 (2270)
Furfuran	Furan *	100 (45.4)
D-Glucopyranose, 2-deoxy-2-(3-methyl-3-nitrosoureido)-	Streptozotocin	1 (0.454)

LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

Hazardous Substance	Synonyms	Reportable Quantity(RQ) Pounds(Kilograms)
Glycidylaldehyde	1-Propanal, 2,3-epoxy-	1 (0.454)
Guanidine, N-nitroso-N-methyl-N'-nitro-	N-Methyl-N'-nitro-N-nitrosoguanidine	1 (0.454)
Guthion *	Azinphos methyl ●	1 (0.454)
HALOETHERS		**
HALOMETHANES		**
Heptachlor *	4,7-Methano-1H-indene, 1,4,5,6,7,8,8-heptachloro-3a,4,7,7a-tetrahydro-	1 (0.454)
HEPTACHLOR AND METABOLITES		**
Heptachlor epoxide		1 (0.454)
Hexachlorobenzene	Benzene, hexachloro-	1 (0.454)
Hexachlorobutadiene *	1,3-Butadiene, 1,1,2,3,4,4-hexachloro-	1(0.454)
HEXACHLOROCYCLOHEXANE (all isomers)		**
Hexachlorocyclohexane (gamma isomer)	gamma - BHC Lindane *	1 (0.454)
Hexachlorocyclopentadiene *	1,3-Cyclopentadiene, 1,2,3,4,5,5-hexachloro-	1 (0.454)
1,2,3,4,10,10-Hexachloro-6,7-epoxy-1,4,4a,5,6,7,8,8a-octahydro-endo,endo-1,4:5,8-dimethanonaphthalene.	Endrin *	1 (0.454)
1,2,3,4,10,10-Hexachloro-6,7-epoxy-1,4,4a,5,6,7,8,8a-octahydro-endo,exo-1,4:5,8-dimethanonaphthalene.	Dieldrin *	1 (0.454)
Hexachloroethane *	Ethane, 1,1,1,2,2,2-hexachloro-	1 (0.454)
Hexachlorohexahydro-endo,endo-dimethanonaphthalene	1,2,3,4,10,10-Hexachloro-1,4,4a,5,8,8a-hexahydro-1,4,5,8-endo,endo-dimethanonaphthalene.	1 (0.454)
1,2,3,4,10,10-Hexachloro-1,4,4a,5,8,8a-hexahydro-1,4,5,8-endo,endo-dimethanonaphthalene.	Hexachlorohexahydro-endo,endo-dimethanonaphthalene	1 (0.454)
1,2,3,4,10-10-Hexachloro-1,4,4a,5,8,8a-hexahydro-1,4:5,8-endo,exo-dimethanonaphthalene.	Aldrin *	1 (0.454)
Hexachlorophene	2,2'-Methylenebis(3,4,6-trichlorophenol)	100(45.4)
Hexachloropropene	1-Propene, 1,1,2,3,3,3-hexachloro-	1000 (454)
Hexaethyl tetraphosphate *	Tetraphosphonic acid, hexaethyl ester	100 (45.4)
Hydrazine *	Diamine	1 (0.454)
Hydrazine, 1,2-diethyl-	N,N'-Diethylhydrazine	1 (0.454)
Hydrazine, 1,1-dimethyl-	1,1-Dimethylhydrazine *	1 (0.454)
Hydrazine, 1,2-dimethyl-	1,2-Dimethylhydrazine	1 (0.454)
Hydrazine, 1,2-diphenyl-	1,2-Diphenylhydrazine	1 (0.454)
Hydrazine, methyl-	Methyl hydrazine *	10 (4.54)
Hydrazinocarbothioamide	Thiosemicarbazide	100 (45.4)
Hydrochloric acid *	Hydrogen cyanide	5000 (2270)
Hydrocyanic acid *	Hydrogen fluoride *	10 (4.54)
Hydrofluoric acid *	Hydrocyanic acid *	100 (45.4)
Hydrogen cyanide	Hydrofluoric acid *	10 (4.54)
Hydrogen fluoride *	Phosphine *	100 (45.4)
Hydrogen phosphide	Hydrosulfuric acid	100 (45.4)
Hydrogen sulfide *	Sulfur hydride	100 (45.4)
Hydroperoxide, 1-methyl-1-phenylethyl-	alpha,alpha-Dimethylbenzylhydroperoxide	10 (4.54)
Hydrosulfuric acid	Hydrogen sulfide *	100 (45.4)
Hydroxydimethylarsine oxide	Sulfur hydride	1 (0.454)
2-Imidazolidinethione	Cacodylic acid	1 (0.454)
Indeno(1,2,3-cd)pyrene	Ethylenethiourea	1 (0.454)
Iron dextran ***	1,10-(1,2-Phenylene)pyrene	5000 (2270)
Isobutyl alcohol	Ferric dextran ***	5000 (2270)
Isocyanic acid, methyl ester	1-Propanol, 2-methyl-	1 (0.454)
Isophorone	Methyl isocyanate *	5000 (2270)
Isoprene *		1000 (454)
Isopropanolamine dodecylbenzene sulfonate		1000 (454)
Isosafrole	Benzene, 1,2-methylenedioxy-4-propenyl-	1 (0.454)
5(2H) Isoxazolone, 5-(aminomethyl)-	5-(Aminomethyl)-3-isoxazolol	1000 (454)
Kelthane		10 (4.54)
Kepone	Decachlorooctahydro-1,3,4-metheno-2H-cyclobuta(c,d)-pentalen-2-one	1 (0.454)
Lasiocarpine		1 (0.454)
Lead c	Acetic acid, lead salt	1 (0.454)
Lead acetate		5000 (2270)
LEAD AND COMPOUNDS		**
Lead arsenate *		5000 (2270)
Lead chloride *		100 (45.4)
Lead fluoborate *		100 (45.4)
Lead fluoride *		100 (45.4)
Lead iodide		100 (45.4)
Lead nitrate *		100 (45.4)
Lead phosphate	Phosphonic acid, lead salt	1 (0.454)
Lead stearate		5000 (2270)
Lead subacetate		1 (0.454)
Lead sulfate *		100 (45.4)
Lead sulfide		5000 (2270)
Lead thiocyanate		100 (45.4)
Lindane *	gamma - BHC Hexachlorocyclohexane (gamma isomer)	1 (0.454)
Lithium chromate		1000 (454)
Malathion *		100 (45.4)
Maleic acid *		5000 (2270)
Maleic anhydride *	2,5-Furandione	5000 (2270)
Maleic hydrazide	1,2-Dihydro-3,6-pyridazinedione	5000 (2270)
Malononitrile	Propanedinitrile	1000 (454)
Melphalan	Alanine, 3-[p-bis(2-chloroethyl)amino]phenyl-, L-	1 (0.454)
Mercaptodimethur		10 (4.54)
Mercuric cyanide *		1 (0.454)
Mercuric nitrate *		10 (4.54)
Mercuric sulfate *		10 (4.54)
Mercuric thiocyanate		10 (4.54)
Mercurous nitrate *		10 (4.54)
Mercury *		1 (0.454)

LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

Hazardous Substance	Synonyms	Reportable Quantity(RQ) Pounds(Kilograms)
MERCURY AND COMPOUNDS		**
Mercury, (acetato-O)phenyl-	Phenylmercuric acetate	100 (45.4)
Mercury fulminate	Fulminic acid, mercury(II)salt	10 (4.54)
Methacrylonitrile	2-Propenenitrile, 2-methyl-	1000 (454)
Methanamine, N-methyl-	Dimethylamine *	1000 (454)
Methane, bromo-	Methyl bromide *	1000 (454)
Methane, chloro-	Methyl chloride *	1 (0.454)
Methane, chloromethoxy-	Chloromethyl methyl ether	1 (0.454)
Methane, dibromo-	Methylchloromethyl ether @	
Methane, dichloro-	Methylene bromide	1000 (454)
Methane, dichlorodifluoro-	Methylene chloride *	1000 (454)
Methane, iodo-	Dichlorodifluoromethane *	5000 (2270)
Methane, oxybis(chloro-	Methyl iodide	1 (0.454)
Methane, tetrachloro-	Bis(chloromethyl) ether	1 (0.454)
Methane, tetranitro-	Carbon tetrachloride *	5000 (2270)
Methane, tribromo-	Tetranitromethane *	10 (4.54)
Methane, trichloro-	Bromoform	100 (45.4)
Methane, trichlorofluoro-	Chloroform *	5000 (2270)
Methanesulfenyl chloride, trichloro-	Trichloromonofluoromethane	5000 (2270)
	Perchloromethyl mercaptan @	100 (45.4)
Methanesulfonic acid, ethyl ester	Trichloromethanesulfenyl chloride	
Methanethiol	Ethyl methanesulfonate	1 (0.454)
	Methyl mercaptan *	100 (45.4)
4,7-Methano-1H-indene, 1,4,5,6,7,8,8-heptachloro-a,4,7,7a-tetrahydro-	Thiomethanol	
Methanoic acid	Heptachlor *	1 (0.454)
4,7-Methanoindan, 1,2,4,5,6,7,8,8-octachloro-3a,4,7,7a-tetrahydro-	Formic acid *	5000 (2270)
	Chlordane *	1 (0.454)
Methanol *	Chlordane, technical *	
Methapyrilene	Methyl alcohol *	5000 (2270)
Methomyl	Pyridine, 2-[(2-(dimethylamino)ethyl)-2-thenylamino]-	5000 (2270)
Methoxychlor	Acetimidic acid, N-[(methylcarbamoyl)oxy]thio-, methyl ester	100 (45.4)
Methyl alcohol *	Ethane, 1,1,1-trichloro-2,2-bis(p-methoxyphenyl)-	1 (0.454)
Methylamine @	Methanol *	5000 (2270)
2-Methylaziridine	Monoethylamine *	100 (45.4)
Methyl bromide *	1,2-Propylenimine	1 (0.454)
1-Methylbutadiene	Methane, bromo-	1000 (454)
Methyl chloride *	1,3-Pentadiene	100 (45.4)
Methyl chlorocarbonate	Methane, chloro-	1 (0.454)
Methyl chloroform *	Carbonochloridic acid, methyl ester	1000 (454)
Methylchloromethyl ether @	1,1,1-Trichloroethane *	1000 (454)
	Chloromethyl methyl ether	1 (0.454)
3-Methylcholanthrene	Methane, chloromethoxy-	
4,4'-Methylenebis(2-chloroaniline)	Benz[j]aceanthrylene, 1,2-dihydro-3-methyl-	1 (0.454)
2,2'-Methylenebis(3,4,6-trichlorophenol)	Benzenamine, 4,4'-methylenebis(2-chloro-	1 (0.454)
Methylene bromide	Hexachlorophene	100(45.4)
Methylene chloride *	Methane, dibromo-	1000 (454)
Methylene oxide	Methane, dichloro-	1000 (454)
Methyl ethyl ketone *	Formaldehyde *	1000 (454)
	2-Butanone	5000 (2270)
Methyl ethyl ketone peroxide *	Ethyl methyl ketone @	
Methyl hydrazine *	2-Butanone peroxide	10 (4.54)
Methyl iodide	Hydrazine, methyl-	10 (4.54)
Methyl isobutyl ketone	Methane, iodo-	1 (0.454)
Methyl isocyanate *	4-Methyl-2-pentanone	5000 (2270)
2-Methylactonitrile	Isocyanic acid, methyl ester	1 (0.454)
	Acetone cyanohydrin *	10 (4.54)
Methyl mercaptan *	Propanenitrile, 2-hydroxy-2-methyl-	
	Methanethiol	100 (45.4)
Methyl methacrylate *	Thiomethanol	
N-Methyl-N'-nitro-N-nitrosoguanidine	2-Propenoic acid, 2-methyl-, methyl ester	1000 (454)
Methyl parathion *	Guanidine, N-nitroso-N-methyl-N'-nitro-	1 (0.454)
4-Methyl-2-pentanone	O,O-Dimethyl O-p-nitrophenyl phosphorothioate	100 (45.4)
Methylthiouracil	Methyl isobutyl ketone	5000 (2270)
Mevinphos *	4(1H)-Pyrimidinone, 2,3-dihydro-6-methyl-2-thioxo-	1 (0.454)
Mexacarbate *		10 (4.54)
Mitomycin C		1000 (454)
	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-	1 (0.454)
Monoethylamine *	Methylamine @	
Monomethylamine		100 (45.4)
5,12-Naphthacenedione, (8S-cis)-8-acetyl-10-[3-amino-2,3,6-trideoxy-alpha-L-lyxo-hexopyranosyl) oxy]-7,8,9,10-tetrahydro-6,8,11-trihydroxy-1-methoxy-.	Daunomycin	100 (45.4)
Naphthalene *		1 (0.454)
Naphthalene, 2-chloro-	beta-Chloronaphthalene	5000 (2270)
	2-Chloronaphthalene	
1,4-Naphthalenedione	1,4-Naphthoquinone	5000 (2270)
2,7-Naphthalenedisulfonic acid, 3,3'-[(3,3'-dimethyl-[1,1'-biphenyl]-4,4'-diyl)-bis(azo)]bis(5-amino-4-hydroxy)-tetrasodium salt.	Trypan blue	1 (0.454)
Naphthenic acid		100 (45.4)
1,4-Naphthoquinone	1,4-Naphthalenedione	5000 (2270)
alpha-Naphthylamine	1-Naphthylamine	1 (0.454)
beta-Naphthylamine	2-Naphthylamine	1 (0.454)
2-Naphthylamine, N,N-bis(2-chloroethyl)-	Chlornaphazine	1 (0.454)
1-Naphthylamine	alpha-Naphthylamine	1 (0.454)
2-Naphthylamine	beta-Naphthylamine	1 (0.454)
alpha-Naphthylthiourea	Thiourea, 1-naphthalenyl-	100 (45.4)
Nickel *		1 (0.454)
Nickel ammonium sulfate		5000 (2270)
NICKEL AND COMPOUNDS		**
Nickel carbonyl *	Nickel tetracarbonyl	1 (0.454)
Nickel chloride *		5000 (2270)

LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

Hazardous Substance	Synonyms	Reportable Quantity(RQ) Pounds(Kilograms)
Nickel cyanide *	Nickel(II) cyanide	1 (0.454)
Nickel(II) cyanide	Nickel cyanide *	1 (0.454)
Nickel hydroxide		1000 (454)
Nickel nitrate *		5000 (2270)
Nickel sulfate		5000 (2270)
Nickel tetracarbonyl	Nickel carbonyl *	1 (0.454)
Nicotine * and salts *	Pyridine, (S)-3-(1-methyl-2-pyrrolidinyl)-, and salts	100 (45.4)
Nitric acid *		1000 (454)
Nitric oxide *	Nitrogen(II) oxide	10 (4.54)
p-Nitroaniline *	Benzenamine, 4-nitro-	5000 (2270)
Nitrobenzene *	Benzene, nitro-	1000 (454)
Nitrogen dioxide *	Nitrogen(IV) oxide	10 (4.54)
Nitrogen(II) oxide	Nitric oxide *	10 (4.54)
Nitrogen(IV) oxide	Nitrogen dioxide *	10 (4.54)
Nitroglycerine *	1,2,3-Propanetriol, trinitrate-	10 (4.54)
Nitrophenol * (mixed)		100 (45.4)
m-Nitrophenol		100 (45.4)
o-Nitrophenol	2-Nitrophenol	100 (45.4)
p-Nitrophenol	Phenol, 4-nitro-	100 (45.4)
o-Nitrophenol *	4-Nitrophenol	100 (45.4)
p-Nitrophenol *	2-Nitrophenol *	
	Phenol, 4-nitro-	100 (45.4)
2-Nitrophenol *	4-Nitrophenol *	100 (45.4)
4-Nitrophenol *	o-Nitrophenol *	
	p-Nitrophenol *	100 (45.4)
NITROPHENOLS	Phenol, 4-nitro-	100 (45.4)
2-Nitropropane	Propane, 2-nitro-	**
NITROSAMINES		1 (0.454)
N-Nitrosodi-n-butylamine	1-Butanamine, N-butyl-N-nitroso-	**
N-Nitrosodiethanolamine	Ethanol, 2,2'-(nitrosoimino)bis-	1 (0.454)
N-Nitrosodiethylamine	Ethanamine, N-ethyl-N-nitroso-	1 (0.454)
N-Nitrosodimethylamine	Dimethylnitrosamine	1 (0.454)
N-Nitrosodiphenylamine		1 (0.454)
N-Nitrosodi-n-propylamine	Di-n-propylnitrosamine	100 (45.4)
N-Nitroso-N-ethylurea	Carbamide, N-ethyl-N-nitroso-	1 (0.454)
N-Nitroso-N-methylurea	Carbamide, N-methyl-N-nitroso-	1 (0.454)
N-Nitroso-N-methylurethane	Carbamic acid, methylnitroso-, ethyl ester	1 (0.454)
N-Nitrosomethylvinylamine	Ethenamine, N-methyl-N-nitroso-	1 (0.454)
N-Nitrosopiperidine	Pyridine, hexahydro-N-nitroso-	1 (0.454)
N-Nitrosopyrrolidine	Pyrrole, tetrahydro-N-nitroso-	1 (0.454)
Nitrotoluene *		1000 (454)
m-Nitrotoluene		
o-Nitrotoluene		
p-Nitrotoluene		
5-Nitro-o-toluidine	Benzenamine, 2-methyl-5-nitro-	1 (0.454)
5-Norbornene-2,3-dimethanol,1,4,5,6,7,7-hexachloro,cyclic sulfite	Endosulfan *	1 (0.454)
Octamethylpyrophosphoramide	Diphosphoramide, octamethyl-	100(45.4)
Osmium oxide	Osmium tetroxide	1000 (454)
Osmium tetroxide	Osmium oxide	1000 (454)
7-Oxabicyclo[2.2.1]heptane-2,3-dicarboxylic acid	Endothall	1000 (454)
1,2-Oxathiolane, 2,2-dioxide	1,3-Propane sultone	1 (0.454)
2H-1,3,2-Oxazaphosphorine,2-[bis(2-chloroethyl) amino] tetrahydro-2-oxide	Cyclophosphamide	1 (0.454)
Oxirane	Ethylene oxide *	1 (0.454)
Oxirane, 2-(chloromethyl)-	Epichlorohydrin *	1000 (454)
Paraformaldehyde *	1-Chloro-2,3-epoxypropane	1000 (454)
Paraldehyde *	1,3,5-Trioxane, 2,4,6-trimethyl-	1000 (454)
Parathion *	Phosphorothioic acid, O,O-diethyl O-(p-nitrophenyl)ester	1 (0.454)
Pentachlorobenzene	Benzene, pentachloro-	10 (4.54)
Pentachloroethane	Ethane, pentachloro-	1 (0.454)
Pentachloronitrobenzene	Benzene, pentachloronitro-	1 (0.454)
Pentachlorophenol *	Phenol, pentachloro-	10 (4.54)
1,3-Pentadiene	1-Methylbutadiene	100 (45.4)
Perchloroethylene *	Ethene, 1,1,2,2-tetrachloro-	1 (0.454)
	Tetrachloroethene	
	Tetrachloroethylene *	
Perchloromethyl mercaptan @	Methanesulfenyl chloride, trichloro-	100 (45.4)
	Trichloromethanesulfenyl chloride	
Phenacetin	Acetamide, N-(4-ethoxyphenyl)-	1 (0.454)
Phenanthrene		5000 (2270)
Phenol *	Benzene, hydroxy-	1000 (454)
Phenol, 4-chloro-3-methyl-	p-Chloro-m-cresol	5000 (2270)
	4-Chloro-m-cresol	
Phenol, 2-chloro-	o-Chlorophenol	100 (45.4)
	2-Chlorophenol	
Phenol, 2-cyclohexyl-4,6-dinitro-	4,6-Dinitro-o-cyclohexylphenol *	100 (45.4)
Phenol, 2,4-dichloro-	2,4-Dichlorophenol	100 (45.4)
Phenol, 2,6-dichloro-	2,6-Dichlorophenol	100 (45.4)
Phenol, 2,4-dimethyl-	2,4-Dimethylphenol	100 (45.4)
	2,4-Xylenol @	
Phenol, 2,4-dinitro-6-(1-methylpropyl)-	Dinoseb	1000 (454)
Phenol, 2,4-dinitro-6-methyl-, and salts	4,6-Dinitro-o-cresol and salts	10 (4.54)
Phenol, 2,4-dinitro-	2,4-Dinitrophenol *	10 (4.54)
Phenol, 4-nitro-	p-Nitrophenol *	100 (45.4)
	4-Nitrophenol *	
Phenol, pentachloro-	Pentachlorophenol *	10 (4.54)
Phenol, 2,3,4,6-tetrachloro-	2,3,4,6-Tetrachlorophenol *	10 (4.54)
Phenol, 2,4,5-trichloro-	2,4,5-Trichlorophenol *	10 (4.54)
Phenol, 2,4,6-trichloro-	2,4,6-Trichlorophenol *	10 (4.54)
Phenol, 2,4,6-trinitro-, ammonium salt	Ammonium picrate *	10 (4.54)

LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

Hazardous Substance	Synonyms	Reportable Quantity (RQ) Pounds (Kilograms)
Phenyl dichlorarsine *	Dichlorophenylarsine	1 (0.454)
1,10-(1,2-Phenylene)pyrene	Indeno(1,2,3-cd)pyrene	1 (0.454)
Phenyl mercaptan @	Benzenethiol	100 (45.4)
	Thiophenol *	
Phenylmercuric acetate	Mercury, (acetato-O)phenyl-	100 (45.4)
N-Phenylthiourea	Thiourea, phenyl-	100 (45.4)
Phorate	Phosphorodithioic acid, O,O-diethyl S-(ethylthio), methylester	10 (4.54)
Phosgene *	Carbonyl chloride	10 (4.54)
Phosphine *	Hydrogen phosphide	100 (45.4)
Phosphoric acid *		5000 (2270)
Phosphoric acid, diethyl p-nitrophenyl ester	Diethyl-p-nitrophenyl phosphate	100 (45.4)
Phosphoric acid, lead salt	Lead phosphate	1 (0.454)
Phosphorodithioic acid, O,O-diethyl S-(ethylthio), methyl ester	Phorate	10 (4.54)
Phosphorodithioic acid, O,O-diethyl S-methyl ester	O,O-Diethyl S-methyl dithiophosphate	5000 (2270)
Phosphorodithioic acid, O,O-dimethyl S-[2 (methylamino)-2-oxoethyl] ester	Dimethoate	10 (4.54)
Phosphorofluoridic acid, bis(1-methylethyl) ester	Diisopropyl fluorophosphate	100 (45.4)
Phosphorothioic acid, O,O-diethyl O-(p-nitrophenyl) ester	Parathion *	1 (0.454)
Phosphorothioic acid, O,O-diethyl O-pyrazinyl ester	O,O-Diethyl O-pyrazinyl phosphorothioate	100 (45.4)
Phosphorothioic acid, O,O-dimethyl O-[p-[(dimethylamino)-sulfonyl] phenyl] ester	Famphur	1000 (454)
Phosphorus *		1 (0.454)
Phosphorus oxychloride *		1000 (454)
Phosphorus pentasulfide *	Phosphorus sulfide	100 (45.4)
	Sulfur phosphide	
Phosphorus sulfide	Phosphorus pentasulfide *	100 (45.4)
	Sulfur phosphide	
Phosphorus trichloride *		1000 (454)
PHTHALATE ESTERS		**
Phthalic anhydride	1,2-Benzenedicarboxylic acid anhydride	5000 (2270)
2-Picoline	Pyridine, 2-methyl-	5000 (2270)
Plumbane, tetraethyl-	Tetraethyl lead *	10 (4.54)
POLYCHLORINATED BIPHENYLS (PCBs) *		10 (4.54)
Aroclor 1016	POLYCHLORINATED BIPHENYLS (PCBs)	10 (4.54)
Aroclor 1221	POLYCHLORINATED BIPHENYLS (PCBs)	10 (4.54)
Aroclor 1232	POLYCHLORINATED BIPHENYLS (PCBs)	10 (4.54)
Aroclor 1242	POLYCHLORINATED BIPHENYLS (PCBs)	10 (4.54)
Aroclor 1248	POLYCHLORINATED BIPHENYLS (PCBs)	10 (4.54)
Aroclor 1254	POLYCHLORINATED BIPHENYLS (PCBs)	10 (4.54)
Aroclor 1260	POLYCHLORINATED BIPHENYLS (PCBs)	10 (4.54)
POLYNUCLEAR AROMATIC HYDROCARBONS		**
Potassium arsenate *		1000 (454)
Potassium arsenite *		1000 (454)
Potassium bichromate	Potassium dichromate @	1000 (454)
Potassium chromate		1000 (454)
Potassium cyanide *		10 (4.54)
Potassium dichromate @	Potassium bichromate	1000 (454)
Potassium hydroxide *		1000 (454)
Potassium permanganate *		100 (45.4)
Potassium silver cyanide		1 (0.454)
Pronamide	3,5-Dichloro-N-(1,1-dimethyl-2-propynyl)benzamide	5000 (2270)
1-Propanal, 2,3-epoxy-	Glycidylaldehyde	1 (0.454)
Propanal, 2-methyl-2-(methylthio)-,O-[(methylamino)carbonyl]oxime	Aldicarb	1 (0.454)
1-Propanamine	n-Propylamine *	5000 (2270)
1-Propanamine, N-propyl-	Dipropylamine	5000 (2270)
Propane, 1,2-dibromo-3-chloro-	1,2-Dibromo-3-chloropropane	1(0.454)
Propane, 2-nitro-	2-Nitropropane	1 (0.454)
Propane, 2,2'-oxybis(2-chloro-	Bis(2-chloroisopropyl) ether	1000 (454)
1,3-Propane sultone	1,2-Oxathiolane, 2,2-dioxide	1 (0.454)
Propanedinitrile	Malononitrile	1000 (454)
Propanenitrile	Ethyl cyanide	10 (4.54)
Propanenitrile, 3-chloro-	3-Chloropropionitrile	1000 (454)
Propanenitrile, 2-hydroxy-2-methyl-	Acetone cyanohydrin *	10 (4.54)
	2-Methyllactonitrile	
1,2,3-Propanetriol, trinitrate-	Nitroglycerine *	10 (4.54)
1-Propanol, 2,3-dibromo-, phosphate (3:1)	Tris(2,3-dibromopropyl)phosphate	1 (0.454)
1-Propanol, 2-methyl-	Isobutyl alcohol	5000 (2270)
2-Propanone	Acetone *	5000 (2270)
2-Propanone, 1-bromo-	Bromoacetone *	1000 (454)
Propargite		10 (4.54)
Propargyl alcohol *	2-Propyn-1-ol	1000 (454)
2-Propenal	Acrolein *	1 (0.454)
2-Propenamide	Acrylamide	5000 (2270)
Propene, 1,3-dichloro-	1,3-Dichloropropene *	100 (45.4)
1-Propene, 1,1,2,3,3,3-hexachloro-	Hexachloropropene	1000 (454)
2-Propenenitrile	Acrylonitrile *	100 (45.4)
2-Propenenitrile, 2-methyl-	Methacrylonitrile	1000 (454)
2-Propenoic acid	Acrylic acid *	5000 (2270)
2-Propenoic acid, ethyl ester	Ethyl acrylate *	1000 (454)
2-Propenoic acid, 2-methyl-, ethyl ester	Ethyl methacrylate	1000 (454)
2-Propenoic acid, 2-methyl-, methyl ester	Methyl methacrylate *	1000 (454)
2-Propen-1-ol	Allyl alcohol *	100 (45.4)
Propionic acid *		5000 (2270)
Propionic acid, 2-(2,4,5-trichlorophenoxy)-	Silvex	100 (45.4)
	2,4,5-TP @	
	2,4,5-TP acid	
Propionic anhydride		5000 (2270)
n-Propylamine *	1-Propanamine	5000 (2270)
Propylene dichloride *	1,2-Dichloropropane	1000 (454)
Propylene oxide *		100 (45.4)
1,2-Propylenimine *	2-Methylaziridine	1 (0.454)
2-Propyn-1-ol	Propargyl alcohol *	1000 (454)
Pyrene		5000 (2270)

LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

Hazardous Substance	Synonyms	Reportable Quantity(RQ) Pounds(Kilograms)
Pyrethrins		1 (0.454)
4-Pyridinamine	4-Aminopyridine	1000 (454)
Pyridine *		1000 (454)
Pyridine, 2-[(2-(dimethylamino)ethyl)-2- thenylamino]-	Methapyrilene	5000 (2270)
Pyridine, hexahydro-N-nitroso-	N-Nitrosopiperidine	1 (0.454)
Pyridine, 2-methyl-	2-Picoline	5000 (2270)
Pyridine, (S)-3-(1-methyl-2-pyrrolidinyl)-, and salts	Nicotine * and salts *	100 (45.4)
4(1H)-Pyrimidinone, 2,3-dihydro-6-methyl-2-thioxo-	Methylthiouracil	1 (0.454)
Pyrophosphoric acid, tetraethyl ester	Tetraethyl pyrophosphate *	10 (4.54)
Pyrrole, tetrahydro-N-nitroso-	N-Nitrosopyrrolidine	1 (0.454)
Quinoline		5000 (2270)
RADIONUCLIDES ***		1 (0.454)
Reserpine	Yohimban-16-carboxylic acid,11,17-dimethoxy-18-[(3,4,5-trimethoxybenzoyl)oxy]-, methyl ester.	5000 (2270)
Resorcinol *	1,3-Benzenediol	5000 (2270)
Saccharin and salts	1,2-Benzisothiazolin-3-one,1,1-dioxide, and salts	1 (0.454)
Safrole	Benzene, 1,2-methylenedioxy-4-allyl-	1 (0.454)
Selenious acid		10 (4.54)
Selenium ¢		100 (45.4)
SELENIUM AND COMPOUNDS		**
Selenium dioxide	Selenium oxide *	10 (4.54)
Selenium disulfide	Sulfur selenide	1 (0.454)
Selenium oxide *	Selenium dioxide	10 (4.54)
Seleniourea	Carbamimidoselenoic acid	1000 (454)
L-Serine, diazoacetate (ester)	Azaserine	1 (0.454)
Silver ¢		1000 (454)
SILVER AND COMPOUNDS		**
Silver cyanide *		1 (0.454)
Silver nitrate *		1 (0.454)
Silvex	Propionic acid, 2-(2,4,5-trichlorophenoxy)-	100 (45.4)
	2,4,5-TP @	
	2,4,5-TP acid	
Sodium *		10 (4.54)
Sodium arsenate *		1000 (454)
Sodium arsenite *		1000 (454)
Sodium azide *		1000 (454)
Sodium bichromate	Sodium dichromate @	1000 (454)
Sodium bifluoride *		100 (45.4)
Sodium bisulfite *		5000 (2270)
Sodium chromate		1000 (454)
Sodium cyanide *		10 (4.54)
Sodium dichromate @	Sodium bichromate	1000 (454)
Sodium dodecylbenzene sulfonate		1000 (454)
Sodium fluoride *		1000 (454)
Sodium hydrosulfide *		5000 (2270)
Sodium hydroxide *		1000 (454)
Sodium hypochlorite *		100 (45.4)
Sodium methylate *		1000 (454)
Sodium nitrite *		100 (45.4)
Sodium phosphate, dibasic		5000 (2270)
Sodium phosphate, tribasic		5000 (2270)
Sodium selenite *		1000 (454)
4,4'-Stilbenediol, alpha,alpha'-diethyl-	Diethylstilbestrol	1 (0.454)
Streptozotocin	D-Glucopyranose, 2-deoxy-2-(3-methyl-3-nitrosoureido)-	1 (0.454)
Strontium chromate		1000 (454)
Strontium sulfide		100 (45.4)
Strychnidin-10-one, and salts	Strychnine * and salts *	10 (4.54)
Strychnidin-10-one, 2,3-dimethoxy-	Brucine	100 (45.4)
Strychnine * and salts *	Strychnidin-10-one, and salts	10 (4.54)
Styrene		1000 (454)
Sulfur hydride	Hydrogen sulfide *	100 (45.4)
	Hydrosulfuric acid	
Sulfur monochloride		1000 (454)
Sulfur phosphide	Phosphorus pentasulfide *	100 (45.4)
	Phosphorus sulfide	
Sulfur selenide	Selenium disulfide	1 (0.454)
Sulfuric acid		1000 (454)
Sulfuric acid, dimethyl ester	Dimethyl sulfate *	1 (0.454)
Sulfuric acid, thallium(I) salt	Thallium(I) sulfate *	100 (45.4)
2,4,5-T acid	2,4,5-T *	1000 (454)
	2,4,5-Trichlorophenoxyacetic acid *	
2,4,5-T amines *		5000 (2270)
2,4,5-T esters *		1000 (454)
2,4,5-T salts *		1000 (454)
2,4,5-T *	2,4,5-T acid	1000 (454)
	2,4,5-Trichlorophenoxyacetic acid *	
TDE *	DDD	1(0.454)
	Dichlorodiphenyl dichloroethane	
	4,4' DDD	
1,2,4,5-Tetrachlorobenzene	Benzene, 1,2,4,5-tetrachloro-	5000 (2270)
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)		1 (0.454)
1,1,1,2-Tetrachloroethane *	Ethane, 1,1,1,2-tetrachloro-	1 (0.454)
1,1,2,2-Tetrachloroethane *	Ethane, 1,1,2,2-tetrachloro-	1 (0.454)
Tetrachloroethene	Ethene, 1,1,2,2-tetrachloro-	1 (0.454)
	Perchloroethylene *	
	Tetrachloroethylene *	
Tetrachloroethylene *	Ethene, 1,1,2,2-tetrachloro-	1 (0.454)
	Perchloroethylene *	
	Tetrachloroethene	
2,3,4,6-Tetrachlorophenol	Phenol, 2,3,4,6-tetrachloro-	10 (4.54)
Tetraethyl lead *	Plumbane, tetraethyl-	10 (4.54)

LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

Hazardous Substance	Synonyms	Reportable Quantity (RQ) Pounds (Kilograms)
Tetraethyl pyrophosphate *	Pyrophosphonic acid, tetraethyl ester	10 (4.54)
Tetraethylthiopyrophosphate	Dithiopyrophosphonic acid, tetraethyl ester	100 (45.4)
Tetrahydrofuran *	Furan, tetrahydro-	1000 (454)
Tetranitromethane *	Methane, tetranitro-	10 (4.54)
Tetraphosphonic acid, hexaethyl ester	Hexaethyl tetraphosphate *	100 (45.4)
Thallic oxide	Thallium(III) oxide	100 (45.4)
Thallium ¢		1000 (454)
THALLIUM AND COMPOUNDS		**
Thallium(I) acetate	Acetic acid, thallium(I) salt	100 (45.4)
Thallium(I) carbonate	Carbonic acid, dithallium (I) salt	100(45.4)
Thallium(I) chloride		100 (45.4)
Thallium(I) nitrate		100 (45.4)
Thallium(III) oxide	Thallic oxide	100 (45.4)
Thallium(I) selenide		1000 (454)
Thallium(I) sulfate *	Sulfuric acid, thallium(I) salt	100 (45.4)
Thioacetamide	Ethanethioamide	1 (0.454)
Thiofanox	3,3-Dimethyl-1-(methylthio)-2-butanone,O-[(methylamino)carbonyl] oxime	100 (45.4)
Thiomidodicarbonic diamide	2,4-Dithiobiuret	100 (45.4)
Thiomethanol	Methanethiol	100 (45.4)
Thiophenol *	Methyl mercaptan *	100 (45.4)
	Benzenethiol	
	Phenyl mercaptan @	
Thiosemicarbazide	Hydrazinecarbothioamide	100 (45.4)
Thiourea	Carbamide, thio-	1 (0.454)
Thiourea, (2-chlorophenyl)-	1-(o-Chlorophenyl)thiourea	100 (45.4)
Thiourea, 1-naphthalenyl-	alpha-Naphthylthiourea	100 (45.4)
Thiourea, phenyl-	N-Phenylthiourea	100 (45.4)
Thiram	Bis(dimethylthiocarbamoyl) disulfide	10 (4.54)
Toluene *	Benzene, methyl-	1000 (454)
Toluene-2,4-diamine	2,4-Diaminotoluene	1 (0.454)
2,4-Toluenediamine *	2,4-Toluenediamine *	1 (0.454)
	Toluene-2,4-diamine	
	2,4-Diaminotoluene	
Toluene diisocyanate *	Benzene, 2,4-diisocyanatomethyl-	100 (45.4)
o-Toluidine hydrochloride	Benzenamine, 2-methyl-, hydrochloride	1 (0.454)
o-Toluidine	2-Amino-1-methyl benzene	1 (0.454)
p-Toluidine	4-Amino-1-methyl benzene	1 (0.454)
Toxaphene *	Camphene, octachloro-	1 (0.454)
2,4,5-TP @	Propionic acid, 2-(2,4,5-trichlorophenoxy)-	100 (45.4)
	Silvex	
2,4,5-TP acid esters	2,4,5-TP acid	
2,4,5-TP acid	2,4,5-TP ester @	100 (45.4)
	Propionic acid, 2-(2,4,5-trichlorophenoxy)-	100 (45.4)
	Silvex	
2,4,5-TP ester @	2,4,5-TP @	
1H-1,2,4-Triazol-3-amine	2,4,5-TP acid esters	100 (45.4)
Trichlorfon	Amitrole	1 (0.454)
1,2,4-Trichlorobenzene		100 (45.4)
1,1,1-Trichloroethane *		100 (45.4)
1,1,2-Trichloroethane	Methyl chloroform *	1000 (454)
Trichloroethene	Ethane, 1,1,2-trichloro-	1 (0.454)
Trichloroethylene *	Trichloroethylene *	1000 (454)
Trichloromethanesulfenyl chloride	Trichloroethene	1000 (454)
	Methanesulfenyl chloride, trichloro-	100 (45.4)
Trichloromonofluoromethane	Perchloromethyl mercaptan @	
Trichlorophenol *	Methane, trichlorofluoro-	5000 (2270)
2,3,4-Trichlorophenol		10 (4.54)
2,3,5-Trichlorophenol		
2,3,6-Trichlorophenol		
Phenol, 2,4,5-trichloro-	2,4,5-Trichlorophenol	10 (4.54)
Phenol, 2,4,6-trichloro-	2,4,6-Trichlorophenol	10 (4.54)
3,4,5-Trichlorophenol		
2,4,5-Trichlorophenol *	Phenol, 2,4,5-trichloro-	10 (4.54)
2,4,6-Trichlorophenol *	Phenol, 2,4,6-trichloro-	10 (4.54)
2,4,5-Trichlorophenoxyacetic acid *	2,4,5-T *	1000 (454)
	2,4,5-T acid	
Triethanolamine dodecylbenzene sulfonate		1000 (454)
Triethylamine		5000 (2270)
Trimethylamine *		100 (45.4)
sym-Trinitrobenzene *	Benzene, 1,3,5-trinitro-	10 (4.54)
1,3,5-Trioxane, 2,4,6-trimethyl-	Paraldehyde	1000 (454)
Tris(2,3-dibromopropyl) phosphate	1-Propanol, 2,3-dibromo-, phosphate (3:1)	1 (0.454)
Trypan blue	2,7-Naphthalenedisulfonic acid, 3,3'-[(3,3'-dimethyl-(1,1'-biphenyl)-4,4'-diyl)-bis(azo)]bis(5-amino-4-hydroxy)-tetrasodium salt.	1 (0.454)
Unlisted Hazardous Wastes Characteristic of Corrosivity		100(45.4)
Unlisted Hazardous Wastes Characteristic of EP Toxicity		
Arsenic D004		1 (0.454)
Barium D005		1000 (454)
Cadmium D006		1 (0.454)
Chromium D007		1 (0.454)
Lead D008		1 (0.454)
Mercury D009		1 (0.454)
Selenium D010		10 (4.54)
Silver D011		1 (0.454)
Endrin D012		1 (0.454)
Lindane D013		1 (0.454)
Methoxychlor D014		1 (0.454)
Toxaphene D015		1 (0.454)
2,4-D D016		100 (45.4)
2,4,5-TP D017		100 (45.4)

List of Hazardous Substances and Reportable Quantities—Continued

Hazardous Substance	Synonyms	Reportable Quantity (RQ) Pounds (Kilograms)
Unlisted Hazardous Wastes Characteristic of Ignitability		100 (45.4)
Unlisted Hazardous Wastes Characteristic of Reactivity		100 (45.4)
Uracil, 5-[bis(2-chloroethyl)amino]-	Uracil mustard	1 (0.454)
Uracil mustard	Uracil, 5-[bis(2-chloroethyl)amino]-	1 (0.454)
Uranyl acetate *		100 (45.4)
Uranyl nitrate *		100 (45.4)
Vanadic acid, ammonium salt	Ammonium vanadate	1000 (454)
Vanadium(V) oxide	Vanadium pentoxide *	1000 (454)
Vanadium pentoxide *	Vanadium(V) oxide	1000 (454)
Vanadyl sulfate		1000 (454)
Vinyl acetate *		5000 (2270)
Vinyl chloride *	Ethene, chloro-	1 (0.454)
Vinylidene chloride *	Ethene, 1,1-dichloro-	5000 (2270)
	1,1-Dichloroethylene	
Warfarin	3-(alpha-Acetonylbenzyl)-4-hydroxycoumarin and salts	100 (45.4)
Xylene * (mixed)	Benzene, dimethyl-	1000 (454)
m-Benzene, dimethyl-	m-Xylene	
o-Benzene, dimethyl-	o-Xylene	
p-Benzene, dimethyl-	p-Xylene	
Xylenol *		1000 (454)
2,4-Xylenol @	2,4-Dimethylphenol	100 (45.4)
	Phenol, 2,4-dimethyl-	
Yohimban-16-carboxylic acid,11,17-dimethoxy-18-[(3,4,5-trimethoxybenzoyl)oxy]-, methyl ester.	Reserpine	5000 (2270)
Zinc c		1000 (454)
ZINC AND COMPOUNDS		**
Zinc acetate		1000 (454)
Zinc ammonium chloride		1000 (454)
Zinc borate		1000 (454)
Zinc bromide		1000 (454)
Zinc carbonate		1000 (454)
Zinc chloride		1000 (454)
Zinc cyanide *		10 (4.54)
Zinc fluoride		1000 (454)
Zinc formate		1000 (454)
Zinc hydrosulfite *		1000 (454)
Zinc nitrate *		1000 (454)
Zinc phenolsulfonate		5000 (2270)
Zinc phosphide *		100 (45.4)
Zinc silicofluoride		5000 (2270)
Zinc sulfate		1000 (454)
Zirconium nitrate *		5000 (2270)
Zirconium potassium fluoride		1000 (454)
Zirconium sulfate *		5000 (2270)
Zirconium tetrachloride *		5000 (2270)
F001		1 (0.454)
The following spent halogenated solvents used in degreasing and sludges from the recovery of these solvents in degreasing operations:		
(a) Tetrachloroethylene		1 # (0.454)
(b) Trichloroethylene		1000 # (454)
(c) Methylene chloride		1000 (454)
(d) 1,1,1-Trichloroethane		1000 (454)
(e) Carbon tetrachloride		5000 # (2270)
(f) Chlorinated fluorocarbons		5000 (2270)
F002		1 (0.454)
The following spent halogenated solvents and the still bottoms from the recovery of these solvents:		
(a) Tetrachloroethylene		1 # (0.454)
(b) Methylene chloride		1000 (454)
(c) Trichloroethylene		1000 # (454)
(d) 1,1,1-Trichloroethane		1000 (454)
(e) Chlorobenzene		100 (45.4)
(f) 1,1,2-Trichloro-1,2,2-trifluoroethane		5000 (2270)
(g) o-Dichlorobenzene		100 (45.4)
(h) Trichlorofluoromethane		5000 (2270)
F003		100 (45.4)
The following spent non-halogenated solvents and solvents:		
(a) Xylene		1000 (454)
(b) Acetone		5000 (2270)
(c) Ethyl acetate		5000 (2270)
(d) Ethylbenzene		1000 (454)
(e) Ethyl ether		100 (45.4)
(f) Methyl isobutyl ketone		5000 (2270)
(g) n-Butyl alcohol		5000 (2270)
(h) Cyclohexanone		5000 (2270)
(i) Methanol		5000 (2270)
F004		1000 (454)
The following spent non-halogenated solvents and the stillbottoms from the recovery of these solvents: (a) Cresols/Cresylic acid (b) Nitrobenzene.		
F005		100 (45.4)
The following spent non-halogenated solvents and the stillbottoms from the recovery of these solvents: (a) Toluene (b) Methyl ethyl ketone (c) Carbon disulfide (d) Isobutanol (e) Pyridine.		
F006		1 (0.454)
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 carbonsteel, (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		

LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

Hazardous Substance	Synonyms	Reportable Quantity(RQ) Pounds(Kilograms)
F007 Spent cyanide plating bath solutions from electroplating operations		10 (4.54)
F008 Plating bath sludges from the bottom of plating baths fromelectroplating operations where cyanides are used in the process (except for precious metals electroplating plating bath sludges).		10 (4.54)
F009 Spent stripping and cleaning bath solutions from electroplating operations where cyanides are used in the process (except for precious metals electroplating spent stripping and cleaning bath solutions).		10 (4.54)
F010 Quenching bath sludge from oil baths from metal heat treating operations where cyanides are used in the process (except for precious metals heat-treating quenching bath sludges).		10 (4.54)
F011 Spent cyanide solutions from salt bath pot cleaning from metal heat treating operations (except for precious metals heat treating spent cyanide solutions from salt bath pot cleaning).		10 (4.54)
F012 Quenching wastewater treatment sludges from metal heat treating operations where cyanides are used in the process (except for precious metals heat treating quenching wastewater treatment sludges).		10 (4.54)
F019 Wastewater treatment sludges from the chemical conversion coating of aluminum		1 (0.454)
F020 Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the production or manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of tri-or-tetrachlorophenol, or of intermediates used to produce their pesticide derivatives. (This listing does not include wastes from the production of hexachlorophene from highly purified 2,4,5-trichlorophenol.).		1 (0.454)
F021 Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the production or manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of pentachlorophenol, or of intermediates used to produce its derivatives.		1 (0.454)
F022 Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of tetra-, penta-, or hexachlorobenzenes under alkaline conditions.		1 (0.454)
F023 Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the production of materials on equipment previously used for the production or manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of tri- and tetrachlorophenols. (This listing does not include wastes from equipment used only for the production or use of hexachlorophene from highly purified 2,4,5-trichlorophenol.).		1 (0.454)
F024 Wastes, including but not limited to distillation residues, heavy ends, tars, and reactor cleanout wastes, from the production of chlorinated aliphatic hydrocarbons, having carbon content from one to five, utilizing free radical catalyzed processes. (This listing does not include light ends, spent filters and filter aids, spent desiccants(sic), wastewater, wastewater treatment sludges, spent catalysts, and wastes listed in Section 261.32.).		1 (0.454)
F026 Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the production of materials on equipment previously used for the manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of tetra-, penta-, or hexachlorobenzene under alkaline conditions.		1 (0.454)
F027 Discarded unused formulations containing tri-, tetra-, or pentachlorophenol or discarded unused formulations containing compounds derivedfrom these chlorophenols. (This listing does not include formulations containing hexachlorophene synthesized from prepurified 2,4,5-trichlorophenol as the sole component.).		1 (0.454)
F028 Residues resulting from the incineration or thermal treatment of soil contaminated with EPA Hazardous Waste nos. F020, F021, F022, F023, F026, and F027.		1 (0.454)
K001 Bottom sediment sludge from the treatment of wastewaters from wood preserving processes that use creosote and/or pentachlorophenol.		1 (0.454)
K002 Wastewater treatment sludge from the production of chrome yellow and orange pigments.		1 (0.454)
K003 Wastewater treatment sludge from the production of molybdate orange pigments		1 (0.454)
K004 Wastewater treatment sludge from the production of zinc yellow pigments		1 (0.454)
K005 Wastewater treatment sludge from the production of chrome green pigments		1 (0.454)
K006 Wastewater treatment sludge from the production of chrome oxide green pigments (anhydrous and hydrated).		1 (0.454)
K007 Wastewater treatment sludge from the production of iron blue pigments		1 (0.454)
K008 Oven residue from the production of chrome oxide green pigments		1 (0.454)
K009 Distillation bottoms from the production of acetaldehyde from ethylene		1 (0.454)

LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

Hazardous Substance	Synonyms	Reportable Quantity(RQ) Pounds(Kilograms)
K010		
Distillation side cuts from the production of acetaldehydefrom ethylene		1 (0.454)
K011		
Bottom stream from the wastewater stripper in the production of acrylonitrile		1 (0.454)
K013		
Bottom stream from the acetonitrile column in the production of acrylonitrile		1 (0.454)
K014		
Bottoms from the acetonitrile purification column in the production of acrylonitrile		5000 (2270)
K015		
Still bottoms from the distillation of benzyl chloride		1 (0.454)
K016		
Heavy ends or distillation residues from the production ofcarbon tetrachloride		1 (0.454)
K017		
Heavy ends (still bottoms) from the purification column inthe production of epichlorohydrin.		1 (0.454)
K018		
Heavy ends from the fractionation column in ethyl chlorideproduction		1 (0.454)
K019		
Heavy ends from the distillation of ethylene dichloride inethylene dichloride production.		1 (0.454)
K020		
Heavy ends from the distillation of vinyl chloride in vinyl chloride monomer production.		1 (0.454)
K021		
Aqueous spent antimony catalyst waste from fluoromethanes production		1 (0.454)
K022		
Distillation bottom tars from the production of phenol/acetone from cumene		1 (0.454)
K023		
Distillation light ends from the production of phthalic anhydride from naphthalene		5000 (2270)
K024		
Distillation bottoms from the production of phthalic anhydride from naphthalene		5000 (2270)
K025		
Distillation bottoms from the production of nitrobenzene by the nitration of benzene.		1 (0.454)
K026		
Stripping still tars from the production of methyl ethyl pyridines		1000 (454)
K027		
Centrifuge and distillation residues from toluene diisocyanate production		1 (0.454)
K028		
Spent catalyst from the hydrochlorinator reactor in the production of 1,1,1-trichloroethane.		1 (0.454)
K029		
Waste from the product steam stripper in the production of1,1,1-trichloroethane		1 (0.454)
K030		
Column bottoms or heavy ends from the combined production of trichloroethylene and perchloroethylene.		1 (0.454)
K031		
By-product salts generated in the production of MSMA and cacodylic acid		1 (0.454)
K032		
Wastewater treatment sludge from the production of chlordane		1 (0.454)
K033		
Wastewater and scrub water from the chlorination of cyclopentadiene in the production of chlordane.		1 (0.454)
K034		
Filter solids from the filtration of hexachlorocyclopentadiene in the production of chlordane.		1 (0.454)
K035		
Wastewater treatment sludges generated in the production of creosote		1 (0.454)
K036		
Still bottoms from toluene reclamation distillation in theproduction of disulfoton		1 (0.454)
K037		
Wastewater treatment sludges from the production of disulfoton		1 (0.454)
K038		
Wastewater from the washing and stripping of phorate production		1 (0.454)
K039		
Filter cake from the filtration of diethylphosphorodithioic acid in the production of phorate.		10 (4.54)
K040		
Wastewater treatment sludge from the production of phorate		1 (0.454)
K041		
Wastewater treatment sludge from the production of toxaphene		1 (0.454)
K042		
Heavy ends or distillation residues from the distillation of tetrachlorobenzene in the production of 2,4,5-T.		1 (0.454)
K043		
2,6-dichlorophenol waste from the production of 2,4-D		1 (0.454)
K044		
Wastewater treatment sludges from the manufacturing and processing of explosives.		10 (4.54)
K045		
Spent carbon from the treatment of wastewater containing explosives		10 (4.54)
K046		
Wastewater treatment sludges from the manufacturing, formulation and loading of lead-based initiating compounds.		100 (45.4)
K047		
Pink/red water from TNT operations		10 (4.54)
K048		
Dissolved air flotation (DAF) float from the petroleum refining industry		1 (0.454)
K049		
Slop oil emulsion solids from the petroleum refining industry		1 (0.454)

LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

Hazardous Substance	Synonyms	Reportable Quantity (RQ) Pounds (Kilograms)
K050		
Heat exchanger bundle cleaning sludge from the petroleum refining industry		1 (0.454)
K051		
API separator sludge from the petroleum refining industry		1 (0.454)
K052		
Tank bottoms (leaded) from the petroleum refining industry		10 (4.54)
K060		
Ammonia still lime sludge from coking operations		1 (0.454)
K061		
Emission control dust/sludge from the primary production of steel in electric furnaces.		1 (0.454)
K062		
Spent pickle liquor from steel finishing operations		1 (0.454)
K069		
Emission control dust/sludge from secondary lead smelting		1 (0.454)
K071		
Brine purification muds from the mercury cell process in chlorine production, where separately prepurified brine is not used.		1(0.454)
K073		
Chlorinated hydrocarbon waste from the purification step of the diaphragm cell process using graphite anodes in chlorine production.		1 (0.454)
K083		
Distillation bottoms from aniline extraction		100 (45.4)
K084		
Wastewater treatment sludges generated during the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds.		1 (0.454)
K085		
Distillation or fractionation column bottoms from the production of chlorobenzenes.		1 (0.454)
K086		
Solvent washes and sludges, caustic washes and sludges, or wastewater washes and sludges from cleaning tubs and equipment used in the formulation of ink from pigments, driers, soaps, and stabilizers containing chromium and lead.		1 (0.454)
K087		
Decanter tank tar sludge from coking operations		100 (45.4)
K093		
Distillation light ends from the production of phthalic anhydride from ortho-xylene		5000 (2270)
K094		
Distillation bottoms from the production of phthalic anhydride from ortho-xylene		5000 (2270)
K095		
Distillation bottoms from the production of 1,1,1-trichloroethane		1 (0.454)
K096		
Heavy ends from the heavy ends column from the production of 1,1,1-trichloroethane.		1 (0.454)
K097		
Vacuum stripper discharge from the chlordane chlorinator in the production of chlordane.		1 (0.454)
K098		
Untreated process wastewater from the production of toxaphene		1 (0.454)
K099		
Untreated wastewater from the production of 2,4-D		1 (0.454)
K100		
Waste leaching solution from acid leaching of emission control dust/sludge from secondary lead smelting.		1 (0.454)
K101		
Distillation tar residues from the distillation of aniline-based compounds in the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds.		1 (0.454
K102		
Residue from the use of activated carbon for decolorization in the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds.		1 (0.454)
K103		
Process residues from aniline extraction from the production of aniline		100 (45.4)
K104		
Combined wastewater streams generated from nitrobenzene/aniline chlorobenzenes.		1 (0.454)
K105		
Separated aqueous stream from the reactor product washing step in the production of chlorobenzenes.		1 (0.454)
K106		
Wastewater treatment sludge from the mercury cell process in chlorine production.		1 (0.454)
K111		
Product washwaters from the production of dinitrotoluene via nitration of toluene		1 (0.454)
K112		
Reaction by-product water from the drying column in the production of toluenediamine via hydrogenation of dinitrotoluene.		1 (0.454)
K113		
Condensed liquid light ends from the purification of toluenediamine in the production of toluenediamine via hydrogenation of dinitrotoluene.		1 (0.454)
K114		
Vicinals from the purification of toluenediamine in the production of toluenediamine via hydrogenation of dinitrotoluene.		1 (0.454)
K115		
Heavy ends from the purification of toluenediamine in the production of toluenediamine via hydrogenation of dinitrotoluene.		1 (0.454)
K116		
Organic condensate from the solvent recovery column in the production of toluene diisocyanate via phosgenation of toluenediamine.		1 (0.454)

Section H

PERSONNEL TRAINING

The information contained in this section outlines training programs for personnel, in accordance with 40 CFR Sections 264.16 and 270.14(b)(12).

H.1 Outline of Training Program [40 CFR 270.14(b)(12);]

DRMO personnel who handle hazardous wastes must successfully complete a program of classroom instruction and/or on-the-job training in order to prepare them to operate and to maintain the facility in a manner which ensures the facility's compliance with 40 CFR 264.16. Relevant course selections are determined by DRMS Headquarters in Battle Creek, Michigan. Headquarters personnel review the content of available military, government, and professional hazardous waste management training courses in an effort to select the most appropriate training program which will correspond to specific job tasks, and to comply with training requirements in 40 CFR 264.16(a)(3). This guidance is provided to DRMO-Cannon by DRMR-Ogden.

The personnel handling hazardous wastes at DRMO-Cannon have attended or will attend the Property Disposal Hazardous Materials Handling Course offered by the Army Logistics Management Command in Ft. Lee, Virginia (Figure H-1), which consists of 40 hours of lecture and practical exercises. In addition, DRMO employees may attend the course, "Hazardous Chemicals Safety," offered by the J. T. Baker Chemical Company. This course consists

of 16 hours of lecture and practical exercises (Figure H-2). Employees are also required to read and understand the DRMO publication entitled Environment Considerations in the DRMS Disposal Process (Figure H-3).

On-the-job training is provided to DRMO-Cannon by DRMS-Battle Creek and DRMR-Ogden environmental specialists throughout the year during periodic quality assurance visits. Also, the Oil and Hazardous Substance Spill Prevention and Response Plan for Cannon AFB will be executed at least once annually for training purposes.

All personnel at Cannon AFB involved in hazardous waste management attend the Hazardous Waste Management Training Program developed by the Research Triangle Institute for the Department of the Air Force. A copy of the training manual for this course is included as Appendix H-1.

H.1.a Job Titles and Duties 40 CFR 264.16(d)91 and (2);

(i) DRMO-Cannon

Three DRMO employees will be directly responsible for handling hazardous wastes. The duties, responsibilities, and qualifications of each of these positions are as follows:

Position Title: Chief, DRMO

Date:
Revision No.: 4
Section: H
Cannon

Fiqure H-1

Property Disposal Hazardous Materials Course,
Army Logistics Management Command

Ft. Lee, Virginia

Topic

1. Identification, categorization, and recognition of hazardous wastes that are the responsibility of Defense Reutilization and Marketing Service for disposal.

2. Safety and health hazards, both acute and chronic.

3. Personal protective equipment requirements and their proper use.

4. Segregation and storage procedures for hazardous property

5. Packing, marking, labeling, placarding, and transportation requirements.

6. Spill containment and control.

7. DRMS responsibilities with regard to current legislation in the environment arena, with particular emphasis on the ramifications of the Resource Conservation and Recovery Act of 1976.

8. Requirements for final disposal of wastes (includes, but is not limited to, recognition, manifesting, reporting, and recordkeeping).

Figure H-2

Topics Covered by the Course, Hazardous Chemical Safety, which is offered by the J.T. Baker Chemical Company.

1. Safety Fundamentals
2. Safety Policies Training
3. Toxic Chemicals
4. Toxic Chemical Monitoring
5. Material Release Investigation and Response
6. Safety Planning
7. Hazardous Materials Labeling
8. Flammable Chemical Hazards
9. Corrosive Chemical Hazards
10. Safety Audits
11. Reactive Chemical Hazards
12. Insidious Hazards
13. Compressed Gas Hazards
14. Cryogenic Liquid Hazards
15. Fire Safety
16. Storage of Hazardous Materials and Hazardous Waste
17. Hazardous Waste Disposal According to RCRA
18. Measuring Effectiveness

Figure H-3

Environmental Considerations in the DRDS Disposal Process,
DPDS-M #6050.1, Section V

Chapter

1. Asbestos Disposal Procedures
2. Containers
3. PCB Disposal Procedures
4. Oil and Hazardous Materials/Hazardous Wastes (HM/HW) Spill Prevention and Response
5. Transportation of Hazardous Material/Hazardous Waste
6. Batteries
7. Retrogrades
8. Chemical Handling Procedures
9. Packaging of Hazardous Materials/Hazardous Wastes
10. Pesticide Disposal Procedures
11. Storage Compatibility
12. Spill Residue Disposal Procedures
13. Record Keeping

Responsibilities:

Directs the operation of disposal services to military activities at Cannon AFB. Disposal services provided include the acceptance of accountability for excess and surplus personal property from Department of Defense (DOD) generating activities; physical receipt, storage, and issue of property accepted; reutilization of excess property by DOD activities in lieu of new procurement; transfer of excess property to the General Services Administration and other Federal government agencies, educational institutions, public service organizations, etc.; sale of surplus property to the general public; and abandonment or destruction when other methods of disposal have been exhausted. The DRMO receives a limited volume but wide variety of excess property, ranging from scrap and common-use, commercial -type items to complex and highly specialized equipment, including precious metals and hazardous materials and wastes. Approximately 25 percent or more of the usual items received are complex or specialized items.

The DRMO Chief supervises a subordinate staff comprised of 10 to 20 employees in technical, clerical. and wage grade positions. He receives general supervision from the Commander and Deputy of the Defense Property Disposal Region (DRMR), who provides overall program direction, goals and objectives, and policy guidance, and applies judgment and resourcefulness to independently direct operations of the DRMO within the framework of regulations, policy, and procedures established by the Defense Property Disposal Service (DRMS) and higher level authorities within DOD.

Duties:

Directs the local property disposal program by establishing and maintaining contact with the Cannon AFB Installation Commander and other generating activity officials, including supply officers, civil engineers, maintenance shop foremen. interservice support agreement (ISA) coordinators, and others. Also maintains contact with key officials of tenant organizations and off-base generating activities. Acquires a knowledge of missions, functions, and contemplated program changes to gain insight into the effect such activity will have on the generation of excess property. Advises activities served of steps they can take to facilitate turn-in of excess property and when special handling, storage. or transportation are required. periodically visits generating activities to promote reutilization screening, discuss the quality or services provided by the DPMO, resolve problems experienced by either party. and coordinate very large turn-ins. Educates those interested in or affected by the property disposal program and conducts training on the proper procedures for turn-in of excess property, screening and requisitioning of DPMO property for reutilization, and buying property offered for sale. Explains and verifies compliance with special requirements for segregation of scrap and turn-in of hazardous materials and wastes, weapons, machine tools, and automatic data processing equipment. Coordinates the proper handling and disposition of property which cannot be stored at the DRMO.

Assures that employees receiving excess hazardous/toxic materials and wastes can properly identify items that may pose a threat to the health and safety of individuals or to the environment. Decides whether to accept or reject property based on hazardous characteristics or improper identification, ascertains the type of special handling required and assures

it is provided, accepts or refuses physical custody based on adequacy of storage facilities, and requests laboratory analyses as appropriate. Periodically inspects hazardous items, even when physically stored by generating activity, and repackages if necessary. Keeps abreast of applicable environmental regulations promulgated by the New Mexico Environmental Improvement Division and the U. S. Environmental Protection Agency and maintains close working relationships with representatives of local safety and environmental organizations to verify that DPMO operations comply with governing requirements. Serves as an active member of the environmental committee, explaining DRMS policy relating to acceptance of custody versus accountability, packaging, manifesting, placarding, and transportation. Serves as the contracting officer's representative on service contracts for the removal and disposal of hazardous materials and wastes, assuring that the contractor complies with the terms and conditions of the contract, as well as the Department of Transportation standards.

Experience and Oualifications:

Ability to manage the DRMO operation by planning work for his staff, establishing priorities and preparing work schedules, determining training needs and arranging attendance at specific training courses.

Ability to amend and improve the receipt, storage, and issue methods, to define equipment and supply needs, and to determine the nature and quantity of services that DRMO will need from Cannon AFB, such as vehicle and equipment maintenance, fire protection, safety and security support, and building maintenance.

Position Title: Environmental Protection Specialist

Responsibilities:

Provides technical guidance to DRMO personnel involved in the receipt/storage/handling/accounting/disposal of hazardous property. Determines, through coordination with turn-in activities, if hazardous property is a DRMS disposal responsibility and if the DRMO will take physical custody of the property. Participates in coordinating and scheduling receipt of hazardous property, assuring that pre-receipt examination is performed when necessary. Assures that hazardous property is properly identified including hazardous waste categorization, identification of all contaminants and, as required, presence of a laboratory analysis. Determines the nature (e.g., flammability) and degree (e.g., repercussions of long-term storage) of the hazard. Determines if containers are safe to handle, non-leaking, capable of withstanding routine handling, and safe for required period of storage. When required, determines if containers are DOT-approved and are marked and labeled in accordance with DOT regulations. Determines DTID requirements (e.g., RCRA manifest information, as required, and hazard codes), makes storage compatibility determinations, and determines the need for special handling of property (e.g., friable asbestos, PCBs, batteries, pesticides, etc.). Rejects property not meeting turn-in requirements. Assures that hazardous property storage areas are inspected weekly (or more frequently if dictated by state/local requirements) to ensure that property is properly accounted for, identified, stored and that necessary measures (e.g., repackaging) are taken to compensate for deterioration of substances and containers. Inspects the facility and equipment required by the facility inspection schedule and documents findings. Participates in inspection conducted by the host and

NMEID/Federal EPA personnel. During the preparation of sales property lists, ensures proper identification, lotting, and designation of hazardous wastes/materials. Reviews completed property lists to confirm the preceding and resolves discrepancies. Provides assistance during pre-award surveys (i.e., investigate statement of intent, permitting, etc., required for hazardous property.). Acts as the Emergency Spill Coordinator at the DRMO site and organizes a similar function at each Off-Site Branch (OSB). Executes required actions if a spill occurs and ensures personnel are trained to act during this absence. Maintains cognizance of the host installation contingency plan, the location and characteristics of the wastes handled, the location of all facility records, and the facility layout. Contains and cleans up spills for which the DRMO has the capability. Decontaminates and replenishes spill equipment and supplies. Ensures spill incident reports are prepared in accordance with applicable regulations.

Insures DRMO/OSB compliance with DRMS operating policy at each phase of the disposal cycle. Determines disposal cycle processing requirements in accordance with established criteria. Ensures shipping operations comply with DOT and EPA (i.e.. packaging, placarding, transportation, and manifesting). Initiates corrective action to resolve manifest discrepancies. Maintains proper visibility of hazardous property inventory utilizing IDMS outputs and other methods. Requests and justifies accelerated disposal of hazardous property when normal disposal timeframes would cause deterioration of hazardous property containers, impact storage capabilities, or create unsafe conditions or other circumstances which dictate emergency action. Intensifies inventory management control to accommodate shortened timeframes.

Contacts to host personnel, customers, generating activities, DRMR personnel, and local environmental personnel to coordinate requirements of environmental policies and directives. Serves as the DRMO representative in meetings, discussions and liaison visits. Serves as DRMO representative on the Host Environmental Board. Resolves problems within established DOD disposal policies.

Initiates and maintains required environmental reports/plans/records in the processing of hazardous property. Ensures that RCRA recordkeeping requirements are complied with (e.g.. facility operating records, training records, inspection schedule/log contingency plan, HW management report, unmanifested waste report etc.). Ensures consistency of plans with host installation Hazardous Waste Management Plans, Spill Contingency plans, and ISAs. Ensures that local support agreements with Host and/or surrounding communities are in existence. Assists in the preparation of hazardous waste facility permit applications. Prepares and provides required reports to host installation and higher headquarters. Ensures that an internal spill continqency plan is prepared and complied with at the DRMO/OSB.

Coordinates with turn-in activities to identify inventory for requirements contracts. Verifies quantities and storage locations and forwards to DRMR. Reviews pre-solicitation documents for errors or omissions in inventories, pick-up points, points of contact and any special considerations (i.e., security requirements, removal time frames, minimum order quantities, etc.) and refers to DRMR/DRMS for corrective action. May be assigned COR for contracts when appointed by DRMS. As COR prepares delivery order and forwards them to CO. Maintains COR files of all correspondence and conversations with the CO and with the contractor.

Accompanies contractor during removals of DRMO property. Verifies the contractor-prepared manifest and shipping papers and DOT markings, packaging and labeling requirements. Confirms that the transporter and final destination of the hazardous property are authorized in contract. Monitors contractor compliance with the contract and all environmental and safety requirements during removal. Notifies CO of discrepancies in contractor performance and may immediately stop the contractor's work for violation of safety regulations. Documents removals and forwards documentation to the CO. Recommends changes to existing and future service contracts.

Performs other duties as assigned.

Position Title: Material Sorter and Classifier

Responsibilities:

Researches applicable DOD/DLA policies in order to properly inspect, classify, and identify materials for storage; reviews shipping manifests to ensure that the descriptions of the items intended for storage match the labels on the containers.

Major duties:

Physically inspects the condition of property intended for DRMO storage; determines the proper storage location maintains logbooks which inventory all items in storage to include: NSN, noun name, volume, manufacturer's name. etc.; writes letters stating requirements for property

requiring special handling procedures (i.e., hazardous materials/wastes); detirmines the condition of sales and the need for disposal of property; refuses property if not properly packaged and manifested; operates a forklift.

Experience and Oualifications:

Ability to differentiate between various materials (i.e., corrosives, flammables, reactives); to catalog storage items by utilizing the HMIS and other reference documents; to read and to understand technical data presented on manifest and container labels. Skill in operating a forklift.

H.1.b Training Content, Frequency, and Techniques [40 CFR 264.16(c) and 264.16(d)(3):]

The training program employed by DRMS for employees handling hazardous wastes combines supervised on-the-job instruction and formal classroom training. Each employee learns about particular dangers associated with hazardous wastes typically stored at the DRMO and their storage requirements. Training specified in this section will be provided across the board to all DRMO employees having duties relating to hazardous waste management. Continuing training will be of the refresher type and will address the same topics discussed in the initial training, plus any additional pertinent information available.

On-the-job training requires hazardous waste management personnel to read and understand the manual entitled Environmental Considerations in the DRMS Disposal Process. Publication #DRMS-M 6050.1. Section V of this publication outlines procedures to ensure the proper management and handling of hazardous wastes. In part, each employee's performance of his/her assigned duties will be dependent upon his/her demonstration of an understanding of the information/guidance provided in this manual. The employee's performance is continuously monitored by the on-site supervisor and is formally evaluated at least annually during the employee's performance appraisal. In addition, employee compliance with the requirements set forth in 6050.1 are also reviewed during DRMR, DRMS, Inspector General, and to a lesser extent, by EPA/NMEID visits to the facility. Reference materials describing technical and regulatory aspects of hazardous waste manaqement are also available at the DRMO Administrative Office.

Additional on-the-job training is provided by DRMS-Battle Creek and DRMR-Ogden by environmental specialists who make periodic quality assistance visits throughout the year. These individuals provide guidance to DRMO personnel for the proper identification, handling, and storage of hazardous wastes.

After receiving sufficient on-the-job training, employees will take the Property Disposal Hazardous Materials Course offered by the Army Logistics Management Command. DRMS assisted in developing this course, which consists of 40 hours of lecture and practical exercises. As Figure H-1 indicates. topics addressed include:

1. Federal and state hazardous waste regulatory requirements including manifests and log notebooks.

2. Hazards for specific wastes.

3. Spill prevention control. and decontamination procedures for equipment and employees.

The J. T. Baker course "Hazardous Chemical Safety" consists of 16 hours of lecture and practical exercises demonstrating the nature of hazardous materials and waste.

The topics covered in these courses provide the employee with an understanding of potential hazards inherent in the job, as well as with the precautions necessary to minimize these hazards.

All Cannon AFB personnel also take the course developed by the Research Triangle Institute for the Department of the Air Force.

This training program is divided into eighteen elements. The elements in which personnel receive training depend upon the type of hazardous waste management activities they perform. (See Appendix H-1). Job descriptions will be modified to include the duties and responsibilities of the employee with respect to hazardous waste management.

H.1.c Training Director [40 CFR Section 264.16(a)(2);

DRMR, Ogden is responsible for ensuring that DRMO personnel receive adequate training in handling hazardous wastes. No personnel will be allowed to provide on-the-job training without first demonstrating an understanding of hazardous waste management procedures sufficient to ensure operation of the facility in a manner that complies with all State and Federal regulations.

The Commander, 27th Combat Support Group, is responsible for ensuring that personnel on Cannon AFB receive training. This responsibility is delegated to 27 CSG/DEV.

H.1.d Relevance of Training to Job Position [40 CFR 264.16(a)(2);]

The training outlined in the preceding sections is relevant to the job descriptions in that the training teaches those personnel to recognize hazardous waste, handle it safely in accordance with federal and state regulations, be able to respond and take appropriate action in the case of an emergency, etc.

Since this is a specified duty under the job description, the training is sufficient to satisfy the requirements of NM HWMR 206.B.6.a.

Courses which offer more in-depth instruction on labeling and storage requirements include:

(i) Hazardous Materials, Chemicals and Waste Training and Compliance Course, Hazardous Materials and Waste Management Assoc., Inc., Transportation Skills Program, Inc. (8 hours) (Figure H-4).

(ii) Hazardous Materials Incident Response Operations Course, Office of Emergency and Remedial Response, U.S. Environmental Protection Agency (5 days), Edison, N.J. - (Figure H-5).

(iii) Hazardous Materials Compliance and Enforcement Course, U.S. Department of Transportation (1 week) - (Figure H-6).

At least one of these courses would be recommended as advanced hazardous waste management training for DRMO personnel.

Figure H-4

Hazardous Materials, Chemical and
Waste Training and Compliance Course

Hazardous Materials & Waste
Management Assoc. Inc., Transportation
Skills Program Inc.

Seminar Content Covers:

- The regulatory interface between DOT, EPA, and OSHA.
- The current status of DOT, EPA, and OSHA regulations affecting hazardous materials, substances, chemicals, and waste. (Two-Part presentation featuring an audiovisual. presentation and a review of supporting Federal and state documentation.)
- Training requirements for company personnel on all applicable DOT, EPA, and OSHA regulations.
- RCRA contingency/emergency plans required for all generators and owners/operators of treatment, storage, and disposal facilities.
- How to prepare "lab packs" and the new EPA regulations for recyclable hazardous waste.
- New OSHA regulations for manufacturers, users, generators, transporters, and carriers for Material Safety Data sheets.
- Training requirements for all employees required by the Hazard Determination and Communications Training Program. (This portion of the seminar features an audiovisual program and review of actual regulatory documentation.)

Figure H-4 (continued)

Hazardous Materials, Chemical and
Waste Training and Compliance Course

Hazardous Materials & Waste
Management Assoc. Inc., Transportation
Skills Program Inc.

Seminar Content Covers:

- Current and proposed EPA and DOT regulations for handling "empties," "non-empties," and "leakers."
- Emergency response requirements for hazardous materials, substances, chemicals, and waste under DOT, EPA, and OSHA.
- Current and proposed DOT, EPA, and OSHA shipping papers and manifest requirements for hazardous materials, substances, chemicals, and waste. (This portion of the seminar features an audiovisual presentation and review of applicable documentation.)
- Current and proposed DOT, EPA, and OSHA requirements for identifying. classifying, labeling. marking, placarding, and packaging of hazardous materials, substances, chemicals, and wastes.

Figure H-5

Hazardous Materials Incident Response Operations Course
Office of Emergency and Remedial Response
U.S. Environmental Protection Agency
Edison, New Jersey

This course provides attendees with practical knowledge concerning incident response operations. The course focuses on response team function, methods, procedures, and safety in responding to hazardous substances spills or abandoned wastes sites.

After completing the course, attendees should be more familiar with selection, use, and limitation of respiratory protection apparatus and protective clothing; site entry, control, and decontamination procedures; the use of field instruments and equipment; and response organization and management.

Approximately one-third of the course is classroom instruction. The remaining time is hands-on use of monitoring equipment. personnel protective apparatus, and other applications of classroom topics. Decision-making in incident response operations is practiced by responding as teams to a simulated vehicular accident and an abandoned waste site.

Course topics include: respiratory protection apparatus, protective clothing, field instruments, hazard analysis, response organization, and standard operating safety procedures.

Course Mo. 165.5

Continuing Education Units: 2.3

Length of Course: 5 days

Figure H-6

Hazardous Materials Compliance and
Enforcement Course
U.S. Department of Transportation

Course Content

Introduction and Legal Aspects	Cargo Tanks Specifications Inspection Procedures
Organization and Introduction to 49 CFR	
Procedure for Using HM Regulations	Roadside Inspection Procedures
Shipper Functions (All Modes)	Enforcement and Field Problems
Hazardous Substances and Wastes	Citing Non-Compliance
Modal Requirements	Emergency Response
Overview: Int'l Civil Aviation Education Organization (IcAo)	Training and Education
Overview: Int'l Maritime Organization Procedures (IMO)	Inspection
Introduction to Radioactive Materials	

Note: Prior to Phase I each course participant will receive:

Title 49, CFR, Parts 100-177, Phase I Student Text and Workbook, and a qualifying examination.

During Phase II (in-residence - 5 days) Participants will receive:

Title 49, CFR, Parts 178-199, Phase II Student Workbook and other support material.

H.1.e Training for Emergency Response [40 CFR 264.16(a)(3);].

The DRMS training program ensures that its employees receive emergency response training. On-the-job training requires each employee to read and to understand Section V, Chapter 4 of publication # DPDS-M 6050.1 entitled, "Oil and Hazardous Materials/Hazardous Wastes Spill Prevention and Response."

Emergency response is also covered in classroom instruction with lectures and practical exercises. The Property Disposal Hazardous Materials Course (Fiqure H-1. item 6) addresses the topic. Spill Containment and Control. In addition. the Air Force Training Program provides instruction in emergency response, spill clean-up, and the line of personnel to be contacted.

H.2 Implementation of Training Program 40 CFR 264.16(d)(4) and 264.16(b);

Current and future DRMO employees assigned to manage/handle hazardous materials and hazardous wastes will complete the training program discussed in Section H-1b within six months of their date of employment. At a minimum, DRMO employees will attend the Property Disposal Hazardous Materials Course offered by ALMC.

- The Air Force Training Program will be completed within six months of employment or assignment to a new activity, unless the employee has a record of previous hazardous waste management training.

No employee will work unsupervised with hazardous wastes until he/she successfully completes on-the-job training. This training will be provided by DRMO by either the DRMS or DRMR environmental specialists during their periodic quality assurance visits throughout the year.

Additional formal training programs will be attended by DRMO personnel. The content of these programs is outlined in Figures H-3 through H-5. Facility personnel will also take part in an annual review of the training program.

For DRMO employees, all records documenting the job title for each position, job descriptions, employee names, and completed training programs (both introductory and review) will be kept onsite in the DRMO Office. Duplicate records will be kept at 27 CSG/DEV. The above information for Cannon AFB personnel is also maintained bY 27 CSG/DEV.

These records will be kept until closure of the facility for current employees, and for three years from the date of an individual employee's termination for former employees.

PERMIT ATTACHMENT H.

Closure Plan

Section I

CLOSURE PLAN, POST CLOSURE PLAN AND FINANCIAL REQUIREMENTS

This section is submitted in accordance with the requirements of 40 CFR 270.14(b)(13), 270.14(b)(15-18), 264.110-261.115, 264.351, 264.178 and 264.197.

I.1 Closure Plans [40 CFR 270.14(b)(13);]

This plan identifies all steps that will be necessary to partially close the storage facility at any point during the intended operating life and to completely close the facility at the end of its intended operating life.

DRMO Cannon and Cannon AFB will maintain an on site copy of the approved closure plan, and of all revisions to the plan. Revisions will be made whenever any modifications are made to the existing equipment, structures, instruments, or procedures related to the management of the facility.

I.1.a Closure Performance Standard [40 CFR 264.111 and 264.112;]

This closure plan is designed to: ensure that the facility will not require further maintenance and controls; minimize and eliminate threats to human health and the environment; and prevent escape of hazardous wastes,

hazardous waste constituents, or waste decomposition products to the ground or surface waters or to the atmosphere. If there is evidence of any spills or leaks, samples will be taken and analyzed to determine the extent of contamination in the soil and, if necessary, in groundwater. Any contaminated soil will be excavated, removed, and disposed of at a proper disposal facility. Any contaminated ground water attributable to the handling practices of hazardous wastes at this facility will be treated so that any contamination resulting from the above handling practices is below local, state, and/or Federal limits. Specific procedures are discussed in Section I.1.e.

I.1.b Partial and Final Closure Activities [40 CFR 264.112(a)(1)-264.112(a)(4);]

Partial closure of the container storage is not planned. However, in the event that future circumstances or decisions force the facility to discontinue their activities, the procedures for final closure will be followed.

I.1.c Maximum Waste Inventory [40 CFR 264.112(a)(2);]

At a maximum, there will be 10,720 gallons in 55-gallon drums and smaller containers of hazardous waste in storage at any one time during the operational life of the storage facility.

I.1.d Schedule for Closure [40CFR 264.112(a)(4);]

Cannon AFB is an integral part of the defense system of the United States; it is not anticipated that closure will occur. However, a closure date of 2034 can be estimated for the DRMO facility.

I.1.d(1) Time Allowed for Closure [40 CFR 264.113(a) and (b);

Within 90 days after the receipt of the final volume of hazardous wastes, final closure activities will be initiated. Table I-1 presents an estimated schedule for closure which gives an estimate of the total time required to close the facility and the time required for intervening closure activities.

Notification of intent to close will be sent to the New Mexico Environmental Improvement Division, Hazardous Waste Management Section and/or the EPA Regional Administrator 180 days before beginning final closure. Final closure will be supervised and certified by an independent registered professional engineer.

I.1.d(2) Extensions for Closure Time [40 CFR 261.113(a) and (b);)

No extension for closure time is anticipated. If, however, an extension would be necessary to properly close the HWSF, then a petition will be sent to the permitting authority amending the closure schedule listed in Table I-1. This petition will demonstrate:

(i) The need for more than 90 days to remove wastes received at the facility prior to commencement of the closure activities.

(ii) The need for more than 180 days to close the facility.

(iii) There is a reasonable likelihood that a person other than the owner/operator will recommence operation of the site.

(iv) Closure would be incompatible with continued operation.

(v) All steps have and will be taken to prevent threats to human health and the environment from the unclosed but inactive facility.

I-1e. Inventory Disposal, Removal, or Decontamination of Equipment [40 CFR 264.114]

Upon formal notification to proceed with facility closure, no additional hazardous property will be accepted at the storage facilities. Furthermore, all hazardous waste/property remaining in inventory will be removed in accordance with a contractual agreement to a State and/or EPA-TSD facility or recycling site(s). If this process cannot be accomplished within the allotted time for closure, then the hazardous property will be transferred to an operational DRMO with a valid approved TSD permit. After the final inventory of waste has been removed the hazardous waste storage facility will be inspected for loose items; i.e., papers, pallets, or empty containers. These items will be removed and properly disposed.

Trained personnel wearing appropriate protective equipment (rubber gloves, rubber boots, coveralls and organic vapor masks) will remove and clean-up all visible signs of contamination using water and detergent. Then all waste storage area floors, containment trenches and walls will be cleaned using high pressure steam cleaning equipment. All washings will be collected, stored and the washwater analyzed. If the analysis indicates that the wash is hazardous, then it will be drummed, labelled and disposed of as hazardous waste. If the analysis shows no evidence of contamination, the wash will be discharged to the sewer system. The load/unload area and containment trench will be cleaned in the same manner after the equipment decontamination has taken place.

The samples of the washwater will be analyzed for pH, EP toxic metals, and scanned for organics using the GC/MS methods outlined in Permit Attachment II-1. The washwater will be considered hazardous if:

1. The concentration of any EP toxic metal exceeds the concentration in HWMR-5, Part II, 40CFR Section 261.24;

2. The pH is >12.5 or <2; or

3. Any of the wastes or constituents of the waste that have been stored at the facility are detected in concentrations above detection limits.

All equipment which has come into contact with hazardous waste will be decontaminated at closure, or shipped off-site to a permitted hazardous waste disposal site. The equipment, forklifts and hand tools will be decontaminated on the load/unload area of the storage building. Equipment, where applicable, will be steam-cleaned and the washwater collected. Disposable equipment and other equipment not readily decontaminated (e.g. brushes, mops, protective clothing, pump hose and fittings) will be drummed, labelled and disposed of as hazardous waste.

If there is evidence of any spills or leaks, samples will be taken to determine the extent of contamination in the soil. Surface samples will be taken initially, and will be analyzed for halogenated organics, non-halogenated organics, corrosivity and EP toxicity. These parameters are selected based on the information provided in Appendix C. All sampling and analysis methods will be in accordance with EPA Publication SW 846, "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", 2nd ed., 1982. A minimum of four samples will be collected. A representative background sample will be taken outside the area defined as potentially contaminated. Sites will be selected by the contractor hired to develop and implement the sampling protocol.

If results indicate that contaminant levels are above allowable concentrations and/or background levels, additional samples will be taken down to a depth of one foot, using an auger. Based on these analyses, the contractor will then determine the need for further soil sampling and whether samples should be analyzed for additional parameters. If unacceptable concentrations of contaminants are found at greater depths, the contractor will also determine the need for establishing groundwater monitoring wells.

Any contaminated soil will be removed until pollutant levels in the remaining soil are down to allowable concentrations and/or background levels. Additional sampling will be performed until decontamination is verified. Any contaminated groundwater attributable to the handling or storing of hazardous wastes at this facility will be treated so that any contamination is reduced to a level below local, state and/or Federal limits specific for that contaminant. If necessary, the site will be regraded subsequent to closure in order to prevent erosion.

Facility decontamination procedures will be conducted by trained personnel. The services of these personnel will be obtained at the time of closure notification in accordance with contractual procedures established by DRMS. DRMS will prescribe requirements for decontamination and will require the contractor to provide all necessary equipment and protective clothing to safely effect decontamination.

Following the final disposition process, soil samples will be taken to determine whether contamination of the area exists. If necessary, soil will be removed and the area re-tested until no appreciable level of contamination remains. Any soil removed will be containerized and transported to either the DRMO storage facility or to a state/EPA approved disposal site. All soil sampling results, (the full investigation) will be sent to the NMEID for review.

Verification of all analyses will be supplied by an independent laboratory.

I-1e(1). Closure of Containers [40 CFR 264.178;]

The removal of waste containers previously discussed in Section I-1(e) will be verified by an independent registered professional engineer. All containers will be sealed and labeled prior to shipment in accordance with 40 CFR Sections 261 and 262. Manifests for container removal will be maintained by the Defense Property Disposal Service Headquarters Office, 74 N. Washington, Battle Creek, MI 49016.

I-1e(2). Closure of Tanks [40 CFR 264.197;]

No tanks will be used to store wastes at this facility.

I-1e(3). Closure of Waste Piles (Reserved) [40 CFR 270.17(i) and 264.258;]

No waste piles will be located at this facility.

I-1e(4). Closure of Surface Impoundments [40 CFR 270.17(i) and 264.228;]

No surface impoundments will be located near this facility. This section is not applicable.

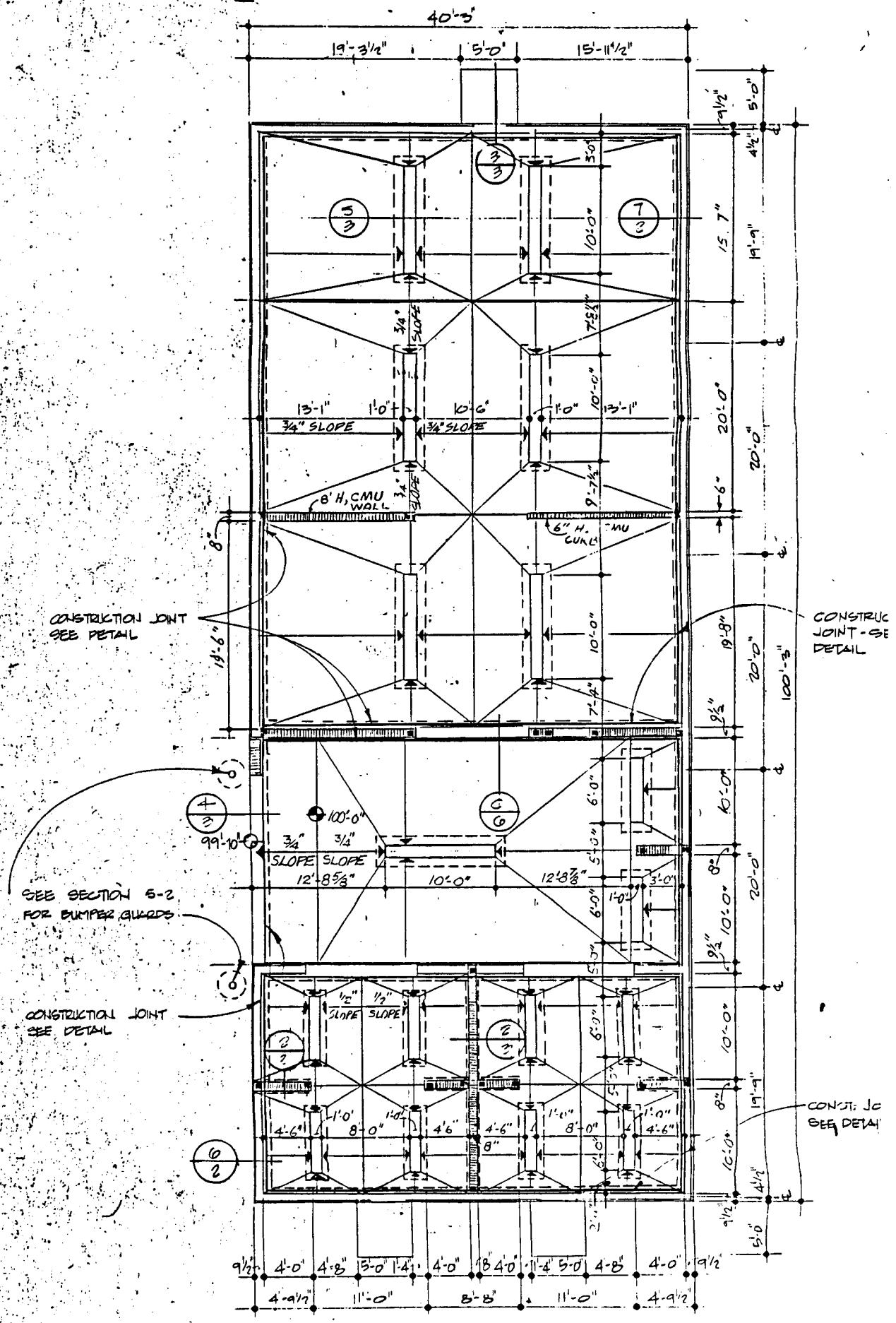
Table I-1

Estimated Closure Schedule

Item	Activity	Days
1.	Notify NMEID of closure.	-45
2.	Receipt of final volume of hazardous waste.	-30-0
3.	Begin closure period.	0
4.	Removal/disposal of final waste inventory.	10-90
5.	Decontamination of storage facility.	90-140
6.	Decontamination verification.	160
7.	Submittal of final report and certification to NMEID.	180
8.	Completion of closure period.	180

PERMIT ATTACHMENT I.

Secondary Containment Plans and Specifications



FOUNDATION PLAN

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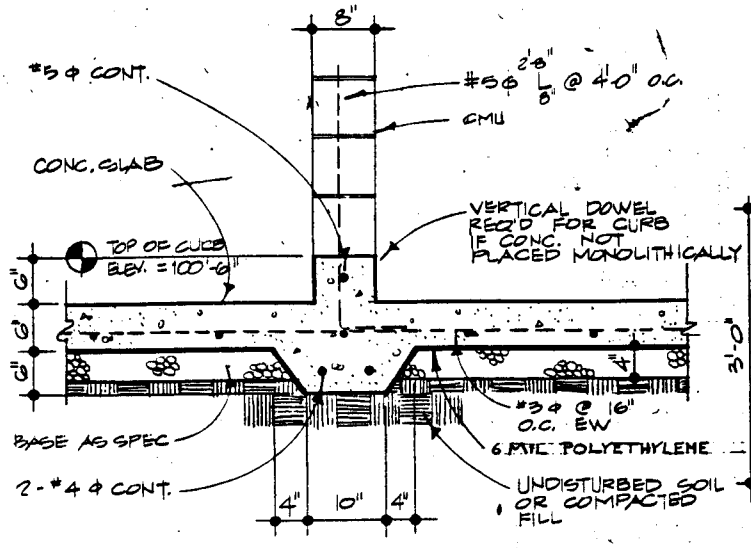
CALLED NORTH



SECTION 2/3
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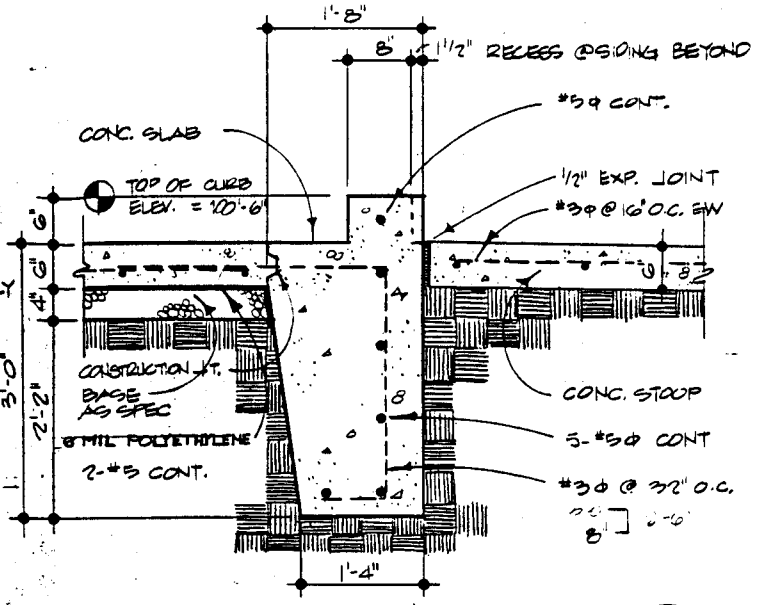

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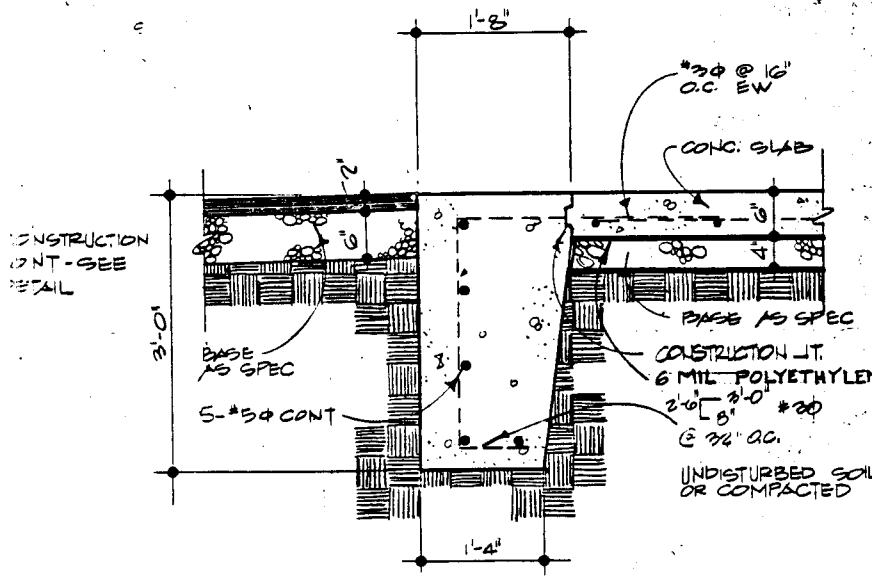

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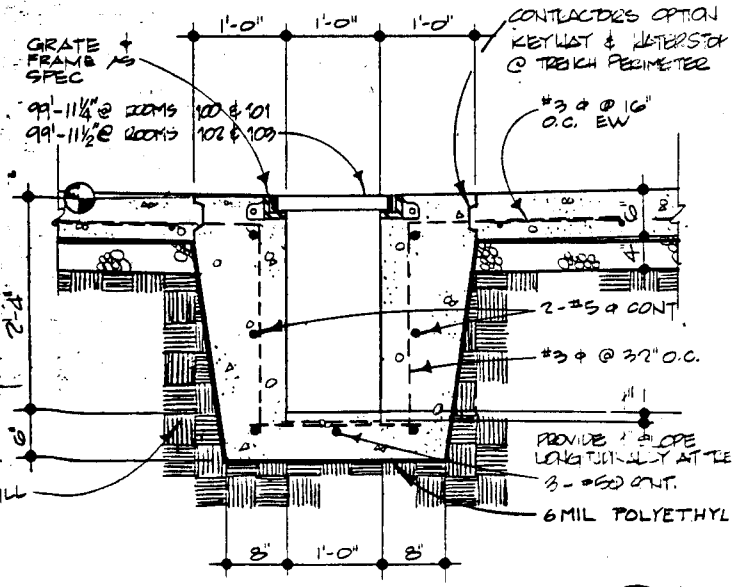

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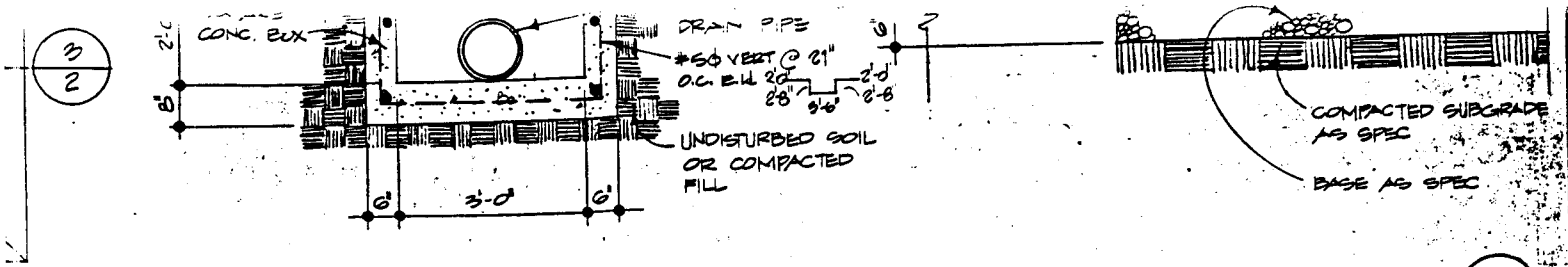

3/2

2/2 SECTION 3/2
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SECTION 4/2
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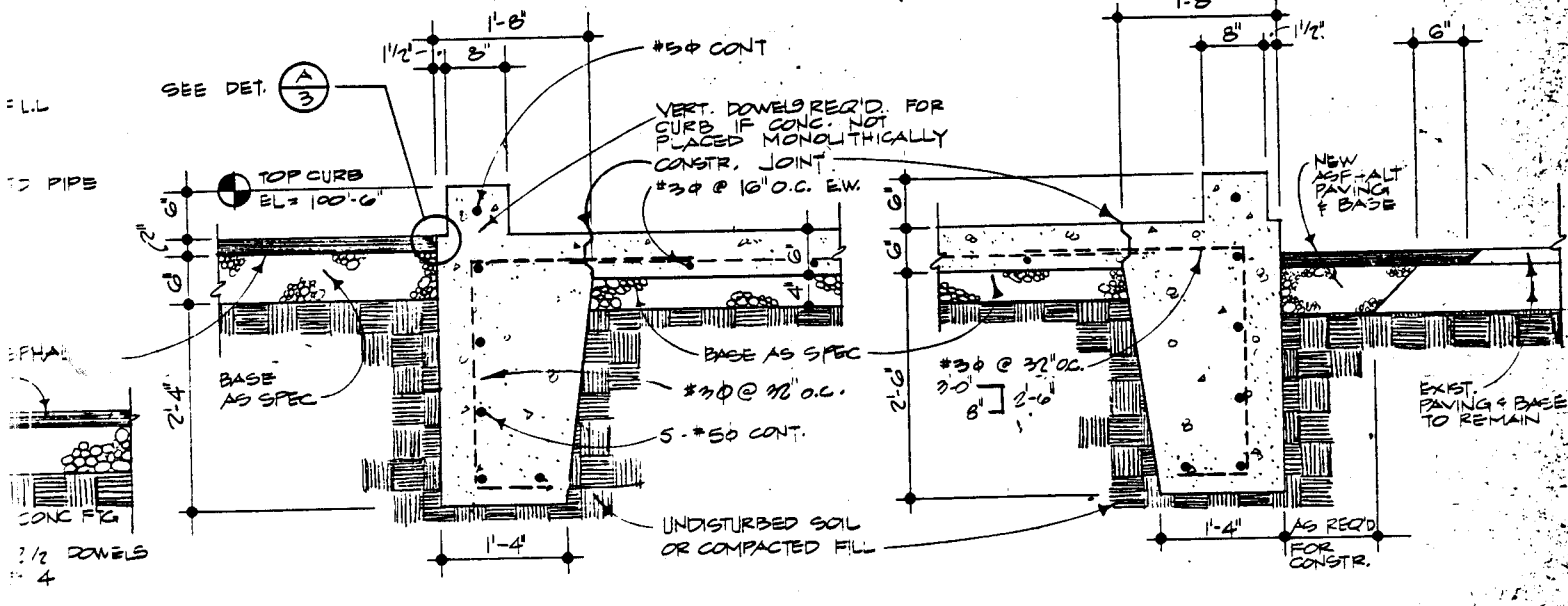

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SECTION 7/2
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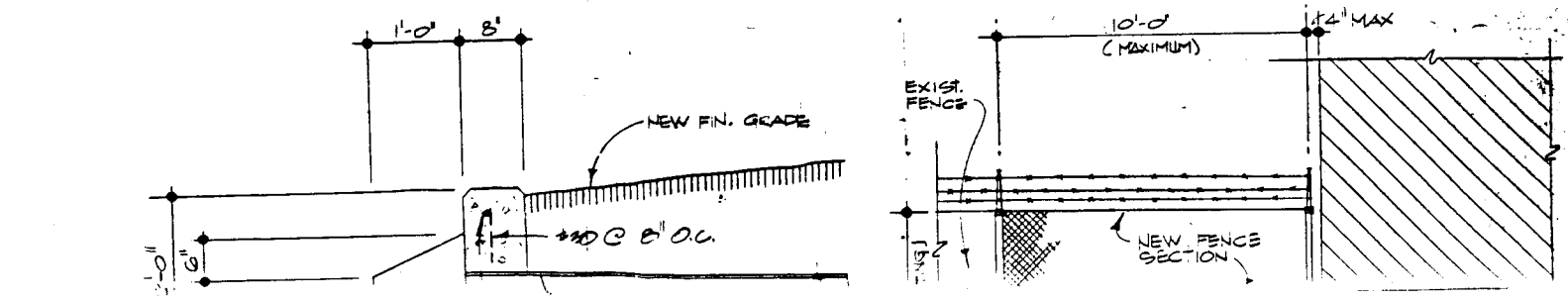

REV	DATE	DESCRIPTION	BY	APPROVED
	5/14/85	AS-BUILT	VCP	
1	8 Nov 84	REVISED FOUNDATION PLAN	RCC	PHC

ELDON W. SMITH, AIA
ARCHITECTS PLANNERS
Clovis New Mexico

STATE OF NEW MEXICO
ELDON W. SMITH
No. 799
CLOVIS
N.M.
REGISTERED ARCHITECT

DEPARTMENT OF THE AIR FORCE
TACTICAL AIR COMMAND

CANNON AFB, NM
CIVIL ENGINEER OFFICE

HAZARDOUS STORAGE FACILITY

CHECKED BY	DRAWN BY	DATE	SCALE
EWS	TAT, RCL	02 MAY 84	AS NOTED

PROJECT NO.	DRAWING NO.	SHEET
840050	2072.03/1	3 of 9

PERMIT ATTACHMENT J.

New Mexico Hazardous Waste Management Regulations
(HWMR-5, as amended July 9, 1989)

ENVIRONMENTAL IMPROVEMENT BOARD
1190 ST. FRANCIS DRIVE
SANTA FE, NEW MEXICO 87503

EIB/HWMR-5
Amended July 9, 1989

HAZARDOUS WASTE MANAGEMENT REGULATIONS

PART I - HAZARDOUS WASTE MANAGEMENT SYSTEM - GENERAL

101. Adoption of 40 CFR Part 260. Except as otherwise provided, the regulations of the United States Environmental Protection Agency set forth in 40 CFR Part 260, through July 1, 1988, are hereby incorporated as Part I of the New Mexico Hazardous Waste Management Regulations.

102. Modifications and Exceptions. The following modifications and exceptions are made to the incorporated federal regulations:

A. The following terms defined in 40 CFR §260.10 have the meanings set forth herein, in lieu of the meanings set forth in 40 CFR §260.10:

1. "Administrator" or "Regional Administrator" means the Director of the Environmental Improvement Division of the New Mexico Health and Environment Department, or his designee.

B. The following terms not defined in 40 CFR §260.10 have the meanings set forth herein:

1. "Act" or "RCRA" ("Resource Conservation Recovery Act" as amended) means the Hazardous Waste Act, §§74-4-1 through 74-4-13 NMSA 1978;

2. "Application" means the Division forms for applying for permits including any additions, revisions, or modifications to the forms, and any other information required by the Director pursuant to these regulations;

3. "Appropriate act or regulation" means the Hazardous Waste Act or the New Mexico Hazardous Waste Management Regulations, HWMR-5;

4. "Board" means the Environmental Improvement Board;

5. "CFR" means the Code of Federal Regulations;

6. "Division" means the Environmental Improvement Division of the New Mexico Health and Environment Department;

7. "Environmental Protection Agency" or "EPA" shall be construed to mean the Environmental Improvement Division of the Health and Environment Department except when used in the phrase "EPA hazardous waste number" and in the definition of that phrase set forth in 40 CFR §260.10;

8. "Freedom of Information Act" or "FOIA" means the New Mexico act governing inspection of public records, §§14-2-1 through 14-2-3,14-3A-1 through14-3A-2, and 74-4-4.3.C. NMSA 1978;

9. "Hazardous substance incident" means any emergency incident involving a chemical or chemicals, including but not limited to transportation wrecks, accidental spills or leaks, fires, or explosions, which incident creates the reasonable probability of injury to human health or property; and

10. "Subtitle C of RCRA" means the New Mexico Hazardous Waste Act, §§74-4-1 to 74-4-13 NMSA 1978.

C. The following provisions of 40 CFR Part 260 are omitted from Part I of these regulations:

   1. The Editorial Note immediately preceeding Subpart A:

   2. §260.1(b)(6);

   3. §260.22;

   4. §260.30;

   5. §260.31;

   6. §260.32; and

   7. §260.33.

D. Whenever there is any requirement in any of the federal regulations incorporated into these regulations to report an emergency situation, the requirement shall be construed to mean that the party required to report shall report the incident to the Division via the New Mexico 24-hour emergency response number, (505) 827-9329.

DRAFT-4-6-3

E. References to 40 CFR Part 124 within the text of HWMR-5 as adopted shall be construed to mean Section 902 of HWMR-5.

PART II - IDENTIFICATION AND LISTING OF HAZARDOUS WASTE

201. Adoption of 40 CFR Part 261. The regulations of the United States Environmental Protection Agency set forth in 40 CFR Part 261, through July 1, 1988, are hereby incorporated as Part II of the New Mexico Hazardous Waste Management Regulations.

PART III - STANDARDS APPLICABLE TO GENERATORS OF HAZARDOUS WASTE

301. Adoption of 40 CFR Part 262. The regulations of the United States Environmental Protection Agency set forth in 40 CFR Part 262, through July 1, 1988, are hereby incorporated as Part III of the New Mexico Hazardous Waste Regulations.

PART IV - STANDARDS APPLICABLE TO TRANSPORTERS OF HAZARDOUS WASTE

401. Adoption of 40 CFR Part 263. Except as otherwise provided, the regulations of the United States Environmental Protection Agency set forth in 40 CFR Part 263, through July 1, 1988, are hereby incorporated as Part IV of the New Mexico Hazardous Waste Management Regulations.

402. Omissions. The following provisions of 40 CFR Part 263 are omitted from Part III of these regulations:

A. §263.20 (e).

403. Financial Assessments. The following provisions regarding financial assessments are applicable to hazardous substance incidents, in addition to the provisions of 40 CFR Part 263, Subpart C:

A. Any regulated person having possession, custody or control of a hazardous substance involved in a hazardous substance incident shall use his best efforts to effectuate a prompt and thorough cleanup, to levels required under applicable standards adopted under the laws of New Mexico. Nothing in the remainder of this section shall be read as authorizing or requiring a delay in clean-up.

B. In order to achieve the most prompt and thorough cleanup, the Division may assess charges against all regulated persons who contribute to the occurrence of a hazardous substance incident or who had possession, custody or control of the substance at the time such incident occurred.

C. The foregoing assessment shall be allocated among the regulated persons who are subject to the assessment on a basis deemed by the Division to be equitable under the circumstances. Assessments under this section shall be imposed only to expedite cleanup, and not to assign responsibility or to punish.

D. Failure of any assessed person to pay the assessment within 30 days of receipt shall subject said person to suspension or revocation of their hazardous waste permit, if they hold one, and subject them to possible fines and/or penalties.

E. Neither the fact that an assessment has been imposed, nor the size of the assessment, reflects any official view of responsibility for the incident for use in any civil or criminal proceeding. The fact that an assessment has been paid in compliance with these regulations does not constitute an admission of responsibility for the purposes of any civil or criminal proceeding.

PART V - STANDARDS FOR OWNERS AND OPERATORS OF HAZARDOUS WASTE TREATMENT STORAGE, AND DISPOSAL FACILITIES

501. Adoption of 40 CFR Part 264. Except as otherwise provided, the regulations of the United States Environmental Protection Agency set forth in 40 CFR Part 264, through July 1, 1988 are hereby incorporated as Part V of the New Mexico Hazardous Waste Management Regulations.

502. Omissions. The following provisions of 40 CFR Part 264 are omitted from Part V of these regulations:

A. §264.149; and

B. §264.150.

PART VI - INTERIM STATUS STANDARDS FOR OWNERS AND OPERATORS OF HAZARDOUS WASTE TREATMENT STORAGE, AND DISPOSAL FACILITIES

601. Adoption of 40 CFR Part 265. Except as otherwise provided, the regulations of the United States Environmental Protection Agency set forth in 40 CFR Part 265, through July 1, 1988, are hereby incorporated as Part VI of the New Mexico Hazardous Waste Management Regulations.

602. Omissions. The following provision of 40 CFR Part 265 are omitted from Part VI of these regulations:

A. §265.149; and

B. §265.150.

PART VII - STANDARDS FOR THE MANAGEMENT OF SPECIFIC HAZARDOUS WASTES AND SPECIFIC TYPES OF HAZARDOUS WASTE MANAGEMENT FACILITIES

701. Adoption of 40 CFR Part 266. The regulations of the United States Environmental Protection Agency set forth in 40 CFR Part 266, through July 1, 1988, are hereby incorporated as Part VII of the New Mexico Hazardous Waste Management Regulations.

PART VIII - LAND DISPOSAL RESTRICTIONS

801. Adoption of 40 CFR Part 268. The regulations of the United States Environmental Protection Agency set forth in 40 CFR Part 268 through July 1, 1988, are hereby incorporated as Part VIII of the New Mexico Hazardous Waste Management Regulations.

PART IX - THE HAZARDOUS WASTE PERMIT PROGRAM

901. Adoption of 40 CFR PART 270. The regulations of the United States Environmental Protection Agency set forth 40 CFR Part 270, through July 1, 1988, are hereby incorporated in Part IX of the New Mexico Hazardous Waste Management Regulations.

902. Permitting Procedures.

A. Permit Issuance.

1. Once an application is complete, the Director shall tentatively decide whether to prepare a draft permit or to deny the application.

2. If the Director decides to prepare a draft permit, he shall prepare a draft permit that contains all conditions, compliance schedules, monitoring requirements and technical standards for treatment, storage, and/or disposal provided for in Part 270 of these regulations.

3. All draft permits for facilities or activities prepared by the Division under 902.A.2. shall be accompanied by a fact sheet and shall be based on the administrative file. Copies of the fact sheet shall be sent to the applicant, any state or federal agency as applicable and, on request, to any other person.

4. The Director shall give public notice that a draft permit has been prepared or that a permit application has been tentatively denied and shall allow at least forty-five (45) days for public comment and review. During this comment period, whenever a written notice of opposition to a draft permit and a request for a hearing is received from an affected individual, a public hearing may be held. The Division, acting in conjunction with the applicant, will respond to these requests in an attempt to resolve those issues giving rise to such opposition. If such issues can be resolved to the satisfaction of the opponent, the affected individual may waive his request for a public hearing. In such case the public hearing need not be held. The Director may also hold a public hearing at his discretion.

5. No ruling shall be made on permit issuance without an opportunity for all interested persons to be given a reasonable chance to submit significant data, views or arguments orally or in writing and to examine witnesses testifying at any public hearing. The comment period specified in 902.A.4. shall automatically be extended to the close of any public hearing.

6. The Director shall give due consideration and the weight he deems appropriate to all comments received during a public comment period and to all relevant facts and circumstances presented at any public hearing.

7. When ruling on permit issuance, the Division may disapprove in whole or in part, or make reasonable conditions to any permit, if it appears that the proposed action will not meet the requirements of these regulations.

8. At the time that any final permit decision is issued, the Director shall issue a response to comments. This response shall:

   a. Specify which provisions, if any, of the draft permit have been changed in the final permit decision, and the reasons for the change; and

   b. Briefly describe and respond to all significant comments on the draft permit or the permit application raised during the public comment period, or during any hearing.

9. The response to comments shall be available to the public.

10. The approval of a permit does not relieve any person from the responsibility of complying with applicable state or federal laws and regulations.

11. The Director shall notify the permittee by certified mail of any impending permit action and of any scheduled public hearing date.

B. Permit Modification, Suspension and Revocation.

1. The Director may modify, suspend, or revoke a permit issued pursuant to 902.B. for cause set forth in Part 270 of these regulations.

2. The Director may modify, suspend, revoke or terminate a permit upon his initiative, or if, after the Division's investigation of the facts and circumstances, pursuant to the request of any interested person, such permit action is deemed warranted.

3. All requests for permit modification, suspension, revocation or termination shall be in writing and shall contain facts or reasons supporting the request.

4. In a permit modification under this section, only those conditions to be modified shall be considered when a new draft permit is prepared. All other aspects of the existing permit shall remain in effect for the duration of the unmodified permit.

5. Minor modifications as outlined in Part 270 of these regulations are not subject to the requirements in 902.B. for permit modifications.

6. The Director shall notify the permittee by certified mail of any impending permit action and of any scheduled public hearing date and issue public notice of impending permit action.

7. No ruling shall be made on permit modification, suspension or revocation without an opportunity for a public hearing at which all interested persons shall be given a reasonable chance to submit significant data, views or argument orally or in writing and to examine witnesses testifying at the hearing.

8. The Director shall give due consideration and the weight he deems appropriate to all comments received during a public comment period and to all relevant facts and circumstances presented at any public hearing.

C. Public Notices.

1. Public notice of permit actions (preparation of a draft permit, tentative denial of a permit application, scheduling of a public hearing) shall be given by publication of a notice in a newspaper of general circulation in the area affected, broadcasts over local radio stations and by mailing a copy of the notice to the permit applicant, those individuals on the Hazardous Waste Unit's mailing list, and to any units of local, state and federal government as may be applicable.

2. All public notices issued shall contain the following minimum information:

   a. The subject, the time and place of any scheduled hearing and the manner in which interested persons may present their views;

   b. A brief description of the procedures by which requests for hearings may be made, unless already scheduled;

   c. Name and address of the office processing the permit action for which notice is being given;

   d. Name and address of the permittee or permit applicant, and, if different, of the facility or activity regulated by the permit;

   e. A brief description of the business conducted at the facility or activity described in the permit application or the draft permit; and

f. Name, address and telephone number of a person from whom interested persons may obtain further information;

g. In addition, public notice of a scheduled public hearing shall also contain references to the date of previous public notices relating to the permit.

D. Fact Sheet.

1. A fact sheet shall be prepared for every draft permit for a Hazardous Waste Management facility or activity. The fact sheet shall briefly set forth the principal facts and the significant factual legal, methodological and policy questions considered in preparing the draft permit.

2. The fact sheet shall include, when applicable:

a. A brief description of the type of facility or activity which is the subject of the draft permit;

b. The type and quantity of wastes which are proposed to be or are being treated, stored, disposed of, injected, emitted, or discharged.

c. A brief summary of the basis for the draft permit conditions including references to applicable statutory or regulatory provisions.

d. Reasons why any requested variance or alternative to require standards do or do not appear justified.

e. A description of the procedures for reaching a final decision on the draft permit including:

(1) The beginning and ending dates of the comment period and the address where comments will be received;

(2) Procedures for requesting a hearing and the nature of that hearing; and

(3) Any other procedures by which the public may participate in the final decision.

f. Name and telephone number of a person to contact for additional information.

3. The fact sheet shall be available at the time the public notice is published.

E. Hearings.

1. Public notice of any public hearing shall be given at least thirty (30) days prior to the scheduled date of the hearing.

2. Hearings shall be held in Santa Fe or within any area of the state substantially affected by the proceedings as specified by the Director.

3. The Director may designate a hearing officer to take evidence at the hearing.

4. All hearings shall be recorded by a certified court reporter. A transcript will be furnished to all persons for review at the Division's main office. Costs of a copy of a transcript will be borne by those requesting such copies.

5. In hearings, the rules of civil procedures and the technical rules of evidence shall not apply, but the hearings shall be conducted so that all relevant views, arguments, and testimony are amply and fairly received without undue repetition.

6. Any person heard or represented at the hearing shall be given written notice of the action of the Director.

7. The Director shall notify the applicant or permittee of his decision and the reasons, therefore, by certified mail.

F. Director's Decision.

For purposes of these regulations, the Director's decision is not made until it becomes final under Section 902.G. or until the Board renders its decision under 902.F. either sustaining or reversing the Director. Immediately upon receiving the Board's decision the Director shall enter the Director's decision in accord with the Board's decision, which shall be considered the Director's decision for purposes of appeal to the Court of Appeals.

G. Review and Hearings Before Board.

1. Any person adversely affected by the decision of the Director concerning the issuance, suspension, modification or revocation of a permit may submit a petition for review of the Director's decision by the Environmental Improvement Board. For purposes of this regulation, an applicant for permit, permittee or an alleged violator of a permit or regulation shall be the "appellant". A petition for review must be made in writing to the Board within thirty (30) days after notice of the Director's action or decision has been received by the appellant and must include a statement of issues and supporting

arguments. Unless a timely request for review and hearing is made, the decision of the Director shall be final.

2. Any new evidence becoming available after the tentative decision by, or the hearing before the Director, may be presented at a hearing before the Board if such hearing is requested along with the request for review of the Director's decision. Otherwise, the Board shall consider only the evidence admitted in the record formed at the hearing before the Director or the evidence available to the Director at the time of his or her tentative decision. All parties who participated in the hearing before the Director may submit to the Board, within thirty days of the appellant's request for review, proposed findings and reasons based upon the hearing record.

   In reviewing the Director's decision, the Board may modify or reverse the Director's decision if the decision is found to be:

   (a) arbitrary, capricious or an abuse of discretion;

   (b) not supported by substantial evidence; or,

   (c) otherwise not in accordance with law.

   If the appellant requests only that the Board review the Director's decision without requesting a hearing to consider new evidence, the Board shall render a decision denying, modifying or sustaining the Director's decision, along with findings and reasons, within sixty (60) days of the appellant's request, and by certified mail shall notify the appellant and shall make a reasonable effort to notify all participants in the hearing before the Director of its decision, findings and reasons. If a hearing to consider new evidence is held, the Board's decision on the Director's decision shall be defered until the hearing is held in accordance with the sub-sections 3 through 6.

3. If a timely request for hearing is made, the Board shall hold a hearing within sixty (60) days after receipt of the request, and at least twenty (20) days prior to the hearing date shall notify the appellant by certified mail and shall make a reasonable effort to notify all who submitted comments on the permit, or who participated in the hearing before the Director of the date, time and place of the hearing. The Board shall also publish notice of the date, time and place of hearing at least twenty (20) days prior to the hearing date in a newspaper of general circulation in the county in which the facility is proposed to be located or is located and a newspaper of general circulation in the state.

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4. The Division will arrange for transcript of the hearing by a certified reporter. Copies of the transcript shall be paid for by those requesting them.

5. Hearings shall be before the Board or a hearing officer appointed by the Board. If a hearing officer is designated by the Board he or she shall conduct the hearing and rule on the evidence presented. In hearings, the technical rules of evidence and the rules of civil procedure shall not apply, but the hearings shall be conducted so that all relevant views are amply and fairly presented without undue repetition. The Board may require reasonable substantiation of statements or records tendered and may require any view to be stated in writing when the circumstances justify.

6. The Board shall allow all parties a reasonable opportunity at a hearing to submit written and oral evidence and arguments, to introduce exhibits, and to cross-examine persons who testify. At any hearing accompanying the review of the Director's decision, in which only new evidence becoming available following the hearing before the Director is allowed, all exhibits, evidence and cross-examination shall be restricted to such new evidence.

7. All parties participating in the hearing may submit proposed findings and reasons to the Board within thirty (30) days following the Board's receipt of the transcript.

8. The Board may adopt findings submitted or may make separate findings, but the Board shall:

   (a) consider and weigh all of the evidence presented in making or adopting any and all of its findings and reasons;

   (b) adopt or make only findings and reasons that are supported by substantial evidence as presented; and,

   (c) not adopt or make any findings and reasons which are arbitrary or capricious, or otherwise not in accordance with the law.

9. Within sixty (60) days following the Board's receipt of the transcript, the Board shall render a decision on the basis of the hearing record sustaining, modifying or reversing the Director, along with findings, and shall notify the appellant and all participants in the hearing of its decision and findings.

PART X - MISCELLANEOUS

1001. Compliance with Other Regulations. Compliance with the Hazardous Waste Management Regulations does not relieve a person of the obligation to comply with other applicable state and federal regulations. If the United States Environmental Protection Agency should suspend any federal hazardous waste regulation having a direct counterpart in these regulations, the counterpart in these regulations shall be deemed suspended without any further action being taken.

1002. Construction. The Hazardous Waste Management Regulations shall be liberally construed to effectuate the purpose of the Act.

1003. Severability. If any Part or application of the Hazardous Waste Management Regulations is held invalid, the remainder, or its application to other situations or persons, shall not be affected.

1004. Supercession of Prior Regulations. These regulations supercede the Hazardous Waste Management Regulations, EIB/HWMR-4, filed December 16, 1987.

226, radium-228, and gross alpha particle radioactivity:

(a) Combined radium-226 and radium-228—5 pCi/l;

(b) Gross alpha particle activity (including radium-226 but excluding radon and uranium)—15 pCi/l.

APPENDIX II

A. Processes to Significantly Reduce Pathogens

Aerobic digestion: The process is conducted by agitating sludge with air or oxygen to maintain aerobic conditions at residence times ranging from 60 days at 15° C to 40 days at 20° C, with a volatile solids reduction of at least 38 percent.

Air Drying: Liquid sludge is allowed to drain and/or dry on under-drained sand beds, or paved or unpaved basins in which the sludge is at a depth of nine inches. A minimum of three months is needed, two months of which temperatures average on a daily basis above 0° C.

Anaerobic digestion: The process is conducted in the absence of air at residence times ranging from 60 days at 20° C to 15 days at 35° to 55° C, with a volatile solids reduction of at least 38 percent.

Composting: Using the within-vessel, static aerated pile or windrow composting methods, the solid waste is maintained at minimum operating conditions of 40° C for 5 days. For four hours during this period the temperature exceeds 55° C.

Lime Stabilization: Sufficient lime is added to produce a pH of 12 after 2 hours of contact.

Other methods: Other methods or operating conditions may be acceptable if pathogens and vector attraction of the waste (volatile solids) are reduced to an extent equivalent to the reduction achieved by any of the above methods.

B. Processes to Further Reduce Pathogens

Composting: Using the within-vessel composting method, the solid waste is maintained at operating conditions of 55° C or greater for three days. Using the static aerated pile composting method, the solid waste is maintained at operating conditions of 55° C or greater for three days. Using the windrow composting method, the solid waste attains a temperature of 55° C or greater for at least 15 days during the composting period. Also, during the high temperature period, there will be a minimum of five turnings of the windrow.

Heat drying: Dewatered sludge cake is dried by direct or indirect contact with hot gases, and moisture content is reduced to 10 percent or lower. Sludge particles reach temperatures well in excess of 80° C, or the wet bulb temperature of the gas stream in contact with the sludge at the point where it leaves the dryer is in excess of 80° C.

Heat treatment: Liquid sludge is heated to temperatures of 180° C for 30 minutes.

Thermophilic Aerobic Digestion: Liquid sludge is agitated with air or oxygen to maintain aerobic conditions at residence times of 10 days at 55-60° C, with a volatile solids reduction of at least 38 percent.

Other methods: Other methods or operating conditions may be acceptable if pathogens and vector attraction of the waste (volatile solids) are reduced to an extent equivalent to the reduction achieved by any of the above methods.

Any of the processes listed below, if added to the processes described in Section A above, further reduce pathogens. Because the processes listed below, on their own, do not reduce the attraction of disease vectors, they are only add-on in nature.

Beta ray irradiation: Sludge is irradiated with beta rays from an accelerator at dosages of at least 1.0 megarad at room temperature (ca. 20° C).

Gamma ray irradiation: Sludge is irradiated with gamma rays from certain isotopes, such as ^{60}Cobalt and ^{137}Cesium, at dosages of at least 1.0 megarad at room temperature (ca. 20° C).

Pasteurization: Sludge is maintained for at least 30 minutes at a minimum temperature of 70° C.

Other methods: Other methods or operating conditions may be acceptable if pathogens are reduced to an extent equivalent to the reduction achieved by any of the above add-on methods.

PART 260—HAZARDOUS WASTE MANAGEMENT SYSTEM: GENERAL

Subpart A—General

Sec.
260.1 Purpose, scope, and applicability.
260.2 Availability of information; confidentiality of information.
260.3 Use of number and gender.

Subpart B—Definitions

260.10 Definitions.
260.11 References.

Subpart C—Rulemaking Petitions

260.20 General.
260.21 Petitions for equivalent testing or analytical methods.

260.22 Petitions to amend Part 261 to exclude a waste produced at a particular facility.
260.30 Variances from classification as a solid waste.
260.31 Standards and criteria for variances from classification as a solid waste.
260.32 Variances to be classified as a boiler.
260.33 Procedures for variances from classification as a solid waste or to be classified as a boiler.
260.40 Additional regulation of certain hazardous waste recycling activities on a case-by-case basis.
260.41 Procedures for case-by-case regulation of hazardous waste recycling activities.

APPENDIX I—OVERVIEW OF SUBTITLE C REGULATIONS

AUTHORITY: 42 U.S.C. 6905, 6912(a), 6921-6927, 6930, 6934, 6935, 6937, 6938, 6939, and 6974.

SOURCE: 45 FR 33073, May 19, 1980, unless otherwise noted.

EDITORIAL NOTE: The reporting or recordkeeping provisions included in the final rule published at 47 FR 32274, July 26, 1982, will be submitted for approval to the Office of Management and Budget (OMB), and will not become effective until OMB approval has been obtained. EPA will publish a notice of the effective date of the reporting and recordkeeping provisions of this rule after it obtains OMB approval.

Subpart A—General

§ 260.1 Purpose, scope, and applicability.

(a) This part provides definitions of terms, general standards, and overview information applicable to Parts 260 through 265 and 268 of this chapter.

(b) In this part: (1) Section 260.2 sets forth the rules that EPA will use in making information it receives available to the public and sets forth the requirements that generators, transporters, or owners or operators of treatment, storage, or disposal facilities must follow to assert claims of business confidentiality with respect to information that is submitted to EPA under Parts 260 through 265 and 268 of this chapter.

(2) Section 260.3 establishes rules of grammatical construction for Parts 260 through 265 and 268 of this chapter.

(3) Section 260.10 defines terms which are used in Parts 260 through 265 and 268 of this chapter.

(4) Section 260.20 establishes procedures for petitioning EPA to amend, modify, or revoke any provision of Parts 260 through 265 and 268 of this chapter and establishes procedures governing EPA's action on such petitions.

(5) Section 260.21 establishes procedures for petitioning EPA to approve testing methods as equivalent to those prescribed in Parts 261, 264, or 265 of this chapter.

(6) Section 260.22 establishes procedures for petitioning EPA to amend Subpart D of Part 261 to exclude a waste from a particular facility.

[45 FR 33073, May 19, 1980, as amended at 51 FR 40636, Nov. 7, 1986]

§ 260.2 Availability of information; confidentiality of information.

(a) Any information provided to EPA under Parts 260 through 265 and 268 of this chapter will be made available to the public to the extent and in the manner authorized by the Freedom of Information Act, 5 U.S.C. section 552, section 3007(b) of RCRA and EPA regulations implementing the Freedom of Information Act and section 3007(b), Part 2 of this chapter, as applicable.

(b) Any person who submits information to EPA in accordance with Parts 260 through 266 and 268 of this chapter may assert a claim of business confidentiality covering part or all of that information by following the procedures set forth in § 2.203(b) of this chapter. Information covered by such a claim will be disclosed by EPA only to the extent, and by means of the procedures, set forth in Part 2, Subpart B, of this chapter except that information required by § 262.53(a) which is submitted in notification of intent to export a hazardous waste will be provided to the Department of State and the appropriate authorities in a receiving country regardless of any claims of confidentiality. However, if no such claim accompanies the information when it is received by EPA, it may be made available to the public without further notice to the person submitting it.

[45 FR 33073, May 19, 1980, as amended at 51 FR 28682, Aug. 8, 1986; 51 FR 40636, Nov. 7, 1986]

§ 260.3 Use of number and gender.

As used in Parts 260 through 265 and 268 of this chapter:

(a) Words in the masculine gender also include the feminine and neuter genders; and

(b) Words in the singular include the plural; and

(c) Words in the plural include the singular.

[45 FR 33073, May 19, 1980, as amended at 51 FR 40636, Nov. 7, 1986]

Subpart B—Definitions

§ 260.10 Definitions.

When used in Parts 260 through 265 and 268 of this chapter, the following terms have the meanings given below:

"Above ground tank" means a device meeting the definition of "tank" in § 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.

"Act" or *"RCRA"* means the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act of 1976, as amended, 42 U.S.C. section 6901 et seq.

"Active life" of a facility means the period from the initial receipt of hazardous waste at the facility until the Regional Administrator receives certification of final closure.

"Active portion" means that portion of a facility where treatment, storage, or disposal operations are being or have been conducted after the effective date of Part 261 of this chapter and which is not a closed portion. (See also "closed portion" and "inactive portion".)

"Administrator" means the Administrator of the Environmental Protection Agency, or his designee.

"Ancillary equipment" means any device including, but not limited to, such devices as piping, fittings, flanges, valves, and pumps, that is 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 for disposal off-site.

"Aquifer" means a geologic formation, group of formations, or part of a formation capable of yielding a significant amount of ground water to wells or springs.

"Authorized representative" means the person responsible for the overall operation of a facility or an operational unit (i.e., part of a facility), e.g., the plant manager, superintendent or person of equivalent responsibility.

"Boiler" means an enclosed device using controlled flame combustion and having the following characteristics:

(1)(i) The unit must have physical provisions for recovering and exporting thermal energy in the form of steam, heated fluids, or heated gases; and

(ii) The unit's combustion chamber and primary energy recovery sections(s) must be of integral design. To be of integral design, the combustion chamber and the primary energy recovery section(s) (such as waterwalls and superheaters) must be physically formed into one manufactured or assembled unit. A unit in which the combustion chamber and the primary energy recovery section(s) are joined only by ducts or connections carrying flue gas is not integrally designed; however, secondary energy recovery equipment (such as economizers or air preheaters) need not be physically formed into the same unit as the combustion chamber and the primary energy recovery section. The following units are not precluded from being boilers solely because they are not of integral design: process heaters (units that transfer energy directly to a process stream), and fluidized bed combustion units; and

(iii) While in operation, the unit must maintain a thermal energy recovery efficiency of at least 60 percent, calculated in terms of the recovered energy compared with the thermal value of the fuel; and

(iv) The unit must export and utilize at least 75 percent of the recovered energy, calculated on an annual basis. In this calculation, no credit shall be given for recovered heat used internally in the same unit. (Examples of internal use are the preheating of fuel or combustion air, and the driving of induced or forced draft fans or feedwater pumps); or

(2) The unit is one which the Regional Administrator has determined, on a case-by-case basis, to be a boiler, after considering the standards in § 260.32.

"Certification" means a statement of professional opinion based upon knowledge and belief.

"Closed portion" means that portion of a facility which an owner or operator has closed in accordance with the approved facility closure plan and all applicable closure requirements. (See also "active portion" and "inactive portion".)

"Component" means either the tank or ancillary equipment of a tank system.

"Confined aquifer" means an aquifer bounded above and below by impermeable beds or by beds of distinctly lower permeability than that of the aquifer itself; an aquifer containing confined ground water.

"Container" means any portable device in which a material is stored, transported, treated, disposed of, or otherwise handled.

"Contingency plan" means 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.

"Corrosion expert" means a person who, by reason of his 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 certified as being qualified by the National Association of Corrosion Engineers (NACE) or be a registered professional engineer who has certification or licensing that includes education and experience in corrosion control on buried or submerged metal piping systems and metal tanks.

"Designated facility" means a hazardous waste treatment, storage, or disposal facility which has received an EPA permit (or a facility with interim status) in accordance with the requirements of Parts 270 and 124 of this chapter, a permit from a State authorized in accordance with Part 271 of this chapter, or that is regulated under § 261.6(c)(2) or Subpart F of Part 266 of this chapter, and that has been designated on the manifest by the generator pursuant to § 262.20.

"Dike" means an embankment or ridge of either natural or man-made materials used to prevent the movement of liquids, sludges, solids, or other materials.

"Discharge" or *"hazardous waste discharge"* means the accidental or intentional spilling, leaking, pumping, pouring, emitting, emptying, or dumping of hazardous waste into or on any land or water.

"Disposal" means 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 ground waters.

"Disposal facility" means a facility or part of a facility at which hazardous waste is intentionally placed into or on any land or water, and at which waste will remain after closure.

"Elementary neutralization unit" means a device which:

(1) Is used for neutralizing wastes which are hazardous wastes only because they exhibit the corrosivity characteristic defined in § 261.22 of this chapter, or are listed in Subpart D of Part 261 of this chapter only for this reason; and,

(2) Meets the definition of tank, container, transport vehicle, or vessel in § 260.10 of this chapter.

"EPA hazardous waste number" means the number assigned by EPA to each hazardous waste listed in Part 261, Subpart D, of this chapter and to each characteristic identified in Part 261, Subpart C, of this chapter.

"EPA identification number" means the number assigned by EPA to each generator, transporter, and treatment, storage, or disposal facility.

"EPA region" means the states and territories found in any one of the following ten regions:

Region I—Maine, Vermont, New Hampshire, Massachusetts, Connecticut, and Rhode Island.
Region II—New York, New Jersey, Commonwealth of Puerto Rico, and the U.S. Virgin Islands.
Region III—Pennsylvania, Delaware, Maryland, West Virginia, Virginia, and the District of Columbia.
Region IV—Kentucky, Tennessee, North Carolina, Mississippi, Alabama, Georgia, South Carolina, and Florida.
Region V—Minnesota, Wisconsin, Illinois, Michigan, Indiana and Ohio.
Region VI—New Mexico, Oklahoma, Arkansas, Louisiana, and Texas.
Region VII—Nebraska, Kansas, Missouri, and Iowa.
Region VIII—Montana, Wyoming, North Dakota, South Dakota, Utah, and Colorado.
Region IX—California, Nevada, Arizona, Hawaii, Guam, American Samoa, Commonwealth of the Northern Mariana Islands.
Region X—Washington, Oregon, Idaho, and Alaska.

"Equivalent method" means any testing or analytical method approved by the Administrator under §§ 260.20 and 260.21.

"Existing hazardous waste management (HWM) facility" or *"existing facility"* means a facility which was in operation or for which construction commenced on or before November 19, 1980. A facility has commenced construction if:

(1) The owner or operator has obtained the Federal, State and local approvals or permits necessary to begin physical construction; and either

(2)(i) A continuous on-site, physical construction program has begun; or

(ii) The owner or operator has entered into contractual obligations—which cannot be cancelled or modified without substantial loss—for physical construction of the facility to be completed within a reasonable time.

"Existing portion" means that land surface area of an existing waste management unit, included in the original Part A permit application, on which wastes have been placed prior to the issuance of a permit.

"Existing tank system" or *"existing component"* means 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 prior to July 14, 1986. Installation will be considered to have 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 on-site physical construction or installation program has begun, or (2) the owner or operator has entered into contractual obligations—which 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.

"Facility" means 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 combinations of them).

"Federal agency" means any department, agency, or other instrumentality of the Federal Government, any independent agency or establishment of the Federal Government including any Government corporation, and the Government Printing Office.

"Federal, State and local approvals or permits necessary to begin physical construction" means permits and approvals required under Federal, State or local hazardous waste control statutes, regulations or ordinances.

"Final closure" means the closure of all hazardous waste management units at the facility in accordance with all applicable closure requirements so that hazardous waste management activities under Parts 264 and 265 of this chapter are no longer conducted at the facility unless subject to the provisions in § 262.34.

"Food-chain crops" means tobacco, crops grown for human consumption, and crops grown for feed for animals

whose products are consumed by humans.

"Free liquids" means liquids which readily separate from the solid portion of a waste under ambient temperature and pressure.

"Freeboard" means the vertical distance between the top of a tank or surface impoundment dike, and the surface of the waste contained therein.

"Generator" means any person, by site, whose act or process produces hazardous waste identified or listed in Part 261 of this chapter or whose act first causes a hazardous waste to become subject to regulation.

"Ground water" means water below the land surface in a zone of saturation.

"Hazardous waste" means a hazardous waste as defined in § 261.3 of this chapter.

"Hazardous waste constituent" means a constituent that caused the Administrator to list the hazardous waste in Part 261, Subpart D, of this chapter, or a constituent listed in Table 1 of § 261.24 of this chapter.

"Hazardous waste management unit" is a contiguous area of land on or in which hazardous waste is placed, or the largest area in which there is significant likelihood of mixing hazardous waste constituents in the same area. Examples of hazardous waste management units include a surface impoundment, a waste pile, a land treatment area, a landfill cell, an incinerator, a tank and its associated piping and underlying containment system and a container storage area. A container alone does not constitute a unit; the unit includes containers and the land or pad upon which they are placed.

"In operation" refers to a facility which is treating, storing, or disposing of hazardous waste.

"Inactive portion" means that portion of a facility which is not operated after the effective date of Part 261 of this chapter. (See also "active portion" and "closed portion".)

"Incinerator" means any enclosed device using controlled flame combustion that neither meets the criteria for classification as a boiler nor is listed as an industrial furnace.

"Incompatible waste" means a hazardous waste which is unsuitable for:

(1) Placement in a particular device or facility because it may cause corrosion or decay of containment materials (e.g., container inner liners or tank walls); or

(2) Commingling with another waste or material under uncontrolled conditions because the commingling might produce heat or pressure, fire or explosion, violent reaction, toxic dusts, mists, fumes, or gases, or flammable fumes or gases.

(See Part 265, Appendix V, of this chapter for examples.)

"Individual generation site" means 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.

"Industrial furnace" means any of the following enclosed devices that are integral components of manufacturing processes and that use controlled flame devices to accomplish recovery of materials or energy:

(1) Cement kilns
(2) Lime kilns
(3) Aggregate kilns
(4) Phosphate kilns
(5) Coke ovens
(6) Blast furnaces
(7) Smelting, melting and refining furnaces (including pyrometallurgical devices such as cupolas, reverberator furnaces, sintering machine, roasters, and foundry furnaces)
(8) Titanium dioxide chloride process oxidation reactors
(9) Methane reforming furnaces
(10) Pulping liquor recovery furnaces
(11) Combustion devices used in the recovery of sulfur values from spent sulfuric acid
(12) Such other devices as the Administrator may, after notice and comment, add to this list on the basis of one or more of the following factors:

(i) The design and use of the device primarily to accomplish recovery of material products;

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(ii) The use of the device to burn or reduce raw materials to make a material product;

(iii) The use of the device to burn or reduce secondary materials as effective substitutes for raw materials, in processes using raw materials as principal feedstocks;

(iv) The use of the device to burn or reduce secondary materials as ingredients in an industrial process to make a material product;

(v) The use of the device in common industrial practice to produce a material product; and

(vi) Other factors, as appropriate.

"Inground tank" means a device meeting the definition of "tank" in § 260.10 whereby a portion of the tank wall 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.

"Injection well" means a well into which fluids are injected. (See also "underground injection".)

"Inner liner" means 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.

"Installation inspector" means a person who, by reason 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.

"International shipment" means the transportation of hazardous waste into or out of the jurisdiction of the United States.

"Landfill" means a disposal facility or part of a facility where hazardous waste is placed in or on land and which is not a pile, a land treatment facility, a surface impoundment, an underground injection well, a salt dome formation, a salt bed formation, an underground mine, or a cave.

"Landfill cell" means a discrete volume of a hazardous waste landfill which uses a liner to provide isolation of wastes from adjacent cells or wastes. Examples of landfill cells are trenches and pits.

"Land treatment facility" means a facility or part of a facility at which hazardous waste is applied onto or incorporated into the soil surface; such facilities are disposal facilities if the waste will remain after closure.

"Leachate" means any liquid, including any suspended components in the liquid, that has percolated through or drained from hazardous waste.

"Leak-detection system" means 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 containment structure. Such a system must employ operational controls (e.g., daily visual inspections for releases into the secondary containment system of aboveground tanks) or consist of an interstitial monitoring device 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.

"Liner" means a continuous layer of natural or man-made materials, beneath or on the sides of a surface impoundment, landfill, or landfill cell, which restricts the downward or lateral escape of hazardous waste, hazardous waste constituents, or leachate.

"Management" or *"hazardous waste management"* means the systematic control of the collection, source separation, storage, transportation, processing, treatment, recovery, and disposal of hazardous waste.

"Manifest" means the shipping document EPA form 8700-22 and, if necessary, EPA form 8700-22A, originated and signed by the generator in accordance with the instructions included in the Appendix to Part 262.

"Manifest document number" means the U.S. EPA twelve digit identification number assigned to the generator plus a unique five digit document number assigned to the Manifest by the generator for recording and reporting purposes.

"Mining overburden returned to the mine site" means any material overlying an economic mineral deposit which is removed to gain access to that deposit and is then used for reclamation of a surface mine.

"Miscellaneous unit" means a hazardous waste management unit where hazardous waste is treated, stored, or disposed of and that is not a container, tank, surface impoundment, pile, land treatment unit, landfill, incinerator, boiler, industrial furnace, underground injection well with appropriate technical standards under 40 CFR Part 146, or unit eligible for a research, development, and demonstration permit under § 270.65.

"Movement" means that hazardous waste transported to a facility in an individual vehicle.

"New hazardous waste management facility" or *"new facility"* means a facility which began operation, or for which construction commenced after October 21, 1976. (See also "Existing hazardous waste management facility".)

"New tank system" or *"new tank component"* means a tank system or component that will be used for the storage or treatment of hazardous waste and for which installation has commenced after July 14, 1986; except, however, for purposes of § 264.193(g)(2) and § 265.193(g)(2), a new tank system is one for which construction commences after July 14, 1986. (See also "existing tank system.")

"On ground tank" means a device meeting the definition of "tank" in § 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 visually inspected.

"On-site" means the same or geographically contiguous property which may be divided by public or private 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. Non-contiguous properties owned by the same person but connected by a right-of-way which he controls and to which the public does not have access, is also considered on-site property.

"Open burning" means 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, and

(3) Control of emission of the gaseous combustion products.

(See also "incineration" and "thermal treatment".)

"Operator" means the person responsible for the overall operation of a facility.

"Owner" means the person who owns a facility or part of a facility.

"Partial closure" means the closure of a hazardous waste management unit in accordance with the applicable closure requirements of Parts 264 and 265 of this chapter at a facility that contains other active hazardous waste management units. For example, partial closure may include the closure of a tank (including its associated piping and underlying containment systems), landfill cell, surface impoundment, waste pile, or other hazardous waste management unit, while other units of the same facility continue to operate.

"Person" means an individual, trust, firm, joint stock company, Federal Agency, corporation (including a government corporation), partnership, association, State, municipality, commission, political subdivision of a State, or any interstate body.

"Personnel" or *"facility personnel"* means all persons who work, at, or oversee the operations of, a hazardous waste facility, and whose actions or failure to act may result in noncompliance with the requirements of Part 264 or 265 of this chapter.

"Pile" means any non-containerized accumulation of solid, nonflowing hazardous waste that is used for treatment or storage.

"Point source" means 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 other floating craft, from which pollutants are or

may be discharged. This term does not include return flows from irrigated agriculture.

"Publicly owned treatment works" or *"POTW"* means any device or system used in the treatment (including recycling and reclamation) of municipal sewage or industrial wastes of a liquid nature which is owned by a "State" or "municipality" (as defined by section 502(4) of the CWA). This definition includes sewers, pipes, or other conveyances only if they convey wastewater to a POTW providing treatment.

"Regional Administrator" means the Regional Administrator for the EPA Region in which the facility is located, or his designee.

"Representative sample" means a sample of a universe or whole (e.g., waste pile, lagoon, ground water) which can be expected to exhibit the average properties of the universe or whole.

"Run-off" means any rainwater, leachate, or other liquid that drains over land from any part of a facility.

"Run-on" means any rainwater, leachate, or other liquid that drains over land onto any part of a facility.

"Saturated zone" or *"zone of saturation"* means that part of the earth's crust in which all voids are filled with water.

"Sludge" means 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.

"Small Quantity Generator" means a generator who generates less than 1000 kg of hazardous waste in a calendar month.

"Solid waste" means a solid waste as defined in § 261.2 of this chapter.

"State" means any of the several States, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, American Samoa, and the Commonwealth of the Northern Mariana Islands.

"Storage" means the holding of hazardous waste for a temporary period, at the end of which the hazardous waste is treated, disposed of, or stored elsewhere.

"Sump" means any pit or reservoir that meets the definition of tank and those troughs/trenches connected to it that serves to collect hazardous waste for transport to hazardous waste storage, treatment, or disposal facilities.

"Surface impoundment" or *"impoundment"* means a facility or part of a facility which is a natural topographic depression, man-made excavation, or diked area formed primarily of earthen materials (although it may be lined with man-made materials), which is designed to hold an accumulation of liquid wastes or wastes containing free liquids, and which is not an injection well. Examples of surface impoundments are holding, storage, settling, and aeration pits, ponds, and lagoons.

"Tank" means a stationary device, designed to contain an accumulation of hazardous waste which is constructed primarily of non-earthen materials (e.g., wood, concrete, steel, plastic) which provide structural support.

"Tank system" means a hazardous waste storage or treatment tank and its associated ancillary equipment and containment system.

"Thermal treatment" means the treatment of hazardous waste in a device which uses elevated temperatures as the primary means to change the chemical, physical, or biological character or composition of the hazardous waste. Examples of thermal treatment processes are incineration, molten salt, pyrolysis, calcination, wet air oxidation, and microwave discharge. (See also "incinerator" and "open burning".)

"Totally enclosed treatment facility" means a facility for the treatment of hazardous waste which is directly connected to an industrial production process and which is constructed and operated in a manner which prevents the release of any hazardous waste or any constituent thereof into the environment during treatment. An example is a pipe in which waste acid is neutralized.

"Transfer facility" means any transportation related facility including loading docks, parking areas, storage areas and other similar areas where shipments of hazardous waste are held during the normal course of transportation.

"Transport vehicle" means a motor vehicle or rail car used for the transportation of cargo by any mode. Each cargo-carrying body (trailer, railroad freight car, etc.) is a separate transport vehicle.

"Transportation" means the movement of hazardous waste by air, rail, highway, or water.

"Transporter" means a person engaged in the offsite transportation of hazardous waste by air, rail, highway, or water.

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

"Treatment zone" means a soil area of the unsaturated zone of a land treatment unit within which hazardous constituents are degraded, transformed, or immobilized.

"Underground injection" means 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 the largest surface dimension. (See also "injection well".)

"Underground tank" means a device meeting the definition of "tank" in § 260.10 whose entire surface area is totally below the surface of and covered by the ground.

"Unfit-for use tank system" means 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.

"Unsaturated zone" or *"zone of aeration"* means the zone between the land surface and the water table.

"United States" means 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.

"Uppermost aquifer" means 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.

"Vessel" includes every description of watercraft, used or capable of being used as a means of transportation on the water.

"Wastewater treatment unit" means a device which:

(1) Is part of a wastewater treatment facility which is subject to regulation under either section 402 or 307(b) of the Clean Water Act; and

(2) Receives and treats or stores an influent wastewater which is a hazardous waste as defined in § 261.3 of this chapter, or generates and accumulates a wastewater treatment sludge which is a hazardous waste as defined in § 261.3 of this chapter, or treats or stores a wastewater treatment sludge which is a hazardous waste as defined in § 261.3 of this chapter; and

(3) Meets the definition of tank in § 260.10 of this chapter.

"Water (bulk shipment)" means the bulk transportation of hazardous waste which is loaded or carried on board a vessel without containers or labels.

"Well" means any shaft or pit dug or bored into the earth, generally of a cylindrical form, and often walled with bricks or tubing to prevent the earth from caving in.

"Well injection": (See "underground injection".)

"Zone of engineering control" means an area under the control of the owner/operator that, upon detection of a hazardous waste release, can be readily cleaned up prior to the release of hazardous waste or hazardous constituents to ground water or surface water.

[45 FR 33073, May 19, 1980]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting § 260.10, see the List of

CFR Sections Affected in the Finding Aids section of this volume.

§ 260.11 References.

(a) When used in Parts 260 through 270 of this chapter, the following publications are incorporated by reference:

"ASTM Standard Test Methods for Flash Point of Liquids by Setaflash Closed Tester," ASTM Standard D-3278-78, available from American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103.

"ASTM Standard Test Methods for Flash Point by Pensky-Martens Closed Tester," ASTM Standard D-93-79 or D-93-80. D-93-80 is available from American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103.

"Flammable and Combustible Liquids Code" (1977 or 1981), available from the National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

"Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", EPA Publication SW-846 [Second Edition, 1982 as amended by Update I (April, 1984), and Update II (April, 1985)]. The second edition of SW-846 and Updates I and II are available from the National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22161, (703) 487-4600, as document no. PB 87-120-291. The cost is $48.95 for paper and $13.50 for microfiche.

(b) The references listed in paragraph (a) of this section are also available for inspection at the Office of the Federal Register, 1100 L Street, NW, Washington, DC 20408. These incorporations by reference were approved by the Director of the Federal Register. These materials are incorporated as they exist on the date of approval and a notice of any change in these materials will be published in the FEDERAL REGISTER.

[46 FR 35247, July 7, 1981, as amended at 50 FR 18374, Apr. 30, 1985; 52 FR 8073, Mar. 16, 1987; 52 FR 41295, Oct. 27, 1987]

Subpart C—Rulemaking Petitions

§ 260.20 General.

(a) Any person may petition the Administrator to modify or revoke any provision in Parts 260 through 265 and 268 of this chapter. This section sets forth general requirements which apply to all such petitions. Section 260.21 sets forth additional requirements for petitions to add a testing or analytical method to Part 261, 264 or 265. Section 260.22 sets forth additional requirements for petitions to exclude a waste at a particular facility from § 261.3 of this chapter or the lists of hazardous wastes in Subpart D of Part 261.

(b) Each petition must be submitted to the Administrator by certified mail and must include:

(1) The petitioner's name and address;

(2) A statement of the petitioner's interest in the proposed action;

(3) A description of the proposed action, including (where appropriate) suggested regulatory language; and

(4) A statement of the need and justification for the proposed action, including any supporting tests, studies, or other information.

(c) The Administrator will make a tentative decision to grant or deny a petition and will publish notice of such tentative decision, either in the form of an advanced notice of proposed rulemaking, a proposed rule, or a tentative determination to deny the petition, in the FEDERAL REGISTER for written public comment.

(d) Upon the written request of any interested person, the Administrator may, at his discretion, hold an informal public hearing to consider oral comments on the tentative decision. A person requesting a hearing must state the issues to be raised and explain why written comments would not suffice to communicate the person's views. The Administrator may in any case decide on his own motion to hold an informal public hearing.

(e) After evaluating all public comments the Administrator will make a final decision by publishing in the FEDERAL REGISTER a regulatory amendment or a denial of the petition.

[45 FR 33073, May 19, 1980, as amended at 51 FR 40636, Nov. 7, 1986]

§ 260.21 Petitions for equivalent testing or analytical methods.

(a) Any person seeking to add a testing or analytical method to Part 261, 264, or 265 of this chapter may petition for a regulatory amendment under this section and § 260.20. To be successful, the person must demonstrate to the satisfaction of the Administrator that the proposed method is equal to or superior to the corresponding method prescribed in Part 261, 264, or 265 of this chapter, in terms of its sensitivity, accuracy, and precision (i.e., reproducibility).

(b) Each petition must include, in addition to the information required by § 260.20(b):

(1) A full description of the proposed method, including all procedural steps and equipment used in the method;

(2) A description of the types of wastes or waste matrices for which the proposed method may be used;

(3) Comparative results obtained from using the proposed method with those obtained from using the relevant or corresponding methods prescribed in Part 261, 264, or 265 of this chapter;

(4) An assessment of any factors which may interfere with, or limit the use of, the proposed method; and

(5) A description of the quality control procedures necessary to ensure the sensitivity, accuracy and precision of the proposed method.

(c) After receiving a petition for an equivalent method, the Administrator may request any additional information on the proposed method which he may reasonably require to evaluate the method.

(d) If the Administrator amends the regulations to permit use of a new testing method, the method will be incorporated in "Test Methods for the Evaluation of Solid Waste: Physical/Chemical Methods," SW-846, U.S. Environmental Protection Agency, Office of Solid Waste, Washington, DC 20460.

[45 FR 33073, May 19, 1980, as amended at 49 FR 47391, Dec. 4, 1984]

§ 260.22 Petitions to amend Part 261 to exclude a waste produced at a particular facility.

(a) Any person seeking to exclude a waste at a particular generating facility from the lists in Subpart D of Part 261 may petition for a regulatory amendment under this section and § 260.20. To be successful:

(1) The petitioner must demonstrate to the satisfaction of the Administrator that the waste produced by a particular generating facility does not meet any of the criteria under which the waste was listed as a hazardous or an actutely hazardous waste; and

(2) Based on a complete application, the Administrator must determine, where he has a reasonable basis to believe that factors (including additional constituents) other than those for which the waste was listed could cause the waste to be a hazardous waste, that such factors do not warrant retaining the waste as a hazardous waste. A waste which is so excluded, however, still may be a hazardous waste by operation of Subpart C of Part 261.

(b) The procedures in this section and § 260.20 may also be used to petition the Administrator for a regulatory amendment to exclude from § 261.3(a)(2)(ii) or (c), a waste which is described in those sections and is either a waste listed in Subpart D, contains a waste listed in Subpart D, or is derived from a waste listed in Subpart D. This exclusion may only be issued for a particular generating, storage, treatment, or disposal facility. The petitioner must make the same demonstration as required by paragraph (a) of this section, except that where the waste is a mixture of solid waste and one or more listed hazardous wastes or is derived from one or more hazardous wastes, his demonstration may be made with respect to each constituent listed waste or the waste mixture as a whole. A waste which is so excluded may still be a hazardous waste by operation of Subpart C of Part 261.

(c) If the waste is listed with codes "I", "C", "R", or "E", in Subpart D,

(1) The petitioner must show that the waste does not exhibit the relevant characteristic for which the waste was listed as defined in § 261.21, § 261.22, § 261.23, or § 261.24 using any applicable methods prescribed therein. The petitioner also must show that the waste does not exhibit any of the other characteristics defined in § 261.21, § 261.22, § 261.23, or § 261.24 using any applicable methods prescribed therein;

(2) Based on a complete application, the Administrator must determine,

where he has a reasonable basis to believe that factors (including additional constituents) other than those for which the waste was listed could cause the waste to be hazardous waste, that such factors do not warrant retaining the waste as a hazardous waste. A waste which is so excluded, however, still may be a hazardous waste by operation of Subpart C of Part 261.

(d) If the waste is listed with code "T" in Subpart D,

(1) The petitioner must demonstrate that the waste:

(i) Does not contain the constituent or constituents (as defined in Appendix VII of Part 261) that caused the Administrator to list the waste, using the appropriate test methods prescribed in Appendix III; or

(ii) Although containing one or more of the hazrdous constituents (as defined in Appendix VII of Part 261) that caused the Administrator to list the waste, does not meet the criterion of § 261.11(a)(3) when considering the factors used by the Administrator in § 261.11(a)(3) (i) through (xi) under which the waste was listed as hazardous; and

(2) Based on a complete application, the Administrator must determine, where he has a reasonable basis to believe that factors (including additional constituents) other than those for which the waste was listed could cause the waste to be a hazardous waste, that such factors do not warrant retaining the waste as a hazardous waste; and

(3) The petitioner must demonstrate that the waste does not exhibit any of the characteristics defined in § 261.21, § 261.22, § 261.23, and § 261.24 using any applicable methods prescribed therein;

(4) A waste which is so excluded, however, still may be a hazardous waste by operation of Subpart C of Part 261.

(e) If the waste is listed with the code "H" in Subpart D,

(1) The petitioner must demonstrate that the waste does not meet the criterion of § 261.11(a)(2); and

(2) Based on a complete application, the Administrator must determine, where he has a reasonable basis to believe that additional factors (including additional constituents) other than those for which the waste was listed could cause the waste to be a hazardous waste, that such factors do not warrant retaining the waste as a hazardous waste; and

(3) The petitioner must demonstrate that the waste does not exhibit any of the characteristics defined in § 261.21, § 261.22, § 261.23, and § 261.24 using any applicable methods prescribed therein;

(4) A waste which is so excluded, however, still may be a hazardous waste by operation of Subpart C of Part 261.

(f) [Reserved for listing radioactive wastes.]

(g) [Reserved for listed infectious wastes.]

(h) Demonstration samples must consist of enough representative samples, but in no case less than four samples, taken over a period of time sufficient to represent the variability or the uniformity of the waste.

(i) Each petition must include, in addition to the information required by § 260.20(b):

(1) The name and address of the laboratory facility performing the sampling or tests of the waste;

(2) The names and qualifications of the persons sampling and testing the waste;

(3) The dates of sampling and testing;

(4) The location of the generating facility;

(5) A description of the manufacturing processes or other operations and feed materials producing the waste and an assessment of whether such processes, operations, or feed materials can or might produce a waste that is not covered by the demonstration;

(6) A description of the waste and an estimate of the average and maximum monthly and annual quantities of waste covered by the demonstration;

(7) Pertinent data on and discussion of the factors delineated in the respective criterion for listing a hazardous waste, where the demonstration is based on the factors in § 261.11(a)(3);

(8) A description of the methodologies and equipment used to obtain the representative samples;

(9) A description of the sample handling and preparation techniques, including techniques used for extraction, containerization and preservation of the samples;

(10) A description of the tests performed (including results);

(11) The names and model numbers of the instruments used in performing the tests; and

(12) The following statement signed by the generator of the waste or his authorized representative:

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this demonstration and all attached documents, and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

(j) After receiving a petition for an exclusion, the Administrator may request any additional information which he may reasonably require to evaluate the petition.

(k) An exclusion will only apply to the waste generated at the individual facility covered by the demonstration and will not apply to waste from any other facility.

(l) The Administrator may exclude only part of the waste for which the demonstration is submitted where he has reason to believe that variability of the waste justifies a partial exclusion.

[45 FR 33073, May 19, 1980, as amended at 50 FR 28742, July 15, 1985]

EDITORIAL NOTE: For information on the availability of a guidance manual for petitions to delist hazardous wastes, see 50 FR 21607, May 28, 1985.

§ 260.30 Variances from classification as a solid waste.

In accordance with the standards and criteria in § 260.31 and the procedures in § 260.33, the Regional Administrator may determine on a case-by-case basis that the following recycled materials are not solid wastes:

(a) Materials that are accumulated speculatively without sufficient amounts being recycled (as defined in § 261.1(c)(8) of this chapter);

(b) Materials that are reclaimed and then reused within the original primary production process in which they were generated;

(c) Materials that have been reclaimed but must be reclaimed further before the materials are completely recovered.

[50 FR 661, Jan. 4, 1985; 50 FR 14219, Apr. 11, 1985]

§ 260.31 Standards and criteria for variances from classification as a solid waste.

(a) The Regional Administrator may grant requests for a variance from classifying as a solid waste those materials that are accumulated speculatively without sufficient amounts being recycled if the applicant demonstrates that sufficient amounts of the material will be recycled or transferred for recycling in the following year. If a variance is granted, it is valid only for the following year, but can be renewed, on an annual basis, by filing a new application. The Regional Administrator's decision will be based on the following standards and criteria:

(1) The manner in which the material is expected to be recycled, when the material is expected to be recycled, and whether this expected disposition is likely to occur (for example, because of past practice, market factors, the nature of the material, or contractual arrangements for recycling);

(2) The reason that the applicant has accumulated the material for one or more years without recycling 75 percent of the volume accumulated at the beginning of the year;

(3) The quantity of material already accumulated and the quantity expected to be generated and accumulated before the material is recycled;

(4) The extent to which the material is handled to minimize loss;

(5) Other relevant factors.

(b) The Regional Administrator may grant requests for a variance from classifying as a solid waste those materials that are reclaimed and then reused as feedstock within the original primary production process in which the materials were generated if the

reclamation operation is an essential part of the production process. This determination will be based on the following criteria:

(1) How economically viable the production process would be if it were to use virgin materials, rather than reclaimed materials;

(2) The prevalence of the practice on an industry-wide basis;

(3) The extent to which the material is handled before reclamation to minimize loss;

(4) The time periods between generating the material and its reclamation, and between reclamation and return to the original primary production process;

(5) The location of the reclamation operation in relation to the production process;

(6) Whether the reclaimed material is used for the purpose for which it was originally produced when it is returned to the original process, and whether it is returned to the process in substantially its original form;

(7) Whether the person who generates the material also reclaims it;

(8) Other relevant factors.

(c) The Regional Administrator may grant requests for a variance from classifying as a solid waste those materials that have been reclaimed but must be reclaimed further before recovery is completed if, after initial reclamation, the resulting material is commodity-like (even though it is not yet a commercial product, and has to be reclaimed further). This determination will be based on the following factors:

(1) The degree of processing the material has undergone and the degree of further processing that is required;

(2) The value of the material after it has been reclaimed;

(3) The degree to which the reclaimed material is like an analogous raw material;

(4) The extent to which an end market for the reclaimed material is guaranteed;

(5) The extent to which the reclaimed material is handled to minimize loss;

(6) Other relevant factors.

[50 FR 66[illegible]n. 4, 1985]

§ 260.32 Variance to be classified as a boiler.

In accordance with the standards and criteria in § 260.10 (definition of "boiler"), and the procedures in § 260.33, the Regional Administrator may determine on a case-by-case basis that certain enclosed devices using controlled flame combustion are boilers, even though they do not otherwise meet the definition of boiler contained in § 260.10, after considering the following criteria:

(a) The extent to which the unit has provisions for recovering and exporting thermal energy in the form of steam, heated fluids, or heated gases; and

(b) The extent to which the combustion chamber and energy recovery equipment are of integral design; and

(c) The efficiency of energy recovery, calculated in terms of the recovered energy compared with the thermal value of the fuel; and

(d) The extent to which exported energy is utilized; and

(e) The extent to which the device is in common and customary use as a "boiler" functioning primarily to produce steam, heated fluids, or heated gases; and

(f) Other factors, as appropriate.

[50 FR 662, Jan. 4, 1985]

§ 260.33 Procedures for variances from classification as a solid waste or to be classified as a boiler.

The Regional Administrator will use the following procedures in evaluating applications for variances from classification as a solid waste or applications to classify particular enclosed flame combustion devices as boilers:

(a) The applicant must apply to the Regional Administrator in the region where the recycler is located. The application must address the relevant criteria contained in § 260.31 or § 260.32 of this part.

(b) The Regional Administrator will evaluate the application and issue a draft notice tentatively granting or denying the application. Notification of this tentative decision will be provided by newspaper advertisement and radio broadcast in the locality where the recycler is located. The Regional Administrator will accept comment on the tentative decision for 30 days, and may also hold a public hearing upon request or at his discretion. The Regional Administrator will issue a final decision after receipt of comments and after the hearing (if any), and this decision may not be appealed to the Administrator.

[50 FR 662, Jan. 4, 1985]

§ 260.40 Additional regulation of certain hazardous waste recycling activities on a case-by-case basis.

(a) The Regional Administrator may decide on a case-by-case basis that persons accumulating or storing the recyclable materials described in § 261.6(a)(2)(iv) of this chapter should be regulated under § 261.6 (b) and (c) of this chapter. The basis for this decision is that the materials are being accumulated or stored in a manner that does not protect human health and the environment because the materials or their toxic constituents have not been adequately contained, or because the materials being accumulated or stored together are incompatible. In making this decision, the Regional Administrator will consider the following factors:

(1) The types of materials accumulated or stored and the amounts accumulated or stored;

(2) The method of accumulation or storage;

(3) The length of time the materials have been accumulated or stored before being reclaimed;

(4) Whether any contaminants are being released into the environment, or are likely to be so released; and

(5) Other relevant factors.

The procedures for this decision are set forth in § 260.41 of this chapter.

[50 FR 662, Jan. 4, 1985]

§ 260.41 Procedures for case-by-case regulation of hazardous waste recycling activities.

The Regional Administrator will use the following procedures when determining whether to regulate hazardous waste recycling activities described in § 261.6(a)(2)(iv) under the provisions of § 261.6 (b) and (c), rather than under the provisions of Subpart F of Part 266 of this chapter.

(a) If a generator is accumulating the waste, the Regional Administrator will issue a notice setting forth the factual basis for the decision and stating that the person must comply with the applicable requirements of Subparts A, C, D, and E of Part 262 of this chapter. The notice will become final within 30 days, unless the person served requests a public hearing to challenge the decision. Upon receiving such a request, the Regional Administrator will hold a public hearing. The Regional Administrator will provide notice of the hearing to the public and allow public participation at the hearing. The Regional Administrator will issue a final order after the hearing stating whether or not compliance with Part 262 is required. The order becomes effective 30 days after service of the decision unless the Regional Administrator specifies a later date or unless review by the Administrator is requested. The order may be appealed to the Administrator by any person who participated in the public hearing. The Administrator may choose to grant or to deny the appeal. Final Agency action occurs when a final order is issued and Agency review procedures are exhausted.

(b) If the person is accumulating the recyclable material as a storage facility, the notice will state that the person must obtain a permit in accordance with all applicable provisions of Parts 270 and 124 of this chapter. The owner or operator of the facility must apply for a permit within no less than 60 days and no more than six months of notice, as specified in the notice. If the owner or operator of the facility wishes to challenge the Regional Administrator's decision, he may do so in his permit application, in a public hearing held on the draft permit, or in comments filed on the draft permit or on the notice of intent to deny the permit. The fact sheet accompanying the permit will specify the reasons for the Agency's determination. The question of whether the Regional Administrator's decision was proper will remain open for consideration during the public comment period discussed

under § 124.11 of this chapter and in any subsequent hearing.

[50 FR 663, Jan. 4, 1985]

APPENDIX I—OVERVIEW OF SUBTITLE C REGULATIONS

The Agency believes that there are many people who suspect, but are not sure, that their activities are subject to control under the RCRA Subtitle C rules. This appendix is written for these people. It is designed to help those who are unfamiliar with the hazardous waste control program to determine with which, if any, of the regulations they should comply.

Definition of Solid Waste

The first question which such a person should ask himself is: "Is the material I handle a solid waste?" If the answer to this question is "No", then the material is not subject to control under RCRA and, therefore, the person need not worry about whether he should comply with the Subtitle C rules.

Section 261.2 of this chapter provides a definition of "solid waste" which expands the statutory definition of that term given in section 1004(27) of RCRA. This definition is diagrammed in Figure 1 below.

Figure 1 explains that all materials are either: (1) Garbage refuse, or sludge; (2) solid, liquid, semi-solid or contained gaseous material; or (3) something else. No materials in the third category are solid waste. All materials in the first category are solid waste. Materials in the second category are solid waste unless they are one of the five exclusions specified in § 261.4(a).

Definition of Hazardous Waste

If a person has determined that his material is a "solid waste", the next question he should ask is: "Is the solid waste I handle a hazardous waste?"

Hazardous waste is defined in § 261.3 of this chapter. Section 261.3 provides that, in general, a solid waste is a hazardous waste if: (1) It is, or contains, a hazardous waste listed in Subpart D of Part 261 of this chapter, or (2) the waste exhibits any of the characteristics defined in Subpart C of Part 261. However, Parts 260 and 261 also contain provisions which exclude (§§ 261.4(b), 260.20, and 260.22) certain solid wastes from the definition of "hazardous waste", even though they are listed in Subpart D or exhibit one or more of the characteristics defined in Subpart C. Figure 2 depicts the interplay of these special provisions with the definition of "hazardous waste". It presents a series of questions which a person should ask himself concerning his waste. After doing so, the person should be able to determine if the solid waste he handles is a hazardous waste.

Hazardous Waste Regulations

If this is the case, the person should look at Figure 3. Figure 3 depicts the special provisions specified in the final Part 261 rules for hazardous waste which:

1. Is generated by a small quantity generator
2. Is or is intended to be legitimately and beneficially used, re-used, recycled, or reclaimed
3. Is a sludge; is listed in Part 261, Subpart D; or is a mixture containing a waste listed in Part 261, Subpart D.

For each of these Groups, Figure 3 indicates with which Subtitle C regulations (if any) the person handling these wastes must comply. Figure 3 also explains that, if a person handles hazardous waste which is not included in any one of the above three categories, his waste is subject to the Subtitle C regulations diagrammed in Figure 4.

Figure 4 is a flowchart which identifies the three categories of activities regulated under the Subtitle C rules, and the corresponding set of rules with which people in each of these categories must comply. It points out that all people who handle hazardous waste are either: (1) Generators of hazardous waste, (2) transporters of hazardous waste, (3) owners or operators of hazardous waste treatment, storage, or disposal facilities, or (4) a combination of the above. Figure 4 indicates that all of these people must notify EPA of their hazardous waste activities in accordance with the Section 3010 Notification Procedures (see 45 FR 12746 *et seq.*), and obtain an EPA identification number.

It should be noted that people handling wastes listed in Subpart D of Part 261 who have filed, or who intend to file an application to exempt their waste from regulation under the Subtitle C rules, must also comply with the notification requirements of section 3010.

If a person generates hazardous waste, Figure 4 indicates that he must comply with the Part 262 rules. If he transports it, he must comply with the Part 263 rules. The standards in both these Parts are designed to ensure, among other things, proper recordkeeping and reporting, the use of a manifest system to track shipments of hazardous waste, the use of proper labels and containers, and the delivery of the waste to a permitted treatment, storage, or disposal facility.

If a person owns or operates a facility which treats, stores, or disposes of hazardous waste, the standards with which he must comply depend on a number of factors. First of all, if the owner or operator of a *storage* facility is also the person who generates the waste, and the waste is stored at the facility for less than 90 days for subsequent shipment off-site, then the person must comply with § 262.34 of the Part 262 rules.

All other owners or operators of treatment, storage, or disposal facilities must comply with either the Part 264 or the Part 265 rules. To determine with which of these sets of rules an owner or operator must comply, he must find out whether his facility qualifies for interim status. To qualify, the owner or operator must: (1) Have been treating, storing, or disposing of the hazardous waste, or commenced facility construction on or before October 21, 1976, (2) comply with the section 3010 notification requirements, and (3) apply for a permit under Part 270 of this chapter.

If the owner or operator has done all of the above, he qualifies for interim status, and he must comply with the Part 265 rules. These rules contain administrative requirements, monitoring and closure standards, and an abbreviated set of technical and closure and post-closure cost estimate requirements. The owner or operator must comply with these standards until final administrative disposition of his permit application is made. If a permit is issued to the owner or operator, he must then comply with the permit which will be based on the Part 264 rules.

If the owner or operator has not carried out the above three requirements, he does not qualify for interim status. Until he is issued a permit for his facility, the owner or operator must stop waste management operations (if any) at the facility, and send his hazardous waste (if any) to a facility whose owner or operator has interim status or to a storage facility following the Part 262 rules.

In order to apply for a permit, the owner or operator must comply with the procedures specified in Part 270 of this chapter.

It should be noted that the Agency will be periodically revising the rules depicted in Figures 3 and 4. All persons are encouraged to write to EPA to verify that the regulations which they are reading are up-to-date. To obtain this verification, contact: Solid Waste Information, U.S. Environmental Protection Agency, 26 West St. Clair Street, Cincinnati, Ohio 45268 (513) 684-5362.

FIGURE 1

DEFINITION OF A SOLID WASTE

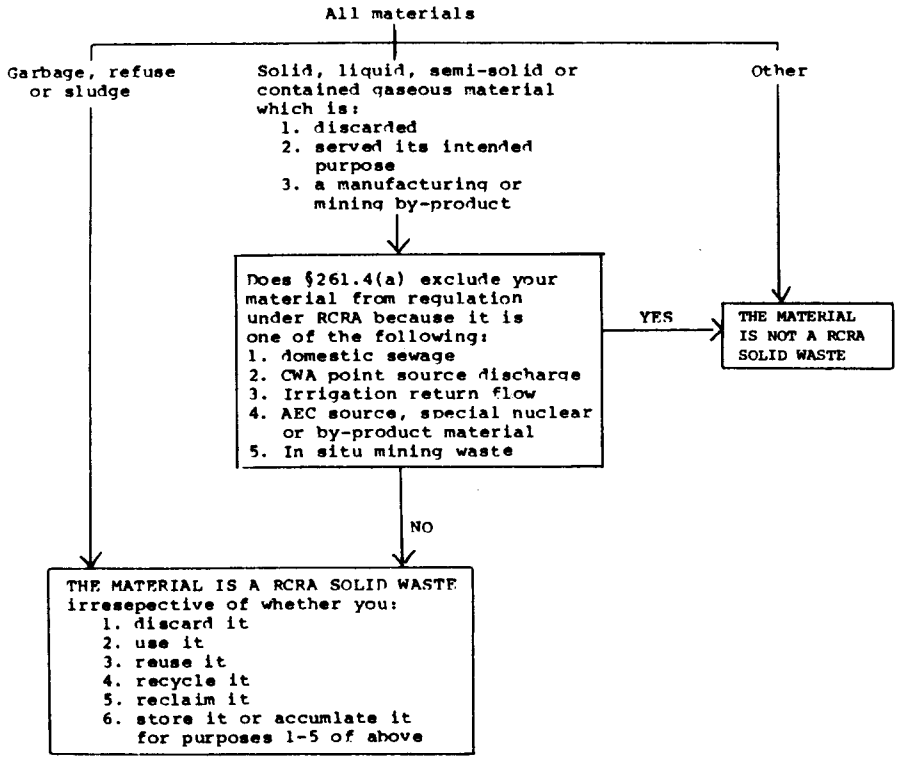
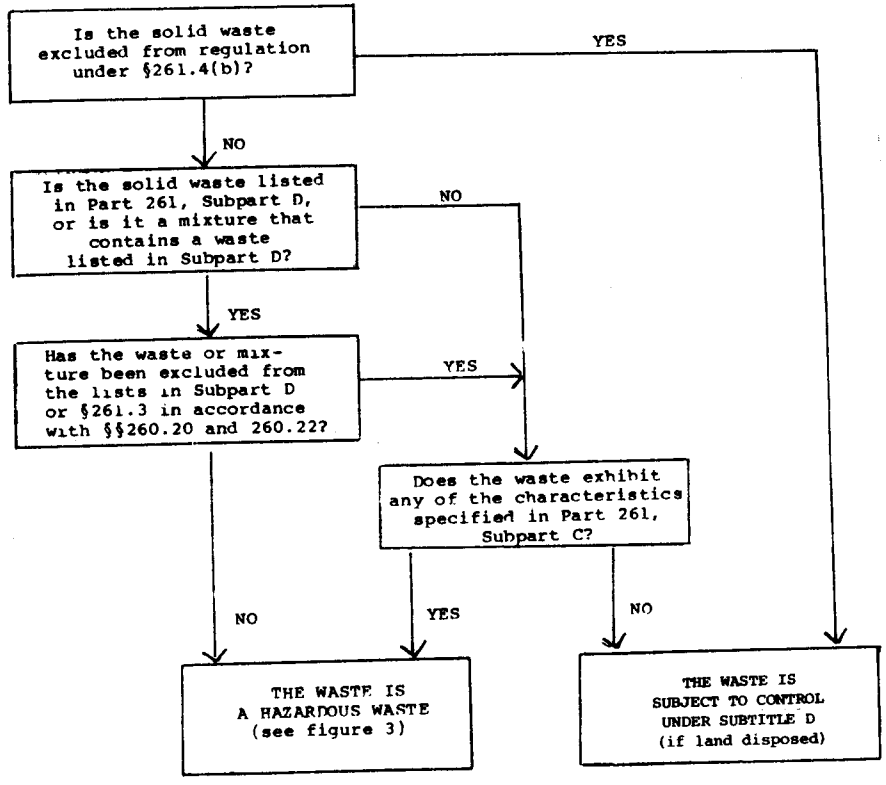


FIGURE 2

DEFINITION OF A HAZARDOUS WASTE



PART 261—IDENTIFICATION AND LISTING OF HAZARDOUS WASTE

Subpart A—General

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APPENDICES

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APPENDIX VII—BASIS FOR LISTING HAZARDOUS WASTE
APPENDIX VIII—HAZARDOUS CONSTITUENTS
APPENDIX IX—WASTES EXCLUDED UNDER §§ 260.20 AND 260.22
APPENDIX X—METHOD OF ANALYSIS FOR CHORINATED DIBENZO-P-DIOXINS AND -DIBENZOFURANS

AUTHORITY: 42 U.S.C. 6905, 6912(a), 6921, and 6922.

SOURCE: 45 FR 33119, May 19, 1980, unless otherwise noted.

Subpart A—General

§ 261.1 Purpose and scope.

(a) This part identifies those solid wastes which are subject to regulation as hazardous wastes under Parts 262 through 265, 268, and Parts 270, 271, and 124 of this chapter and which are subject to the notification requirements of section 3010 of RCRA. In this part:

(1) Subpart A defines the terms "solid waste" and "hazardous waste", identifies those wastes which are excluded from regulation under Parts 262 through 266, 268 and 270 and establishes special management requirements for hazardous waste produced by conditionally exempt small quantity generators and hazardous waste which is recycled.

(2) Subpart B sets forth the criteria used by EPA to identify characteristics of hazardous waste and to list particular hazardous wastes.

(3) Subpart C identifies characteristics of hazardous waste.

(4) Subpart D lists particular hazardous wastes.

(b)(1) The definition of solid waste contained in this part applies only to wastes that also are hazardous for purposes of the regulations implementing Subtitle C of RCRA. For example, it does not apply to materials (such as non-hazardous scrap, paper, textiles, or rubber) that are not otherwise hazardous wastes and that are recycled.

(2) This part identifies only some of the materials which are solid wastes and hazardous wastes under sections 3007, 3013, and 7003 of RCRA. A material which is not defined as a solid waste in this part, or is not a hazardous waste identified or listed in this part, is still a solid waste and a hazardous waste for purposes of these sections if:

(i) In the case of sections 3007 and 3013, EPA has reason to believe that the material may be a solid waste within the meaning of section 1004(27) of RCRA and a hazardous waste within the meaning of section 1004(5) of RCRA; or

(ii) In the case of section 7003, the statutory elements are established.

(c) For the purposes of §§ 261.2 and 261.6:

(1) A "spent material" is any material that has been used and as a result of contamination can no longer serve the purpose for which it was produced without processing;

(2) "Sludge" has the same meaning used in § 260.10 of this chapter;

(3) A "by-product" is a material that is not one of the primary products of a production process and is not solely or separately produced by the production process. Examples are process residues such as slags or distillation column bottoms. The term does not include a co-product that is produced for the general public's use and is ordinarily used in the form it is produced by the process.

(4) A material is "reclaimed" if it is processed to recover a usable product, or if it is regenerated. Examples are recovery of lead values from spent batteries and regeneration of spent solvents.

(5) A material is "used or reused" if it is either:

(i) Employed as an ingredient (including use as an intermediate) in an industrial process to make a product (for example, distillation bottoms from one process used as feedstock in another process). However, a material will not satisfy this condition if distinct components of the material are recovered as separate end products (as when metals are recovered from metal-containing secondary materials); or

(ii) Employed in a particular function or application as an effective substitute for a commercial product (for example, spent pickle liquor used as phosphorous precipitant and sludge conditioner in wastewater treatment).

(6) "Scrap metal" is bits and pieces of metal parts (*e.g.*,) bars, turnings, rods, sheets, wire) or metal pieces that may be combined together with bolts or soldering (*e.g.*, radiators, scrap automobiles, railroad box cars), which when worn or superfluous can be recycled.

(7) A material is "recycled" if it is used, reused, or reclaimed.

(8) A material is "accumulated speculatively" if it is accumulated before being recycled. A material is not accumulated speculatively, however, if the person accumulating it can show that the material is potentially recyclable and has a feasible means of being recycled; and that—during the calendar year (commencing on January 1)—the amount of material that is recycled, or transferred to a different site for recycling, equals at least 75 percent by weight or volume of the amount of that material accumulated at the beginning of the period. In calculating the percentage of turnover, the 75 percent requirement is to be applied to each material of the same type (*e.g.*, slags from a single smelting process) that is recycled in the same way (*i.e.*, from which the same material is recovered or that is used in the same way). Materials accumulating in units that would be exempt from regulation under § 261.4(c) are not be included in making the calculation. (Materials that are already defined as solid wastes also are not to be included in making the calculation.) Materials are no longer in this category once they are removed from accumulation for recycling, however.

[45 FR 33119, May 19, 1980, as amended at 48 FR 14293, Apr. 1, 1983; 50 FR 663, Jan. 4, 1985; 51 FR 10174, Mar. 24, 1986; 51 FR 40636, Nov. 7, 1986]

§ 261.2 Definition of solid waste.

(a)(1) A *solid waste* is any discarded material that is not excluded by § 261.4(a) or that is not excluded by variance granted under §§ 260.30 and 260.31.

(2) A *discarded material* is any material which is:

(i) *Abandoned*, as explained in paragraph (b) of this section; or

(ii) *Recycled*, as explained in paragraph (c) of this section; or

(iii) Considered *inherently waste-like*, as explained in paragraph (d) of this section.

(b) Materials are solid waste if they are *abandoned* by being:

(1) Disposed of; or

(2) Burned or incinerated; or

(3) Accumulated, stored, or treated (but not recycled) before or in lieu of being abandoned by being disposed of, burned, or incinerated.

(c) Materials are solid wastes if they are *recycled*—or accumulated, stored, or treated before recycling—as specified in paragraphs (c)(1) through (4) of this section.

(1) *Used in a manner constituting disposal.* (i) Materials noted with a "*" in Column 1 of Table I are solid wastes when they are:

(A) Applied to or placed on the land in a manner that constitutes disposal; or

(B) Used to produce products that are applied to or placed on the land or are otherwise contained in products that are applied to or placed on the land (in which cases the product itself remains a solid waste).

(ii) However, commercial chemical products listed in § 261.33 are not solid wastes if they are applied to the land and that is their ordinary manner of use.

(2) *Burning for energy recovery.* (i) Materials noted with a "*" in column 2 of Table 1 are solid wastes when they are:

(A) Burned to recover energy;

(B) Used to produce a fuel or are otherwise contained in fuels (in which cases the fuel itself remains a solid waste).

(ii) However, commercial chemical products listed in § 261.33 are not solid wastes if they are themselves fuels.

(3) *Reclaimed.* Materials noted with a "*" in column 3 of Table 1 are solid wastes when reclaimed.

(4) *Accumulated speculatively.* Materials noted with a "*" in column 4 of Table 1 are solid wastes when accumulated speculatively.

TABLE 1

	Use constituting disposal (§ 261.2(c)(1)) (1)	Energy recovery/fuel (§ 261.2(c)(2)) (2)	Reclamation (§ 261.2(c)(3)) (3)	Speculative accumulation (§ 261.2(c)(4)) (4)
Spent Materials	(*)	(*)	(*)	(*)
Sludges (listed in 40 CFR Part 261.31 or 261.32)	(*)	(*)	(*)	(*)
Sludges exhibiting a characteristic of hazardous waste	(*)	(*)		(*)
By-products (listed in 40 CFR Part 261.31 or 261.32)	(*)	(*)	(*)	(*)
By-products exhibiting a characteristic of hazardous waste	(*)	(*)		(*)
Commercial chemical products listed in 40 CFR 261.33	(*)	(*)		
Scrap metal	(*)	(*)	(*)	(*)

Note: The terms "spent materials", "sludges", "by-products," and "scrap metal" are defined in § 261.1.

(d) *Inherently waste-like materials.* The following materials are solid wastes when they are recycled in any manner:

(1) Hazardous Waste Nos. F020, F021 (unless used as an ingredient to make a product at the site of generation), F022, F023, F026, and F028.

(2) The Administrator will use the following criteria to add wastes to that list:

(i)(A) The materials are ordinarily disposed of, burned, or incinerated; or

(B) The materials contain toxic constituents listed in Appendix VIII of Part 261 and these constituents are not ordinarily found in raw materials or prod[illegible] for which the materials substitute (or are found in raw materials or products in smaller concentrations) and are not used or reused during the recycling process; and

(ii) The material may pose a substantial hazard to human health and the environment when recycled.

(e) *Materials that are not solid waste when recycled.* (1) Materials are not solid wastes when they can be shown to be recycled by being:

(i) Used or reused as ingredients in an industrial process to make a product, provided the materials are not being reclaimed; or

(ii) Used or reused as effective substitutes for commercial products; or

(iii) Returned to the original process from which they are generated, without first being reclaimed. The material must be returned as a substitute for raw material feedstock, and the process must use raw materials as principal feedstocks.

(2) The following materials are solid wastes, even if the recycling involves use, reuse, or return to the original process (described in paragraphs (e)(1)(i) through (iii) of this section):

(i) Materials used in a manner constituting disposal, or used to produce products that are applied to the land; or

(ii) Materials burned for energy recovery, used to produce a fuel, or contained in fuels; or

(iii) Materials accumulated speculatively; or

(iv) Materials listed in paragraph (d)(1) of this section.

(f) *Documentation of claims that materials are not solid wastes or are conditionally exempt from regulation.* Respondents in actions to enforce regulations implementing Subtitle C of RCRA who raise a claim that a certain material is not a solid waste, or is conditionally exempt from regulation, must demonstrate that there is a known market or disposition for the material, and that they meet the terms of the exclusion or exemption. In doing so, they must provide appropriate documentation (such as contracts showing that a second person uses the material as an ingredient in a production process) to demonstrate that the material is not a waste, or is exempt from regulation. In addition, owners or operators of facilities claiming that they actually are recycling materials must show that they have the necessary equipment to do so.

[50 FR 664, Jan. 4, 1985, as amended at 50 FR 33542, Aug. 20, 1985]

§ 261.3 Definition of hazardous waste.

(a) A solid waste, as defined in § 261.2, is a hazardous waste if:

(1) It is not excluded from regulation as a hazardous waste under § 261.4(b); and

(2) It meets any of the following criteria:

(i) It exhibits any of the characteristics of hazardous waste identified in Subpart C.

(ii) It is listed in Subpart D and has not been excluded from the lists in Subpart D under §§ 260.20 and 260.22 of this chapter.

(iii) It is a mixture of a solid waste and a hazardous waste that is listed in Subpart D solely because it exhibits one or more of the characteristics of hazardous waste identified in Subpart C, unless the resultant mixture no longer exhibits any characteristic of hazardous waste identified in Subpart C.

(iv) It is a mixture of solid waste and one or more hazardous wastes listed in Subpart D and has not been excluded from this paragraph under §§ 260.[illegible] and 260.22 of this chapter; however, the following mixtures of solid waste and hazardous wastes listed in Subpart D are not hazardous waste (except by application of paragraph (a)(2) (i) or (ii) of this section) if the generator can demonstrate that the mixture consists of wastewater the discharge of which is subject to regulation under either section 402 or section 307(b) of the Clean Water Act (including wastewater at facilities which have eliminated the discharge of wastewater) and:

(A) One or more of the following spent solvents listed in § 261.31—carbon tetrachloride, tetrachloroethylene, trichloroethylene—*Provided That the maximum total weekly usage of these solvents (other than the amounts that can be demonstrated not to be discharged to wastewater) divided by the average weekly flow of wastewater into the headworks of the facility's wastewater treatment or pretreatment system does not exceed [illegible] part per million; or*

(B) One or more of the following spent solvents listed in § 261.31—methylene chloride, 1,1,1-trichloroethane, chlorobenzene, o-dichlorobenzene, cresols, cresylic acid, nitrobenzene, toluene, methyl ethyl ketone, carbon disulfide, isobutanol, pyridine, spent chlorofluorocarbon solvents—provided that the maximum total weekly usage of these solvents (other than the amounts that can be demonstrated not to be discharged to wastewater) divid-

ed by the average weekly flow of wastewater into the headworks of the facility's wastewater treatment or pre-treatment system does not exceed 25 parts per million; or

(C) One of the following wastes listed in § 261.32—heat exchanger bundle cleaning sludge from the petroleum refining industry (EPA Hazardous Waste No. K050); or

(D) A discarded commercial chemical product, or chemical intermediate listed in § 261.33, arising from *de minimis* losses of these materials from manufacturing operations in which these materials are used as raw materials or are produced in the manufacturing process. For purposes of this subparagraph, *"de minimis"* losses include those from normal material handling operations (e.g. spills from the unloading or transfer of materials from bins or other containers, leaks from pipes, valves or other devices used to transfer materials); minor leaks of process equipment, storage tanks or containers; leaks from well-maintained pump packings and seals; sample purgings; relief device discharges; discharges from safety showers and rinsing and cleaning of personal safety equipment; and rinsate from empty containers or from containers that are rendered empty by that rinsing; or

(E) Wastewater resulting from laboratory operations containing toxic (T) wastes listed in Subpart D, *Provided, That the annualized average flow of laboratory wastewater does not exceed one percent of total wastewater flow into the headworks of the facility's wastewater treatment or pre-treatment system, or provided the wastes, combined annualized average concentration does not exceed one part per million in the headworks of the facility's wastewater treatment or pre-treatment facility. Toxic (T) wastes used in laboratories that are demonstrated not to be discharged to wastewater are not to be included in this calculation.*

(b) A solid waste which is not excluded from regulation under paragraph (a)(1) of this section becomes a hazardous waste when any of the following events occur:

(1) In the case of a waste listed in Subpart D, when the waste first meets the listing description set forth in Subpart D.

(2) In the case of a mixture of solid waste and one or more listed hazardous wastes, when a hazardous waste listed in Subpart D is first added to the solid waste.

(3) In the case of any other waste (including a waste mixture), when the waste exhibits any of the characteristics identified in Subpart C.

(c) Unless and until it meets the criteria of paragraph (d):

(1) A hazardous waste will remain a hazardous waste.

(2)(i) Except as otherwise provided in paragraph (c)(2)(ii) of this section, any solid waste generated from the treatment, storage, or disposal of a hazardous waste, including any sludge, spill residue, ash, emission control dust, or leachate (but not including precipitation run-off) is a hazardous waste. (However, materials that are reclaimed from solid wastes and that are used beneficially are not solid wastes and hence are not hazardous wastes under this provision unless the reclaimed material is burned for energy recovery or used in a manner constituting disposal.)

(ii) The following solid wastes are not hazardous even though they are generated from the treatment, storage, or disposal of a hazardous waste, unless they exhibit one or more of the characteristics of hazardous waste: (A) Waste pickle liquor sludge generated by lime stabilization of spent pickle liquor from the iron and steel industry (SIC Codes 331 and 332).

(B) Waste from burning any of the materials exempted from regulation by § 261.6(a)(3) (v) through (ix).

(d) Any solid waste described in paragraph (c) of this section is not a hazardous waste if it meets the following criteria:

(1) In the case of any solid waste, it does not exhibit any of the characteristics of hazardous waste identified in Subpart C.

(2) In the case of a waste which is a listed waste under Subpart D, contains a waste listed under Subpart D or is derived from a waste listed in Subpart D, it also has been excluded from paragraph (c) under §§ 260.20 and 260.22 of this chapter.

[45 FR 33119, May 19, 1980, as amended at 46 FR 56588, Nov. 17, 1981; 50 FR 14219, Apr. 11, 1985; 50 FR 49202, Nov. 29, 1985; 52 FR 11821, Apr. 13, 1987]

§ 261.4 Exclusions.

(a) *Materials which are not solid wastes.* The following materials are not solid wastes for the purpose of this part:

(1)(i) Domestic sewage; and

(ii) Any mixture of domestic sewage and other wastes that passes through a sewer system to a publicly-owned treatment works for treatment. "Domestic sewage" means untreated sanitary wastes that pass through a sewer system.

(2) Industrial wastewater discharges that are point source discharges subject to regulation under section 402 of the Clean Water Act, as amended.

[*Comment:* This exclusion applies only to the actual point source discharge. It does not exclude industrial wastewaters while they are being collected, stored or treated before discharge, nor does it exclude sludges that are generated by industrial wastewater treatment.]

(3) Irrigation return flows.

(4) Source, special nuclear or by-product material as defined by the Atomic Energy Act of 1954, as amended, 42 U.S.C. 2011 *et seq.*

(5) Materials subjected to in-situ mining techniques which are not removed from the ground as part of the extraction process.

(6) Pulping liquors (*i.e.*, black liquor) that are reclaimed in a pulping liquor recovery furnace and then reused in the pulping process, unless it is accumulated speculatively as defined in § 261.1(c) of this chapter.

(7) Spent sulfuric acid used to produce virgin sulfuric acid, unless it is accumulated speculatively as defined in § 261.1(c) of this chapter.

(8) Secondary materials that are reclaimed and returned to the original process or processes in which they were generated where they are reused in the production process provided:

(i) Only tank storage is involved, and the entire process through completion of reclamation is closed by being entirely connected with pipes or other comparable enclosed means of conveyance;

(ii) Reclamation does not involve controlled flame combustion (such as occurs in boilers, industrial furnaces, or incinerators);

(iii) The secondary materials are never accumulated in such tanks for over twelve months without being reclaimed; and

(iv) The reclaimed material is not used to produce a fuel, or used to produce products that are used in a manner constituting disposal.

(b) *Solid wastes which are not hazardous wastes.* The following solid wastes are not hazardous wastes:

(1) Household waste, including household waste that has been collected, transported, stored, treated, disposed, recovered (e.g., refuse-derived fuel) or reused. "Household waste" means any material (including garbage, trash and sanitary wastes 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). A resource recovery facility managing municipal solid waste shall not be deemed to be treating, storing, disposing of, or otherwise managing hazardous wastes for the purposes of regulation under this subtitle, if such facility:

(i) Receives and burns only

(A) Household waste (from single and multiple dwellings, hotels, motels, and other residential sources) and

(B) Solid waste from commercial or industrial sources that does not contain hazardous waste; and

(ii) Such facility does not accept hazardous wastes and the owner or operator of such facility has established contractual requirements or other appropriate notification or inspection procedures to assure that hazardous wastes are not received at or burned in such facility.

(2) Solid wastes generated by any of the following and which are returned to the soils as fertilizers:

(i) The growing and harvesting of agricultural crops.

(ii) The raising of animals, including animal manures.

(3) Mining overburden returned to the mine site.

(4) Fly ash waste, bottom ash waste, slag waste, and flue gas emission control waste generated primarily from the combustion of coal or other fossil fuels.

(5) Drilling fluids, produced waters, and other wastes associated with the exploration, development, or production of crude oil, natural gas or geothermal energy.

(6)(i) Wastes which fail the test for the characteristic of EP toxicity because chromium is present or are listed in Subpart D due to the presence of chromium, which do not fail the test for the characteristic of EP toxicity for any other constituent or are not listed due to the presence of any other constituent, and which do not fail the text for any other characteristic, if it is shown by a waste generator or by waste generators that:

(A) The chromium in the waste is exclusively (or nearly exclusively) trivalent chromium; and

(B) The waste is generated from an industrial process which uses trivalent chromium exlcusively (or nearly exclusively) and the process does not generate hexavalent chromium; and

(C) The waste is typically and frequently managed in non-oxidizing environments.

(ii) Specific wastes which meet the standard in paragraphs (b)(6)(i)(A), (B) and (C) (so long as they do not fail the test for the charactristic of EP toxicity, and do not fail the test for any other characteristic) are:

(A) Chrome (blue) trimmings generated by the following subcategories of the leather tanning and finishing industry; hair pulp/chrome tan/retan/wet finish; hair save/chrome tan/retan/wet finish; retan/wet finish; no beamhouse; through-the-blue; and shearling.

(B) Chrome (blue) shavings generated by the following subcategories of the leather tanning and finishing industry: Hair pulp/chrome tan/retan/wet finish; hair save/chrome tan/retan/wet finish; retan/wet finish; no beamhouse; through-the-blue; and shearling.

(C) Buffing dust generated by the following subcategories of the leather tanning and finishing industry; hair pulp/c[illegible]me tan/retan/wet finish; hair save/chrome tan/retan/wet finish; retan/wet finish; no beamhouse; through-the-blue.

(D) Sewer screenings generated by the following subcategories of the leather tanning and finishing industry: Hair pulp/crome tan/retan/wet finish; hair save/chrome tan/retan/wet finish; retan/wet finish; no beamhouse; through-the-blue; and shearling.

(E) Wastewater treatment sludges generated by the following subcategories of the leather tanning and finishing industry: Hair pulp/chrome tan/retan/wet finish; hair save/chrome tan/retan/wet finish; retan/wet finish; no beamhouse; through-the-blue; and shearling.

(F) Wastewater treatment sludes generated by the following subcategories of the leather tanning and finishing industry: Hair pulp/chrome tan/retan/wet finish; hair save/chrome-tan/retan/wet finish; and through-the-blue.

(G) Waste scrap leather from the leather tanning industry, the shoe manufacturing industry, and other leather product manufacturing industries.

(H) Wastewater treatment sludges from the production of TiO_2 pigment using chromium-bearing ores by the chloride process.

(7) Solid waste from the extraction, beneficiation and processing of ores and minerals (including coal), including phosphate rock and overburden from the mining of uranium ore.

(8) Cement kiln dust waste.

(9) Solid waste which consists of discarded wood or wood products which fails the test for the characteristic of EP toxicity 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 these materials' intended end use.

(c) Hazardous wastes which are exempted from certain regulations. A hazardous waste which is generated in a product or raw material storage tank, a product or raw material transport vehicle or vessel, a product or raw material pipeline, or in a manufacturing process unit or an associated non-waste-treatment-manufacturing unit, is not subject to regulation under Parts 262 through 265, 268, 270, 271 and 124 of this chapter or to the notification requirements of section 3010 of RCRA until it exits the unit in which it was generated, unless the unit is a surface impoundment, or unless the hazardous waste remains in the unit more than 90 days after the unit ceases to be operated for manufacturing, or for storage or transportation of product or raw materials.

(d) *Samples.* (1) Except as provided in paragraph (d)(2) of this section, a sample of solid waste or a sample of water, soil, or air, which is collected for the sole purpose of testing to determine its characteristics or composition, is not subject to any requirements of this part or Parts 262 through 268 or Part 270 or Part 124 of this chapter or to the notification requirements of section 3010 of RCRA, when:

(i) The sample is being transported to a laboratory for the purpose of testing; or

(ii) The sample is being transported back to the sample collector after testing; or

(iii) The sample is being stored by the sample collector before transport to a laboratory for testing; or

(iv) The sample is being stored in a laboratory before testing; or

(v) The sample is being stored in a laboratory after testing but before it is returned to the sample collector; or

(vi) The sample is being stored temporarily in the laboratory after testing for a specific purpose (for example, until conclusion of a court case or enforcement action where further testing of the sample may be necessary).

(2) In order to qualify for the exemption in paragraphs (d)(1) (i) and (ii) of this section, a sample collector shipping samples to a laboratory and a laboratory returning samples to a sample collector must:

(i) Comply with U.S. Department of Transportation (DOT), U.S. Postal Service (USPS), or any other applicable shipping requirements; or

(ii) Comply with the following requirements if the sample collector determines that DOT, USPS, or other shipping requirements do not apply to the shipment of the sample:

(A) Assure that the following information accompanies the sample:

(*1*) The sample collector's name, mailing address, and telephone number;

(*2*) The laboratory's name, mailing address, and telephone number;

(*3*) The quantity of the sample;

(*4*) The date of shipment; and

(*5*) A description of the sample.

(B) Package the sample so that it does not leak, spill, or vaporize from its packaging.

(3) This exemption does not apply if the laboratory determines that the waste is hazardous but the laboratory is no longer meeting any of the conditions stated in paragraph (d)(1) of this section.

[45 FR 33119, May 19, 1980]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting § 261.4, see the List of CFR Sections Affected in the Finding Aids section of this volume.

§ 261.5 Special requirements for hazardous waste generated by conditionally exempt small quantity generators.

(a) A generator is a conditionally exempt small quantity generator in a calendar month if he generates no more than 100 kilograms of hazardous waste in that month.

(b) Except for those wastes identified in paragraphs (e), (f), (g), and (j) of this section, a conditionally exempt small quantity generator's hazardous wastes are not subject to regulation under Parts 262 through 266, 268, and Parts 270 and 124 of this chapter, and the notification requirements of section 3010 of RCRA, provided the generator complies with the requirements of paragraphs (f), (g), and (j) of this section.

(c) Hazardous waste that is not subject to regulation or that is subject only to § 262.11, § 262.12, § 262.40(c), and § 262.41 is not included in the quantity determinations of this part and Parts 262 through 266, 268, and 270 and is not subject to any of the requirements of those parts. Hazardous waste that is subject to the requirements of § 261.6 (b) and (c) and Subparts C, D, and F of Part 266 is included in the quantity determination of this part and is subject to the require-

ments of Parts 262 through 266 and 270.

(d) In determining the quantity of hazardous waste generated, a generator need not include:

(1) Hazardous waste when it is removed from on-site storage; or

(2) Hazardous waste produced by on-site treatment (including reclamation) of his hazardous waste, so long as the hazardous waste that is treated was counted once; or

(3) Spent materials that are generated, reclaimed, and subsequently reused on-site, so long as such spent materials have been counted once.

(e) If a generator generates acute hazardous waste in a calendar month in quantities greater than set forth below, all quantities of that acute hazardous waste are subject to full regulation under Parts 262 through 266, 268, and Parts 270 and 124 of this chapter, and the notification requirements of section 3010 of RCRA:

(1) A total of one kilogram of acute hazardous wastes listed in §§ 261.31, 261.32, or 261.33(e).

(2) A total of 100 kilograms of any residue or contaminated soil, waste, or other debris resulting from the clean-up of a spill, into or on any land or water, of any acute hazardous wastes listed in §§ 261.31, 261.32, or 261.33(e).

(f) In order for acute hazardous wastes generated by a generator of acute hazardous wastes in quantities equal to or less than those set forth in paragraph (e)(1) or (2) of this section to be excluded from full regulation under this section, the generator must comply with the following requirements:

(1) Section 262.11 of this chapter;

(2) The generator may accumulate acute hazardous waste on-site. If he accumulates at any time acute hazardous wastes in quantities greater than those set forth in paragraph (e)(1) or (2) of this section, all of those accumulated wastes are subject to regulation under Parts 262 through 266, 268, and Parts 270 and 124 of this chapter, and the applicable notification requirements of section 3010 of RCRA. The time period of § 262.34(d) for accumulation of wastes on-site begins when the accumulated wastes exceed the applicable exclusion limit;

(3) A conditionally exempt small quantity generator may either treat or dispose of his acute hazardous waste in an on-site facility or ensure delivery to an off-site treatment, storage or disposal facility, either of which, if located in the U.S., is:

(i) Permitted under Part 270 of this chapter;

(ii) In interim status under Parts 270 and 265 of this chapter;

(iii) Authorized to manage hazardous waste by a State with a hazardous waste management program approved under Part 271 of this chapter;

(iv) Permitted, licensed, or registered by a State to manage municipal or industrial solid waste; or

(v) A facility which:

(A) Beneficially uses or reuses, or legitimately recycles or reclaims its waste; or

(B) Treats its waste prior to beneficial use or reuse, or legitimate recycling or reclamation.

(g) In order for hazardous waste generated by a conditionally exempt small quantity generator in quantities of less than 100 kilograms of hazardous waste during a calendar month to be excluded from full regulation under this section, the generator must comply with the following requirements:

(1) Section 262.11 of this chapter;

(2) The conditionally exempt small quantity generator may accumulate hazardous waste on-site. If he accumulates at any time more than a total of 1000 kilograms of his hazardous wastes, all of those accumulated wastes are subject to regulation under the special provisions of Part 262 applicable to generators of between 100 kg and 1000 kg of hazardous waste in a calendar month as well as the requirements of Parts 263 through 266, 268, and Parts 270 and 124 of this chapter, and the applicable notification requirements of section 3010 of RCRA. The time period of § 262.34(d) for accumulation of wastes on-site begins for a conditionally exempt small quantity generator when the accumulated wastes exceed 1000 kilograms;

(3) A conditionally exempt small quantity generator may either treat or dispose of his hazardous waste in an on-site facility or ensure delivery to an off-site treatment, storage or disposal facility, either of which, if located in the U.S., is:

(i) Permitted under Part 270 of this chapter;

(ii) In interim status under Parts 270 and 265 of this chapter;

(iii) Authorized to manage hazardous waste by a State with a hazardous waste management program approved under Part 271 of this chapter;

(iv) Permitted, licensed, or registered by a State to manage municipal or industrial solid waste; or

(v) A facility which:

(A) Beneficially uses or reuses, or legitimately recycles or reclaims its waste; or

(B) Treats its waste prior to beneficial use or reuse, or legitimate recycling or reclamation.

(h) Hazardous waste subject to the reduced requirements of this section may be mixed with non-hazardous waste and remain subject to these reduced requirements even though the resultant mixture exceeds the quantity limitations identified in this section, unless the mixture meets any of the characteristics of hazardous waste identified in Subpart C.

(i) If any person mixes a solid waste with a hazardous waste that exceeds a quantity exclusion level of this section, the mixture is subject to full regulation.

(j) If a conditionally exempt small quantity generator's wastes are mixed with used oil, the mixture is subject to Subpart E of Part 266 of this chapter if it is destined to be burned for energy recovery. Any material produced from such a mixture by processing, blending, or other treatment is also so regulated if it is destined to be burned for energy recovery.

[51 FR 10174, Mar. 24, 1986, as amended at 51 FR 28682, Aug. 8, 1986; 51 FR 40637, Nov. 7, 1986]

§ 261.6 Requirements for recyclable materials.

(a)(1) Hazardous wastes that are recycled are subject to the requirements for generators, transporters, and storage facilities of paragraphs (b) and (c) of this section, except for the materials listed in paragraphs (a)(2) and (a)(3) of this section. Hazardous wastes that are recycled will be known as "recyclable materials."

(2) The following recyclable materials are not subject to the requirements of this section but are regulated under Subparts C through G of Part 266 of this chapter and all applicable provisions in Parts 270 and 124 of this chapter:

(i) Recyclable materials used in a manner constituting disposal (Subpart C);

(ii) Hazardous wastes burned for energy recovery in boilers and industrial furnaces that are not regulated under Subpart O of Part 264 or 265 of this chapter (Subpart D);

(iii) Used oil that exhibits one or more of the characteristics of hazardous waste and is burned for energy recovery in boilers and industrial furnaces that are not regulated under Subpart O of Part 264 or 265 of this chapter (Subpart E);

(iv) Recyclable materials from which precious metals are reclaimed (Subpart F);

(v) Spent lead-acid batteries that are being reclaimed (Subpart G).

(3) The following recyclable materials are not subject to regulation under Parts 262 through Parts 266 or Parts 268, 270 or 124 of this chapter, and are not subject to the notification requirements of section 3010 of RCRA:

(i) Industrial ethyl alcohol that is reclaimed except that, unless provided otherwise in an international agreement as specified in § 262.58:

(A) A person initiating a shipment for reclamation in a foreign country, and any intermediary arranging for the shipment, must comply with the requirements applicable to a primary exporter in §§ 262.53, 262.56 (a)(1)-(4), (6), and (b), and 262.57, export such materials only upon consent of the receiving country and in conformance with the EPA Acknowledgment of Consent as defined in Subpart E of Part 262, and provide a copy of the EPA Acknowledgment of Consent to the shipment to the transporter transporting the shipment for export;

(B) Transporters transporting a shipment for export may not accept a shipment if he knows the shipment does not conform to the EPA Acknowledgment of Consent, must ensure that

a copy of the EPA Acknowledgment of Consent accompanies the shipment and must ensure that it is delivered to the facility designated by the person initiating the shipment.

(ii) Used batteries (or used battery cells) returned to a battery manufacturer for regeneration;

(iii) Used oil that exhibits one or more of the characteristics of hazardous waste but is recycled in some other manner than being burned for energy recovery;

(iv) Scrap metal;

(v) Fuels produced from the refining of oil-bearing hazardous wastes along with normal process streams at a petroleum refining facility if such wastes result from normal petroleum refining, production, and transportation practices;

(vi) Oil reclaimed from hazardous waste resulting from normal petroleum refining, production, and transportation practices, which oil is to be refined along with normal process streams at a petroleum refining facility;

(vii) Coke and coal tar from the iron and steel industry that contains EPA Hazardous Waste No. K087 (Decanter tank tar sludge from coking operations) from the iron and steel production process;

(viii)(A) Hazardous waste fuel produced from oil-bearing hazardous wastes from petroleum refining, production, or transportation practices, or produced from oil reclaimed from such hazardous wastes, where such hazardous wastes are reintroduced into a process that does not use distillation or does not produce products from crude oil so long as the resulting fuel meets the used oil specification under § 266.40(e) of this chapter and so long as no other hazardous wastes are used to produce the hazardous waste fuel;

(B) Hazardous waste fuel produced from oil-bearing hazardous waste from petroleum refining production, and transportation practices, where such hazardous wastes are reintroduced into a refining process after a point at which contaminants are removed, so long as the fuel meets the used oil fuel specification under § 266.40(e) of this chapter; and

(C) Oil reclaimed from oil-bearing hazardous wastes from petroleum refining, production, and transportation practices, which reclaimed oil is burned as a fuel without reintroduction to a refining process, so long as the reclaimed oil meets the used oil fuel specification under § 266.40(e) of this chapter; and

(ix) Petroleum coke produced from petroleum refinery hazardous wastes containing oil at the same facility at which such wastes were generated, unless the resulting coke product exceeds one or more of the characteristics of hazardous waste in Part 261, Subpart C.

(b) Generators and transporters of recyclable materials are subject to the applicable requirements of Parts 262 and 263 of this chapter and the notification requirements under section 3010 of RCRA, except as provided in paragraph (a) of this section.

(c)(1) Owners or operators of facilities that store recyclable materials before they are recycled are regulated under all applicable provisions of Subparts A through L of Parts 264 and 265, and under Parts 124, 266, 268, and 270 of this Chapter and the notification requirements under section 3010 of RCRA, except as provided in paragraph (a) of this section. (The recycling process itself is exempt from regulation.)

(2) Owners or operators of facilities that recycle recyclable materials without storing them before they are recycled are subject to the following requirements, except as provided in paragraph (a) of this section:

(i) Notification requirements under section 3010 of RCRA;

(ii) Sections 265.71 and 265.72 (dealing with the use of the manifest and manifest discrepancies) of this chapter.

[50 FR 49203, Nov. 29, 1985, as amended at 51 FR 28682, Aug. 8, 1986; 51 FR 40637, Nov. 7, 1986; 52 FR 11821, Apr. 13, 1987]

§ 261.7 Residues of hazardous waste in empty containers.

(a)(1) Any hazardous waste remaining in either (i) an empty container or (ii) an inner liner removed from an empty container, as defined in paragraph (b) of this section, is not subject to regulation under Parts 261 through 265, or Part 268, 270 or 124 of this chapter or to the notification requirements of section 3010 of RCRA.

(2) Any hazardous waste in either (i) a container that is not empty or (ii) an inner liner removed from a container that is not empty, as defined in paragraph (b) of this section, is subject to regulation under Parts 261 through 265, and Parts 268, 270 and 124 of this chapter and to the notification requirements of section 3010 of RCRA.

(b)(1) A container or an inner liner removed from a container that has held any hazardous waste, except a waste that is a compressed gas or that is identified as an acute hazardous waste listed in §§ 261.31, 261.32, or 261.33(e) of this chapter is empty if:

(i) All wastes have been removed that can be removed using the practices commonly employed to remove materials from that type of container, *e.g.*, pouring, pumping, and aspirating, *and*

(ii) No more than 2.5 centimeters (one inch) of residue remain on the bottom of the container or inner liner, *or*

(iii)(A) No more than 3 percent by weight of the total capacity of the container remains in the container or inner liner if the container is less than or equal to 110 gallons in size, or

(B) No more than 0.3 percent by weight of the total capacity of the container remains in the container or inner liner if the container is greater than 110 gallons in size.

(2) A container that has held a hazardous waste that is a compressed gas is empty when the pressure in the container approaches atmospheric.

(3) A container or an inner liner removed from a container that has held an acute hazardous waste listed in §§ 261.31, 261.32, or 261.33(e) is empty if:

(i) The container or inner liner has been triple rinsed using a solvent capable of removing the commercial chemical product or manufacturing chemical intermediate;

(ii) The container or inner liner has been cleaned by another method that has been shown in the scientific literature, or by tests conducted by the generator, to achieve equivalent removal; or

(iii) In the case of a container, the inner liner that prevented contact of the commercial chemical product or manufacturing chemical intermediate with the container, has been removed.

[45 FR 78529, Nov. 25, 1980, as amended at 47 FR 36097, Aug. 18, 1982; 48 FR 14294, Apr. 1, 1983; 50 FR 1999, Jan. 14, 1985; 51 FR 40637, Nov. 7, 1986]

Subpart B—Criteria for Identifying the Characteristics of Hazardous Waste and for Listing Hazardous Waste

§ 261.10 Criteria for identifying the characteristics of hazardous waste.

(a) The Administrator shall identify and define a characteristic of hazardous waste in Subpart C only upon determining that:

(1) A solid waste that exhibits the characteristic may:

(i) Cause, or significantly contribute to, an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; or

(ii) Pose a substantial present or potential hazard to human health or the environment when it is improperly treated, stored, transported, disposed of or otherwise managed; and

(2) The characteristic can be:

(i) Measured by an available standardized test method which is reasonably within the capability of generators of solid waste or private sector laboratories that are available to serve generators of solid waste; or

(ii) Reasonably detected by generators of solid waste through their knowledge of their waste.

§ 261.11 Criteria for listing hazardous waste.

(a) The Administrator shall list a solid waste as a hazardous waste only upon determining that the solid waste meets one of the following criteria:

(1) It exhibits any of the characteristics of hazardous waste identified in Subpart C.

(2) It has been found to be fatal to humans in low doses or, in the absence of data on human toxicity, it has been shown in studies to have an oral LD 50

toxicity (rat) of less than 50 milligrams per kilogram, an inhalation LC 50 toxicity (rat) of less than 2 milligrams per liter, or a dermal LD 50 toxicity (rabbit) of less than 200 milligrams per kilogram or is otherwise capable of causing or significantly contributing to an increase in serious irreversible, or incapacitating reversible, illness. (Waste listed in accordance with these criteria will be designated Acute Hazardous Waste.)

(3) It contains any of the toxic constituents listed in Appendix VIII unless, after considering any of the following factors, the Administrator concludes that the waste is not capable of posing a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported or disposed of, or otherwise managed:

(i) The nature of the toxicity presented by the constituent.

(ii) The concentration of the constituent in the waste.

(iii) The potential of the constituent or any toxic degradation product of the constituent to migrate from the waste into the environment under the types of improper management considered in paragraph (a)(3)(vii) of this section.

(iv) The persistence of the constituent or any toxic degradation product of the constituent.

(v) The potential for the constituent or any toxic degradation product of the constituent to degrade into nonharmful constituents and the rate of degradation.

(vi) The degree to which the constituent or any degradation product of the constituent bioaccumulates in ecosystems.

(vii) The plausible types of improper management to which the waste could be subjected.

(viii) The quantities of the waste generated at individual generation sites or on a regional or national basis.

(ix) The nature and severity of the human health and environmental damage that has occurred as a result of the improper management of wastes containing the constituent.

(x) Action taken by other governmental agencies or regulatory programs based on the health or environmental hazard posed by the waste or waste constituent.

(xi) Such other factors as may be appropriate.

Substances will be listed on Appendix VIII only if they have been shown in scientific studies to have toxic, carcinogenic, mutagenic or teratogenic effects on humans or other life forms.

(Wastes listed in accordance with these criteria will be designated Toxic wastes.)

(b) The Administrator may list classes or types of solid waste as hazardous waste if he has reason to believe that individual wastes, within the class or type of waste, typically or frequently are hazardous under the definition of hazardous waste found in section 1004(5) of the Act.

(c) The Administrator will use the criteria for listing specified in this section to establish the exclusion limits referred to in § 261.5(c).

Subpart C—Characteristics of Hazardous Waste

§ 261.20 General.

(a) A solid waste, as defined in § 261.2, which is not excluded from regulation as a hazardous waste under § 261.4(b), is a hazardous waste if it exhibits any of the characteristics identified in this subpart.

[*Comment*: § 262.11 of this chapter sets forth the generator's responsibility to determine whether his waste exhibits one or more of the characteristics identified in this subpart]

(b) A hazardous waste which is identified by a characteristic in this subpart, but is not listed as a hazardous waste in Subpart D, is assigned the EPA Hazardous Waste Number set forth in the respective characteristic in this subpart. This number must be used in complying with the notification requirements of section 3010 of the Act and certain recordkeeping and reporting requirements under Parts 262 through 265, 268, and Part 270 of this chapter.

(c) For purposes of this subpart, the Administrator will consider a sample obtained using any of the applicable sampling methods specified in Appendix I to be a representative sample within the meaning of Part 260 of this chapter.

[*Comment*: Since the Appendix I sampling methods are not being formally adopted by the Administrator, a person who desires to employ an alternative sampling method is not required to demonstrate the equivalency of his method under the procedures set forth in §§ 260.20 and 260.21.]

[45 FR 33119, May 19, 1980, as amended at 48 FR 14294, Apr. 1, 1983; 51 FR 40636, Nov. 7, 1986]

§ 261.21 Characteristic of ignitability.

(a) A solid waste exhibits the characteristic of ignitability if a representative sample of the waste has any of the following properties:

(1) It is a liquid, other than an aqueous solution containing less than 24 percent alcohol by volume and has flash point less than 60°C (140°F), as determined by a Pensky-Martens Closed Cup Tester, using the test method specified in ASTM Standard D-93-79 or D-93-80 (incorporated by reference, see § 260.11), or a Setaflash Closed Cup Tester, using the test method specified in ASTM Standard D-3278-78 (incorporated by reference, see § 260.11), or as determined by an equivalent test method approved by the Administrator under procedures set forth in §§ 260.20 and 260.21.

(2) It is not a liquid and is capable, under standard temperature and pressure, of causing fire through friction, absorption of moisture or spontaneous chemical changes and, when ignited, burns so vigorously and persistently that it creates a hazard.

(3) It is an ignitable compressed gas as defined in 49 CFR 173.300 and as determined by the test methods described in that regulation or equivalent test methods approved by the Administrator under §§ 260.20 and 260.21.

(4) It is an oxidizer as defined in 49 CFR 173.151.

(b) A solid waste that exhibits the characteristic of ignitability, but is not listed as a hazardous waste in Subpart D, has the EPA Hazardous Waste Number of D001.

[45 FR 33119, May 19, 1980, as amended at 46 FR 35247, July 7, 1981]

§ 261.22 Characteristic of corrosivity.

(a) A solid waste exhibits the characteristic of corrosivity if a representative sample of the waste has either of the following properties:

(1) It is aqueous and has a pH less than or equal to 2 or greater than or equal to 12.5, as determined by a pH meter using either an EPA test method or an equivalent test method approved by the Administrator under the procedures set forth in §§ 260.20 and 260.21. The EPA test method for pH is specified as Method 5.2 in "Test Methods for the Evaluation of Solid Waste, Physical/Chemical Methods" (incorporated by reference, see § 260.11).

(2) It is a liquid and corrodes steel (SAE 1020) at a rate greater than 6.35 mm (0.250 inch) per year at a test temperature of 55°C (130°F) as determined by the test method specified in NACE (National Association of Corrosion Engineers) Standard TM-01-69 as standardized in "Test Methods for the Evaluation of Solid Waste, Physical/Chemical Methods" (incorporated by reference, see § 260.11) or an equivalent test method approved by the Administrator under the procedures set forth in §§ 260.20 and 260.21.

(b) A solid waste that exhibits the characteristic of corrosivity, but is not listed as a hazardous waste in Subpart D, has the EPA Hazardous Waste Number of D002.

[45 FR 33119, May 19, 1980, as amended at 46 FR 35247, July 7, 1981]

§ 261.23 Characteristic of reactivity.

(a) A solid waste exhibits the characteristic of reactivity if a representative sample of the waste has *any* of the following properties:

(1) It is normally unstable and readily undergoes violent change without detonating.

(2) It reacts violently with water.

(3) It forms potentially explosive mixtures with water.

(4) When mixed with water, it generates toxic gases, vapors or fumes in a quantity sufficient to present a danger to human health or the environment.

(5) It is a cyanide or sulfide bearing waste which, when exposed to pH conditions between 2 and 12.5, can gener-

ate toxic gases, vapors or fumes in a quantity sufficient to present a danger to human health or the environment.

(6) It is capable of detonation or explosive reaction if it is subjected to a strong initiating source or if heated under confinement.

(7) It is readily capable of detonation or explosive decomposition or reaction at standard temperature and pressure.

(8) It is a forbidden explosive as defined in 49 CFR 173.51, or a Class A explosive as defined in 49 CFR 173.53 or a Class B explosive as defined in 49 CFR 173.88.

(b) A solid waste that exhibits the characteristic of reactivity, but is not listed as a hazardous waste in Subpart D, has the EPA Hazardous Waste Number of D003.

§ 261.24 Characteristic of EP toxicity.

(a) A solid waste exhibits the characteristic of EP toxicity if, using the test methods described in Appendix II or equivalent methods approved by the Administrator under the procedures set forth in §§ 260.20 and 260.21, the extract from a representative sample of the waste contains any of the contaminants listed in Table I at a concentration equal to or greater than the respective value given in that Table. Where the waste contains less than 0.5 percent filterable solids, the waste itself, after filtering, is considered to be the extract for the purposes of this section.

(b) A solid waste that exhibits the characteristic of EP toxicity, but is not listed as a hazardous waste in Subpart D, has the EPA Hazardous Waste Number specified in Table I which corresponds to the toxic contaminant causing it to be hazardous.

TABLE I—MAXIMUM CONCENTRATION OF CONTAMINANTS FOR CHARACTERISTIC OF EP TOXICITY

EPA hazardous waste number	Contaminant	Maximum concentration (milligrams per liter)
D004	Arsenic	5.0
D005	Barium	100.0
D006	Cadmium	1.0
D007	Chromium	5.0

TABLE I—MAXIMUM CONCENTRATION OF CONTAMINANTS FOR CHARACTERISTIC OF EP TOXICITY—Continued

EPA hazardous waste number	Contaminant	Maximum concentration (milligrams per liter)
D008	Lead	5.0
D009	Mercury	0.2
D010	Selenium	1.0
D011	Silver	5.0
D012	Endrin (1,2,3,4,10,10-hexachloro-1,7-epoxy-1,4,4a,5,6,7,8,8a-octahydro-1,4-endo, endo-5,8-dimethano-naphthalene.	0.02
D013	Lindane (1,2,3,4,5,6-hexa- chlorocyclohexane, gamma isomer.	0.4
D014	Methoxychlor (1,1,1-Trichloro-2,2-bis [p-methoxyphenyl]ethane).	10.0
D015	Toxaphene ($C_{10}H_{10}Cl_8$, Technical chlorinated camphene, 67-69 percent chlorine).	0.5
D016	2,4-D, (2,4-Dichlorophenoxyacetic acid).	10.0
D017	2,4,5-TP Silvex (2,4,5-Trichlorophenoxypropionic acid).	1.0

Subpart D—Lists of Hazardous Wastes

§ 261.30 General.

(a) A solid waste is a hazardous waste if it is listed in this subpart, unless it has been excluded from this list under §§ 260.20 and 260.22.

(b) The Administrator will indicate his basis for listing the classes or types of wastes listed in this Subpart by employing one or more of the following Hazard Codes:

Ignitable Waste	(I)
Corrosive Waste	(C)
Reactive Waste	(R)
EP Toxic Waste	(E)
Acute Hazardous Waste	(H)
Toxic Waste	(T)

Appendix VII identifies the constituent which caused the Administrator to list the waste as an EP Toxic Waste (E) or Toxic Waste (T) in §§ 261.31 and 261.32.

(c) Each hazardous waste listed in this subpart is assigned an EPA Hazardous Waste Number which precedes the name of the waste. This number must be used in complying with the notification requirements of Section 3010 of the Act and certain recordkeeping and reporting requirements under Parts 262 through 265, 268, and Part 270 of this chapter.

(d) The following hazardous wastes listed in § 261.31 or § 261.32 are subject to the exclusion limits for acutely hazardous wastes established in § 261.5: EPA Hazardous Wastes Nos. FO20, FO21, FO22, FO23, FO26, and FO27.

[45 FR 33119, May 19, 1980, as amended at 48 FR 14294, Apr. 1, 1983; 50 FR 2000, Jan. 14, 1985; 51 FR 40636, Nov. 7, 1986]

§ 261.31 Hazardous wastes from non-specific sources.

The following solid wastes are listed hazardous wastes from non-specific sources unless they are excluded under §§ 260.20 and 260.22 and listed in Appendix IX.

Industry and EPA hazardous waste No.	Hazardous waste	Hazard code
Generic:		
F001	The following spent halogenated solvents used in degreasing: Tetrachloroethylene, trichloroethylene, methylene chloride, 1,1,1-trichloroethane, carbon tetrachloride, and chlorinated fluorocarbons; all spent solvent mixtures/blends used in degreasing containing, before use, a total of ten percent or more (by volume) of one or more of the above halogenated solvents or those solvents listed in F002, F004, and F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.	(T)
F002	The following spent halogenated solvents: Tetrachloroethylene, methylene chloride, trichloroethylene, 1,1,1-trichloroethane, chlorobenzene, 1,1,2-trichloro-1,2,2-trifluoroethane, ortho-dichlorobenzene, trichlorofluoromethane, and 1,1,2-trichloroethane; all spent solvent mixtures/blends containing, before use, a total of ten percent or more (by volume) of one or more of the above halogenated solvents or those listed in F001, F004, or F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.	(T)
F003	The following spent non-halogenated solvents: Xylene, acetone, ethyl acetate, ethyl benzene, ethyl ether, methyl isobutyl ketone, n-butyl alcohol, cyclohexanone, and methanol; all spent solvent mixtures/blends containing, before use, only the above spent non-halogenated solvents; and all spent solvent mixtures/blends containing, before use, one or more of the above non-halogenated solvents, and, a total of ten percent or more (by volume) of one or more of those solvents listed in F001, F002, F004, and F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.	(I)*
F004	The following spent non-halogenated solvents: Cresols and cresylic acid, and nitrobenzene; all spent solvent mixtures/blends containing, before use, a total of ten percent or more (by volume) of one or more of the above non-halogenated solvents or those solvents listed in F001, F002, and F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.	(T)
F005	The following spent non-halogenated solvents: Toluene, methyl ethyl ketone, carbon disulfide, isobutanol, pyridine, benzene, 2-ethoxyethanol, and 2-nitropropane; all spent solvent mixtures/blends containing, before use, a total of ten percent or more (by volume) of one or more of the above non-halogenated solvents or those solvents listed in F001, F002, or F004; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.	(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)
F019	Wastewater treatment sludges from the chemical conversion coating of aluminum	(T)
F007	Spent cyanide plating bath solutions from electroplating operations	(R, T)
F008	Plating bath residues from the bottom of plating baths from 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)
F012	Quenching waste water treatment sludges from metal heat treating operations where cyanides are used in the process.	(T)

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Industry and EPA hazardous waste No.	Hazardous waste	Hazard code
F024	Wastes, including but not limited to, distillation residues, heavy ends, tars, and reactor clean-out wastes from the production of chlorinated aliphatic hydrocarbons, having carbon content from one to five, utilizing free radical catalyzed processes. [This listing does not include light ends, spent filters and filter aids, spent dessicants, wastewater, wastewater treatment sludges, spent catalysts, and wastes listed in § 261.32.].	(T)
F020	Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the production or manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of tri- or tetrachlorophenol, or of intermediates used to produce their pesticide derivatives. (This listing does not include wastes from the production of Hexachlorophene from highly purified 2,4,5-trichlorophenol.).	(H)
F021	Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the production or manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of pentachlorophenol, or of intermediates used to produce its derivatives.	(H)
F022	Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of tetra-, penta-, or hexachlorobenzenes under alkaline conditions.	(H)
F023	Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the production of materials on equipment previously used for the production or manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of tri- and tetrachlorophenols. (This listing does not include wastes from equipment used only for the production or use of Hexachlorophene from highly purified 2,4,5-trichlorophenol.).	(H)
F026	Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the production of materials on equipment previously used for the manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) 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. (This listing does not include formulations containing Hexachlorophene sythesized from prepurified 2,4,5-trichlorophenol as the sole component.).	(H)
F028	Residues resulting from the incineration or thermal treatment of soil contaminated with EPA Hazardous Waste Nos. F020, F021, F022, F023, F026, and F027.	(T)

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

[46 FR 4617, Jan. 16, 1981, as amended at 46 FR 27477, May 20, 1981; 49 FR 5312, Feb. 10, 1984; 49 FR 37070, Sept. 21, 1984; 50 FR 665, Jan. 4, 1985; 50 FR 2000, Jan. 14, 1985; 50 FR 53319, Dec. 31, 1985; 51 FR 2702, Jan. 21, 1986; 51 FR 6541, Feb. 25, 1986]

§ 261.32 Hazardous wastes from specific sources.

The following solid wastes are listed hazardous wastes from specific sources unless they are excluded under §§ 260.20 and 260.22 and listed in Appendix IX.

Industry and EPA hazardous waste No.	Hazardous waste	Hazard code
Wood preservation: K001	Bottom sediment sludge from the treatment of wastewaters from wood preserving processes that use creosote and/or pentachlorophenol.	(T)
Inorganic pigments:		
K002	Wastewater treatment sludge from the production of chrome yellow and orange pigments.	(T)
K003	Wastewater treatment sludge from the production of molybdate orange pigments	(T)
K004	Wastewater treatment sludge from the production of zinc yellow pigments	(T)
K005	Wastewater treatment sludge from the production of chrome green pigments	(T)
K006	Wastewater treatment sludge from the production of chrome oxide green pigments (anhydrous and hydrated).	(T)
K007	Wastewater treatment sludge from the production of iron blue pigments	(T)
K008	Oven residue from the production of chrome oxide green pigments	(T)
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 acetonitrile purification column in the production of acrylonitrile	(T)
K015	Still bottoms from the distillation of benzyl chloride	(T)

Industry and EPA hazardous waste No.	Hazardous waste	Hazard code
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 the fractionation column 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)
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)
K093	Distillation light ends from the production of phthalic anhydride from ortho-xylene	(T)
K094	Distillation bottoms from the production of phthalic anhydride from ortho-xylene	(T)
K025	Distillation bottoms from the production of nitrobenzene by the nitration of benzene	(T)
K026	Stripping still tails from the production of methy ethyl pyridines	(T)
K027	Centrifuge and distillation residues 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 steam stripper in the production of 1,1,1-trichloroethane	(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)
K030	Column bottoms or heavy ends from the combined production of trichloroethylene and perchloroethylene.	(T)
K083	Distillation bottoms from aniline production	(T)
K103	Process residues from aniline extraction from the production of aniline	(T)
K104	Combined wastewater streams generated from nitrobenzene/aniline production	(T)
K085	Distillation or fractionation column bottoms from the production of chlorobenzenes	(T)
K105	Separated aqueous stream from the reactor product washing step in the production of chlorobenzenes.	(T)
K111	Product washwaters from the production of dinitrotoluene via nitration of toluene	(C,T)
K112	Reaction by-product water from the drying column in the production of toluenediamine via hydrogenation of dinitrotoluene.	(T)
K113	Condensed liquid light ends from the purification of toluenediamine in the production of toluenediamine via hydrogenation of dinitrotoluene.	(T)
K114	Vicinals from the purification of toluenediamine in the production of toluenediamine via hydrogenation of dinitrotoluene.	(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)
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)
Pesticides:		
K031	By-product salts generated in the production of MSMA and cacodylic acid	(T)
K032	Wastewater treatment sludge from the production of chlordane	(T)
K033	Wastewater and scrub water from the chlorination of cyclopentadiene in the production of chlordane.	(T)
K034	Filter solids from the filtration of hexachlorocyclopentadiene in the production of chlordane.	(T)
K097	Vacuum stripper discharge from the chlordane chlorinator in the production of chlordane.	(T)
K035	Wastewater treatment sludges generated in the production of creosote	(T)
K036	Still bottoms from toluene reclamation distillation in the production of disulfoton	(T)
K037	Wastewater treatment sludges from the production of disulfoton	(T)
K038	Wastewater from the washing and stripping of phorate production	(T)
K039	Filter cake from the filtration of diethylphosphorodithioic acid in the production of phorate.	(T)
K040	Wastewater treatment sludge from the production of phorate	(T)
K041	Wastewater treatment sludge from the production of toxaphene	(T)
K098	Untreated process wastewater from the production of toxaphene	(T)

Industry and EPA hazardous waste No.	Hazardous waste	Hazard code
K042	Heavy ends or distillation residues from the distillation of tetrachlorobenzene in the production of 2,4,5-T.	(T)
K043	2,6-Dichlorophenol waste from the production of 2,4-D	(T)
K099	Untreated wastewater from the production of 2,4-D	(T)
K123	Process wastewater (including supernates, filtrates, and washwaters) from the production of ethylenebisdithiocarbamic acid and its salt.	(T)
K124	Reactor vent scrubber water from the production of ethylenebisdithiocarbamic acid and its salts.	(C, T)
K125	Filtration, evaporation, and centrifugation solids from the production of ethylenebisdithiocarbamic acid and its salts.	(T)
K126	Baghouse dust and floor sweepings in milling and packaging operations from the production or formulation of ethylenebisdithiocarbamic acid and its salts.	(T)
Explosives:		
K044	Wastewater treatment sludges 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)
Petroleum refining:		
K048	Dissolved air flotation (DAF) float from the petroleum refining industry	(T)
K049	Slop oil emulsion solids from the petroleum refining industry	(T)
K050	Heat exchanger bundle cleaning sludge from the petroleum refining industry	(T)
K051	API separator sludge from the petroleum refining industry	(T)
K052	Tank bottoms (leaded) from the petroleum refining industry	(T)
Iron and steel:		
K061	Emission control dust/sludge from the primary production of steel in electric furnaces.	(T)
K062	Spent pickle liquor generated by steel finishing operations of facilities within the iron and steel industry (SIC Codes 331 and 332).	(C,T)
Secondary lead:		
K069	Emission control dust/sludge from secondary lead smelting	(T)
K100	Waste leaching solution from acid leaching of emission control dust/sludge from secondary lead smelting.	(T)
Veterinary pharmaceuticals:		
K084	Wastewater treatment sludges generated during the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds.	(T)
K101	Distillation tar residues from the distillation of aniline-based compounds in the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds.	(T)
K102	Residue from the use of activated carbon for decolorization in the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds.	(T)
Ink formulation: K086	Solvent washes and sludges, caustic washes and sludges, or water washes and sludges from cleaning tubs and equipment used in the formulation of ink from pigments, driers, soaps, and stabilizers containing chromium and lead.	(T)
Coking:		
K060	Ammonia still lime sludge from coking operations	(T)
K087	Decanter tank tar sludge from coking operations	(T)

[46 FR 4618, Jan. 16, 1981, as amended at 46 FR 27476-27477, May 20, 1981; 49 FR 37070, Sept. 21, 1984; 50 FR 42942, Oct. 23, 1985; 51 FR 5330, Feb. 13, 1986; 51 FR 19322, May 28, 1986; 51 FR 33612, Sept. 22, 1986; 51 FR 37729, Oct. 24, 1986; 52 FR 28698, Aug. 3, 1987]

§ 261.33 Discarded commercial chemical products, off-specification species, container residues, and spill residues thereof.

The following materials or items are hazardous wastes if and when they are discarded or intended to be discarded as described in § 261.2(a)(2)(i), when they are mixed with waste oil or used oil or other material and applied to the land for dust suppression or road treatment, when they are otherwise applied to the land in lieu of their original intended use or when they are contained in products that are applied to the land in lieu of their original intended use, or when, in lieu of their original intended use, they are produced for use as (or as a component of) a fuel, distributed for use as a fuel, or burned as a fuel.

(a) Any commercial chemical product, or manufacturing chemical intermediate having the generic name listed in paragraph (e) or (f) of this section.

(b) Any off-specification commercial chemical product or manufacturing chemical intermediate which, if it met specifications, would have the generic name listed in paragraph (e) or (f) of this section.

(c) Any residue remaining in a container or in an inner liner removed from a container that has held any commercial chemical product or manufacturing chemical intermediate having the generic name listed in paragraph (e) of this section, unless the container is empty as defined in § 261.7(b)(3) of the chapter.

[Comment: Unless the residue is being beneficially used or reused, or legitimately recycled or reclaimed; or being accumulated, stored, transported or treated prior to such use, re-use, recycling or reclamation, EPA considers the residue to be intended for discard, and thus, a hazardous waste. An example of a legitimate re-use of the residue would be where the residue remains in the container and the container is used to hold the same commercial chemical product or manufacturing chemical intermediate it previously held. An example of the discard of the residue would be where the drum is sent to a drum reconditioner who reconditions the drum but discards the residue.]

(d) Any residue or contaminated soil, water or other debris resulting from the cleanup of a spill into or on any land or water of any commercial chemical product or manufacturing chemical intermediate having the generic name listed in paragraph (e) or (f) of this section, or any residue or contaminated soil, water or other debris resulting from the cleanup of a spill, into or on any land or water, of any off-specification chemical product and manufacturing chemical intermediate which, if it met specifications, would have the generic name listed in paragraph (e) or (f) of this section.

[*Comment:* The phrase "commercial chemical product or manufacturing chemical intermediate having the generic name listed in . . ." refers to a chemical substance which is manufactured or formulated for commercial or manufacturing use which consists of the commercially pure grade of the chemical, any technical grades of the chemical that are produced or marketed, and all formulations in which the chemical is the sole active ingredient. It does not refer to a material, such as a manufacturing process waste, that contains any of the substances listed in paragraph (e) or (f). Where a manufacturing process waste is deemed to be a hazardous waste because it contains a substance listed in paragraph (e) or (f), such waste will be listed in either § 261.31 or § 261.32 or will be identified as a hazardous waste by the characteristics set forth in Subpart C of this part.]

(e) The commercial chemical products, manufacturing chemical intermediates or off-specification commercial chemical products or manufacturing chemical intermediates referred to in paragraphs (a) through (d) of this section, are identified as acute hazardous wastes (H) and are subject to be the small quantity exclusion defined in § 261.5(e).

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

These wastes and their corresponding EPA Hazardous Waste Numbers are:

Hazardous waste No.	Chemical abstracts No.	Substance
P023	107-20-0	Acetaldehyde, chloro-
P002	591-08-2	Acetamide, N-(aminothioxomethyl)-
P057	640-19-7	Acetamide, 2-fluoro-
P058	62-74-8	Acetic acid, fluoro-, sodium salt
P002	591-08-2	1-Acetyl-2-thiourea
P003	107-02-8	Acrolein
P070	116-06-3	Aldicarb
P004	309-00-2	Aldrin
P005	107-18-6	Allyl alcohol
P006	20859-73-8	Aluminum phosphide (R,T)
P007	2763-96-4	5-(Aminomethyl)-3-isoxazolol
P008	504-24-5	4-Aminopyridine
P009	131-74-8	Ammonium picrate (R)

Hazardous waste No.	Chemical abstracts No.	Substance
P119	7803-55-6	Ammonium vanadate
P099	506-61-6	Argentate(1-), bis(cyano-C)-, potassium
P010	7778-39-4	Arsenic acid H_3AsO_4
P012	1327-53-3	Arsenic oxide As_2O_3
P011	1303-28-2	Arsenic oxide As_2O_5
P011	1303-28-2	Arsenic pentoxide
P012	1327-53-3	Arsenic trioxide
P038	692-42-2	Arsine, diethyl-
P036	696-28-6	Arsonous dichloride, phenyl-
P054	151-56-4	Aziridine
P067	75-55-8	Aziridine, 2-methyl-
P013	542-62-1	Barium cyanide
P024	106-47-8	Benzenamine, 4-chloro-
P077	100-01-6	Benzenamine, 4-nitro-
P028	100-44-7	Benzene, (chloromethyl)-
P042	51-43-4	1,2-Benzenediol, 4-[1-hydroxy-2-(methylamino)ethyl]-, (R)-
P046	122-09-8	Benzeneethanamine, alpha,alpha-dimethyl-
P014	108-98-5	Benzenethiol
P001	[1] 81-81-2	2H-1-Benzopyran-2-one, 4-hydroxy-3-(3-oxo-1-phenylbutyl)-, & salts, when present at concentrations greater than 0.3%
P028	100-44-7	Benzyl chloride
P015	7440-41-7	Beryllium
P017	598-31-2	Bromoacetone
P018	357-57-3	Brucine
P045	39196-18-4	2-Butanone, 3,3-dimethyl-1-(methylthio)-, O-[methylamino)carbonyl] oxime
P021	592-01-8	Calcium cyanide
P021	592-01-8	Calcium cyanide $Ca(CN)_2$
P022	75-15-0	Carbon disulfide
P095	75-44-5	Carbonic dichloride
P023	107-20-0	Chloroacetaldehyde
P024	106-47-8	p-Chloroaniline
P026	5344-82-1	1-(o-Chlorophenyl)thiourea
P027	542-76-7	3-Chloropropionitrile
P029	544-92-3	Copper cyanide
P029	544-92-3	Copper cyanide Cu(CN)
P030	.....	Cyanides (soluble cyanide salts), not otherwise specified
P031	460-19-5	Cyanogen
P033	506-77-4	Cyanogen chloride
P033	506-77-4	Cyanogen chloride (CN)Cl
P034	131-89-5	2-Cyclohexyl-4,6-dinitrophenol
P016	542-88-1	Dichloromethyl ether
P036	696-28-6	Dichlorophenylarsine
P037	60-57-1	Dieldrin
P038	692-42-2	Diethylarsine
P041	311-45-5	Diethyl-p-nitrophenyl phosphate
P040	297-97-2	O,O-Diethyl O-pyrazinyl phosphorothioate
P043	55-91-4	Diisopropylfluorophosphate (DFP)
P004	309-00-2	1,4,5,8-Dimethanonaphthalene, 1,2,3,4,10,10-hexa- chloro-1,4,4a,5,8,8a,-hexahydro-, (1alpha,4alpha,4abeta,5alpha,8alpha,8abeta)-
P060	465-73-6	1,4,5,8-Dimethanonaphthalene, 1,2,3,4,10,10-hexa- chloro-1,4,4a,5,8,8a-hexahydro-, (1alpha,4alpha,4abeta,5beta,8beta,8abeta)-
P037	60-57-1	2,7:3,6-Dimethanonaphth[2,3-b]oxirene, 3,4,5,6,9,9-hexachloro-1a,2,2a,3,6,6a,7,7a-octahydro-, (1aalpha,2beta,2aalpha,3beta,6beta,6aalpha,7beta, 7aalpha)-
P051	[1] 72-20-8	2,7:3,6-Dimethanonaphth [2,3-b]oxirene, 3,4,5,6,9,9-hexachloro-1a,2,2a,3,6,6a,7,7a-octahydro-, (1aalpha,2beta,2abeta,3alpha,6alpha,6abeta,7beta, 7aalpha)-, & metabolites
P044	60-51-5	Dimethoate
P046	122-09-8	alpha,alpha-Dimethylphenethylamine
P047	[1] 534-52-1	4,6-Dinitro-o-cresol, & salts
P048	51-28-5	2,4-Dinitrophenol
P020	88-85-7	Dinoseb
P085	152-16-9	Diphosphoramide, octamethyl-
P111	107-49-3	Diphosphoric acid, tetraethyl ester
P039	298-04-4	Disulfoton
P049	541-53-7	Dithiobiuret
P050	115-29-7	Endosulfan
P088	145-73-3	Endothall
P051	72-20-8	Endrin
P051	72-20-8	Endrin, & metabolites

Hazardous waste No.	Chemical abstracts No.	Substance
P042	51-43-4	Epinephrine
P031	460-19-5	Ethanedinitrile
P066	16752-77-5	Ethanimidothioic acid, N-[[(methylamino)carbonyl]oxy]-, methyl ester
P101	107-12-0	Ethyl cyanide
P054	151-56-4	Ethyleneimine
P097	52-85-7	Famphur
P056	7782-41-4	Fluorine
P057	640-19-7	Fluoroacetamide
P058	62-74-8	Fluoroacetic acid, sodium salt
P065	628-86-4	Fulminic acid, mercury(2+) salt (R,T)
P059	76-44-8	Heptachlor
P062	757-58-4	Hexaethyl tetraphosphate
P116	79-19-6	Hydrazinecarbothioamide
P068	60-34-4	Hydrazine, methyl-
P063	74-90-8	Hydrocyanic acid
P063	74-90-8	Hydrogen cyanide
P096	7803-51-2	Hydrogen phosphide
P060	465-73-6	Isodrin
P007	2763-96-4	3(2H)-Isoxazolone, 5-(aminomethyl)-
P092	62-38-4	Mercury, (acetato-O)phenyl-
P065	628-86-4	Mercury fulminate (R,T)
P082	62-75-9	Methanamine, N-methyl-N-nitroso-
P064	624-83-9	Methane, isocyanato-
P016	542-88-1	Methane, oxybis[chloro-
P112	509-14-8	Methane, tetranitro- (R)
P118	75-70-7	Methanethiol, trichloro-
P050	115-29-7	6,9-Methano-2,4,3-benzodioxathiepin, 6,7,8,9,10,10-hexachloro-1,5,5a,6,9,9a-hexahydro-, 3-oxide
P059	76-44-8	4,7-Methano-1H-indene, 1,4,5,6,7,8,8-heptachloro-3a,4,7,7a-tetrahydro-
P066	16752-77-5	Methomyl
P068	60-34-4	Methyl hydrazine
P064	624-83-9	Methyl isocyanate
P069	75-86-5	2-Methyllactonitrile
P071	298-00-0	Methyl parathion
P072	86-88-4	alpha-Naphthylthiourea
P073	13463-39-3	Nickel carbonyl
P073	13463-39-3	Nickel carbonyl $Ni(CO)_4$, (T-4)-
P074	557-19-7	Nickel cyanide
P074	557-19-7	Nickel cynaide $Ni(CN)_2$
P075	[1] 54-11-5	Nicotine, & salts
P076	10102-43-9	Nitric oxide
P077	100-01-6	p-Nitroaniline
P078	10102-44-0	Nitrogen dioxide
P076	10102-43-9	Nitrogen oxide NO
P078	10102-44-0	Nitrogen oxide NO_2
P081	55-63-0	Nitroglycerine (R)
P082	62-75-9	N-Nitrosodimethylamine
P084	4549-40-0	N-Nitrosomethylvinylamine
P085	152-16-9	Octamethylpyrophosphoramide
P087	20816-12-0	Osmium oxide OsO_4, (T-4)-
P087	20816-12-0	Osmium tetroxide
P088	145-73-3	7-Oxabicyclo[2.2.1]heptane-2,3-dicarboxylic acid
P089	56-38-2	Parathion
P034	131-89-5	Phenol, 2-cyclohexyl-4,6-dinitro-
P048	51-28-5	Phenol, 2,4-dinitro-
P047	[1] 534-52-1	Phenol, 2-methyl-4,6-dinitro-, & salts
P020	88-85-7	Phenol, 2-(1-methylpropyl)-4,6-dinitro-
P009	131-74-8	Phenol, 2,4,6-trinitro-, ammonium salt (R)
P092	62-38-4	Phenylmercury acetate
P093	103-85-5	Phenylthiourea
P094	298-02-2	Phorate
P095	75-44-5	Phosgene
P096	7803-51-2	Phosphine
P041	311-45-5	Phosphoric acid, diethyl 4-nitrophenyl ester
P039	298-04-4	Phosphorodithioic acid, O,O-diethyl S-[2-(ethylthio)ethyl] ester
P094	298-02-2	Phosphorodithioic acid, O,O-diethyl S-[(ethylthio)methyl] ester

Hazardous waste No.	Chemical abstracts No.	Substance
P044	60-51-5	Phosphorodithioic acid, O,O-dimethyl S-[2-(methylamino)-2-oxoethyl] ester
P043	55-91-4	Phosphorofluoridic acid, bis(1-methylethyl) ester
P089	56-38-2	Phosphorothioic acid, O,O-diethyl O-(4-nitrophenyl) ester
P040	297-97-2	Phosphorothioic acid, O,O-diethyl O-pyrazinyl ester
P097	52-85-7	Phosphorothioic acid, O-[4-[(dimethylamino)sulfonyl]phenyl] O,O-dimethyl ester
P071	298-00-0	Phosphorothioic acid, O,O,-dimethyl O-(4-nitrophenyl) ester
P110	78-00-2	Plumbane, tetraethyl-
P098	151-50-8	Potassium cyanide
P098	151-50-8	Potassium cyanide K(CN)
P099	506-61-6	Potassium silver cyanide
P070	116-06-3	Propanal, 2-methyl-2-(methylthio)-, O-[(methylamino)carbonyl]oxime
P101	107-12-0	Propanenitrile
P027	542-76-7	Propanenitrile, 3-chloro-
P069	75-86-5	Propanenitrile, 2-hydroxy-2-methyl-
P081	55-63-0	1,2,3-Propanetriol, trinitrate (R)
P017	598-31-2	2-Propanone, 1-bromo-
P102	107-19-7	Propargyl alcohol
P003	107-02-8	2-Propenal
P005	107-18-6	2-Propen-1-ol
P067	75-55-8	1,2-Propylenimine
P102	107-19-7	2-Propyn-1-ol
P008	504-24-5	4-Pyridinamine
P075	[1] 54-11-5	Pyridine, 3-(1-methyl-2-pyrrolidinyl)-, (S)-, & salts
P114	12039-52-0	Selenious acid, dithallium(1+) salt
P103	630-10-4	Selenourea
P104	506-64-9	Silver cyanide
P104	506-64-9	Silver cyanide Ag(CN)
P105	26628-22-8	Sodium azide
P106	143-33-9	Sodium cyanide
P106	143-33-9	Sodium cyanide Na(CN)
P107	1314-96-1	Strontium sulfide
P107	1314-96-1	Strontium sulfide SrS
P108	[1] 57-24-9	Strychnidin-10-one, & salts
P018	357-57-3	Strychnidin-10-one, 2,3-dimethoxy-
P108	[1] 57-24-9	Strychnine, & salts
P115	7446-18-6	Sulfuric acid, dithallium(1+) salt
P109	3689-24-5	Tetraethyldithiopyrophosphate
P110	78-00-2	Tetraethyl lead
P111	107-49-3	Tetraethyl pyrophosphate
P112	509-14-8	Tetranitromethane (R)
P062	757-58-4	Tetraphosphoric acid, hexaethyl ester
P113	1314-32-5	Thallic oxide
P113	1314-32-5	Thallium oxide Tl_2O_3
P114	12039-52-0	Thallium(I) selenite
P115	7446-18-6	Thallium(I) sulfate
P109	3689-24-5	Thiodiphosphoric acid, tetraethyl ester
P045	39196-18-4	Thiofanox
P049	541-53-7	Thioimidodicarbonic diamide $[(H_2N)C(S)]_2NH$
P014	108-98-5	Thiophenol
P116	79-19-6	Thiosemicarbazide
P026	5344-82-1	Thiourea, (2-chlorophenyl)-
P072	86-88-4	Thiourea, 1-naphthalenyl-
P093	103-85-5	Thiourea, phenyl-
P123	8001-35-2	Toxaphene
P118	75-70-7	Trichloromethanethiol
P119	7803-55-6	Vanadic acid, ammonium salt
P120	1314-62-1	Vanadium oxide V_2O_5
P120	1314-62-1	Vanadium pentoxide
P084	4549-40-0	Vinylamine, N-methyl-N-nitroso-
P001	[1] 81-81-2	Warfarin, & salts, when present at concentrations greater than 0.3%
P121	557-21-1	Zinc cyanide
P121	557-21-1	Zinc cyanide $Zn(CN)_2$
P122	1314-84-7	Zinc phosphide Zn_3P_2, when present at concentrations greater than 10% (R,T)

[1] CAS Number given for parent compound only.

(f) The commercial chemical products, manfacturing chemical intermediates, or off-specification commercial chemical products referred to in paragraphs (a) through (d) of this section, are identified as toxic wastes (T), unless otherwise designated and are subject to the small quantity generator exclusion defined in § 261.5 (a) and (g).

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

These wastes and their corresponding EPA Hazardous Waste Numbers are:

Hazardous waste No.	Chemical abstracts No.	Substance
U001	75-07-0	Acetaldehyde (I)
U034	75-87-6	Acetaldehyde, trichloro-
U187	62-44-2	Acetamide, N-(4-ethoxyphenyl)-
U005	53-96-3	Acetamide, N-9H-fluoren-2-yl-
U240	[1] 94-75-7	Acetic acid, (2,4-dichlorophenoxy)-, salts & esters
U112	141-78-6	Acetic acid ethyl ester (I)
U144	301-04-2	Acetic acid, lead(2+) salt
U214	563-68-8	Acetic acid, thallium(1+) salt
see F027	93-76-5	Acetic acid, (2,4,5-trichlorophenoxy)-
U002	67-64-1	Acetone (I)
U003	75-05-8	Acetonitrile (I,T)
U004	98-86-2	Acetophenone
U005	53-96-3	2-Acetylaminofluorene
U006	75-36-5	Acetyl chloride (C,R,T)
U007	79-06-1	Acrylamide
U008	79-10-7	Acrylic acid (I)
U009	107-13-1	Acrylonitrile
U011	61-82-5	Amitrole
U012	62-53-3	Aniline (I,T)
U136	75-60-5	Arsinic acid, dimethyl-
U014	492-80-8	Auramine
U015	115-02-6	Azaserine
U010	50-07-7	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-, [1aS-(1aalpha, 8beta,8aalpha,8balpha)]-
U157	56-49-5	Benz[j]aceanthrylene, 1,2-dihydro-3-methyl-
U016	225-51-4	Benz[c]acridine
U017	98-87-3	Benzal chloride
U192	23950-58-5	Benzamide, 3,5-dichloro-N-(1,1-dimethyl-2-propynyl)-
U018	56-55-3	Benz[a]anthracene
U094	57-97-6	Benz[a]anthracene, 7,12-dimethyl-
U012	62-53-3	Benzenamine (I,T)
U014	492-80-8	Benzenamine, 4,4'-carbonimidoylbis[N,N-dimethyl-
U049	3165-93-3	Benzenamine, 4-chloro-2-methyl-, hydrochloride
U093	60-11-7	Benzenamine, N,N-dimethyl-4-(phenylazo)-
U328	95-53-4	Benzenamine, 2-methyl-
U353	106-49-0	Benzenamine, 4-methyl-
U158	101-14-4	Benzenamine, 4,4'-methylenebis[2-chloro-
U222	636-21-5	Benzenamine, 2-methyl-, hydrochloride
U181	99-55-8	Benzenamine, 2-methyl-5-nitro-
U019	71-43-2	Benzene (I,T)
U038	510-15-6	Benzeneacetic acid, 4-chloro-alpha-(4-chlorophenyl)-alpha-hydroxy-, ethyl ester
U030	101-55-3	Benzene, 1-bromo-4-phenoxy-
U035	305-03-3	Benzenebutanoic acid, 4-[bis(2-chloroethyl)amino]-
U037	108-90-7	Benzene, chloro-
U221	25376-45-8	Benzenediamine, ar-methyl-
U028	117-81-7	1,2-Benzenedicarboxylic acid, bis(2-ethylhexyl) ester
U069	84-74-2	1,2-Benzenedicarboxylic acid, dibutyl ester
U088	84-66-2	1,2-Benzenedicarboxylic acid, diethyl ester
U102	131-11-3	1,2-Benzenedicarboxylic acid, dimethyl ester
U107	117-84-0	1,2-Benzenedicarboxylic acid, dioctyl ester
U070	95-50-1	Benzene, 1,2-dichloro-
U071	541-73-1	Benzene, 1,3-dichloro-
U072	106-46-7	Benzene, 1,4-dichloro-
U060	72-54-8	Benzene, 1,1'-(2,2-dichloroethylidene)bis[4-chloro-

Hazardous waste No.	Chemical abstracts No.	Substance
U017	98-87-3	Benzene, (dichloromethyl)-
U223	26471-62-5	Benzene, 1,3-diisocyanatomethyl- (R,T)
U239	1330-20-7	Benzene, dimethyl- (I,T)
U201	108-46-3	1,3-Benzenediol
U127	118-74-1	Benzene, hexachloro-
U056	110-82-7	Benzene, hexahydro- (I)
U220	108-88-3	Benzene, methyl-
U105	121-14-2	Benzene, 1-methyl-2,4-dinitro-
U106	606-20-2	Benzene, 2-methyl-1,3-dinitro-
U055	98-82-8	Benzene, (1-methylethyl)- (I)
U169	98-95-3	Benzene, nitro-
U183	608-93-5	Benzene, pentachloro-
U185	82-68-8	Benzene, pentachloronitro-
U020	98-09-9	Benzenesulfonic acid chloride (C,R)
U020	98-09-9	Benzenesulfonyl chloride (C,R)
U207	95-94-3	Benzene, 1,2,4,5-tetrachloro-
U061	50-29-3	Benzene, 1,1'-(2,2,2-trichloroethylidene)bis[4-chloro-
U247	72-43-5	Benzene, 1,1'-(2,2,2-trichloroethylidene)bis[4- methoxy-
U023	98-07-7	Benzene, (trichloromethyl)-
U234	99-35-4	Benzene, 1,3,5-trinitro-
U021	92-87-5	Benzidine
U202	[1] 81-07-2	1,2-Benzisothiazol-3(2H)-one, 1,1-dioxide, & salts
U203	94-59-7	1,3-Benzodioxole, 5-(2-propenyl)-
U141	120-58-1	1,3-Benzodioxole, 5-(1-propenyl)-
U090	94-58-6	1,3-Benzodioxole, 5-propyl-
U064	189-55-9	Benzo[rst]pentaphene
U248	[1] 81-81-2	2H-1-Benzopyran-2-one, 4-hydroxy-3-(3-oxo-1-phenyl-butyl)-, & salts, when present at concentrations of 0.3% or less
U022	50-32-8	Benzo[a]pyrene
U197	106-51-4	p-Benzoquinone
U023	98-07-7	Benzotrichloride (C,R,T)
U085	1464-53-5	2,2'-Bioxirane
U021	92-87-5	[1,1'-Biphenyl]-4,4'-diamine
U073	91-94-1	[1,1'-Biphenyl]-4,4'-diamine, 3,3'-dichloro-
U091	119-90-4	[1,1'-Biphenyl]-4,4'-diamine, 3,3'-dimethoxy-
U095	119-93-7	[1,1'-Biphenyl]-4,4'-diamine, 3,3'-dimethyl-
U225	75-25-2	Bromoform
U030	101-55-3	4-Bromophenyl phenyl ether
U128	87-68-3	1,3-Butadiene, 1,1,2,3,4,4-hexachloro-
U172	924-16-3	1-Butanamine, N-butyl-N-nitroso-
U031	71-36-3	1-Butanol (I)
U159	78-93-3	2-Butanone (I,T)
U160	1338-23-4	2-Butanone, peroxide (R,T)
U053	4170-30-3	2-Butenal
U074	764-41-0	2-Butene, 1,4-dichloro- (I,T)
U143	303-34-4	2-Butenoic acid, 2-methyl-, 7-[[2,3-dihydroxy-2-(1-methoxyethyl)-3-methyl-1-oxobutoxy]methyl]-2,3,5,7a-tetrahydro-1H-pyrrolizin-1-yl ester, [1S-[1alpha(Z),7(2S*,3R*),7aalpha]]-
U031	71-36-3	n-Butyl alcohol (I)
U136	75-60-5	Cacodylic acid
U032	13765-19-0	Calcium chromate
U238	51-79-6	Carbamic acid, ethyl ester
U178	615-53-2	Carbamic acid, methylnitroso-, ethyl ester
U097	79-44-7	Carbamic chloride, dimethyl-
U114	[1] 111-54-6	Carbamodithioic acid, 1,2-ethanediylbis-, salts & esters
U062	2303-16-4	Carbamothioic acid, bis(1-methylethyl)-, S-(2,3-dichloro-2-propenyl) ester
U215	6533-73-9	Carbonic acid, dithallium(1+) salt
U033	353-50-4	Carbonic difluoride
U156	79-22-1	Carbonochloridic acid, methyl ester (I,T)
U033	353-50-4	Carbon oxyfluoride (R,T)
U211	56-23-5	Carbon tetrachloride
U034	75-87-6	Chloral
U035	305-03-3	Chlorambucil
U036	57-74-9	Chlordane, alpha & gamma isomers
U026	494-03-1	Chlornaphazin
U037	108-90-7	Chlorobenzene
U038	510-15-6	Chlorobenzilate
U039	59-50-7	p-Chloro-m-cresol

Hazardous waste No.	Chemical abstracts No.	Substance
U042	110-75-8	2-Chloroethyl vinyl ether
U044	67-66-3	Chloroform
U046	107-30-2	Chloromethyl methyl ether
U047	91-58-7	beta-Chloronaphthalene
U048	95-57-8	o-Chlorophenol
U049	3165-93-3	4-Chloro-o-toluidine, hydrochloride
U032	13765-19-0	Chromic acid H_2CrO_4, calcium salt
U050	218-01-9	Chrysene
U051	.....	Creosote
U052	1319-77-3	Cresol (Cresylic acid)
U053	4170-30-3	Crotonaldehyde
U055	98-82-8	Cumene (I)
U246	506-68-3	Cyanogen bromide (CN)Br
U197	106-51-4	2,5-Cyclohexadiene-1,4-dione
U056	110-82-7	Cyclohexane (I)
U129	58-89-9	Cyclohexane, 1,2,3,4,5,6-hexachloro-, (1alpha,2alpha,3beta,4alpha,5alpha,6beta)-
U057	108-94-1	Cyclohexanone (I)
U130	77-47-4	1,3-Cyclopentadiene, 1,2,3,4,5,5-hexachloro-
U058	50-18-0	Cyclophosphamide
U240	[1] 94-75-7	2,4-D, salts & esters
U059	20830-81-3	Daunomycin
U060	72-54-8	DDD
U061	50-29-3	DDT
U062	2303-16-4	Diallate
U063	53-70-3	Dibenz[a,h]anthracene
U064	189-55-9	Dibenzo[a,i]pyrene
U066	96-12-8	1,2-Dibromo-3-chloropropane
U069	84-74-2	Dibutyl phthalate
U070	95-50-1	o-Dichlorobenzene
U071	541-73-1	m-Dichlorobenzene
U072	106-46-7	p-Dichlorobenzene
U073	91-94-1	3,3'-Dichlorobenzidine
U074	764-41-0	1,4-Dichloro-2-butene (I,T)
U075	75-71-8	Dichlorodifluoromethane
U078	75-35-4	1,1-Dichloroethylene
U079	156-60-5	1,2-Dichloroethylene
U025	111-44-4	Dichloroethyl ether
U027	108-60-1	Dichloroisopropyl ether
U024	111-91-1	Dichloromethoxy ethane
U081	120-83-2	2,4-Dichlorophenol
U082	87-65-0	2,6-Dichlorophenol
U084	542-75-6	1,3-Dichloropropene
U085	1464-53-5	1,2:3,4-Diepoxybutane (I,T)
U108	123-91-1	1,4-Diethyleneoxide
U028	117-81-7	Diethylhexyl phthalate
U086	1615-80-1	N,N'-Diethylhydrazine
U087	3288-58-2	O,O-Diethyl S-methyl dithiophosphate
U088	84-66-2	Diethyl phthalate
U089	56-53-1	Diethylstilbesterol
U090	94-58-6	Dihydrosafrole
U091	119-90-4	3,3'-Dimethoxybenzidine
U092	124-40-3	Dimethylamine (I)
U093	60-11-7	p-Dimethylaminoazobenzene
U094	57-97-6	7,12-Dimethylbenz[a]anthracene
U095	119-93-7	3,3'-Dimethylbenzidine
U096	80-15-9	alpha,alpha-Dimethylbenzylhydroperoxide (R)
U097	79-44-7	Dimethylcarbamoyl chloride
U098	57-14-7	1,1-Dimethylhydrazine
U099	540-73-8	1,2-Dimethylhydrazine
U101	105-67-9	2,4-Dimethylphenol
U102	131-11-3	Dimethyl phthalate
U103	77-78-1	Dimethyl sulfate
U105	121-14-2	2,4-Dinitrotoluene
U106	606-20-2	2,6-Dinitrotoluene
U107	117-84-0	Di-n-octyl phthalate
U108	123-91-1	1,4-Dioxane
U109	122-66-7	1,2-Diphenylhydrazine
U110	142-84-7	Dipropylamine (I)
U111	621-64-7	Di-n-propylnitrosamine

Hazardous waste No.	Chemical abstracts No.	Substance
U041	106-89-8	Epichlorohydrin
U001	75-07-0	Ethanal (I)
U174	55-18-5	Ethanamine, N-ethyl-N-nitroso-
U155	91-80-5	1,2-Ethanediamine, N,N-dimethyl-N'-2-pyridinyl-N'-(2-thienylmethyl)-
U067	106-93-4	Ethane, 1,2-dibromo-
U076	75-34-3	Ethane, 1,1-dichloro-
U077	107-06-2	Ethane, 1,2-dichloro-
U131	67-72-1	Ethane, hexachloro-
U024	111-91-1	Ethane, 1,1'-[methylenebis(oxy)]bis[2-chloro-
U117	60-29-7	Ethane, 1,1'-oxybis-(I)
U025	111-44-4	Ethane, 1,1'-oxybis[2-chloro-
U184	76-01-7	Ethane, pentachloro-
U208	630-20-6	Ethane, 1,1,1,2-tetrachloro-
U209	79-34-5	Ethane, 1,1,2,2-tetrachloro-
U218	62-55-5	Ethanethioamide
U226	71-55-6	Ethane, 1,1,1-trichloro-
U227	79-00-5	Ethane, 1,1,2-trichloro-
U359	110-80-5	Ethanol, 2-ethoxy-
U173	1116-54-7	Ethanol, 2,2'-(nitrosoimino)bis-
U004	98-86-2	Ethanone, 1-phenyl-
U043	75-01-4	Ethene, chloro-
U042	110-75-8	Ethene, (2-chloroethoxy)-
U078	75-35-4	Ethene, 1,1-dichloro-
U079	156-60-5	Ethene, 1,2-dichloro-, (E)-
U210	127-18-4	Ethene, tetrachloro-
U228	79-01-6	Ethene, trichloro-
U112	141-78-6	Ethyl acetate (I)
U113	140-88-5	Ethyl acrylate (I)
U238	51-79-6	Ethyl carbamate (urethane)
U117	60-29-7	Ethyl ether (I)
U114	[1] 111-54-6	Ethylenebisdithiocarbamic acid, salts & esters
U067	106-93-4	Ethylene dibromide
U077	107-06-2	Ethylene dichloride
U359	110-80-5	Ethylene glycol monoethyl ether
U115	75-21-8	Ethylene oxide (I,T)
U116	96-45-7	Ethylenethiourea
U076	75-34-3	Ethylidene dichloride
U118	97-63-2	Ethyl methacrylate
U119	62-50-0	Ethyl methanesulfonate
U120	206-44-0	Fluoranthene
U122	50-00-0	Formaldehyde
U123	64-18-6	Formic acid (C,T)
U124	110-00-9	Furan (I)
U125	98-01-1	2-Furancarboxaldehyde (I)
U147	108-31-6	2,5-Furandione
U213	109-99-9	Furan, tetrahydro-(I)
U125	98-01-1	Furfural (I)
U124	110-00-9	Furfuran (I)
U206	18883-66-4	Glucopyranose, 2-deoxy-2-(3-methyl-3-nitrosoureido)-, D-
U206	18883-66-4	D-Glucose, 2-deoxy-2-[[(methylnitrosoamino)-carbonyl]amino]-
U126	765-34-4	Glycidylaldehyde
U163	70-25-7	Guanidine, N-methyl-N'-nitro-N-nitroso-
U127	118-74-1	Hexachlorobenzene
U128	87-68-3	Hexachlorobutadiene
U130	77-47-4	Hexachlorocyclopentadiene
U131	67-72-1	Hexachloroethane
U132	70-30-4	Hexachlorophene
U243	1888-71-7	Hexachloropropene
U133	302-01-2	Hydrazine (R,T)
U086	1615-80-1	Hydrazine, 1,2-diethyl-
U098	57-14-7	Hydrazine, 1,1-dimethyl-
U099	540-73-8	Hydrazine, 1,2-dimethyl-
U109	122-66-7	Hydrazine, 1,2-diphenyl-
U134	7664-39-3	Hydrofluoric acid (C,T)
U134	7664-39-3	Hydrogen fluoride (C,T)
U135	7783-06-4	Hydrogen sulfide
U135	7783-06-4	Hydrogen sulfide H_2S
U096	80-15-9	Hydroperoxide, 1-methyl-1-phenylethyl- (R)
U116	96-45-7	2-Imidazolidinethione

Hazardous waste No.	Chemical abstracts No.	Substance
U137	193-39-5	Indeno[1,2,3-cd]pyrene
U139	9004-66-4	Iron dextran
U190	85-44-9	1,3-Isobenzofurandione
U140	78-83-1	Isobutyl alcohol (I,T)
U141	120-58-1	Isosafrole
U142	143-50-0	Kepone
U143	303-34-4	Lasiocarpine
U144	301-04-2	Lead acetate
U146	1335-32-6	Lead, bis(acetato-O)tetrahydroxytri-
U145	7446-27-7	Lead phosphate
U146	1335-32-6	Lead subacetate
U129	58-89-9	Lindane
U163	70-25-7	MNNG
U147	108-31-6	Maleic anhydride
U148	123-33-1	Maleic hydrazide
U149	109-77-3	Malononitrile
U150	148-82-3	Melphalan
U151	7439-97-6	Mercury
U152	126-98-7	Methacrylonitrile (I, T)
U092	124-40-3	Methanamine, N-methyl- (I)
U029	74-83-9	Methane, bromo-
U045	74-87-3	Methane, chloro- (I, T)
U046	107-30-2	Methane, chloromethoxy-
U068	74-95-3	Methane, dibromo-
U080	75-09-2	Methane, dichloro-
U075	75-71-8	Methane, dichlorodifluoro-
U138	74-88-4	Methane, iodo-
U119	62-50-0	Methanesulfonic acid, ethyl ester
U211	56-23-5	Methane, tetrachloro-
U153	74-93-1	Methanethiol (I, T)
U225	75-25-2	Methane, tribromo-
U044	67-66-3	Methane, trichloro-
U121	75-69-4	Methane, trichlorofluoro-
U036	57-74-9	4,7-Methano-1H-indene, 1,2,4,5,6,7,8,8-octachloro-2,3,3a,4,7,7a-hexahydro-
U154	67-56-1	Methanol (I)
U155	91-80-5	Methapyrilene
U142	143-50-0	1,3,4-Metheno-2H-cyclobuta[cd]pentalen-2-one, 1,1a,3,3a,4,5,5,5a,5b,6-decachlorooctahydro-
U247	72-43-5	Methoxychlor
U154	67-56-1	Methyl alcohol (I)
U029	74-83-9	Methyl bromide
U186	504-60-9	1-Methylbutadiene (I)
U045	74-87-3	Methyl chloride (I,T)
U156	79-22-1	Methyl chlorocarbonate (I,T)
U226	71-55-6	Methyl chloroform
U157	56-49-5	3-Methylcholanthrene
U158	101-14-4	4,4'-Methylenebis(2-chloroaniline)
U068	74-95-3	Methylene bromide
U080	75-09-2	Methylene chloride
U159	78-93-3	Methyl ethyl ketone (MEK) (I,T)
U160	1338-23-4	Methyl ethyl ketone peroxide (R,T)
U138	74-88-4	Methyl iodide
U161	108-10-1	Methyl isobutyl ketone (I)
U162	80-62-6	Methyl methacrylate (I,T)
U161	108-10-1	4-Methyl-2-pentanone (I)
U164	56-04-2	Methylthiouracil
U010	50-07-7	Mitomycin C
U059	20830-81-3	5,12-Naphthacenedione, 8-acetyl-10-[(3-amino-2,3,6-trideoxy)-alpha-L-lyxo-hexopyranosyl)oxy]-7,8,9,10-tetrahydro-6,8,11-trihydroxy-1-methoxy-, (8S-cis)-
U167	134-32-7	1-Naphthalenamine
U168	91-59-8	2-Naphthalenamine
U026	494-03-1	Naphthalenamine, N,N'-bis(2-chloroethyl)-
U165	91-20-3	Naphthalene
U047	91-58-7	Naphthalene, 2-chloro-
U166	130-15-4	1,4-Naphthalenedione
U236	72-57-1	2,7-Naphthalenedisulfonic acid, 3,3'-[(3,3'-dimethyl[1,1'-biphenyl]-4,4'-diyl)bis(azo)bis[5-amino-4-hydroxy]-, tetrasodium salt
U166	130-15-4	1,4-Naphthoquinone
U167	134-32-7	alpha-Naphthylamine
U168	91-59-8	beta-Naphthylamine
U217	10102-45-1	Nitric acid, thallium(1+) salt

Hazardous waste No.	Chemical abstracts No.	Substance
U169	98-95-3	Nitrobenzene (I,T)
U170	100-02-7	p-Nitrophenol
U171	79-46-9	2-Nitropropane (I,T)
U172	924-16-3	N-Nitrosodi-n-butylamine
U173	1116-54-7	N-Nitrosodiethanolamine
U174	55-18-5	N-Nitrosodiethylamine
U176	759-73-9	N-Nitroso-N-ethylurea
U177	684-93-5	N-Nitroso-N-methylurea
U178	615-53-2	N-Nitroso-N-methylurethane
U179	100-75-4	N-Nitrosopiperidine
U180	930-55-2	N-Nitrosopyrrolidine
U181	99-55-8	5-Nitro-o-toluidine
U193	1120-71-4	1,2-Oxathiolane, 2,2-dioxide
U058	50-18-0	2H-1,3,2-Oxazaphosphorin-2-amine, N,N-bis(2-chloroethyl)tetrahydro-, 2-oxide
U115	75-21-8	Oxirane (I,T)
U126	765-34-4	Oxiranecarboxyaldehyde
U041	106-89-8	Oxirane, (chloromethyl)-
U182	123-63-7	Paraldehyde
U183	608-93-5	Pentachlorobenzene
U184	76-01-7	Pentachloroethane
U185	82-68-8	Pentachloronitrobenzene (PCNB)
See F027	87-86-5	Pentachlorophenol
U161	108-10-1	Pentanol, 4-methyl-
U186	504-60-9	1,3-Pentadiene (I)
U187	62-44-2	Phenacetin
U188	108-95-2	Phenol
U048	95-57-8	Phenol, 2-chloro-
U039	59-50-7	Phenol, 4-chloro-3-methyl-
U081	120-83-2	Phenol, 2,4-dichloro-
U082	87-65-0	Phenol, 2,6-dichloro-
U089	56-53-1	Phenol, 4,4'-(1,2-diethyl-1,2-ethenediyl)bis-, (E)-
U101	105-67-9	Phenol, 2,4-dimethyl-
U052	1319-77-3	Phenol, methyl-
U132	70-30-4	Phenol, 2,2'-methylenebis[3,4,6-trichloro-
U170	100-02-7	Phenol, 4-nitro-
See F027	87-86-5	Phenol, pentachloro-
See F027	58-90-2	Phenol, 2,3,4,6-tetrachloro-
See F027	95-95-4	Phenol, 2,4,5-trichloro-
See F027	88-06-2	Phenol, 2,4,6-trichloro-
U150	148-82-3	L-Phenylalanine, 4-[bis(2-chloroethyl)amino]-
U145	7446-27-7	Phosphoric acid, lead(2+) salt (2:3)
U087	3288-58-2	Phosphorodithioic acid, O,O-diethyl S-methyl ester
U189	1314-80-3	Phosphorus sulfide (R)
U190	85-44-9	Phthalic anhydride
U191	109-06-8	2-Picoline
U179	100-75-4	Piperidine, 1-nitroso-
U192	23950-58-5	Pronamide
U194	107-10-8	1-Propanamine (I,T)
U111	621-64-7	1-Propanamine, N-nitroso-N-propyl-
U110	142-84-7	1-Propanamine, N-propyl- (I)
U066	96-12-8	Propane, 1,2-dibromo-3-chloro-
U083	78-87-5	Propane, 1,2-dichloro-
U149	109-77-3	Propanedinitrile
U171	79-46-9	Propane, 2-nitro- (I,T)
U027	108-60-1	Propane, 2,2'-oxybis[2-chloro-
U193	1120-71-4	1,3-Propane sultone
See F027	93-72-1	Propanoic acid, 2-(2,4,5-trichlorophenoxy)-
U235	126-72-7	1-Propanol, 2,3-dibromo-, phosphate (3:1)
U140	78-83-1	1-Propanol, 2-methyl- (I,T)
U002	67-64-1	2-Propanone (I)
U007	79-06-1	2-Propenamide
U084	542-75-6	1-Propene, 1,3-dichloro-
U243	1888-71-7	1-Propene, 1,1,2,3,3,3-hexachloro-

Hazardous waste No.	Chemical abstracts No.	Substance
U009	107-13-1	2-Propenenitrile
U152	126-98-7	2-Propenenitrile, 2-methyl- (I,T)
U008	79-10-7	2-Propenoic acid (I)
U113	140-88-5	2-Propenoic acid, ethyl ester (I)
U118	97-63-2	2-Propenoic acid, 2-methyl-, ethyl ester
U162	80-62-6	2-Propenoic acid, 2-methyl-, methyl ester (I,T)
U194	107-10-8	n-Propylamine (I,T)
U083	78-87-5	Propylene dichloride
U148	123-33-1	3,6-Pyridazinedione, 1,2-dihydro-
U196	110-86-1	Pyridine
U191	109-06-8	Pyridine, 2-methyl-
U237	66-75-1	2,4-(1H,3H)-Pyrimidinedione, 5-[bis(2-chloroethyl)amino]-
U164	56-04-2	4(1H)-Pyrimidinone, 2,3-dihydro-6-methyl-2-thioxo-
U180	930-55-2	Pyrrolidine, 1-nitroso-
U200	50-55-5	Reserpine
U201	108-46-3	Resorcinol
U202	[1] 81-07-2	Saccharin, & salts
U203	94-59-7	Safrole
U204	7783-00-8	Selenious acid
U204	7783-00-8	Selenium dioxide
U205	7488-56-4	Selenium sulfide
U205	7488-56-4	Selenium sulfide SeS_2 (R,T)
U015	115-02-6	L-Serine, diazoacetate (ester)
See F027	93-72-1	Silvex (2,4,5-TP)
U206	18883-66-4	Streptozotocin
U103	77-78-1	Sulfuric acid, dimethyl ester
U189	1314-80-3	Sulfur phosphide (R)
See F027	93-76-5	2,4,5-T
U207	95-94-3	1,2,4,5-Tetrachlorobenzene
U208	630-20-6	1,1,1,2-Tetrachloroethane
U209	79-34-5	1,1,2,2-Tetrachloroethane
U210	127-18-4	Tetrachloroethylene
See F027	58-90-2	2,3,4,6-Tetrachlorophenol
U213	109-99-9	Tetrahydrofuran (I)
U214	563-68-8	Thallium(I) acetate
U215	6533-73-9	Thallium(I) carbonate
U216	7791-12-0	Thallium(I) chloride
U216	7791-12-0	Thallium chloride TlCl
U217	10102-45-1	Thallium(I) nitrate
U218	62-55-5	Thioacetamide
U153	74-93-1	Thiomethanol (I,T)
U244	137-26-8	Thioperoxydicarbonic diamide $[(H_2N)C(S)]_2S_2$, tetramethyl-
U219	62-56-6	Thiourea
U244	137-26-8	Thiram
U220	108-88-3	Toluene
U221	25376-45-8	Toluenediamine
U223	26471-62-5	Toluene diisocyanate (R,T)
U328	95-53-4	o-Toluidine
U353	106-49-0	p-Toluidine
U222	636-21-5	o-Toluidine hydrochloride
U011	61-82-5	1H-1,2,4-Triazol-3-amine
U227	79-00-5	1,1,2-Trichloroethane
U228	79-01-6	Trichloroethylene
U121	75-69-4	Trichloromonofluoromethane
See F027	95-95-4	2,4,5-Trichlorophenol
See F027	88-06-2	2,4,6-Trichlorophenol
U234	99-35-4	1,3,5-Trinitrobenzene (R,T)
U182	123-63-7	1,3,5-Trioxane, 2,4,6-trimethyl-
U235	126-72-7	Tris(2,3-dibromopropyl) phosphate
U236	72-57-1	Trypan blue
U237	66-75-1	Uracil mustard
U176	759-73-9	Urea, N-ethyl-N-nitroso-
U177	684-93-5	Urea, N-methyl-N-nitroso-
U043	75-01-4	Vinyl chloride

Hazardous waste No.	Chemical abstracts No.	Substance
U248	[1] 81-81-2	Warfarin, & salts, when present at concentrations of 0.3% or less
U239	1330-20-7	Xylene (I)
U200	50-55-5	Yohimban-16-carboxylic acid, 11,17-dimethoxy-18-[(3,4,5-trimethoxybenzoyl)oxy]-, methyl ester, (3beta,16beta,17alpha,18beta,20alpha)-
U249	1314-84-7	Zinc phosphide Zn_3P_2, when present at concentrations of 10% or less

[1] CAS Number given for parent compound only.

(Approved by the Office of Management and Budget under control number 2050-0047)

[45 FR 78529, 78541, Nov. 25, 1980, as amended at 46 FR 27477, May 20, 1981; 49 FR 19923, May 10, 1984; 50 FR 2000, Jan. 14, 1985; 50 FR 28744, July 15, 1985; 50 FR 42942, Oct. 23, 1985; 51 FR 6541, Feb. 25, 1986; 51 FR 10175, Mar. 24, 1986; 51 FR 28298, Aug. 6, 1986; 52 FR 21306, June 5, 1987; 52 FR 26012, July 10, 1987; 53 FR 13383, 13384, Apr. 22, 1988]

APPENDIX I—REPRESENTATIVE SAMPLING METHODS

The methods and equipment used for sampling waste materials will vary with the form and consistency of the waste materials to be sampled. Samples collected using the sampling protocols listed below, for sampling waste with properties similar to the indicated materials, will be considered by the Agency to be representative of the waste.

Extremely viscous liquid—ASTM Standard D140-70 Crushed or powdered material—ASTM Standard D346-75 Soil or rock-like material—ASTM Standard D420-69 Soil-like material—ASTM Standard D1452-65

Fly Ash-like material—ASTM Standard D2234-76 [ASTM Standards are available from ASTM, 1916 Race St., Philadelphia, PA 19103]

Containerized liquid wastes—"COLIWASA" described in "Test Methods for the Evaluation of Solid Waste, Physical/Chemical Methods," [a] U.S. Environmental Protection Agency, Office of Solid Waste, Washington, D.C. 20460. [Copies may be obtained from Solid Waste Information, U.S. Environmental Protection Agency, 26 W. St. Clair St., Cincinnati, Ohio 45268]

Liquid waste in pits, ponds, lagoons, and similar reservoirs.—"Pond Sampler" described in "Test Methods for the Evaluation of Solid Waste, Physical/Chemical Methods." [a]

This manual also contains additional information on application of these protocols.

[a] These methods are also described in "Samplers and Sampling Procedures for Hazardous Waste Streams," EPA 600/2-80-018, January 1980.

APPENDIX II—EP TOXICITY TEST PROCEDURES

A. Extraction Procedure (EP)

1. A representative sample of the waste to be tested (minimum size 100 grams) shall be obtained using the methods specified in Appendix I or any other method capable of yielding a representative sample within the meaning of Part 260. [For detailed guidance on conducting the various aspects of the EP see "Test Methods for the Evaluation of Solid Waste, Physical/Chemical Methods" (incorporated by reference, see § 260.11).]

2. The sample shall be separated into its component liquid and solid phases using the method described in "Separation Procedure" below. If the solid residue [a] obtained using this method totals less than 0.5% of the original weight of the waste, the residue can be discarded and the operator shall treat the liquid phase as the extract and proceed immediately to Step 8.

$$\frac{(\text{weight of pad + solid}) - (\text{tare weight of pad})}{\text{initial weight of sample}} \times 100$$

3. The solid material obtained from the Separation Procedure shall be evaluated for its particle size. If the solid material has a surface area per gram of material equal to, or greater than, 3.1 cm^2 or passes through a 9.5 mm (0.375 inch) standard sieve, the operator shall proceed to Step 4. If the surface area is smaller or the particle size larger than specified above, the solid material shall be prepared for extraction by crushing, cutting or grinding the material so that it passes through a 9.5 mm (0.375 inch) sieve or, if the material is in a single piece, by subjecting the material to the "Structural Integrity Procedure" described below.

[a] The percent solids is determined by drying the filter pad at 80°C until it reaches constant weight and then calculating the percent solids using the following equation:

Percent solids =

4. The solid material obtained in Step 3 shall be weighed and placed in an extractor with 16 times its weight of deionized water. Do not allow the material to dry prior to weighing. For purposes of this test, an acceptable extractor is one which will impart sufficient agitation to the mixture to not only prevent stratification of the sample and extraction fluid but also insure that all sample surfaces are continuously brought into contact with well mixed extraction fluid.

5. After the solid material and deionized water are placed in the extractor, the operator shall begin agitation and measure the pH of the solution in the extractor. If the pH is greater than 5.0, the pH of the solution shall be decreased to 5.0 ± 0.2 by adding 0.5 N acetic acid. If the pH is equal to or less than 5.0, no acetic acid should be added. The pH of the solution shall be monitored, as described below, during the course of the extraction and if the pH rises above 5.2, 0.5N acetic acid shall be added to bring the pH down to 5.0 ± 0.2. However, in no event shall the aggregate amount of acid added to the solution exceed 4 ml of acid per gram of solid. The mixture shall be agitated for 24 hours and maintained at 20°-40°C (68°-104°F) during this time. It is recommended that the operator monitor and adjust the pH during the course of the extraction with a device such as the Type 45-A pH Controller manufactured by Chemtrix, Inc., Hillsboro, Oregon 97123 or its equivalent, in conjunction with a metering pump and reservoir of 0.5N acetic acid. If such a system is not available, the following manual procedure shall be employed:

(a) A pH meter shall be calibrated in accordance with the manufacturer's specifications.

(b) The pH of the solution shall be checked and, if necessary, 0.5N acetic acid shall be manually added to the extractor until the pH reaches 5.0 ± 0.2. The pH of the solution shall be adjusted at 15, 30 and 60 minute intervals, moving to the next longer interval if the pH does not have to be adjusted more than 0.5N pH units.

(c) The adjustment procedure shall be continued for at least 6 hours.

(d) If at the end of the 24-hour extraction period, the pH of the solution is not below 5.2 and the maximum amount of acid (4 ml per gram of solids) has not been added, the pH shall be adjusted to 5.0 ± 0.2 and the extraction continued for an additional four hours, during which the pH shall be adjusted at one hour intervals.

6. At the end of the 24 hour extraction period, deionized water shall be added to the extractor in an amount determined by the following equation:

$V = (20)(W) - 16(W) - A$

V = ml deionized water to be added

W = weight in grams of solid charged to extractor

A = ml of 0.5N acetic acid added during extraction

7. The material in the extractor shall be separated into its component liquid and solid phases as described under "Separation Procedure."

8. The liquids resulting from Steps 2 and 7 shall be combined. This combined liquid (or the waste itself if it has less than ½ percent solids, as noted in Step 2) is the extract and shall be analyzed for the presence of any of the contaminants specified in Table I of § 261.24 using the Analytical Procedures designated below.

Separation Procedure

Equipment: A filter holder, designed for filtration media having a nominal pore size of 0.45 micrometers and capable of applying a 5.3 kg/cm^2 (75 psi) hydrostatic pressure to the solution being filtered, shall be used. For mixtures containing nonabsorptive solids, where separation can be effected without imposing a 5.3 kg/cm^2 pressure differential, vacuum filters employing a 0.45 micrometers filter media can be used. (For further guidance on filtration equipment or procedures see "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods" incorporated by reference, see § 260.11). Procedure:[2]

(i) Following manufacturer's directions, the filter unit shall be assembled with a filter bed consisting of a 0.45 micrometer filter membrane. For difficult or slow to filter mixtures a prefilter bed consisting of the following prefilters in increasing pore size (0.65 micrometer membrane, fine glass

[2] This procedure is intended to result in separation of the "free" liquid portion of the waste from any solid matter having a particle size >0.45 μm. If the sample will not filter, various other separation techniques can be used to aid in the filtration. As described above, pressure filtration is employed to speed up the filtration process. This does not alter the nature of the separation. If liquid does not separate during filtration, the waste can be centrifuged. If separation occurs during centrifugation, the liquid portion (centrifugate) is filtered through the 0.45 μm filter prior to becoming mixed with the liquid portion of the waste obtained from the initial filtration. Any material that will not pass through the filter after centrifugation is considered a solid and is extracted.

fiber prefilter, and coarse glass fiber prefilter) can be used.

(ii) The waste shall be poured into the filtration unit.

(iii) The reservoir shall be slowly pressurized until liquid begins to flow from the filtrate outlet at which point the pressure in the filter shall be immediately lowered to 10-15 psig. Filtration shall be continued until liquid flow ceases.

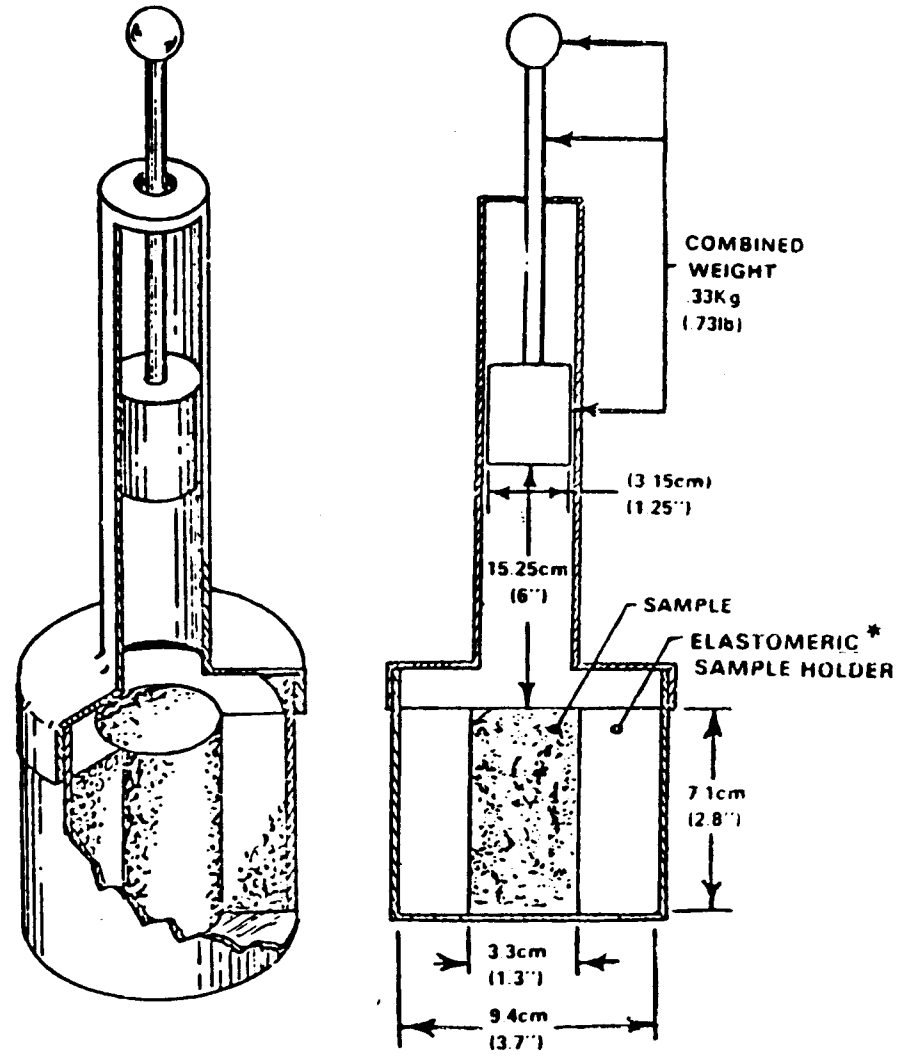
(iv) The pressure shall be increased stepwise in 10 psi increments to 75 psig and filtration continued until flow ceases or the pressurizing gas begins to exit from the filtrate outlet.

(v) The filter unit shall be depressurized, the solid material removed and weighed and then transferred to the extraction apparatus, or, in the case of final filtration prior to analysis, discarded. Do not allow the material retained on the filter pad to dry prior to weighing.

(vi) The liquid phase shall be stored at 4°C for subsequent use in Step 8.

B. Structural Integrity Procedure

Equipment: A Structural Integrity Tester having a 3.18 cm (1.25 in.) diameter hammer weighing 0.33 kg (0.73 lbs.) and having a free fall of 15.24 cm (6 in.) shall be used. This device is available from Associated Design and Manufacturing Company, Alexandria, VA 22314, as Part No. 125, or it may be fabricated to meet the specifications shown in Figure 1.



*ELASTOMERIC SAMPLE HOLDER FABRICATED OF MATERIAL FIRM ENOUGH TO SUPPORT THE SAMPLE

Figure 1

COMPACTION TESTER

Procedure

1. The sample holder shall be filled with the material to be tested. If the sample of waste is a large monolithic block, a portion shall be cut from the block having the dimensions of a 3.3 cm (1.3 in.) diameter x 7.1 cm (2.8 in.) cylinder. For a fixated waste, samples may be cast in the form of a 3.3 cm (1.3 in.) diameter x 7.1 cm (2.8 in.) cylinder for purposes of conducting this test. In such cases, the waste may be allowed to cure for 30 days prior to further testing.

2. The sample holder shall be placed into the Structural Integrity Tester, then the hammer shall be raised to its maximum height and dropped. This shall be repeated fifteen times.

3. The material shall be removed from the sample holder, weighed, and transferred to the extraction apparatus for extraction.

Analytical Procedures for Analyzing Extract Contaminants

The test methods for analyzing the extract are as follows:

1. For arsenic, barium, cadmium, chromium, lead, mercury, selenium, silver, endrin, lindane, methoxychlor, toxaphene, 2,4-D[2,4-dichlorophenoxyacetic acid] or 2,4,5-TP [2,4,5-trichlorophenoxypropionic acid]: "Test Methods for the Evaluation of Solid Waste, Physical/Chemical Methods" (incorporated by reference, see § 260.11).

2. [Reserved]

For all analyses, the methods of standard addition shall be used for quantification of species concentration.

[45 FR 33119, May 19, 1980, as amended at 46 FR 35247, July 7, 1981]

Appendix III—Chemical Analysis Test Methods

Tables 1, 2, and 3 specify the appropriate analytical procedures, described in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," (incorporated by reference, see § 260.11) which shall be used to determine whether a sample contains a given Appendix VII or VIII toxic constituent.

Table 1 identifies each Appendix VII or VIII organic constituent along with the approved measurement method. Table 2 identifies the corresponding methods for inorganic species. Table 3 summarizes the contents of SW-846 and supplies specific section and method numbers for sampling and analysis methods.

Prior to final sampling and analysis method selection the analyst should consult the specific section or method described in SW-846 for additional guidance on which of the approved methods should be employed for a specific sample analysis situation.

TABLE 1—ANALYSIS METHODS FOR ORGANIC CHEMICALS CONTAINED IN SW-846

Compound	Method Numbers
Acetonitrile	8030, 8240
Acrolein	8030, 8240
Acrylamide	8015, 8240
Acrylonitrile	8030, 8240
2-Amino-l-methylbenzene (*o*-Toluidine)	8250
4-Amino-l-methylbenzene (*p*-Toluidine)	8250
Aniline	8250
Benzene	8020, 8024
Benz(a)anthracene	8100, 8250, 8310
Benzo(a)pyrene	8100, 8250, 8310
Benzotrichloride	8120, 8250
Benzyl chloride	8120, 8250
Benzo(b)fluoanthene	8100, 8250, 8310
Bis(2-chloroethoxymethane)	8010, 8240
Bis(2-chloroethyl)ether	8010, 8240
Bis(2-chloroisopropyl)ether	8010, 8240
Carbon disulfide	8015, 8240
Carbon tetrachloride	8010, 8240
Chlordane	8080, 8250
Chlorinated biphenyls	8080, 8250
Chlorinated dibenzo-*p*-dioxins	8280
Chlorinated dibenzofurans	8280
Chloroacetaldehyde	8010, 8240
Chlorobenzene	8020, 8240
Chloroform	8010, 8240
Chloromethane	8010, 8240
2-Chlorophenol	8040, 8250
Chrysene	8100, 8250, 8310
Creosote [1]	8100, 8250
Cresol(s)	8040, 8250
Cresylic Acid(s)	8040, 8250
Dichlorobenzene(s)	8010, 8120, 8250
Dichloroethane(s)	8010, 8240
Dichloromethane	8010, 8240
Dichlorophenoxyacetic acid	8150, 8250
Dichloropropanol	8120, 8250
2,4-Dimethylphenol	8040, 8250
Dinitrobenzene	8090, 8250
4,6-Dinitro-o-cresol	8040, 8250
2,4-Dinitrotoluene	8090, 8250
2,6-Dinitrotoluene	8060, 8250
Endrin	8080, 8250
2-Ethoxyethanol	8030, 8240
Ethyl ether	8015, 8240
Ethylene dibromide	8010, 8240
Ethylene thiourea	8250, 8330
Formaldehyde	8015, 8240
Formic acid	8250
Heptachlor	8080, 8250
Hexachlorobenzene	8120, 8250
Hexachlorobutadiene	8120, 8250
Hexachloroethane	8010, 8240
Hexachlorocyclopentadiene	8120, 8250
Lindane	8080, 8250
Maleic anhydride	8250
Methanol	8010, 8240
Methomyl	8250
Methyl ethyl ketone	8015, 8240
Methyl isobutyl ketone	8015, 8240
Napthalene	8100, 8250
Napthoquinone	8090, 8250
Nitrobenzene	8090, 8250
4-Nitrophenol	8040, 8240

TABLE 1—ANALYSIS METHODS FOR ORGANIC CHEMICALS CONTAINED IN SW-846—Continued

Compound	Method Numbers
2-Nitropropane	8030, 8240
Paraldehyde (trimer of acetaldehyde)	8015, 8240
Pentachlorophenol	8040, 8250
Phenol	8040, 8250
Phorate	8140
Phosphorodithioic acid esters	8140
Phthalic anhydride	8090, 8250
2-Picoline	8090, 8250
Pyridine	8090, 8250
Tetrachlorobenzene(s)	8120, 8250
Tetrachloroethane(s)	8010, 8240
Tetrachloroethene	8010, 8240
Tetrachlorophenol	8040, 8250
Toluene	8020, 8024
Toluene diisocyanate(s)	8250
Toluenediamine	8250
2,4-Toluenediamine	8250
2,6-Toluenediamine	8250
3,4-Toluenediamine	8250
Toxaphene	8080, 8250
Trichloroethane	8010, 8240
Trichloroethene(s)	8010, 8240
Trichlorofluoromethane	8010, 8240
Trichlorophenol(s)	8040, 8250
2,4,5-Trichlorophenoxy propionic acid	8150, 8250
Trichloropropane	8010, 8240
Vinyl chloride	8010, 8240
Vinylidene chloride	8010, 8240

TABLE 1—ANALYSIS METHODS FOR ORGANIC CHEMICALS CONTAINED IN SW-846—Continued

Compound	Method Numbers
Xylene	8020, 8240

[1] Analyne for phenanthrene and carbazole; if these are present in a ratio between 1.4:1 and 5:1 creosote should be considered present.

TABLE 2—ANALYSIS METHODS FOR INORGANIC CHEMICALS CONTAINED IN SW-846

Compound	First edition method(s)	Second edition method(s)
Antimony	8.50	7040, 7041
Arsenic	8.51	7060, 7061
Barium	8.52	7080, 7081
Cadmium	8.53	7090, 7091
Chromium	8.54	7190, 7191
Chromium: Hexavalent	8.545, 8.546, 8.547	7195, 7196, 7197
Lead	8.56	7420, 7421
Mercury	8.57	7470, 7471
Nickel	8.58	7520, 7521
Selenium	8.59	7740, 7741
Silver	8.60	7760, 7761
Cyanides	8.55	9010
Total Organic Halogen	8.66	9020
Sulfides	8.67	9030

TABLE 3—SAMPLING AND ANALYSIS METHODS CONTAINED IN SW-846

Title	First edition		Second edition	
	Section No.	Method No.	Section No.	Method No.
Sampling of Solid Wastes	1.0		1.0	
Development of Appropriate Sampling Plans	1.0		1.1	
Regulatory and Scientific Objectives	1.0–2		1.1.1	
Fundamental Statistical Concepts	1.0–3		1.1.2	
Basic Statistical Strategies	1.0–7		1.1.3	
Simple Random Sampling			1.1.3.1	
Stratified Random Sampling			1.1.3.2	
Systematic Random Sampling			1.1.3.3	
Special Considerations	1.0–7			
Composite Sampling			1.1.4.1	
Subsampling			1.1.4.2	
Cost and Loss Functions			1.1.4.3	
Implementation of Sampling Plan	1.0–7		1.2	
Selection of Sampling Equipment			1.2.1	
Composite Liquid Waste Sampler	3.2.1		1.2.1.1	
Weighted Bottle	3.2.2		1.2.1.2	
Dipper	3.2.3		1.2.1.3	
Thief	3.2.4		1.2.1.4	
Trier	3.2.5		1.2.1.5	
Auger	3.2.6		1.2.1.6	
Scoop and Shovel	3.2.7		1.2.1.7	
Selection of Sample Containers	3.3		1.2.2	
Processing and Storage of Samples	3.3		1.2.3	
Documentation of Chain of Custody	2.0		1.3	
Sample Labels	2.0–1		1.3.1	
Sample Seals	2.0–3		1.3.2	
Field Log Book	2.0–5		1.3.3	
Chain-of-Custody Record	2.0–6		1.3.4	

TABLE 3—SAMPLING AND ANALYSIS METHODS CONTAINED IN SW-846—Continued

Title	First edition		Second edition	
	Section No.	Method No.	Section No.	Method No.
Sample Analysis Request Sheet	2.0-9		1.3.5	
Sample Delivery to Laboratory	2.0-10		1.3.6	
Shipping of Samples	2.0-10		1.3.7	
Receipt and Logging of Sample	2.0-12		1.3.8	
Assignment of Sample for Analysis	2.0-13		1.3.9	
Sampling Methodology	3.0		1.4	
Containers	3.2-2		1.4.1	
Tanks	3.2-2		1.4.2	
Waste Piles	3.2-2		1.4.3	
Landfills and Lagoons	3.2-2		1.4.4	
Waste Evaluation Procedures			2.0	
Characteristics of Hazardous Waste			2.1	
Ignitability	4.0		2.1.1	
Pensky-Martens Closed-Cup Method	4.1		2.1.1	1010
Setaflash Closed-Cup Method	4.1		2.1.1	1020
Corrosivity	5.0		2.1.2	
Corrosivity Toward Steel	5.3		2.1.2	1110
Reactivity	6.0		2.1.3	
Extraction Procedure Toxicity	7.0		2.1.4	
Extraction Procedure Toxicity Test	7.1, 7.2, 7.5			
Method and Structural Integrity Test	7.4		2.1.4	1310
Sample Workup Techniques			4.0	
Inorganic Techniques	8.49		4.1	
Acid Digestion for Flame AAS	[1]		4.1	3010
Acid Digestion for Furnace AAS	[1]		4.1	3020
Acid Digestion of Oil, Grease, or Wax	8.49-9		4.1	3030
Dissolution Procedure for Oil, Grease or Wax	8.49-8			
Alkaline Digestion	8.0	8.458	4.1	3060
Organic Techniques	8.0		4.2	
Separatory Funnel Liquid-Liquid Extraction	9.0	9.1	4.2	3510
Continuous Liquid-Liquid Extraction	9.0	9.01	4.2	3520
Acid-Base Cleanup Extraction	8.0	8.84	4.2	3530
Soxhlet Extraction	8.0	8.86	4.2	3540
Sonication Extraction	8.0	8.85	4.2	3550
Sample Introduction Techniques			5.0	
Headspace	8.0	8.82	5.0	5020
Purge-and-Trap	8.0	8.83	5.0	5030
Inorganic Analytical Methods	8.0		7.0	
Antimony, Flame AAS	8.0	8.50	7.0	7470
Antimony, Furnace AAS	8.0	8.50	7.0	7471
Arsenic, Flame AAS	8.0	8.51	7.0	7060
Arsenic, Furnace AAS	8.0	8.51	7.0	7061
Barium, Flame AAS	8.0	8.52	7.0	7080
Barium, Furnace AAS	8.0	8.52	7.0	7081
Cadmium, Flame AAS	8.0	8.53	7.0	7130
Cadmium, Furnace AAS	8.0	8.53	7.0	7131
Chromium, Flame AAS	8.0	8.54	7.0	7090
Chromium, Furnace AAS	8.0	8.54	7.0	7191
Chromium, Hexavalent, Coprecipitation	8.0	8.545	7.0	7195
Chromium, Hexavalent, Colorimetric	8.0	8.546	7.0	7196
Chromium, Hexavalent, Chelation	8.0	8.547	7.0	7197
Lead, Flame AAS	8.0	8.56	7.0	7420
Lead, Furnace AAS	8.0	8.56	7.0	7421
Mercury, Cold Vapor, Liquid	8.0	8.57	7.0	7470
Mercury, Cold Vapor, Solid	8.0	8.57	7.0	7471
Nickel, Flame AAS	8.0	8.58	7.0	7520
Nickel, Furnace AAS	8.0	8.58	7.0	7521
Selenium, Flame AAS	8.0	8.59	7.0	7740
Selenium, Gaseous Hydride AAS	8.0	8.59	7.0	7741
Silver, Flame AAS	8.0	8.60	7.0	7760
Silver, Furnace AAS	8.0	8.60	7.0	7761
Organic Analytical Methods	8.0		8.0	
Gas Chromatographic Methods	8.0		8.1	
Halogenated Volatile Organics	8.0	8.01	8.1	8010
Nonhalogenated Volatile Organics	8.0	8.01	8.1	8015
Aromatic Volatile Organics	8.0	8.02	8.1	8020
Acrolein, Acrylonitrile, Acetonitrile	8.0	8.03	8.1	8030
Phenols	8.0	8.04	8.1	8040

TABLE 3—SAMPLING AND ANALYSIS METHODS CONTAINED IN SW-846—Continued

Title	First edition		Second edition	
	Section No.	Method No.	Section No.	Method No.
Phthalate Esters	8.0	8.06	8.1	8060
Organochlorine Pesticides and PCBs	8.0	8.08	8.1	8080
Nitroaromatics and Cyclic Ketones	8.0	8.09	8.1	8090
Polynuclear Aromatic Hydrocarbons	8.0	8.10	8.1	8100
Chlorinated Hydrocarbons	8.0	8.12	8.1	8120
Organophosphorus Pesticides	8.0	8.22	8.1	8140
Chlorinated Herbicides	8.0	8.40	8.1	8150
Gas Chromatographic/Mass Spectroscopy Methods (GC/MS)	8.0		8.2	
GC/MS Volatiles	8.0	8.24	8.2	8240
GC/MS Semi-Volatiles, Packed Column	8.0	8.25	8.2	8250
GC/MS Semi-Volatiles, Capillary	8.0	8.27	8.2	8270
Analysis of Chlorinated Dioxins and Dibenzofurans			8.2	8280
High Performance Liquid Chromatographic Methods (HPLC)	8.0		8.3	
Polynuclear Aromatic Hydrocarbons	8.0	8.10	8.3	8310
Miscellaneous Analytical Methods	8.0		9.0	
Cyanide; Total and Amenable to Chlorination	8.0	8.55	9.0	9010
Total Organic Halogen (TOX)	8.0	8.66	9.0	9020
Sulfides	8.0	8.67	9.0	9030
pH Measurement	5.0	5.2	9.0	9040
Quality Control/Quality Assurance	10.0		10.1	
Introduction	10.0		10.1	
Program Design	10.0		10.2	
Sampling	10.0		10.3	
Analysis	10.0		10.4	
Data Handling	10.0		10.5	

[1] See specific metal.

[48 FR 15257, Apr. 8, 1983, as amended at 50 FR 2000, Jan. 14, 1985; 50 FR 42942, Oct. 23, 1985; 51 FR 5330, Feb. 13, 1986; 51 FR 6541, Feb. 25, 1986; 51 FR 37729, Oct. 24, 1986]

APPENDIX IV—[RESERVED FOR RADIOACTIVE WASTE TEST METHODS]

APPENDIX V—[RESERVED FOR INFECTIOUS WASTE TREATMENT SPECIFICATIONS]

APPENDIX VI—[RESERVED FOR ETIOLOGIC AGENTS]

APPENDIX VII—BASIS FOR LISTING HAZARDOUS WASTE

EPA hazardous waste No.	Hazardous constituents for which listed
F001	Tetrachloroethylene, methylene chloride trichloroethylene, 1,1,1-trichloroethane, carbon tetrachloride, chlorinated fluorocarbons.
F002	Tetrachloroethylene, methylene chloride, trichloroethylene, 1,1,1-trichloroethane, 1,1,2-trichloroethane, chlorobenzene, 1,1,2-trichloro-1,2,2-trichfluoroethane, ortho-dichlorobenzene, trichlorofluoromethane.
F003	N.A.
F004	Cresols and cresylic acid, nitrobenzene.
F005	Toluene, methyl ethyl ketone, carbon disulfide, isobutanol, pyridine, 2-ethoxyethanol, benzene, 2-nitropropane.
F006	Cadmium, hexavalent chromium, nickel, cyanide (complexed).
F007	Cyanide (salts).
F008	Cyanide (salts).
F009	Cyanide (salts).
F010	Cyanide (salts).
F011	Cyanide (salts).
F012	Cyanide (complexed).
F019	Hexavalent chromium, cyanide (complexed).
F020	Tetra- and pentachlorodibenzo-*p*-dioxins; tetra and pentachlorodi-benzofurans; tri- and tetrachlorophenols and their chlorophenoxy derivative acids, esters, ethers, amine and other salts.
F021	Penta- and hexachlorodibenzo-*p*-dioxins; penta- and hexachlorodibenzofurans; pentachlorophenol and its derivatives.
F022	Tetra-, penta-, and hexachlorodibenzo-*p*-dioxins; tetra-, penta-, and hexachlorodibenzofurans.
F023	Tetra-, and pentachlorodibenzo-*p*-dioxins; tetra- and pentachlorodibenzofurans; tri- and tetrachlorophenols and their chlorophenoxy derivative acids, esters, ethers, amine and other salts.

EPA hazardous waste No.	Hazardous constituents for which listed
F024	Chloromethane, dichloromethane, trichloromethane, carbon tetrachloride, chloroethylene, 1,1-dichloroethane, 1,2-dichloroethane, trans-1-2-dichloroethylene, 1,1-dichloroethylene, 1,1,1-trichloroethane, 1,1,2-trichloroethane, trichloroethylene, 1,1,1,2-tetra-chloroethane, 1,1,2,2-tetrachloroethane, tetrachloroethylene, pentachloroethane, hexachloroethane, allyl chloride (3-chloropropene), dichloropropane, dichloropropene, 2-chloro-1,3-butadiene, hexachloro-1,3-butadiene, hexachlorocyclopentadiene, hexachlorocyclohexane, benzene, chlorbenzene, dichlorobenzenes, 1,2,4-trichlorobenzene, tetrachlorobenzene, pentachlorobenzene, hexachlorobenzene, toluene, naphthalene.
F026	Tetra-, penta-, and hexachlorodibenzo-*p*-dioxins; tetra-, penta-, and hexachlorodibenzofurans.
F027	Tetra-, penta-, and hexachlorodibenzo-*p*-dioxins; tetra-, penta-, and hexachlorodibenzofurans; tri-, tetra-, and pentachlorophenols and their chlorophenoxy derivative acids, esters, ethers, amine and other salts.
F028	Tetra-, penta-, and hexachlorodibenzo-*p*-dioxins; tetra-, penta-, and hexachlorodibenzofurans; tri-, tetra-, and pentachlorophenols and their chlorophenoxy derivative acids, esters, ethers, amine and other salts.
K001	Pentachlorophenol, phenol, 2-chlorophenol, p-chloro-m-cresol, 2,4-dimethylphenyl, 2,4-dinitrophenol, trichlorophenols, tetrachlorophenols, 2,4-dinitrophenol, creosote, chrysene, naphthalene, fluoranthene, benzo(b)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, benz(a)anthracene, dibenz(a)anthracene, acenaphthalene.
K002	Hexavalent chromium, lead
K003	Hexavalent chromium, lead.
K004	Hexavalent chromium.
K005	Hexavalent chromium, lead.
K006	Hexavalent chromium.
K007	Cyanide (complexed), hexavalent chromium.
K008	Hexavalent chromium.
K009	Chloroform, formaldehyde, methylene chloride, methyl chloride, paraldehyde, formic acid.
K010	Chloroform, formaldehyde, methylene chloride, methyl chloride, paraldehyde, formic acid, chloroacetaldehyde.
K011	Acrylonitrile, acetonitrile, hydrocyanic acid.
K013	Hydrocyanic acid, acrylonitrile, acetonitrile.
K014	Acetonitrile, acrylamide.
K015	Benzyl chloride, chlorobenzene, toluene, benzotrichloride.
K016	Hexachlorobenzene, hexachlorobutadiene, carbon tetrachloride, hexachloroethane, perchloroethylene.
K017	Epichlorohydrin, chloroethers [bis(chloromethyl) ether and bis (2-chloroethyl) ethers], trichloropropane, dichloropropanols.
K018	1,2-dichloroethane, trichloroethylene, hexachlorobutadiene, hexachlorobenzene.
K019	Ethylene dichloride, 1,1,1-trichloroethane, 1,1,2-trichloroethane, tetrachloroethanes (1,1,2,2-tetrachloroethane and 1,1,1,2-tetrachloroethane), trichloroethylene, tetrachloroethylene, carbon tetrachloride, chloroform, vinyl chloride, vinylidene chloride.
K020	Ethylene dichloride, 1,1,1-trichloroethane, 1,1,2-trichloroethane, tetrachloroethanes (1,1,2,2-tetrachloroethane and 1,1,1,2-tetrachloroethane), trichloroethylene, tetrachloroethylene, carbon tetrachloride, chloroform, vinyl chloride, vinylidene chloride.
K021	Antimony, carbon tetrachloride, chloroform.
K022	Phenol, tars (polycyclic aromatic hydrocarbons).
K023	Phthalic anhydride, maleic anhydride.
K024	Phthalic anhydride, 1,4-naphthoquinone.
K025	Meta-dinitrobenzene, 2,4-dinitrotoluene.
K026	Paraldehyde, pyridines, 2-picoline.
K027	Toluene diisocyanate, toluene-2, 4-diamine.
K028	1,1,1-trichloroethane, vinyl chloride.
K029	1,2-dichloroethane, 1,1,1-trichloroethane, vinyl chloride, vinylidene chloride, chloroform.
K030	Hexachlorobenzene, hexachlorobutadiene, hexachloroethane, 1,1,1,2-tetrachloroethane, 1,1,2,2-tetrachloroethane, ethylene dichloride.
K031	Arsenic.
K032	Hexachlorocyclopentadiene.
K033	Hexachlorocyclopentadiene.
K034	Hexachlorocyclopentadiene.
K035	Creosote, chrysene, naphthalene, fluoranthene benzo(b) fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd) pyrene, benzo(a)anthracene, dibenzo(a)anthracene, acenaphthalene.
K036	Toluene, phosphorodithioic and phosphorothioic acid esters.
K037	Toluene, phosphorodithioic and phosphorothioic acid esters.
K038	Phorate, formaldehyde, phosphorodithioic and phosphorothioic acid esters.
K039	Phosphorodithioic and phosphorothioic acid esters.
K040	Phorate, formaldehyde, phosphorodithioic and phosphorothioic acid esters.
K041	Toxaphene.
K042	Hexachlorobenzene, ortho-dichlorobenzene.
K043	2,4-dichlorophenol, 2,6-dichlorophenol, 2,4,6-trichlorophenol.
K044	N.A.
K045	N.A.
K046	Lead.
K047	N.A.
K048	Hexavalent chromium, lead.
K049	Hexavalent chromium, lead.
K050	Hexavalent chromium.
K051	Hexavalent chromium, lead.
K052	Lead.
K060	Cyanide, napthalene, phenolic compounds, arsenic.
K061	Hexavalent chromium, lead, cadmium.
K062	Hexavalent chromium, lead.
K069	Hexavalent chromium, lead, cadmium.
K071	Mercury.
K073	Chloroform, carbon tetrachloride, hexacholroethane, trichloroethane, tetrachloroethylene, dichloroethylene, 1,1,2,2-tetrachloroethane.
K083	Aniline, diphenylamine, nitrobenzene, phenylenediamine.
K084	Arsenic.
K085	Benzene, dichlorobenzenes, trichlorobenzenes, tetrachlorobenzenes, pentachlorobenzene, hexachlorobenzene, benzyl chloride.
K086	Lead, hexavalent chromium.
K087	Phenol, naphthalene.
K093	Phthalic anhydride, maleic anhydride.
K094	Phthalic anhydride.

EPA hazardous waste No.	Hazardous constituents for which listed
K095	1,1,2-trichloroethane, 1,1,1,2-tetrachloroethane, 1,1,2,2-tetrachloroethane.
K096	1,2-dichloroethane, 1,1,1-trichloroethane, 1,1,2-trichloroethane.
K097	Chlordane, heptachlor.
K098	Toxaphene.
K099	2,4-dichlorophenol, 2,4,6-trichlorophenol.
K100	Hexavalent chromium, lead, cadmium.
K101	Arsenic.
K102	Arsenic.
K103	Aniline, nitrobenzene, phenylenediamine.
K104	Aniline, benzene, diphenylamine, nitrobenzene, phenylenediamine.
K105	Benzene, monochlorobenzene, dichlorobenzenes, 2,4,6-trichlorophenol.
K106	Mercury.
K111	2,4-Dinitrotoluene.
K112	2,4-Toluenediamine, *o*-toluidine, *p*-toluidine, aniline.
K113	2,4-Toluenediamine, *o*-toluidine, *p*-toluidine, aniline.
K114	2,4-Toluenediamine, *o*-toluidine, *p*-toluidine.
K115	2,4-Toluenediamine.
K116	Carbon tetrachloride, tetrachloroethylene, chloroform, phosgene.
K117	Ethylene dibromide.
K118	Ethylene dibromide.
K123	Ethylene thiourea.
K124	Ethylene thiourea.
K125	Ethylene thiourea.
K126	Ethylene thiourea.
K136	Ethylene dibromide.

N.A.—Waste is hazardous because it fails the test for the characteristic of ignitability, corrosivity, or reactivity.

[46 FR 4619, Jan. 16, 1981, as amended at 46 FR 27477, May 20, 1981; 49 FR 5312, Feb. 10, 1984; 50 FR 2000, Jan. 14, 1985; 50 FR 42942, Oct. 23, 1985; 51 FR 5330, Feb. 13, 1986; 51 FR 6541, Feb. 25, 1986; 51 FR 37729, Oct. 24, 1986]

APPENDIX VIII—HAZARDOUS CONSTITUENTS

Common name	Chemical abstracts name	Chemical abstracts No.	Hazardous waste No.
Acetonitrile	Same	75-05-8	U003
Acetophenone	Ethanone, 1-phenyl-	98-86-2	U004
2-Acetylaminefluarone	Acetamide, N-9H-fluoren-2-yl-	53-96-3	U005
Acetyl chloride	Same	75-36-5	U006
1-Acetyl-2-thiourea	Acetamide, N-(aminothioxomethyl)-	591-08-2	P002
Acrolein	2-Propenal	107-02-8	P003
Acrylamide	2-Propenamide	79-06-1	U007
Acrylonitrile	2-Propenenitrile	107-13-1	U009
Aflatoxins	Same	1402-68-2	
Aldicarb	Propanal, 2-methyl-2-(methylthio)-, O-[(methylamino)carbonyl]oxime.	116-06-3	P070
Aldrin	1,4,5,8-Dimethanonaphthalene, 1,2,3,4,10,10-10-hexachloro-1,4,4a,5,8,8a-hexahydro-,(1alpha,4alpha,4abeta,5alpha,8alpha,8abeta)-.	309-00-2	P004
Allyl alcohol	2-Propen-1-ol	107-18-6	P005
Aluminum phosphide	Same	20859-73-8	P006
4-Aminobiphenyl	[1,1'-Biphenyl]-4-amine	92-67-1	
5-(Aminomethyl)-3-isoxazolol	3(2H)-Isoxazolone, 5-(aminomethyl)-	2763-96-4	P007
4-Aminopyridine	4-Pyridinamine	504-24-5	P008
Amitrole	1H-1,2,4-Triazol-3-amine	61-82-5	U011
Ammonium vanadate	Vanadic acid, ammonium salt	7803-55-6	P119
Aniline	Benzenamine	62-53-3	U012
Antimony	Same	7440-36-0	
Antimony compounds, N.O.S.[1]			
Aramite	Sulfurous acid, 2-chloroethyl 2-[4-(1,1-dimethylethyl)phenoxy]-1-methylethyl ester.	140-57-8	
Arsenic	Same	7440-38-2	
Arsenic compounds, N.O.S.[1]			
Arsenic acid	Arsenic acid H_3AsO_4	7778-39-4	P010
Arsenic pentoxide	Arsenic oxide As_2O_5	1303-28-2	P011
Arsenic trioxide	Arsenic oxide As_2O_3	1327-53-3	P012
Auramine	Benzenamine, 4,4'-carbonimidoylbis[N,N-dimethyl.	492-80-8	U014
Azaserine	L-Serine, diazoacetate (ester)	115-02-6	U015

Common name	Chemical abstracts name	Chemical abstracts No.	Hazardous waste No.
Barium	Same	7440-39-3	
Barium compounds, N.O.S.[1]			
Barium cyanide	Same	542-62-1	P013
Benz[c]acridine	Same	225-51-4	U016
Benz[a]anthracene	Same	56-55-3	U018
Benzal chloride	Benzene, (dichloromethyl)-	98-87-3	U017
Benzene	Same	71-43-2	U019
Benzenearsonic acid	Arsonic acid, phenyl-	98-05-5	
Benzidine	[1,1'-Biphenyl]-4,4'-diamine	92-87-5	U021
Benzo[b]fluoranthene	Benz[e]acephenanthrylene	205-99-2	
Benzo[j]fluoranthene	Same	205-82-3	
Benzo[a]pyrene	Same	50-32-8	U022
p-Benzoquinone	2,5-Cyclohexadiene-1,4-dione	106-51-4	U197
Benzotrichloride	Benzene, (trichloromethyl)-	98-07-7	U023
Benzyl chloride	Benzene, (chloromethyl)-	100-44-7	P028
Beryllium	Same	7440-41-7	P015
Beryllium compounds, N.O.S.[1]			
Bromoacetone	2-Propanone, 1-bromo-	598-31-2	P017
Bromoform	Methane, tribromo-	75-25-2	U225
4-Bromophenyl phenyl ether	Benzene, 1-bromo-4-phenoxy-	101-55-3	U030
Brucine	Strychnidin-10-one, 2,3-dimethoxy-	357-57-3	P018
Butyl benzyl phthalate	1,2-Benzenedicarboxylic acid, butyl phenylmethyl ester.	85-68-7	
Cacodylic acid	Arsinic acid, dimethyl-	75-60-5	U136
Cadmium	Same	7440-43-9	
Cadmium compounds, N.O.S.[1]			
Calcium chromate	Chromic acid H_2CrO_4, calcium salt	13765-19-0	U032
Calcium cyanide	Calcium cyanide $Ca(CN)_2$	592-01-8	P021
Carbon disulfide	Same	75-15-0	P022
Carbon oxyfluoride	Carbonic difluoride	353-50-4	U033
Carbon tetrachloride	Methane, tetrachloro-	56-23-5	U211
Chloral	Acetaldehyde, trichloro-	75-87-6	U034
Chlorambucil	Benzenebutanoic acid, 4-[bis(2-chloroethyl)amino]-.	305-03-3	U035
Chlordane	4,7-Methano-1H-indene, 1,2,4,5,6,7,8,8-octachloro-2,3,3a,4,7,7a-hexahydro-.	57-74-9	U036
Chlordane (alpha and gamma isomers)			U036
Chlorinated benzenes, N.O.S.[1]			
Chlorinated ethane, N.O.S.[1]			
Chlorinated fluorocarbons, N.O.S.[1]			
Chlorinated naphthalene, N.O.S.[1]			
Chlorinated phenol, N.O.S.[1]			
Chlornaphazin	Naphthalenamine, N,N'-bis(2-chloroethyl)-	494-03-1	U026
Chloroacetaldehyde	Acetaldehyde, chloro-	107-20-0	P023
Chloroalkyl ethers, N.O.S.[1]			
p-Chloroaniline	Benzenamine, 4-chloro-	106-47-8	P024
Chlorobenzene	Benzene, chloro-	108-90-7	U037
Chlorobenzilate	Benzeneacetic acid, 4-chloro-alpha-(4-chlorophenyl)-alpha-hydroxy-, ethyl ester.	510-15-6	U038
p-Chloro-m-cresol	Phenol, 4-chloro-3-methyl-	59-50-7	U039
2-Chloroethyl vinyl ether	Ethene, (2-chloroethoxy)-	110-75-8	U042
Chloroform	Methane, trichloro-	67-66-3	U044
Chloromethyl methyl ether	Methane, chloromethoxy-	107-30-2	U046
beta-Chloronaphthalene	Naphthalene, 2-chloro-	91-58-7	U047
o-Chlorophenol	Phenol, 2-chloro-	95-57-8	U048
1-(o-Chlorophenyl)thiourea	Thiourea, (2-chlorophenyl)-	5344-82-1	P026
Chloroprene	1,3-Butadiene, 2-chloro-	126-99-8	
3-Chloropropionitrile	Propanenitrile, 3-chloro-	542-76-7	P027
Chromium	Same	7440-47-3	
Chromium compounds, N.O.S.[1]			
Chrysene	Same	218-01-9	U050
Citrus red No. 2	2-Naphthalenol, 1-[(2,5-dimethoxyphenyl)azo]-.	6358-53-8	
Coal tar creosote	Same	8007-45-2	
Copper cyanide	Copper cyanide CuCN	544-92-3	P029
Creosote	Same		U051
Cresol (Cresylic acid)	Phenol, methyl-	1319-77-3	U052
Crotonaldehyde	2-Butenal	4170-30-3	U053
Cyanides (soluble salts and complexes) N.O.S.[1]			P030
Cyanogen	Ethanedinitrile	460-19-5	P031
Cyanogen bromide	Cyanogen bromide (CN)Br	506-68-3	U246

Common name	Chemical abstracts name	Chemical abstracts No.	Hazardous waste No.
Cyanogen chloride	Cyanogen chloride (CN)Cl	506-77-4	P033
Cycasin	beta-D-Glucopyranoside, (methyl-ONNazoxy)methyl.	14901-08-7	
2-Cyclohexyl-4,6-dinitrophenol	Phenol, 2-cyclohexyl-4,6-dinitro-	131-89-5	P034
Cyclophosphamide	2H-1,3,2-Oxazaphosphorin-2-amine, N,N-bis(2-chloroethyl)tetrahydro-, 2-oxide.	50-18-0	U058
2,4-D	Acetic acid, (2,4-dichlorophenoxy)-	94-75-7	U240
2,4-D, salts, esters			U240
Daunomycin	5,12-Naphthacenedione, 8-acetyl-10-[(3-amino-2,3,6-trideoxy-alpha-L-lyxohexopyranosyl)oxy]-7,8,9,10-tetrahydro-6,8,11-trihydroxy-1-methoxy-, (8S-cis)-.	20830-81-3	U059
DDD	Benzene, 1,1'-(2,2-dichloroethylidene)bis[4-chloro-.	72-54-8	U060
DDE	Benzene, 1,1'-(dichloroethenylidene)bis[4-chloro-.	72-55-9	
DDT	Benzene, 1,1'-(2,2,2-trichloroethylidene)bis[4-chloro-.	50-29-3	U061
Diallate	Carbamothioic acid, bis(1-methylethyl)-, S-(2,3-dichloro-2-propenyl) ester.	2303-16-4	U062
Dibenz[a,h]acridine	Same	226-36-8	
Dibenz[a,j]acridine	Same	224-42-0	
Dibenz[a,h]anthracene	Same	53-70-3	U063
7H-Dibenzo[c,g]carbazole	Same	194-59-2	
Dibenzo[a,e]pyrene	Naphtho[1,2,3,4-def]chrysene	192-65-4	
Dibenzo[a,h]pyrene	Dibenzo[b,def]chrysene	189-64-0	
Dibenzo[a,i]pyrene	Benzo[rst]pentaphene	189-55-9	U064
1,2-Dibromo-3-chloropropane	Propane, 1,2-dibromo-3-chloro-	96-12-8	U066
Dibutyl phthalate	1,2-Benzenedicarboxylic acid, dibutyl ester	84-74-2	U069
o-Dichlorobenzene	Benzene, 1,2-dichloro-	95-50-1	U070
m-Dichlorobenzene	Benzene, 1,3-dichloro-	541-73-1	U071
p-Dichlorobenzene	Benzene, 1,4-dichloro-	106-46-7	U072
Dichlorobenzene, N.O.S.[1]	Benzene, dichloro-	25321-22-6	
3,3'-Dichlorobenzidine	[1,1'-Biphenyl]-4,4'-diamine, 3,3'-dichloro-	91-94-1	U073
1,4-Dichloro-2-butene	2-Butene, 1,4-dichloro-	764-41-0	U074
Dichlorodifluoromethane	Methane, dichlorodifluoro-	75-71-8	U075
Dichloroethylene, N.O.S.[1]	Dichloroethylene	25323-30-2	
1,1-Dichloroethylene	Ethene, 1,1-dichloro-	75-35-4	U078
1,2-Dichloroethylene	Ethene, 1,2-dichloro-, (E)-	156-60-5	U079
Dichloroethyl ether	Ethane, 1,1'-oxybis[2-chloro-	111-44-4	U025
Dichloroisopropyl ether	Propane, 2,2'-oxybis[2-chloro-	108-60-1	U027
Dichloromethoxy ethane	Ethane, 1,1'-[methylenebis(oxy)]bis[2-chloro-.	111-91-1	U024
Dichloromethyl ether	Methane, oxybis[chloro-	542-88-1	P016
2,4-Dichlorophenol	Phenol, 2,4-dichloro-	120-83-2	U081
2,6-Dichlorophenol	Phenol, 2,6-dichloro-	87-65-0	U082
Dichlorophenylarsine	Arsonous dichloride, phenyl-	696-28-6	P036
Dichloropropane, N.O.S.[1]	Propane, dichloro-	26638-19-7	
Dichloropropanol, N.O.S.[1]	Propanol, dichloro-	26545-73-3	
Dichloropropene, N.O.S.[1]	1-Propene, dichloro-	26952-23-8	
1,3-Dichloropropene	1-Propene, 1,3-dichloro-	542-75-6	U084
Dieldrin	2,7:3,6-Dimethanonaphth[2,3-b]oxirene, 3,4,5,6,9,9-hexachloro-1a,2,2a,3,6,6a,7,7a-octahydro-, (1aalpha,2beta,2aalpha,3beta,6beta,6aalpha,7beta,7aalpha)-.	60-57-1	P037
1,2:3,4-Diepoxybutane	2,2'-Bioxirane	1464-53-5	U085
Diethylarsine	Arsine, diethyl-	692-42-2	P038
1,4-Diethyleneoxide	1,4-Dioxane	123-91-1	U108
Diethylhexyl phthalate	1,2-Benzenedicarboxylic acid, bis(2-ethylhexyl) ester.	117-81-7	U028
N,N'-Diethylhydrazine	Hydrazine, 1,2-diethyl-	1615-80-1	U086
O,O-Diethyl S-methyl dithiophosphate	Phosphorodithioic acid, O,O-diethyl S-methyl ester.	3288-58-2	U087
Diethyl-p-nitrophenyl phosphate	Phosphoric acid, diethyl 4-nitrophenyl ester	311-45-5	P041
Diethyl phthalate	1,2-Benzenedicarboxylic acid, diethyl ester	84-66-2	U088
O,O-Diethyl O-pyrazinyl phosphoro- thioate	Phosphorothioic acid, O,O-diethyl O-pyrazinyl ester.	297-97-2	P040
Diethylstilbesterol	Phenol, 4,4'-(1,2-diethyl-1,2-ethenediyl)bis-, (E)-.	56-53-1	U089
Dihydrosafrole	1,3-Benzodioxole, 5-propyl-	94-58-6	U090
Diisopropylfluorophosphate (DFP)	Phosphorofluoridic acid, bis(1-methylethyl) ester.	55-91-4	P043

Common name	Chemical abstracts name	Chemical abstracts No.	Hazardous waste No.
Dimethoate	Phosphorodithioic acid, O,O-dimethyl S-[2-(methylamino)-2-oxoethyl] ester.	60-51-5	P044
3,3'-Dimethoxybenzidine	[1,1'-Biphenyl]-4,4'-diamine, 3,3'-dimethoxy-	119-90-4	U091
p-Dimethylaminoazobenzene	Benzenamine, N,N-dimethyl-4-(phenylazo)	60-11-7	U093
7,12-Dimethylbenz[a]anthracene	Benz[a]anthracene, 7,12-dimethyl-	57-97-6	U094
3,3'-Dimethylbenzidine	[1,1'-Biphenyl]-4,4'-diamine, 3,3'-dimethyl-	119-93-7	U095
Dimethylcarbamoyl chloride	Carbamic chloride, dimethyl-	79-44-7	U097
1,1-Dimethylhydrazine	Hydrazine, 1,1-dimethyl-	57-14-7	U098
1,2-Dimethylhydrazine	Hydrazine, 1,2-dimethyl-	540-73-8	U099
alpha,alpha-Dimethylphenethylamine	Benzeneethanamine, alpha,alpha-dimethyl-	122-09-8	P046
2,4-Dimethylphenol	Phenol, 2,4-dimethyl-	105-67-9	U101
Dimethyl phthalate	1,2-Benzenedicarboxylic acid, dimethyl ester	131-11-3	U102
Dimethyl sulfate	Sulfuric acid, dimethyl ester	77-78-1	U103
Dinitrobenzene, N.O.S.[1]	Benzene, dinitro-	25154-54-5	
4,6-Dinitro-o-cresol	Phenol, 2-methyl-4,6-dinitro-	534-52-1	P047
4,6-Dinitro-o-cresol salts			P047
2,4-Dinitrophenol	Phenol, 2,4-dinitro-	51-28-5	P048
2,4-Dinitrotoluene	Benzene, 1-methyl-2,4-dinitro-	121-14-2	U105
2,6-Dinitrotoluene	Benzene, 2-methyl-1,3-dinitro-	606-20-2	U106
Dinoseb	Phenol, 2-(1-methylpropyl)-4,6-dinitro-	88-85-7	P020
Di-n-octyl phthalate	1,2-Benzenedicarboxylic acid, dioctyl ester	117-84-0	U017
Diphenylamine	Benzenamine, N-phenyl-	122-39-4	
1,2-Diphenylhydrazine	Hydrazine, 1,2-diphenyl-	122-66-7	U109
Di-n-propylnitrosamine	1-Propanamine, N-nitroso-N-propyl-	621-64-7	U111
Disulfoton	Phosphorodithioic acid, O,O-diethyl S-[2-(ethylthio)ethyl] ester.	298-04-4	P039
Dithiobiuret	Thioimidodicarbonic diamide [$(H_2N)C(S)]_2NH$.	541-53-7	P049
Endosulfan	6,9-Methano-2,4,3-benzodioxathiepin, 6,7,8,9,10,10-hexachloro-1,5,5a,6,9,9a-hexahydro-, 3-oxide.	115-29-7	P050
Endothall	7-Oxabicyclo[2.2.1]heptane-2,3-dicarboxylic acid.	145-73-3	P088
Endrin	2,7:3,6-Dimethanonaphth[2,3-b]oxirene, 3,4,5,6,9,9-hexachloro-1a,2,2a,3,6,6a,7,7a-octa-hydro-, (1aalpha,2beta,2abeta,3alpha,6alpha, 6abeta,7beta,7aalpha)-.	72-20-8	P051
Endrin metabolites			P051
Epichlorohydrin	Oxirane, (chloromethyl)-	106-89-8	U041
Epinephrine	1,2-Benzenediol, 4-[1-hydroxy-2-(methylamino)ethyl]-, (R)-.	51-43-4	P042
Ethyl carbamate (urethane)	Carbamic acid, ethyl ester	51-79-6	U238
Ethyl cyanide	Propanenitrile	107-12-0	P101
Ethylenebisdithiocarbamic acid	Carbamodithioic acid, 1,2-ethanediylbis-	111-54-6	U114
Ethylenebisdithiocarbamic acid, salts and esters.			U114
Ethylene dibromide	Ethane, 1,2-dibromo-	106-93-4	U067
Ethylene dichloride	Ethane, 1,2-dichloro-	107-06-2	U077
Ethylene glycol monoethyl ether	Ethanol, 2-ethoxy-	110-80-5	U359
Ethyleneimine	Aziridine	151-56-4	P054
Ethylene oxide	Oxirane	75-21-8	U115
Ethylenethiourea	2-Imidazolidinethione	96-45-7	U116
Ethylidene dichloride	Ethane, 1,1-dichloro-	75-34-3	U076
Ethyl methacrylate	2-Propenoic acid, 2-methyl-, ethyl ester	97-63-2	U118
Ethyl methanesulfonate	Methanesulfonic acid, ethyl ester	62-50-0	U119
Famphur	Phosphorothioic acid, O-[4-[(dimethylamino)sulfonyl]phenyl] O,O-dimethyl ester.	52-85-7	P097
Fluoranthene	Same	206-44-0	U120
Fluorine	Same	7782-41-4	P056
Fluoroacetamide	Acetamide, 2-fluoro-	640-19-7	P057
Fluoroacetic acid, sodium salt	Acetic acid, fluoro-, sodium salt	62-74-8	P058
Formaldehyde	Same	50-00-0	U122
Formic acid	Same	64-18-6	U123
Glycidylaldehyde	Oxiranecarboxyaldehyde	765-34-4	U126
Halomethanes, N.O.S.[1]			
Heptachlor	4,7-Methano-1H-indene, 1,4,5,6,7,8,8-heptachloro-3a,4,7,7a-tetrahydro-.	76-44-8	P059
Heptachlor epoxide	2,5-Methano-2H-indeno[1,2-b]oxirene, 2,3,4,5,6,7,7-heptachloro-1a,1b,5,5a,6,6a-hexa- hydro-, (1aalpha,1bbeta,2alpha,5alpha,5abeta, 6beta,6aalpha)-	1024-57-3	

Common name	Chemical abstracts name	Chemical abstracts No.	Hazardous waste No.
Heptachlor epoxide (alpha, beta, and gamma isomers).			
Hexachlorobenzene	Benzene, hexachloro-	118-74-1	U127
Hexachlorobutadiene	1,3-Butadiene, 1,1,2,3,4,4-hexachloro-	87-68-3	U128
Hexachlorocyclopentadiene	1,3-Cyclopentadiene, 1,2,3,4,5,5-hexachloro-	77-47-4	U130
Hexachlorodibenzo-p-dioxins			
Hexachlorodibenzofurans			
Hexachloroethane	Ethane, hexachloro-	67-72-1	U131
Hexachlorophene	Phenol, 2,2'-methylenebis[3,4,6-trichloro-	70-30-4	U132
Hexachloropropene	1-Propene, 1,1,2,3,3,3-hexachloro-	1888-71-7	U243
Hexaethyl tetraphosphate	Tetraphosphoric acid, hexaethyl ester	757-58-4	P062
Hydrazine	Same	302-01-2	U133
Hydrogen cyanide	Hydrocyanic acid	74-90-8	P063
Hydrogen fluoride	Hydrofluoric acid	7664-39-3	U134
Hydrogen sulfide	Hydrogen sulfide H_2S	7783-06-4	U135
Indeno[1,2,3-cd]pyrene	Same	193-39-5	U137
Iron dextran	Same	9004-66-4	U139
Isobutyl alcohol	1-Propanol, 2-methyl-	78-83-1	U140
Isodrin	1,4,5,8-Dimethanonaphthalene, 1,2,3,4,10,10-hexachloro-1,4,4a,5,8,8a-hexahydro-, (1alpha,4alpha,4abeta,5beta,8beta,8abeta)-	465-73-6	P060
Isosafrole	1,3-Benzodioxole, 5-(1-propenyl)-	120-58-1	U141
Kepone	1,3,4-Metheno-2H-cyclobuta[cd]pentalen-2-one, 1,1a,3,3a,4,5,5,5a,5b,6-decachlorooctahydro-.	143-50-0	U142
Lasiocarpine	2-Butenoic acid, 2-methyl-,7-[[2,3-dihydroxy-2-(1-methoxyethyl)-3-methyl-1-oxobutoxy]methyl]-2,3,5,7a-tetrahydro-1H-pyrrolizin-1-yl ester, [1S-[1alpha(Z),7(2S*,3R*),7aalpha]]-	303-34-1	4143
Lead	Same	7439-92-1	
Lead compounds, N.O.S.[1]			
Lead acetate	Acetic acid, lead(2+) salt	301-04-2	U144
Lead phosphate	Phosphoric acid, lead(2+) salt (2:3)	7446-27-7	U145
Lead subacetate	Lead, bis(acetato-O)tetrahydroxytri-	1335-32-6	U146
Lindane	Cyclohexane, 1,2,3,4,5,6-hexachloro-, (1alpha,2alpha,3beta,4alpha,5alpha,6beta)-.	58-89-9	U129
Maleic anhydride	2,5-Furandione	108-31-6	U147
Maleic hydrazide	3,6-Pyridazinedione, 1,2-dihydro-	123-33-1	U148
Malononitrile	Propanedinitrile	109-77-3	U149
Melphalan	L-Phenylalanine, 4-[bis(2-chloroethyl)aminol]-.	148-82-3	U150
Mercury	Same	7439-97-6	U151
Mercury compounds, N.O.S.[1]			
Mercury fulminate	Fulminic acid, mercury(2+) salt	628-86-4	P065
Methacrylonitrile	2-Propenenitrile, 2-methyl-	126-98-7	U152
Methapyrilene	1,2-Ethanediamine, N,N-dimethyl-N'-2-pyridinyl-N'-(2-thienylmethyl)-.	91-80-5	U155
Methomyl	Ethanimidothioic acid, N-[[(methylamino)carbonyl]oxy]-, methyl ester.	16752-77-5	P066
Methoxychlor	Benzene, 1,1'-(2,2,2-trichloroethylidene)bis[4-methoxy-.	72-43-5	U247
Methyl bromide	Methane, bromo-	74-83-9	U029
Methyl chloride	Methane, chloro-	74-87-3	U045
Methyl chlorocarbonate	Carbonochloridic acid, methyl ester	79-22-1	U156
Methyl chloroform	Ethane, 1,1,1-trichloro-	71-55-6	U226
3-Methylcholanthrene	Benz[j]aceanthrylene, 1,2-dihydro-3-methyl-	56-49-5	U157
4,4'-Methylenebis(2-chloroaniline)	Benzenamine, 4,4'-methylenebis[2-chloro-	101-14-4	U158
Methylene bromide	Methane, dibromo-	74-95-3	U068
Methylene chloride	Methane, dichloro-	75-09-2	U080
Methyl ethyl ketone (MEK)	2-Butanone	78-93-3	U159
Methyl ethyl ketone peroxide	2-Butanone, peroxide	1338-23-4	U160
Methyl hydrazine	Hydrazine, methyl-	60-34-4	P068
Methyl iodide	Methane, iodo-	74-88-4	U138
Methyl isocyanate	Methane, isocyanato-	624-83-9	P064
2-Methyllactonitrile	Propanenitrile, 2-hydroxy-2-methyl-	75-86-5	P069
Methyl methacrylate	2-Propenoic acid, 2-methyl-, methyl ester	80-62-6	U162
Methyl methanesulfonate	Methanesulfonic acid, methyl ester	66-27-3	
Methyl parathion	Phosphorothioic acid, O,O-dimethyl O-(4-nitrophenyl) ester.	298-00-0	P071

Common name	Chemical abstracts name	Chemical abstracts No.	Hazardous waste No.
Methylthiouracil	4(1H)-Pyrimidinone, 2,3-dihydro-6-methyl-2-thioxo-.	56-04-2	U164
Mitomycin C	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-, [1aS-(1aalpha,8beta,8aalpha,8balpha)]-.	50-07-7	U010
MNNG	Guanidine, N-methyl-N'-nitro-N-nitroso-	70-25-7	U163
Mustard gas	Ethane, 1,1'-thiobis[2-chloro-	505-60-2	
Naphthalene	Same	91-20-3	U165
1,4-Naphthoquinone	1,4-Naphthalenedione	130-15-4	U166
alpha-Naphthylamine	1-Naphthalenamine	134-32-7	U167
beta-Naphthylamine	2-Naphthalenamine	91-59-8	U168
alpha-Naphthylthiourea	Thiourea, 1-naphthalenyl-	86-88-4	P072
Nickel	Same	7440-02-0	
Nickel compounds, N.O.S.[1]			
Nickel carbonyl	Nickel carbonyl $Ni(CO)_4$, (T-4)-	13463-39-3	P073
Nickel cyanide	Nickel cyanide $Ni(CN)_2$	557-19-7	P074
Nicotine	Pyridine, 3-(1-methyl-2-pyrrolidinyl)-, (S)-	54-11-5	P075
Nicotine salts			P075
Nitric oxide	Nitrogen oxide NO	10102-43-9	P076
p-Nitroaniline	Benzenamine, 4-nitro-	100-01-6	P077
Nitrobenzene	Benzene, nitro-	98-95-3	U169
Nitrogen dioxide	Nitrogen oxide NO_2	10102-44-0	P078
Nitrogen mustard	Ethanamine, 2-chloro-N-(2-chloroethyl)-N-methyl-.	51-75-2	
Nitrogen mustard, hydrochloride salt			
Nitrogen mustard N-oxide	Ethanamine, 2-chloro-N-(2-chloroethyl)-N-methyl-, N-oxide.	126-85-2	
Nitrogen mustard, N-oxide, hydro- chloride salt.			
Nitroglycerin	1,2,3-Propanetriol, trinitrate	55-63-0	P081
p-Nitrophenol	Phenol, 4-nitro-	100-02-7	U170
2-Nitropropane	Propane, 2-nitro-	79-46-9	U171
Nitrosamines, N.O.S.[1]		35576-91-1D	
N-Nitrosodi-n-butylamine	1-Butanamine, N-butyl-N-nitroso-	924-16-3	U172
N-Nitrosodiethanolamine	Ethanol, 2,2'-(nitrosoimino)bis-	1116-54-7	U173
N-Nitrosodiethylamine	Ethanamine, N-ethyl-N-nitroso-	55-18-5	U174
N-Nitrosodimethylamine	Methanamine, N-methyl-N-nitroso-	62-75-9	P082
N-Nitroso-N-ethylurea	Urea, N-ethyl-N-nitroso-	759-73-9	U176
N-Nitrosomethylethylamine	Ethanamine, N-methyl-N-nitroso-	10595-95-6	
N-Nitroso-N-methylurea	Urea, N-methyl-N-nitroso-	684-93-5	U177
N-Nitroso-N-methylurethane	Carbamic acid, methylnitroso-, ethyl ester	615-53-2	U178
N-Nitrosomethylvinylamine	Vinylamine, N-methyl-N-nitroso-	4549-40-0	P084
N-Nitrosomorpholine	Morpholine, 4-nitroso-	59-89-2	
N-Nitrosonornicotine	Pyridine, 3-(1-nitroso-2-pyrrolidinyl)-, (S)-	16543-55-8	
N-Nitrosopiperidine	Piperidine, 1-nitroso-	100-75-4	U179
N-Nitrosopyrrolidine	Pyrrolidine, 1-nitroso-	930-55-2	U180
N-Nitrososarcosine	Glycine, N-methyl-N-nitroso-	13256-22-9	
5-Nitro-o-toluidine	Benzenamine, 2-methyl-5-nitro-	99-55-8	U181
Octamethylpyrophosphoramide	Diphosphoramide, octamethyl-	152-16-9	P085
Osmium tetroxide	Osmium oxide OsO_4, (T-4)-	20816-12-0	P087
Paraldehyde	1,3,5-Trioxane, 2,4,6-trimethyl-	123-63-7	U182
Parathion	Phosphorothioic acid, O,O-diethyl O-(4-nitrophenyl) ester.	56-38-2	P089
Pentachlorobenzene	Benzene, pentachloro-	608-93-5	U183
Pentachlorodibenzo-p-dioxins			
Pentachlorodibenzofurans			
Pentachloroethane	Ethane, pentachloro-	76-01-7	U184
Pentachloronitrobenzene (PCNB)	Benzene, pentachloronitro-	82-68-8	U185
Pentachlorophenol	Phenol, pentachloro-	87-86-5	See F027
Phenacetin	Acetamide, N-(4-ethoxyphenyl)-	62-44-2	U187
Phenol	Same	108-95-2	U188
Phenylenediamine	Benzenediamine	25265-76-3	
Phenylmercury acetate	Mercury, (acetato-O)phenyl-	62-38-4	P092
Phenylthiourea	Thiourea, phenyl-	103-85-5	P093
Phosgene	Carbonic dichloride	75-44-5	P095
Phosphine	Same	7803-51-2	P096
Phorate	Phosphorodithioic acid, O,O-diethyl S-[(ethylthio)methyl] ester.	298-02-2	P094
Phthalic acid esters, N.O.S.[1]			

Common name	Chemical abstracts name	Chemical abstracts No.	Hazardous waste No.
Phthalic anhydride	1,3-Isobenzofurandione	85-44-9	U190
2-Picoline	Pyridine, 2-methyl-	109-06-8	U191
Polychlorinated biphenyls, N.O.S.[1]			
Potassium cyanide	Potassium cyanide K(CN)	151-50-8	P098
Potassium silver cyanide	Argentate(1-), bis(cyano-C)-, potassium	506-61-6	P099
Pronamide	Benzamide, 3,5-dichloro-N-(1,1-dimethyl-2-propynyl)-.	23950-58-5	U192
1,3-Propane sultone	1,2-Oxathiolane, 2,2-dioxide	1120-71-4	U193
n-Propylamine	1-Propanamine	107-10-8	U194
Propargyl alcohol	2-Propyn-1-ol	107-19-7	P102
Propylene dichloride	Propane, 1,2-dichloro-	78-87-5	U083
1,2-Propylenimine	Aziridine, 2-methyl-	75-55-8	P067
Propylthiouracil	4(1H)-Pyrimidinone, 2,3-dihydro-6-propyl-2-thioxo-.	51-52-5	
Pyridine	Same	110-86-1	U196
Reserpine	Yohimban-16-carboxylic acid, 11,17-dimethoxy-18-[(3,4,5-trimethoxybenzoyl)oxy]-smethyl ester, (3beta,16beta,17alpha,18beta,20alpha)-.	50-55-5	U200
Resorcinol	1,3-Benzenediol	108-46-3	U201
Saccharin	1,2-Benzisothiazol-3(2H)-one, 1,1-dioxide	81-07-2	U202
Saccharin salts			U202
Safrole	1,3-Benzodioxole, 5-(2-propenyl)-	94-59-7	U203
Selenium	Same	7782-49-2	
Selenium compounds, N.O.S.[1]			
Selenium dioxide	Selenious acid	7783-00-8	U204
Selenium sulfide	Selenium sulfide SeS_2	7488-56-4	U205
Selenourea	Same	630-10-4	P103
Silver	Same	7440-22-4	
Silver compounds, N.O.S.[1]			
Silver cyanide	Silver cyanide Ag(CN)	506-64-9	P104
Silvex (2,4,5-TP)	Propanoic acid, 2-(2,4,5-trichlorophenoxy)-	93-72-1	See F027
Sodium cyanide	Sodium cyanide Na(CN)	143-33-9	P106
Streptozotocin	D-Glucose, 2-deoxy-2-[[(methylnitrosoamino)carbonyl]amino]-.	18883-66-4	U206
Strontium sulfide	Strontium sulfide SrS	1314-96-1	P107
Strychnine	Strychnidin-10-one	57-24-9	P108
Strychnine salts			P108
TCDD	Dibenzo[b,e][1,4]dioxin, 2,3,7,8-tetrachloro-	1746-01-6	
1,2,4,5-Tetrachlorobenzene	Benzene, 1,2,4,5-tetrachloro-	95-94-3	U207
Tetrachlorodibenzo-p-dioxins			
Tetrachlorodibenzofurans			
Tetrachloroethane, N.O.S.[1]	Ethane, tetrachloro-, N.O.S.	25322-20-7	
1,1,1,2-Tetrachloroethane	Ethane, 1,1,1,2-tetrachloro-	630-20-6	U208
1,1,2,2-Tetrachloroethane	Ethane, 1,1,2,2-tetrachloro-	79-34-5	U209
Tetrachloroethylene	Ethene, tetrachloro-	127-18-4	U210
2,3,4,6-Tetrachlorophenol	Phenol, 2,3,4,6-tetrachloro-	58-90-2	See F027
Tetraethyldithiopyrophosphate	Thiodiphosphoric acid, tetraethyl ester	3689-24-5	P109
Tetraethyl lead	Plumbane, tetraethyl-	78-00-2	P110
Tetraethyl pyrophosphate	Diphosphoric acid, tetraethyl ester	107-49-3	P111
Tetranitromethane	Methane, tetranitro-	509-14-8	P112
Thallium	Same	7440-28-0	
Thallium compounds, N.O.S.[1]			
Thallic oxide	Thallium oxide Tl_2O_3	1314-32-5	P113
Thallium(I) acetate	Acetic acid, thallium(1+) salt	563-68-8	U214
Thallium(I) carbonate	Carbonic acid, dithallium(1+) salt	6533-73-9	U215
Thallium(I) chloride	Thallium chloride TlCl	7791-12-0	U216
Thallium(I) nitrate	Nitric acid, thallium(1+) salt	10102-45-1	U217
Thallium selenite	Selenious acid, dithallium(1+) salt	12039-52-0	P114
Thallium(I) sulfate	Sulfuric acid, dithallium(1+) salt	7446-18-6	P115
Thioacetamide	Ethanethioamide	62-55-5	U218
Thiofanox	2-Butanone, 3,3-dimethyl-1-(methylthio)-, 0-[(methylamino)carbonyl] oxime.	39196-18-4	P045
Thiomethanol	Methanethiol	74-93-1	U153
Thiophenol	Benzenethiol	108-98-5	P014
Thiosemicarbazide	Hydrazinecarbothioamide	79-19-6	P116
Thiourea	Same	62-56-6	U219
Thiram	Thioperoxydicarbonic diamide $[(H_2N)C(S)]_2S_2$, tetramethyl-.	137-26-8	U244
Toluene	Benzene, methyl-	108-88-3	U220
Toluenediamine	Benzenediamine, ar-methyl-	25376-45-8	U221
Toluene-2,4-diamine	1,3-Benzenediamine, 4-methyl-	95-80-7	

Common name	Chemical abstracts name	Chemical abstracts No.	Hazardous waste No.
Toluene-2,6-diamine	1,3-Benzenediamine, 2-methyl-	823-40-5	
Toluene-3,4-diamine	1,2-Benzenediamine, 4-methyl-	496-72-0	
Toluene diisocyanate	Benzene, 1,3-diisocyanatomethyl-	26471-62-5	U223
o-Toluidine	Benzenamine, 2-methyl-	95-53-4	U328
o-Toluidine hydrochloride	Benzenamine, 2-methyl-, hydrochloride	636-21-5	U222
p-Toluidine	Benzenamine, 4-methyl-	106-49-0	U353
Toxaphene	Same	8001-35-2	P123
1,2,4-Trichlorobenzene	Benzene, 1,2,4-trichloro-	120-82-1	
1,1,2-Trichloroethane	Ethane, 1,1,2-trichloro-	79-00-5	U227
Trichloroethylene	Ethene, trichloro-	79-01-6	U228
Trichloromethanethiol	Methanethiol, trichloro-	75-70-7	P118
Trichloromonofluoromethane	Methane, trichlorofluoro-	75-69-4	U121
2,4,5-Trichlorophenol	Phenol, 2,4,5-trichloro-	95-95-4	See F027
2,4,6-Trichlorophenol	Phenol, 2,4,6-trichloro-	88-06-2	See F027
2,4,5-T	Acetic acid, (2,4,5-trichlorophenoxy)-	93-76-5	See F027
Trichloropropane, N.O.S.[1]		25735-29-9	
1,2,3-Trichloropropane	Propane, 1,2,3-trichloro-	96-18-4	
O,O,O-Triethyl phosphorothioate	Phosphorothioic acid, O,O,O-triethyl ester	126-68-1	
1,3,5-Trinitrobenzene	Benzene, 1,3,5-trinitro-	99-35-4	U234
Tris(1-azinidinyl)phosphine sulfide	Aziridine, 1,1',1''-phosphinothioylidynetris-	52-24-4	
Tris(2,3-dibromopropyl) phosphate	1-Propanol, 2,3-dibromo-, phosphate (3:1)	126-72-7	U235
Trypan blue	2,7-Naphthalenedisulfonic acid, 3,3'-[(3,3'-dimethyl[1,1'-biphenyl]-4,4'-diyl)bis(azo)]-bis[5-amino-4-hydroxy-, tetrasodium salt.	72-57-1	U236
Uracil mustard	2,4-(1H,3H)-Pyrimidinedione, 5-[bis(2-chloroethyl)amino]-.	66-75-1	U237
Vanadium pentoxide	Vanadium oxide V_2O_5	1314-62-1	P120
Vinyl chloride	Ethene, chloro-	75-01-4	U043
Warfarin	2H-1-Benzopyran-2-one, 4-hydroxy-3-(3-oxo-1-phenylbutyl)-, when present at concentrations less than 0.3%.	81-81-2	U248
Warfarin	2H-1-Benzopyran-2-one, 4-hydroxy-3-(3-oxo-1-phenylbutyl)-, when present at concentrations greater than 0.3%.	81-81-2	P001
Warfarin salts, when present at concentrations less than 0.3%.			U248
Warfarin salts, when present at concentrations greater than 0.3%.			P001
Zinc cyanide	Zinc cyanide $Zn(CN)_2$	557-21-1	P121
Zinc phosphide	Zinc phosphide Zn_3P_2, when present at concentrations greater than 10%.	1314-84-7	P122
Zinc phosphide	Zinc phosphide Zn_3P_2, when present at concentrations of 10% or less.	1314-84-7	U249

[1] The abbreviation N.O.S. (not otherwise specified) signifies those members of the general class not specifically listed by name in this appendix.

[53 FR 13388 Apr. 22, 1988]

APPENDIX IX—WASTES EXCLUDED UNDER §§ 260.20 AND 260.22

TABLE 1—WASTES EXCLUDED FROM NON-SPECIFIC SOURCES

Facility	Address	Waste description
Arco Building Products.	Sugarcreek, Ohio.	Dewatered wastewater treatment sludge (EPA Hazardous Waste No. F019) generated from the chemical conversion coating of aluminum after August 15, 1986.
Arco Chemical Co.	Miami, FL	Dewatered wastewater treatment sludge (EPA Hazardous Waste No. FO19) generated from the chemical conversion coating of aluminum after April 29, 1986.
BBC Brown Boveri, Inc.	Sanford, FL	Dewatered Wastewater treatment sludges (EPA Hazardous Waste No. F006) generated from electroplating operations after October 17, 1986.
Bommer Industries Inc..	Landrum, SC	Wastewater treatment sludges (EPA Hazardous Waste No. F006) generated from their electroplating operations and contained in evaporation ponds #1 and #2 on August 12, 1987.

TABLE 1—WASTES EXCLUDED FROM NON-SPECIFIC SOURCES—Continued

Facility	Address	Waste description
Capitol Products Corp.	Harrisburg, PA	Dewatered wastewater treatment slugdges (EPA Hazardous Waste No. FO19) generated from the chemical conversion coating of aluminum after September 12, 1986.
Capitol Products Corporation.	Kentland, IN	Dewatered wastewater treatment sludges (EPA Hazardous Waste No. F019) generated from the chemical conversion coating of aluminum after November 17, 1986.
Chamberlian-Featherlite, Inc.	Hot Springs, AR.	Dewatered wastewater treatment sludges (EPA Hazardous Waste No. F019) generated from the chemical conversion coating of aluminum after July 16, 1986.
Cincinnati Metropolitan Sewer District.	Cincinnati, OH	Sluiced bottom ash (approximately 25,000 cubic yards) contained in the South Lagoon, on September 13, 1985 which contains EPA Hazardous Waste Nos. F001, F002, F003, F004, and F005.
Continental Can Co.	Olympia, WA	Dewatered wastewater treatment sludges (DPA Hazardous Waste No. FO19) generated from the chemical conversion coating of aluminum after September 12, 1986.
Dover Corp., Norris Div.	Tulsa, OK	Dewatered wastewater treatment sludge (EPA Hazardous Waste No. FO06) generated from their electroplating operations after April 29, 1986.
EPA's Mobile Incineration System.	Denney Farm Site; McDowell, MO.	Process wastewater, rotary kiln ash, CHEAF media, and other solids (except spent activated carbon) (EPA Hazardous Waste Nos. F020, F022, F023, F026, F027, and F028) generated during the field demonstration of EPA's Mobile Incinerator at the Denney Farm Site in McDowell, Missouri, after July 25, 1985, so long as: (1) The incinerator is functioning properly; (2) a grab sample is taken from each tank of wastewater generated and the EP leachate values do not exceed 0.03 ppm for mercury, 0.14 ppm for selenium, and 0.68 ppm for chromium; and (3) a grab sample is taken from each drum of soil or ash generated and a core sample is collected from each CHEAF roll generated and the EP leachate values of daily composites do not exceed 0.044 ppm in ash or CHEAF media for mercury or 0.22 ppm in ash or CHEAF media for selenium.
EPA's Mobile Incineration System (MIS).	McDowell, MO.	Kiln ash, cyclone ash, separator sludge, and filtered wastewater (except spent activated carbon) (EPA Hazardous Waste No. F027) generated during the treatment of cancelled pesticides containing 2,4,5-T and Silvex and related materials by the EPA's Mobile Incineration System at the Denney Farm Site in McDowell, Missouri after March 11, 1988, so long as: (1) the incinerator is monitored continuously and is in compliance with operating permit conditions. Should the incinerator fail to comply with the permit conditions relevant to the mechanical operation of the incinerator, RCB must test the residues generated during the run when the failure occurred according to the requirements of Conditions (2) through (5), regardless of whether or not the demonstration in Condition (6) has been made; (2) Four grab samples of wastewater must be composited from the volume of filtered wastewater collected after each eight hour run and, prior to disposal, the composite samples analyzed for the EP toxic metals, nickel, and cyanide. If arsenic, chromium, lead, and silver EP leachate test results exceed 0.44 ppm; barium levels exceed 8.8 ppm; cadmium and selenium levels exceed 0.09 ppm; mercury levels exceed 0.02 ppm; nickel levels exceed 4.4 ppm; or cyanide levels exceed 1.8 ppm, the wastewater must be retreated to achieve these levels or must be disposed in accordance with Subtitle C of RCRA. Analyses must be performed according to SW-846 methodologies. (3) One grab sample must be taken from each drum of kiln ash generated during each eight hour run; all grabs collected during a given eight hour run must then be composited to form one composite sample. One grab sample must be taken from each drum of cyclone ash generated during each eight hour run; all grabs collected during a given eight hour run must then be composited to form one composite sample. A composite sample of four grab samples of the separator sludge must be collected at the end of each eight hour run. Prior to the disposal of the residues from each eight hour run, an EP leachate test must be performed on these composite samples and the leachate analyzed for the EP toxic metals, nickel, and cyanide. If arsenic, chromium, lead, and silver EP leachate test results exceed 1.6 ppm; barium levels exceed 32 ppm; cadmium and selenium levels exceed 0.3 ppm; mercury levels exceed 0.07 ppm; nickel levels exceed 16 ppm; or cyanide levels exceed 6.5 ppm, the wastes must be retreated to achieve these levels or must be disposed in accordance with Subtitle C of RCRA. Analyses must be performed according to SW-846 methodologies. (4) RCB must generate, prior to disposal of residues, verification data from each eight hour run for each treatment residue (*i.e.*, kiln ash, cyclone ash, separator sludge, and filtered wastewater) to demonstrate that the maximum allowable treatment residue concentrations listed below are not exceeded. Samples must be collected as specified in conditions (2) and (3). Analyses must be performed according to SW-846 methodologies. Any residues which exceed any of the levels listed below must be retreated or must be disposed as hazardous. Solid and sludge concentrations must not exceed the following levels:

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TABLE 1—WASTES EXCLUDED FROM NON-SPECIFIC SOURCES—Continued

Facility	Address	Waste description
		Aldrin—0.015 ppm Benzene—9.7 ppm Benzo(a)pyrene—0.43 ppm Benzo(b)fluoranthene—1.8 ppm Chlordane—0.37 ppm Chloroform—5.4 ppm Chrysene—170 ppm Dibenz(a,h)anthracene—0.083 ppm 1,2-Dichloroethane—4.1 ppm Dichloromethane—2.4 ppm 2,4-Dichlorophenol—480 ppm Dichlorvos—260 ppm Disulfaton—23 ppm Endosulfan I—310 ppm Fluorene—120 ppm Indeno(1,2,3-cd)pyrene—330 ppm Methyl parathion—210 ppm Nitrosodiphenylamine—130 ppm Phenanthrene—150 ppm Polychlorinated biphenyls—0.31 ppm Tetrachloroethylene—59 ppm 2,4,5-TP (silvex)—110 ppm 2,4,6-Trichlorophenol—3.9 ppm. And detected wastewater concentrations do not exceed the following levels: Acetone—35 ppm Aldrin—0.000018 ppm Benzene—0.044 ppm Benzo(a)pyrene—0.000027 ppm Benzo(b)fluoranthene—0.00018 ppm Biphenyl—15 ppm Bis-2-ethylhexyl phthalate—6.2 ppm Chlordane—0.00024 ppm Chlorobenzene—8.8 ppm Chloroform—0.052 ppm Chrysene—0.0018 ppm 2,4-D—3.5 ppm Dibenz(a,h)anthracene—0.0000006 ppm Dichloromethane—0.042 ppm 1,3-Dichlorobenzene—34 ppm 1,4-Dichlorobenzene—0.66 ppm 1,2-Dichlorobenzene—26 ppm 1,2-Dichloroethane—0.044 ppm 2,4-Dichlorophenol—0.88 ppm Dichlorvos—0.78 ppm Diethyl phthalate—4,400 ppm Disulfaton—0.016 ppm Endosulfan I—0.020 ppm Ethyl benzene—35 ppm Fluoranthene—1.8 ppm Fluorene—0.018 ppm Indeno(1,2,3-cd)pyrene—0.0018 ppm Isophorone—62 ppm Methyl chloride—35 ppm Methyl parathion—0.099 ppm Naphthalene—80 ppm Nitrosodiphenylamine—0.063 ppm Pentachlorophenol—8.8 ppm Phenanthrene—0.018 ppm Phenol—8.8 ppm Polychlorinated biphenyls—0.000072 ppm Pyrene—35 ppm Tetrachloroethylene—0.059 ppm 2,3,4,6-Tetrachlorophenol—8.8 ppm Toluene—88 ppm 2,4,5-TP (silvex)—0.088 ppm 1,2,4-Trichlorobenzene—6.2 ppm 2,4,6-Trichlorophenol—0.018 ppm 2,4,5-Trichlorophenol—35 ppm 2,4,5-Trichlorophenoxyacetic acid—0.88 ppm Xylene—619 ppm;

TABLE 1—WASTES EXCLUDED FROM NON-SPECIFIC SOURCES—Continued

Facility	Address	Waste description
		(5) RCB must generate, prior to disposal of residues, verification data from each eight hour run for each treatment residue (*i.e.*, kiln ash, cyclone ash, separator sludge, and filtered wastewater) to demonstrate that the residues do not contain tetra-, penta-, or hexachlorodibenzo-p-dioxins or furans at levels of regulatory concern. Samples must be collected as specified in conditions (2) and (3). The TCDD equivalent levels for solids must be less than 5 ppt and for wastewater the levels must be below 0.002 ppt. Any residues with detected dioxins or furans in excess of these levels must be retreated or must be disposed as acutely hazardous. Method 8290, a high resolution gas chromatography and high resolution mass spectroscopy (HRGC/HRMS) analytical method, must be used. For tetra- and penta-chlorinated dioxin and furan homologs, the maximum practical quantitation limit must not exceed 15 ppt for solids and 120 ppq for wastewaters. For hexachlorinated dioxin and furan homologs, the maximum practical quantitation limit must not exceed 37 ppt for solids and 0.3 ppt for wastewaters; (6) The test data from conditions (1), (2), (3), (4) and (5) must be kept on file by RCB for inspection purposes and must be compiled, summarized, and submitted to the Assistant Administrator for Solid Waste and Emergency Response by certified mail on a monthly basis and when the treatment of the cancelled pesticides and related materials is concluded. The testing requirements for conditions (2), (3), (4), and (5) will continue until RCB provides the Assistant Administrator with the results of four consecutive batch analyses for the petitioned wastes, none of which exceed the maximum allowable treatment residue concentrations listed in these conditions and the Assistant Administrator notifies RCB that the conditions have been lifted. All data submitted will be placed in the RCRA docket. (7) RCB must provide a signed copy of the following certification statement when submitting data in response to the conditions listed above: "Under civil and criminal penalty of law for the making or submission of false or fraudulent statements or representations, I certify that the information contained in or accompanying this document is true, accurate, and complete. As to the (those) identified section(s) of this document for which I cannot personally verify its (their) accuracy, I certify as the Agency official having supervisory responsibility for the persons who, acting under my direct instructions, made the verification that this information is true, accurate and complete."
Envirite Corporation.	Canton, Ohio; Harvey, Illinois; Thomaston, Connecticut; and York, PA.	Dewatered wastewater sludges (EPA Hazardous Waste No. F006) generated from electroplating operations; spent cyanide plating solutions (EPA Hazardous Waste No. F007) generated from electroplating operations; plating bath residues from the bottom of plating baths (EPA Hazardous Waste No. F008) generated from electroplating operations where cyanides are used in the process; spent stripping and cleaning bath solutions (EPA Hazardous Waste No. F009) generated from electro-plating operations where cyanides are used in the process; spent cyanide solutions from salt bath pot cleaning (EPA Hazardous Waste No. F011) generated from Metal heat treating operations; quenching wastewater treatment sludges (EPA Hazardous Waste No. F012) generated from metal heat treating where cyanides are used in the process; wastewater treatment sludges (EPA Hazardous Waste No. F019) generated from the chemical conversion coating of aluminum after November 14, 1986. To ensure that hazardous constituents are not present in the waste at levels of regulatory concern, the facility must implement a contingency testing program for the petitioned wastes. This testing program must meet the following conditions for the exclusions to be valid: (1) Each batch of treatment residue must be representatively sampled and tested using the EP Toxicity test for arsenic, barium, cadmium, chromium, lead, selenium, silver, mercury, and nickel. If the extract concentrations for chromium, lead, arsenic, and silver exceed 0.315 ppm; barium levels exceed 6.3 ppm; cadmium and selenium exceed 0.063 ppm; mercury exceeds 0.0126 ppm; or nickel levels exceed 2.205 ppm, the waste must be re-treated or managed and disposed as a hazardous waste under 40 CFR Parts 262 to 265 and the permitting standards of 40 CFR Part 270. (2) Each batch of treatment residue must be tested for reactive and leachable cyanide. If the reactive cyanide levels exceed 250 ppm or leachable cyanide levels (using the EP Toxicity test without acetic acid adjustment) exceed 1.26 ppm, the waste must be re-treated or managed and disposed as a hazardous waste under 40 CFR Parts 262 to 265 and the permitting standards of 40 CFR Part 270. (3) Each batch of waste must be tested for the total content of specific organic toxicants. If the total content of anthracene exceeds 76.8 ppm, 1,2-diphenyl hydrazine exceeds 0.001 ppm, methylene chloride exceeds 8.18 ppm, methyl ethyl ketone exceeds 326 ppm, n-nitrosodiphenylamine exceeds 11.9 ppm, phenol exceeds 1,566 ppm, tetrachloroethylene exceeds 0.188 ppm, or trichloroethylene exceeds 0.592 ppm, the waste must be managed and disposed as a hazardous waste under 40 CFR Parts 262 and 265 and the permitting standards of 40 CFR Part 270.

TABLE 1—WASTES EXCLUDED FROM NON-SPECIFIC SOURCES—Continued

Facility	Address	Waste description
		(4) A grab sample must be collected from each batch to form one monthly composite sample which must be tested using GC/MS analysis for the compounds listed in #3 above as well as the remaining organics on the priority pollutant list. (See 47 FR 52309 November 19, 1982, for a list of the priority pollutants.) (5) The data from conditions 1-4 must be kept on file at the facility for inspection purposes and must be compiled, summarized, and submitted to the Administrator by certified mail semi-annually. The Agency will review this information and if needed will propose to modify or withdraw the exclusion. The organics testing described in conditions 3 and 4 above are not required until six months from the date of promulgation. The Agency's decision to conditionally exclude the treatment residue generated from the wastewater treatment systems at these facilities applies only to the wastewater and solids treatment systems as they presently exist as described in the delisting petition. The exclusion does not apply to the proposed process additions described in the petition as recovery including crystalization, electrolytic metals recovery, evaporative recovery, and ion exchange.
Falconer Glass Indust., Inc.	Falconer, NY	Wastewater treatment sludges from the filter press and magnetic drum separator (EPA Hazardous Waste No. F006) generated from electroplating operations after July 16, 1986.
Florida Production Engineering Company.	Daytona Beach, Florida.	This is a one-time exclusion. Wastewater treatment sludges (EPA Hazardous Waste No. F006) generated from electroplating operations and contained in four on-site trenches on January 23, 1987.
General Cable Co.	Muncie, IN	Dewatered wastewater treatment sludges (EPA Hazardous Waste Nos. F006 and K062) generated from electroplating operations and steel finishing operations after October 24, 1986. This exclusion does not apply to sludges in any on-site impoundments as of this date.
General Electric Company.	Shreveport Louisiana.	Wastewater treatment sludges (EPA Hazardous Waste No. F006) generated from electroplating operations and contained in four on-site treatment ponds on August 12, 1987.
General Motors Corp., Fisher Body Division.	Elyria, OH	The residue generated from the use of the Chemfix® treatment process on sludge (EPA Hazardous Waste No. F006) generated from electroplating operations and contained in three on-site surface impoundments on November 14, 1986. To assure that stabilization occurs, the following conditions apply to this exclusion: (1) Mixing ratios shall be monitored continuously to assure consistent treatment. (2) One grab sample of the treated waste shall be taken each hour as it is pumped to the holding area (cell) from each trailer unit. At the end of each production day, the grab samples from the individual trailer units will be composited and the EP toxicity test will be run on each composite sample. If lead or total chromium concentrations exceed 0.315 ppm or if nickel exceeds 2.17 ppm, in the EP extract, the waste will be removed and retreated or disposed of as a hazardous waste. (3) The treated waste shall be pumped into bermed cells which are constructed to assure that the treated waste is identifiable and retrievable (*i.e.*, the material can be removed and either disposed of as a hazardous waste or retreated if conditions 1 or 2 are not met). Failure to satisfy any of these conditions would render the exclusion void. This is a one-time exclusion, applicable only to the residue generated from the use of the Chemfix® treatment process on the sludge currently contained in the three on-site surface impoundments.
Gould, Inc	McConnelsville, OH.	Wastewater treatment sludge (EPA Hazardous Waste No. F006) generated from electroplating operations after November 27, 1985.
Hanover Wire Cloth Division.	Hanover, Pennsylvania.	Dewatered filter cake (EPA Hazardous Waste No. F006) generated from electroplating operations after August 15, 1986.
Holston Army Ammunition Plant.	Kingsport, Tennessee.	Dewatered wastewater treatment sludges (EPA Hazardous Waste Nos. F003, F005, and K044) generated from the manufacturing and processing of explosives and containing spent non-halogenated solvents after November 14, 1986.
Imperial Clevite.	Salem, IN	Solid resin cakes containing EPA Hazardous Waste No. F002 generated after August 27, 1985, from solvent recovery operations.
International Minerals and Chemical Corporation.	Terre Haute, Indiana.	Spent non-halogenated solvents and still bottoms (EPA Hazardous Waste No. F003) generated from the recovery of n-butyl alchohol after August 15, 1986.
Kay-Fries, Inc	Stoney Point, NY.	Biological aeration lagoon sludge and filter press sludge generated after September 21, 1984, which contain EPA Hazardous Waste Nos. F003 and F005 as well as that disposed of in a holding lagoon as of September 21, 1984.
Keymark Corp	Fonda, NY	Wastewater treatment sludge (EPA Hazardous Waste No. F019) generated from chemical conversion coating of aluminum after November 27, 1985.
Keymark Corp	Fonda, New York.	Wastewater treatment sludges (EPA Hazardous Waste No. F019) generated from the chemical conversion coating of aluminum and contained in an on-site impoundment on August 12, 1987. This is a one-time exclusion.

TABLE 1—WASTES EXCLUDED FROM NON-SPECIFIC SOURCES—Continued

Facility	Address	Waste description
Lincoln Plating Company.	Lincoln, NE	Wastewater treatment sludges (EPA Hazardous Waste No. F006) generated from electroplating operations after November 17, 1986.
Loxcreen Company, Inc.	Hayti, MO	Dewatered wastewater treatment sludges (EPA Hazardous Waste No. F019) generated from the chemical conversion coating of aluminum after July 16, 1986.
Martin Marietta Aerospace.	Ocala, Florida	Dewatered wastewater treatment sludges (EPA Hazardous Waste No. F006) generated from electroplating operations after January 23, 1987.
Maytag Company.	Newton, IA	Wastewater treatment sludges (EPA Hazardous Waste No. F006) generated from electroplating operations and wastewater treatment sludges (EPA Hazardous Waste No. F019) generated from the chemical conversion coating of aluminum November 17, 1986.
Metropolitan Sewer District of Greater Cincinnati.	Cincinnati, OH	Sluiced bottom ash sludge (approximately 25,000 cubic yards), contained in the North Lagoon, on September 21, 1984, which contains EPA Hazardous Wastes Nos. F001, F002, F003, F004, and F005.
Michelin Tire Corp.	Sandy Springs, South Carolina.	Dewatered wastewater treatment sludge (EPA Hazardous Wastes No. F006) generated from electroplating operations after November 14, 1986.
Monroe Auto Equipment.	Paragould, AR	Wastewater treatment sludge (EPA Hazardous Waste No. F006) generated from electroplating operations after vacuum filtration after November 27, 1985. This exclusion does not apply to the sludge contained in the on-site impoundment.
Pamcor C, Inc	Las Piedras, PR.	Dewatered Wastewater treatment sludges (EPA Hazardous Waste No. F006) generated from electroplating operations after October 17, 1986.
Plastene Supply Company.	Portageville, Missouri.	Dewatered wastewater treatment sludges (EPA Hazardous Waste No. F006) generated from electroplating operations after August 15, 1986.
Reynolds Metals Company.	Sheffield, AL	Dewatered wastewater treatment sludges (EPA Hazardous Waste No. F019) generated from the chemical conversion coating of aluminum after August 15, 1986.
Siegel-Robert, Inc.	St. Louis, MO	Wastewater treatment sludge (EPA Hazardous Waste No. F006) generated from electroplating operations after November 27, 1985.
Square D Company.	Oxford, Ohio	Dewatered filter press sludge (EPA Hazardous Waste No. F006) generated from electroplating operations after August 15, 1986.
Syntex Agribusiness.	Springfield, MO.	Kiln ash, cyclone ash, separator sludge, and filtered wastewater (except spent activiated carbon) (EPA Hazardous Waste No. F020 generated during the treatment of wastewater treatment sludge by the EPA's Mobile Incineration System at the Denney Farm Site in McDowell, Missouri after June 2, 1988, so long as: (1) The incinerator is monitored continuously and is in compliance with operating permit conditions. Should the incinerator fail to comply with the permit conditions relevant to the mechanical operation of the incinerator, Syntex must test the residues generated during the run when the failure occurred according to the requirements of Conditions (2) through (6), regardless of whether or not the demonstration in Condition (7) has been made. (2) Four grab samples of wastewater must be composited from the volume of filtered wastewater collected after each eight hour run and, prior to disposal the composite samples must be analyzed for the EP toxic metals, nickel, and cyanide. If arsenic, chromium, lead, and silver EP leachate test results exceed 0.61 ppm; barium levels exceed 12 ppm; cadmium and selenium levels exceed 0.12 ppm; mercury levels exceed 0.02 ppm; nickel levels exceed 6.1 ppm; or cyanide levels exceed 2.4 ppm, the wastewater must be retreated to achieve these levels or must be disposed in accordance with all applicable hazardous waste regulations. Analyses must be performed according to SW-846 methodologies. (3) One grab sample must be taken from each drum of kiln and cyclone ash generated during each eight hour run; all grabs collected during a given eight hour run must then be composited to form one composite sample. A composite sample of four grab samples of the separator sludge must be collected at the end of each eight hour run. Prior to the disposal of the residues from each eight hour run, an EP leachate test must be performed on these composite samples and the leachate analyzed for the EP toxic metals, nickel, and cyanide (using a distilled water extraction for the cyanide extraction) to demonstrate that the following maximum allowable treatment residue concentrations listed below are not exceeded. Analyses must be performed according to SW-846 methodologies. Any residues which exceed any of the levels listed below must be retreated to achieve these levels or must be disposed in accordance with all applicable hazardous waste regulations. Maximum Allowable Solids Treatment Residue EP Leachate Concentrations (mg/L) Arsenic—1.6 Barium—32 Cadmium—0.32 Chromium—1.6 Lead—1.6

TABLE 1—WASTES EXCLUDED FROM NON-SPECIFIC SOURCES—Continued

Facility	Address	Waste description
		Mercury—0.065 Nickel—16 Selenium—0.32 Silver—1.6 Cyanide—6.5 (4)—If Syntex stabilizes any of the kiln and cyclone ash or separator sludge, a Portland cement-type stabilization process must be used and Syntex must collect a composite sample of four grab samples from each batch of stabilized waste. An MEP leachate test must be performed on these composite samples and the leachate analyzed for the EP toxic metals, nickel, and cyanide (using a distilled water extraction for the cyanide leachate analysis) to demonstrate that the maximum allowable treatment residue concentrations listed in Condition (3) are not exceeded during any run of the MEP extraction. Analyses must be performed according to SW-846 methodologies. Any residues which exceed any of the levels listed in Condition (3) must be retreated to achieve these levels or must be disposed in accordance with all applicable hazardous waste regulations. (If the residues are stabilized, the analyses required in this condition supercede the analyses required in Condition (3).) (5) Syntex must generate, prior to disposal of residues, verification data from each eight hour run from each treatment residue (*i.e.*, kiln and cyclone ash, separator sludge, and filtered wastewater) to demonstrate that the maximum allowable treatment residue concentrations listed below are not exceeded. Samples must be collected as specified in Conditions (2) and (3). Analyses must be performed according to SW-846 methodologies. Any solid or liquid residues which exceed any of the levels listed below must be retreated to achieve these levels or must be disposed in accordance with Subtitle C of RCRA. Maximum Allowable Wastewater Concentrations (ppm): Benz(a)anthracene—1×10^{-4} Benzo(a)pyrene—4×10^{-5} Benzo(b)fluoranthene—2×10^{-4} Chloroform—0.07 Chrysene—0.002 Dibenz(a,h)anthracene—9×10^{-6} 1,2-Dichloroethane—0.06 Dichloromethane—0.06 Indeno(1,2,3-cd)pyrene—0.002 Polychlorinated biphenyls—1×10^{-4} 1,2,4,5-Tetrachlorobenzene—0.13 2,3,4,6-Tetrachlorophenol—12 Toluene—120 Trichloroethylene—0.04 2,4,5-Trichlorophenol—49 2,4,6-Trichlorophenol—0.02 Maximum Allowable Solid Treatment Residue Concentrations (ppm): Benz(a)anthracene—1.1 Benzo(a)pyrene—0.43 Benzo(b)fluoranthene—1.8 Chloroform—5.4 Chrysene—170 Dibenz(a,h)anthracene—0.083 Dichloromethane—2.4 1,2-Dichloroethane—4.1 Indeno(1,2,3-cd)pyrene—330 Polychlorinated biphenyls—0.31 1,2,4,5-Tetrachlorobenzene—720 Trichloroethylene—6.6 2,4,6-Trichlorophenol—3.9 (6) Syntex must generate, prior to disposal of residues, verification data from each eight hour run for each treatment residue (*i.e.*, kiln and cyclone ash, separator sludge, and filtered wastewater) to demonstrate that the residues do not contain tetra-, penta-, or hexachlorodibenzo-p-dioxins or furans at levels of regulatory concern. Samples must be collected as specified in Conditions (2) and (3). The TCDD equivalent levels for wastewaters must be less than 2 ppq and less than 5 ppt for the solid treatment residues. Any residues with detected dioxins or furans in excess of these levels must be retreated or must be disposed as acutely hazardous. Method 8290, a high resolution gas chromatography and high resolution mass spectroscopy (HRGC/HRMS) analytical method, must be used. For tetra- and pentachloronated dioxin and furan homologs, the maximum practical quantitation limit must not exceed 15 ppt for solids and 120 ppq for wastewaters. For hexachlorinated homologs, the maximum practical quantitation limit must not exceed 37 ppt for solids and 300 ppq for wastewaters.

TABLE 1—WASTES EXCLUDED FROM NON-SPECIFIC SOURCES—Continued

Facility	Address	Waste description
		(7)(A) The test data from Conditions (1), (2), (3), (4), (5) and (6) must be kept on file by Syntex for inspection purposes and must be compiled, summarized, and submitted to the Section Chief, Variances Section, PSPD/OSW (WH-563), US EPA, 401 M Street, S.W., Washington, D.C. 20460 by certified mail on a monthly basis and when the treatment of the lagoon sludge is concluded. All data submitted will be placed in the RCRA docket. (B) The testing requirements for Conditions (2), (3), (4), (5), and (6) will continue until Syntex provides the Section Chief, Variances Section, with the results of four consecutive batch analyses for the petitioned wastes, none of which exceed the maximum allowable treatment residue concentrations listed in these conditions and the Section Chief, Variances Section, notifies Syntex that the conditions have been lifted. (8) Syntex must provide a signed copy of the following certification statement when submitting data in response to the conditions listed above: "Under civil and criminal penalty of law for the making or submission of false or fraudulent statements or representations, I certify that the information contained in or accompanying this document is true, accurate, and complete. As to the (those) identified section(s) of this document for which I cannot personally verify its (their) accuracy, I certify as the company official having supervisory responsibility for the persons who, acting under my direct instructions, made the verification that this information is true, accurate and complete."
SR of Tennessee.	Ripley, TN	Dewatered wastewater treatment sludges (EPA Hazardous Waste No. F006) generated from the copper, nickel, and chromium electroplating of plastic parts after November 17, 1986.
Tennessee Electroplating.	Ripley, Tennessee.	Dewatered wastewater treatment sludges (EPA Hazardous Waste Nos. F006) generated from electroplating operations after November 17, 1986. To ensure chromium levels do not exceed the regulatory standards there must be continuous batch testing of the filter press sludge for chromium for 45 days after the exclusion is granted. Each batch of treatment residue must be representatively sampled and tested using the EP toxicity test for chromium. This data must be kept on file at the facility for inspection purposes. If the extract levels exceed 0.922 ppm of chromium the waste must be managed and disposed of as hazardous. If these conditions are not met, the exclusion does not apply. This exclusion does not apply to sludges in any on-site impoundments as of this date.
Texas Instruments, Inc.	Dallas, TX	Wastewater treatment sludges (EPA Hazardous Waste Nos. F006 and F019) generated after August 27, 1985, from their electroplating operations that have been batch tested for cadmium using the EP toxicity procedure and have been found to contain less than 0.30 ppm cadmium in the EP extract. Wastewater treatment sludges that exceed this level will be considered a hazardous waste.
Tricil Environmental Systems, Inc.	Hilliard, Ohio	Dewatered wastewater treatment sludges (EPA Hazardous Waste No. F006) generated from electroplating operations after November 17, 1986. To ensure that hazardous constituents are not present in the waste at levels of regulatory concern, the facility must implement a contingency testing program for the petitioned wastes. This testing program must meet the following conditions for the exclusion to be valid: (1) Each batch of treatment residue must be representatively sampled and tested using the total oil and grease test and the EP Toxicity test (or the Oily Waste EP test, if the oil and grease content of the waste exceeds one percent) for arsenic, barium, cadmium, chromium, lead, selenium, silver, mercury, and nickel. If the extract concentrations for chromium, lead, arsenic, and silver exceed 0.315 ppm; barium levels exceed 6.3 ppm; cadmium and selenium levels exceed 0.063 ppm; mercury levels exceed 0.013 ppm; or nickel levels exceed 2.2 ppm, the waste will be re-treated or managed and disposed as a hazardous waste under 40 CFR Parts 262 to 265 and the permitting standards of 40 CFR Part 270. (2) Each batch of treatment residue must be tested for reactive and leachable cyanide. If the reactive cyanide levels exceed 250 ppm or leachable cyanide levels (using the EP Toxicity test without acetic acid adjustment) exceed 1.26 ppm, the waste must be re-treated or managed and disposed as a hazardous waste under 40 CFR Parts 262 to 265 and the permitting standards of 40 CFR Part 270. (3) Each batch of the waste must be tested for the total content of the following organic toxicants. If the total content of any of the constituents exceeds the maximum levels shown, the waste must be managed and disposed as a hazardous waste under 40 CFR Parts 262 to 265 and the permitting standards of 40 CFR Part 270. Compound and Maximum Acceptable Levels (ppm) Acrolein, 56.8 Anthracene, 76.8 Benzene, 0.106 p-Chloro-m-cresol, 133 1,1-Dichloroethane, 0.01 Fluorene, 10.4 Methylene chloride, 8.2 Methyl ethyl ketone, 326 n-Nitrosodiphenylamine, 11.9 Phenanthrene, 14 Tetrachloroethylene, 0.188 Trichloroethylene, 0.59

TABLE 1—WASTES EXCLUDED FROM NON-SPECIFIC SOURCES—Continued

Facility	Address	Waste description
		Chloroform, 0.013 1,2-Dichloroethane, 0.0083 1,2-trans-Dichloroethylene, 231 2,4-Dimethylphenol, 12.5 Vinyl chloride, 0.18 (4) A grab sample must be collected from each batch to form one monthly composite sample, which must be tested using GC/MS analysis for the compounds shown above as well as the remaining organics on the priority pollutant list. (See 47 FR 52309, November 19, 1982, for a list of the priority pollutants.) (5) The test data from conditions 1–4 must be kept on file at the facility for inspection purposes and must be compiled, summarized, and submitted to the Administrator by certified mail on a semiannual basis. The Agency will review this information and if needed, will propose to modify or withdraw the exclusion. The organics testing described in conditions 3 and 4 above is not required until May 18, 1987. The Agency's decision to conditionally exclude the treatment residue generated from the wastewater treatment system at this facility applies only to the wastewater treatment residue as described in this petition.
Tricil Environmental Systems, Inc.	Nashville, Tennessee	Dewatered wastewater treatment sludges (EPA Hazardous Waste No. F019) generated from chemical conversion coating of aluminum after November 17, 1986. To ensure that hazardous constituents are not present in the waste at levels of regulatory concern, the facility must implement a contingency testing program for the petitioned wastes. This testing program must meet the following conditions for the exclusion to be valid: (1) Each batch of treatment residue must be representatively sampled and tested using the total oil and grease test and the EP Toxicity test (or the Oily Waste EP test, if the oil and grease content of the waste exceeds one percent) for arsenic, barium, cadmium, chromium, lead, selenium, silver, mercury, and nickel. If the extract concentrations for chromium, lead, arsenic, and silver exceed 1.1 ppm; barium levels exceed 22.2 ppm; cadmium and selenium levels exceed 0.22 ppm; mercury levels exceed 0.044 ppm; or nickel levels exceed 7.8 ppm, the waste will be re-treated or managed and disposed as a hazardous waste under 40 CFR Parts 262 to 265 and the permitting standards of 40 CFR Part 270. (2) Each batch of treatment residue must be tested for reactive and leachable cyanide. If the reactive cyanide levels exceed 250 ppm or leachable cyanide levels (using the EP Toxicity test without acetic acid adjustment) exceed 4.4 ppm, the waste must be re-treated or managed and disposed as a hazardous waste under 40 CFR Parts 262 to 265 and the permitting standards of 40 CFR Part 270. (3) Each batch of the waste must be tested for the total content of the following organic toxicants. If the total content of any of the constituents exceeds the maximum levels shown, the waste must be managed and disposed as a hazardous waste under 40 CFR Parts 262 to 265 and the permitting standards of 40 CFR Part 270. Compound and Maximum Acceptable Levels (ppm) Acrolein, 28.3 Anthracene, 44.2 Benzene, 0.08 p-Chloro-m-cresol, 848 1,1-Dichloroethane, 0.068 Fluorene, 66.7 Methylene chloride, 52.4 n-Nitrosodiphenylamine, 76.1 Phenanthrene, 89 Tetrachloroethylene, 1.2 Trichloroethylene, 3.78 Chloroform, 0.081 1,2-Dichloroethane, 0.053 2,4-Dimethylphenol, 79.7 Vinyl chloride, 1.16 1,2-Diphenyl hydrazine, 0.005 (4) A grab sample must be collected from each batch to form one monthly composite sample, which must be tested using GC/MS analysis for the compounds shown above as well as the remaining organics on the priority pollutant list. (See 47 FR 52309, November 19, 1982, for a list of the priority pollutants.) (5) The test data from conditions 1–4 must be kept on file at the facility for inspection purposes and must be compiled, summarized, and submitted to the Administrator by certified mail on a semiannual basis. The Agency will review this information and if needed, will propose to modify or withdraw the exclusion. The organics testing described in conditions 3 and 4 above is not required until May 18, 1987. The Agency's decision to conditionally exclude the treatment residue generated from the wastewater treatment system at this facility applies only to the wastewater treatment residue as described in this petition.

TABLE 1—WASTES EXCLUDED FROM NON-SPECIFIC SOURCES—Continued

Facility	Address	Waste description
Tricil Environmental Systems, Inc.	Muskegon, Michigan.	Dewatered wastewater treatment sludges (EPA Hazardous Waste No. F006) generated from electroplating operations after November 17, 1986. To ensure that hazardous constituents are not present in the waste at levels of regulatory concern, the facility must implement a contingency testing program for the petitioned wastes. This testing program must meet the following conditions for the exclusion to be valid: (1) Each batch of treatment residue must be representatively sampled and tested using the total oil and grease test and the EP Toxicity test (or the Oily Waste EP test, if the oil and grease content of the waste exceeds one percent) for arsenic, barium, cadmium, chromium, lead, selenium, silver, mercury, and nickel. If the extract concentrations for chromium, lead, arsenic, and silver exceed 0.315 ppm; barium levels exceed 6.3 ppm; cadmium and selenium levels exceed 0.063 ppm; mercury levels exceed 0.013 ppm; or nickel levels exceed 2.2 ppm, the waste will be re-treated or managed and disposed as a hazardous waste under 40 CFR Parts 262 to 265 and the permitting standards of 40 CFR Part 270. (2) Each batch of treatment residue must be tested for reactive and leachable cyanide. If the reactive cyanide levels exceed 250 ppm or leachable cyanide levels (using the EP Toxicity test without acetic acid adjustment) exceed 1.26 ppm, the waste must be re-treated or managed and disposed as a hazardous waste under 40 CFR Parts 262 to 265 and the permitting standards of 40 CFR Part 270. (3) Each batch of the waste must be tested for the total content of the following organic toxicants. If the total content of any of the constituents exceeds the maximum levels shown, the waste must be managed and disposed as a hazardous waste under 40 CFR Parts 262 to 265 and the permitting standards of 40 CFR Part 270. Compound and Maximum Acceptable Levels (ppm) Acrolein, 56.8 Anthracene, 76.8 Benzene, 0.106 p-Chloro-m-cresol, 133 1,1-Dichloroethane, 0.01 Fluorene, 10.4 Methylene chloride, 8.2 Methyl ethyl ketone, 326 n-Nitrosodiphenylamine, 11.9 Phenanthrene, 14 Tetrachloroethylene, 0.189 Trichloroethylene, 0.59 Chloroform, 0.013 1,2-Dichloroethane, 0.0083 1,2-trans-Dichloroethylene, 231 2,4-Dimethylphenol, 12.5 Vinyl chloride, 0.18 (4) A grab sample must be collected from each batch to form one monthly composite sample, which must be tested using GC/MS analysis for the compounds shown above as well as the remaining organics on the priority pollutant list. (See 47 FR 52309, November 19, 1982, for a list of the priority pollutants.) (5) The test data from conditions 1–4 must be kept on file at the facility for inspection purposes and must be compiled, summarized, and submitted to the Administrator by certified mail on a semiannual basis. The Agency will review this information and if needed, will propose to modify or withdraw the exclusion. The organics testing described in conditions 3 and 4 above is not required until May 18, 1987. The Agency's decision to conditionally exclude the treatment residue generated from the wastewater treatment system at this facility applies only to the wastewater treatment residue as described in this petition.
United Technologies Automotive, Inc.	Jeffersonville, IN.	Dewatered wastewater treatment sludge (EPA Hazardous Waste No. FO19) generated from the chemical conversion of aluminum after April 29, 1986.
Universal Oil Products.	Decatur, Alabama.	Wastewater treatment sludges (EPA Hazardous Waste No. F006) generated from electroplating operations and contained in two on-site lagoons on August 15, 1986. This is a one-time exclusion.
Vermont American, Corp.	Newark, OH.....	Wastewater treatment sludge (EPA Hazardous Waste No. F006) generated from electroplating operations after November 27, 1985.
Waterloo Industries.	Pocahontas, AR.	Wastewater treatment sludges (EPA Hazardous Waste No. F006) generated from electroplating operations after dewatering and held on-site on July 17, 1986 and any such sludge generated (after dewatering) after July 17, 1986.
Watervliet Arsenal.	Watervliet, NY..	Wastewater treatment sludges (EPA Hazardous Waste No F006) generated from electroplating operations after January 10, 1986.

TABLE 1—WASTES EXCLUDED FROM NON-SPECIFIC SOURCES—Continued

Facility	Address	Waste description
William L. Bonnell Co.	Carthage, TN	Dewatered Wastewater treatment sludges (Vacuum filter sludge) (EPA Hazardous Waste No. F019) currently generated from the chemical conversion coating of aluminum after October 17, 1986. This exclusion does not apply to sludges in the on-site surface impoundments.
William L. Bonnell Co.	Newnan, Georgia.	Dewatered wastewater treatment sludges (EPA Hazardous Waste No. F019) generated from the chemical conversion coating of aluminum after November 14, 1986. This exclusion does not include sludges contained in Bonnell's on-site surface impoundments.
Windsor Plastics, Inc.	Evansville, IN	Spent non-halogenated solvents and still bottoms (EPA Hazardous Waste No. F003) generated from the recovery of acetone after November 17, 1986.

TABLE 2—WASTES EXCLUDED FROM SPECIFIC SOURCES

Facility	Address	Waste description
American Cyanamid.	Hannibal, Missouri.	Wastewater and sludge (EPA Hazardous Waste No. K038) generated from the washing and stripping of phorate production and contained in on-site lagoons on May 8, 1987, and such wastewater and sludge generated after May 8, 1987.
Amoco Oil Co.	Wood River, IL.	150 million gallons of DAF from petroleum refining contained in in four surge ponds after treatment with the Chemifix® stabilization process. This waste contains EPA Hazardous Waste No. K048. This exclusion applies to the 150 million gallons of waste after chemical stabilization as long as the mixing ratios of the reagent with the waste are monitored continuously and do not vary outside of the limits presented in the demonstration samples; one grab sample is taken each hour from each treatment unit, composited, and EP toxicity tests performed on each sample. If the levels of lead or total chromium exceed 0.5 ppm in the EP extract, then the waste that was processed during the compositing period is considered hazardous; the treatment residue shall be pumped into bermed cells to ensure that the waste is identifiable in the event that removal is necessary.
Envirite Corporation.	Canton, Ohio; Harvey, Illinois; Thomaston, Connecticut; and York PA.	Spent pickle liquor (EPA Hazardous Waste No. K062) generated from steel finishing operations of facilities within the iron and steel industry (SIC Codes 331 and 332); wastewater treatment sludge (EPA Hazardous Waste No. K002) generated from the production of chrome yellow and orange pigments; wastewater treatment sludge (EPA Hazardous Waste No. K003) generated from the production of molybdate orange pigments; wastewater treatment sludge (EPA Hazardous Waste No. K004) generated from the production of zinc yellow pigments; wastewater treatment sludge (EPA Hazardous Waste No. K005) generated from the production of chrome green pigments; wastewater treatment sludge (EPA Hazardous Waste No. K006) generated from the production of chrome oxide green pigments (anhydrous and hydrated); wastewater treatment sludge (EPA Hazardous Waste No. K007) generated from the production of iron blue pigments; oven residues (EPA Hazardous Waste No. K008) generated from the production of chrome oxide green pigments after November 14, 1986. To ensure that hazardous constituents are not present in the waste at levels of regulatory concern, the facility must implement a contingency testing program for the petitioned wastes. This testing program must meet the following conditions for the exclusions to be valid: (1) Each batch of treatment residue must be representatively sampled and tested using the EP Toxicity test for arsenic, barium, cadmium, chromium, lead, selenium, silver, mercury, and nickel. If the extract concentrations for chromium, lead, arsenic, and silver exceed 0.315 ppm; barium levels exceed 6.3 ppm; cadmium and selenium exceed 0.063 ppm; mercury exceeds 0.0126 ppm; or nickel levels exceed 2.205 ppm, the waste must be retreated or managed and disposed as a hazardous waste under 40 CFR Parts 262 to 265 and the permitting standards of 40 CFR Part 270. (2) Each batch of treatment residue must be tested for reactive and leachable cyanide. If the reactive cyanide levels exceed 250 ppm; or leachable cyanide levels (using the EP Toxicity test without acetic acid adjustment) exceed 1.26 ppm, the waste must be retreated or managed and disposed as hazardous waste under 40 CFR Parts 262 to 265 and the permitting standards of 40 CFR 270. (3) Each batch of waste must be tested for the total content of specific organic toxicants. If the total content of anthracene exceeds 76.8 ppm, 1,2-diphenyl hydrazine exceeds 0.001 ppm, methylene chloride exceeds 8.18 ppm, methyl ethyl ketone exceeds 326 ppm, n-nitrosodiphenylamine exceeds 11.9 ppm, phenol exceeds 1,566 ppm, tetrachloroethylene exceeds 0.188 ppm, or trichloroethylene exceeds 0.592 ppm, the waste must be managed and disposed as a hazardous waste under 40 CFR Parts 262 to 265 and the permitting standards of 40 CFR Part 270. (4) A grab sample must be collected from each batch to form one monthly composite sample which must be tested using GC/MS analysis for the compounds listed in #3 above as well as the remaining organics on the priority pollutan list. (See 47 FR 52309, November 19, 1982, for a list of the priority pollutants.)

TABLE 2—WASTES EXCLUDED FROM SPECIFIC SOURCES—Continued

Facility	Address	Waste description
		(5) The data from conditions 1-4 must be kept on file at the facility for inspection purposes and must be compiled, summarized, and submitted to the Administrator by certified mail semi-annually. The Agency will review this information and if needed will propose to modify or withdraw the exclusion. The organics testing described in conditions 3 and 4 above is not required until six months from the date of promulgation. The Agency's decision to conditionally exclude the treatment residue generated from the wastewater treatment systems at these facilities applies only to the wastewater and solids treatment systems as they presently exist as described in the delisting petition. The exclusion does not apply to the proposed process additions described in the petition as recovery, including crystalization, electrolytic metals recovery, evaporative recovery, and ion exchange.
LCP Chemical	Orrington, ME	Brine purification muds and wastewater treatment sludges generated after August 27, 1985 from their chlor-alkali manufacturing operations (EPA Hazardous Waste Nos. K071 and K106) that have been batch tested for mercury using the EP toxicity procedures and have been found to contain less than 0.05 ppm mercury in the EP extract. Brine purification muds and wastewater treatment sludges that exceed this level will be considered a hazardous waste.
Mearl Corp.	Peekskill, NY	Wastewater treatment sludge (EPA Hazardous Waste Nos. K006 and K007) generated from the production of chrome oxide green and iron blue pigments after November 27, 1985.
Monsanto Industrial Chemicals Company.	Sauget, Illinois	Brine purification muds (EPA Hazardous Waste No. K071) generated from the mercury cell process in chlorine production, where separately prepurified brine is not used after August 15, 1986.
Stauffer Chemical Co.	Axis, AL	Brine purification muds generated from their chlor-alkali manufacturing operatings (EPA Hazardous Waste No. K071) and disposed of in brine mud pond HWTF: 5 EP-201.
Stauffer Chemical Co.	St. Gabriel, LA	Brine purification muds, which have been washed and vacuum filtered, generated after August 27, 1985 from their chlor-alkali manufacturing operations (EPA Hazardous Waste No. K071) that have been batch tested for mercury using the EP toxicity procedure and have been found to contain less than 0.05 ppm in mercury in the EP extract. Brine purification muds that exceed this level will be considered a hazardous waste.
Tricil Environmental Systems, Inc.	Hilliard, Ohio	Spent pickle liquor (EPA Hazardous Waste No. K062) generated by steel finishing operations of facilities within the iron and steel industry (SIC Codes 331 and 332) after November 17 1986. To ensure that hazardous constituents are not present in the waste at levels o regulatory concern, the facility must implement a contingency testing program for the petitioned wastes. This testing program must meet the following conditions for the exclusions to be valid: (1) Each batch of treatment residue must be representatively sampled and tested using the total oil and grease test and the EP Toxicity test (or the Oily Waste EP test, if the oil and grease content of the waste exceeds one percent) for arsenic, barium, cadmium, chromium, lead, mercury, selenium, silver and nickel. If the extract concentrations for chromium, lead, arsenic, barium, and silver exceed 6.3 ppm; cadmium and selenium exceed 0.063 ppm; mercury levels exceed 0.013 ppm; or nickel levels exceed 2.2 ppm, the waste will be retreated or managed and disposed as a hazardous waste under 40 CFR Parts 262 to 265 and the permitting standards of 40 CFR 270. (2) Each batch of treatment residue must be tested for reactive and leachable cyanide. If the reactive cyanide levels exceed 250 ppm; or leachable cyanide levels (using ther EP Toxicity test without acetic acid adjustment) exceed 1.26 ppm, the waste must be retreated or managed and disposed as hazardous waste under 40 CFR Parts 262 to 265 and the permitting standards of 40 CFR Part 270. (3) Each batch of waste must be tested for the total content of the following organic toxicants. If the total content of any of the constituents exceeds the maximum levels shown, the waste must be managed and disposed as a hazardous waste under 40 CFR Parts 262 and 265 and the permitting standards of 40 CFR Part 270. Compound and Maximum Acceptable Levels (ppm) Acrolein, 56.8 Anthracene, 76.8 Benzene, 0.106 p-Chloro-m-cresol, 133 1,1-Dichloroethane, 0.01 Fluorene, 10.4 Methylenechloride, 8.2 Methyl ethyl ketone, 326 n-Nitrosodiphenylamine, 11.9 Phenanthrene, 14 Tetrachloroethylene, 0.188 Trichloroethylene, 0.59 Chloroform, 0.013 1,2-Dichloroethane, 0.0083 1,2-trans-Dichloroethylene, 231

TABLE 2—WASTES EXCLUDED FROM SPECIFIC SOURCES—Continued

Facility	Address	Waste description
		2,4-Dimethylphenol, 12.5 Vinyl chloride, 0.18 1,2-Diphenyl hydrazine, 0.001 (4) A grab sample must be collected from each batch to form one monthy composite sample, which must be tested using GC/MS analysis for the organic compounds shown above, as well as the remaining organics on the priority pollutant list (see 47 FR 52309, November 19, 1982, Appendix A-126 Priority Pollutants). (5) The test data from conditions 1-4 must be kept on file at the facility for inspection purposes and must be compiled, summarized, and submitted to the Administrator by certified mail on a semiannual basis. The Agency will review this information and if needed, will propose to modify or withdraw the exclusion. The organics testing described in conditions 3 and 4 above is not required until May 18, 1987. The Agency's decision to conditionally exclude the treatment residue generated from the wastewater treatment system at this facility applies only to the wastewater treatment residue described in this petition.
Tricil Environmental System, Inc.	Muskegon, Michigan.	Spent pickle liquor (EPA Hazardous Waste No. K062) generated by steel finishing operations of facilities within the iron and steel industry (SIC Codes 331 and 332); after November 17, 1986. To ensure that hazardous constituents are not present in the waste at levels of regulatory concern, the facility must implement a contingency testing program for the petitioned wastes. This testing program must meet the following conditions for the exclusion to be valid: (1) Each batch of treatment residue must be representatively sampled and tested using the total oil and grease test and the EP Toxicity test (or the Oily Waste EP test, if the oil and grease content of the waste exceeds one percent) for arsenic, barium, cadmium, chromium, lead, mercury, selenium, silver and nickel. If the extract concentrations for chromium, lead, arsenic, barium, and silver exceed 6.3 ppm, cadmium and selenium exceed 0.063 ppm; mercury levels exceed 0.013 ppm; or nickel levels exceed 2.2 ppm, the waste will be retreated or managed and disposed as a hazardous waste under 40 CFR Parts 262 to 265 and the permitting standards of 40 CFR 270. (2) Each batch of treatment residue must be tested for reactive and leachable cyanide. If the reactive cyanide levels exceed 250 ppm; or leachable cyanide levels (using the EP Toxicity test without acetic acid adjustment) exceed 1.26 ppm, the waste must be retreated or managed and disposed as hazardous waste under 40 CFR Parts 262 to 265 and the permitting standards of 40 CFR Part 270. (3) Each batch of waste must be tested for the total content of the following organic toxicants. If the total content of any of the constituents exceeds the maximum levels shown, the waste must be managed and disposed as a hazardous waste under 40 CFR Parts 262 and 265 and the permitting standards of 40 CFR Part 270: Compound and Maximum Acceptable Levels (ppm) Acrolein, 56.8 Anthracene, 76.8 Benzene, 0.106 p-Chloro-m-cresol, 133 1,1-Dichloroethane, 0.01 Fluorene, 10.4 Methylenechloride, 8.2 Methyl ethyl ketone, 326 n-Nitrosodiphenylamine, 11.9 Phenanthrene, 14 Tetrachloroethylene, 0.188 Trichloroethylene, 0.59 Chloroform, 0.013 1,2-Dichloroethane, 0.0063 1,2-trans-Dichloroethylene, 231 2,4-Dimethylphenol, 12.5 Vinyl chloride, 0.18 1,2-Diphenyl hydrazine, 0.001 (4) A grab sample must be collected from each batch to form one monthly composite sample, which must be tested using GC/MS analysis for the organic compounds shown above, as well as the remaining organics on the priority pollutant list (see 47 FR 52309, November 19, 1982, Appendix A-126 Priority Pollutants). (5) The test data from conditions 1-4 must be kept on file at the facility for inspection purposes and must be compiled, summarized, and submitted to the Administrator by certified mail on a semiannual basis. The Agency will review this information and if needed, will propose to modify or withdraw the exclusion. The organics testing described in conditions 3 and 4 above is not required until May 18, 1987. The Agency's decision to conditionally exclude the treatment residue generated from the wastewater treatment system at this facility applies only to the wastewater treatment residue described in this petition.

TABLE 2—WASTES EXCLUDED FROM SPECIFIC SOURCES—Continued

Facility	Address	Waste description
Vulcan Materials Company.	Port Edwards, WI.	Brine purification muds (EPA Hazardous Waste No. K071) generated from the mercury cell process in chlorine production, where separately prepurified brine is not used after November 17, 1986. To assure that mercury levels in this waste are maintained at acceptable levels, the following conditions apply to this exclusion: Each batch of treated brine clarifier muds and saturator insolubles must be tested (by the extraction procedure) prior to disposal and the leachate concentration of mercury must be less than or equal to 0.0129 ppm. If the waste does not meet this requirement, then it must be re-treated or disposed of as hazardous. This exclusion does not apply to wastes for which either of these conditions is not satisfied.

TABLE 3—WASTES EXCLUDED FROM COMMERCIAL CHEMICAL PRODUCTS, OFF-SPECIFICATION SPECIES, CONTAINER RESIDUES, AND SOIL RESIDUES THEREOF

Facility	Address	Waste description
Union Carbide Corp.	Taft, LA	Contaminated soil (approximately 11,000 cubic yards), which contains acrolein in concentrations of less than 9 ppm.

[49 FR 37070, Sept. 21, 1984]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting Appendix IX of Part 261, see the List of CFR Sections Affected in the Finding Aids section of this volume.

APPENDIX X—METHOD OF ANALYSIS FOR CHLORINATED DIBENZO-P-DIOXINS AND -DIBENZOFURANS [1, 2, 3, 4]

Method 8280

1. *Scope and Application*

1.1 This method measures the concentration of chlorinated dibenzo-*p*-dioxins and chlorinated dibenzofurans in chemical wastes including still bottoms, filter aids, sludges, spent carbon, and reactor residues, and in soils.

1.2 The sensitivity of this method is dependent upon the level of interferences.

1.3 This method is recommended for use only by analysts experienced with residue analysis and skilled in mass spectral analytical techniques.

1.4 Because of the extreme toxicity of these compounds, the analyst must take necessary precautions to prevent exposure to himself, or to others, of materials known or believed to contain CDDs or CDFs.

2. *Summary of the Method*

2.1 This method is an analytical extraction cleanup procedure, and capillary column gas chromatograph-low resolution mass spectrometry method, using capillary column GC/MS conditions and internal standard techniques, which allow for the measurement of PCDDs and PCDFs in the extract.

2.2 If interferences are encountered, the method provides selected general purpose cleanup procedures to aid the analyst in their elimination.

3. *Interferences*

3.1 Solvents, reagents, glassware, and other sample processing hardware may yield discrete artifacts and/or elevated baselines

[1] This method is appropriate for the analysis of tetra-, penta-, and hexachlorinated dibenzo-*p*-dioxins and -dibenzofurans.

[2] Analytical protocol for determination of TCDDs in phenolic chemical wastes and soil samples obtained from the proximity of chemical dumps. T.O. Tiernan and M. Taylor. Brehm Laboratory, Wright State University, Dayton, OH 45435.

[3] Analytical protocol for determination of chlorinated dibenzo-*p*-dioxins and chlorinated dibenzofurans in river water. T.O. Tiernan and M. Taylor. Brehm Laboratory, Wright State University, Dayton, OH 45435.

[4] In general, the techniques that should be used to handle these materials are those which are followed for radioactive or infectious laboratory materials. Assistance in evaluating laboratory practices may be obtained from industrial hygienists and persons specializing in safe laboratory practices. Typical infectious waste incinerators are probably not satisfactory devices for disposal of materials highly contaminated with CDDs or CDFs. Safety instructions are outlined in EPA Test Method 613(4.0)

See also: (1) "Program for monitoring potential contamination in the laboratory following the handling and analyses of chlorinated dibenzo-p-dioxins and dibenzofurans" by F. D. Hileman et al., *In:* Human and Environmental Risks of Chlorinated Dioxins and Related Compounds, R.E. Tucker, et al, eds., Plenum Publishing Corp., 1983. 2) Safety procedures outlined in EPA Method 613, Federal Register volume 44, No. 233, December 3, 1979.

causing misinterpretation of gas chromatograms. All of these materials must be demonstrated to be free from interferences under the conditions of the analysis by running method blanks. Specific selection of reagents and purification of solvents by distillation in all-glass systems may be required.

3.2 Interferences co-extracted from the samples will vary considerably from source to source, depending upon the diversity of the industry being sampled. PCDD is often associated with other interfering chlorinated compounds such as PCB's which may be at concentrations several orders of magnitude higher than that of PCDD. While general cleanup techniques are provided as part of this method, unique samples may require additional cleanup approaches to achieve the sensitivity stated in Table 1.

TABLE 1—GAS CHROMATOGRAPHY OF TCDD

Column	Retention time (min.)	Detection limit (μg/kg)[1]
Glass capillary	9.5	0.003

[1] Detection limit for liquid samples is 0.003 μg/l. This is calculated from the minimum detectable GC response being equal to five times the GC background noise assuming a 1 ml effective final volume of the 1 liter sample extract, and a GC injection of 5 microliters. Detection levels apply to both electron capture and GC/MS detection. For further details see 44 FR 69526 (December 3, 1979).

3.3 The other isomers of tetrachlorodibenzo-*p*-dioxin may interfere with the measurement of 2,3,7,8-TCDD. Capillary column gas chromatography is required to resolve those isomers that yield virtually identical mass fragmentation patterns.

4. *Apparatus and Materials*

4.1. Sampling equipment for discrete or composite sampling.

4.1.1 Grab sample bottle—amber glass, 1-liter or 1-quart volume. French or Boston Round design is recommended. The container must be washed and solvent rinsed before use to minimize interferences.

4.1.2. Bottle caps—threaded to screw on to the sample bottles. Caps must be lined with Teflon. Solvent washed foil, used with the shiny side towards the sample, may be substituted for the Teflon if sample is not corrosive.

4.1.3. Compositing equipment—automatic or manual composing system. No tygon or rubber tubing may be used, and the system must incorporate glass sample containers for the collection of a minimum of 250 ml. Sample containers must be kept refrigerated after sampling.

4.2 Water bath—heated, with concentric ring cover, capable of temperature control (±2 °C). The bath should be used in a hood.

4.3 Gas chromatograph/mass spectrometer data system.

4.3.1 Gas chromatograph: An analytical system with a temperature-programmable gas chromatograph and all required accessories including syringes, analytical columns, and gases.

4.3.2 Column: SP-2250 coated on a 30 m long × 0.25 mm I.D. glass column (Supelco No. 2-3714 or equivalent). Glass capillary column conditions: Helium carrier gas at 30 cm/sec linear velocity run splitless. Column temperature is 210 °C.

4.3.3 Mass spectrometer: Capable of scanning from 35 to 450 amu every 1 sec or less, utilizing 70 volts (nominal) electron energy in the electron impact ionization mode and producing a mass spectrum which meets all the criteria in Table 2 when 50 ng of decafluorotriphenyl-phosphine (DFTPP) is injected through the GC inlet. The system must also be capable of selected ion monitoring (SIM) for at least 4 ions simultaneously, with a cycle time of 1 sec or less. Minimum integration time for SIM is 100 ms. Selected ion monitoring is verified by injecting .015 ng of TCDD Cl^{37} to give a minimum signal to noise ratio of 5 to 1 at mass 328.

TABLE 2—DFTPP KEY IONS AND ION ABUNDANCE CRITERIA[1]

Mass	Ion abundance criteria
51	30–60% of mass 198.
68	Less than 2% of mass 69.
70	Less than 2% of mass 69.
127	40–60% of mass 198.
197	Less than 1% of mass 198.
198	Base peak, 100% relative abundance.
199	5–9% of mass 198.
275	10–30% of mass 198.
365	Greater than 1% of mass 198.
441	Present but less than mass 443.
442	Greater than 40% of mass 198.
443	17–23% of mass 442.

[1] J. W. Eichelberger, L.E. Harris, and W.L. Budde. 1975. Reference compound to calibrate ion abundance measurement in gas chromatography-mass spectrometry. Analytical Chemistry 47:995.

4.3.4 GC/MS interface: Any GC-to-MS interface that gives acceptable calibration points at 50 ng per injection for each compound of interest and achieves acceptable tuning performance criteria (see Sections 6.1 through 6.3) may be used. GC-to-MS interfaces constructed of all glass or glass-lined materials are recommended. Glass can be deactivated by silanizing with dichlorodimethylsilane. The interface must be capable of transporting at least 10 ng of the components of interest from the GC to the MS.

4.3.5 Data system: A computer system must be interfaced to the mass spectrometer. The system must allow the continuous acquisition and storage on machine-readable media of all mass spectra obtained throughout the duration of the chromatographic program. The computer must have software that can search any GC/MS data file for ions of a specific mass and that can plot such ion abundances versus time or scan number. This type of plot is defined as an Extracted Ion Current Profile (EICP). Software must also be able to integrate the abundance, in any EICP, between specified time or scan number limits.

4.4 Pipettes-Disposable, Pasteur, 150 mm long × 5 mm ID (Fisher Scientific Co., No. 13-678-6A or equivalent).

4.5 Flint glass bottle (Teflon-lined screw cap).

4.6 Reacti-vial (silanized) (Pierce Chemical Co.).

5. *Reagents*

5.1 Potassium hydroxide-(ACS), 2% in distilled water.

5.2 Sulfuric acid-(ACS), concentrated.

5.3 Methylene chloride, hexane, benzene, petroleum ether, methanol, tetradecane-pesticide quality or equivalent.

5.4 Prepare stock standard solutions of TCDD and ^{37}Cl-TCDD (molecular weight 328) in a glove box. The stock solutions are stored in a glovebox, and checked frequently for signs of degradation or evaporation, especially just prior to the preparation of working standards.

5.5 Alumina-basic, Woelm; 80/200 mesh. Before use activate overnight at 600°C, cool to room temperature in a dessicator.

5.6 Prepurified nitrogen gas

6.0 *Calibration*

6.1 Before using any cleanup procedure, the analyst must process a series of calibration standards through the procedure to validate elution patterns and the absence of interferences from reagents.

6.2 Prepare GC/MS calibration standards for the internal standard technique that will allow for measurement of relative response factors of at least three CDD/^{37}CDD ratios. Thus, for TCDDs, at least three TCDD/^{37}Cl-TCDD and TCDF/^{37}Cl-TCDF must be determined.[5] The ^{37}Cl-TCDD/F concentration in the standard should be fixed and selected to yield a reproducible response at the most sensitive setting of the mass spectrometer. Response factors for PCDD and HxCDD may be determined by measuring the response of the tetrachloro-labelled compounds relative to that of the unlabelled 1,2,3,4- or 2,3,7,8-TCDD, 1,2,3,4,7-PCDD or 1,2,3,4,7,8-HxCDD, which are commercially available.[6]

6.3 Assemble the necessary GC/MS apparatus and establish operating parameters equivalent to those indicated in Section 11.1 of this method. Calibrate the GC/MS system according to Eichelberger, et al. (1975) by the use of decafluorotriphenyl phosphine (DFTPP). By injecting calibration standards, establish the response factors for CDDs *vs.* ^{37}Cl-TCDD, and for CDFs *vs.* ^{37}Cl-TCDF. The detection limit provided in Table 1 should be verified by injecting .015 ng of ^{37}Cl-TCDD which should give a minimum signal to noise ratio of 5 to 1 at mass 328.

7. *Quality Control*

7.1 Before processing any samples, the analyst should demonstrate through the analysis of a distilled water method blank, that all glassware and reagents are interference-free. Each time a set of samples is extracted, or there is a change in reagents, a method blank should be processed as a safeguard against laboratory contamination.

7.2 Standard quality assurance practices must be used with this method. Field replicates must be collected to measure the precision of the sampling technique. Laboratory replicates must be analyzed to establish the precision of the analysis. Fortified samples must be analyzed to establish the accuracy of the analysis.

8. *Sample Collection, Preservation, and Handling*

8.1 Grab and composite samples must be collected in glass containers. Conventional sampling practices should be followed, except that the bottle must not be prewashed with sample before collection. Composite samples should be collected in glass containers in accordance with the requirements of the RCRA program. Sampling equipment must be free of tygon and other potential sources of contamination.

8.2 The samples must be iced or refrigerated from the time of collection until extraction. Chemical preservatives should not be used in the field unless more than 24 hours will elapse before delivery to the laboratory. If an aqueous sample is taken and the sample will not be extracted within 48 hours of collection, the sample should be

[5] ^{37}Cl-labelled 2,3,7,8-TCDD and 2,3,7,8-TCDF are available from K.O.R. Isotopes, and Cambridge Isotopes, Inc., Cambridge, MA. Proper standardization requires the use of a specific labelled isomer for each congener to be determined. However, the only labelled isomers readily available are ^{37}Cl-2,3,7,8-TCDD and ^{37}Cl-2,3,7,8-TCDF. This method therefore uses these isomers as surrogates for the CDDs and CDFs. When other labelled CDDs and CDFs are available, their use will be required.

[6] This procedure is adopted because standards are not available for most of the CDDs and CDFs, and assumes that all the congeners will show the same response as the unlabelled congener used as a standard. Although this assumption may not be true in all cases, the error will be small.

adjusted to a pH range of 6.0-8.0 with sodium hydroxide or sulfuric acid.

8.3 All samples must be extracted within 7 days and completely analyzed within 30 days of collection.

9. *Extraction and Cleanup Procedures*

9.1 Use an aliquot of 1-10 g sample of the chemical waste or soil to be analyzed. Soils should be dried using a stream of prepurified nitrogen and pulverized in a ball-mill or similar device. Perform this operation in a clear area with proper hood space. Transfer the sample to a tared 125 ml flint glass bottle (Teflon-lined screw cap) and determine the weight of the sample. Add an appropriate quantity of ^{37}Cl-labelled 2,3,7,8-TCDD (adjust the quantity according to the required minimum detectable concentration), which is employed as an internal standard.

9.2 Extraction

9.2.1 Extract chemical waste samples by adding 10 ml methanol, 40 ml petroleum ether, 50 ml doubly distilled water, and then shaking the mixture for 2 minutes. Tars should be completely dissolved in any of the recommended neat solvents. Activated carbon samples must be extracted with benzene using method 3540 in SW-846 (Test Methods for Evaluating Solid Waste—Physical/Chemical Methods, available from G.P.O. Stock #055-022-81001-2). Quantitatively transfer the organic extract or dissolved sample to a clean 250 ml flint glass bottle (Teflon lined screw cap), add 50 ml doubly distilled water and shake for 2 minutes. Discard the aqueous layer and proceed with Step 9.3.

9.2.2 Extract soil samples by adding 40 ml of petroleum ether to the sample, and then shaking for 20 minutes. Quantitatively transfer the organic extract to a clean 250 ml flint glass bottle (Teflon-lined screw cap), add 50 ml doubly distilled water and shake for 2 minutes. Discard the aqueous layer and proceed with Step 9.3.

9.3 Wash the organic layer with 50 ml of 20% aqueous potassium hydroxide by shaking for 10 minutes and then remove and discard the aqueous layer.

9.4 Wash the organic layer with 50 ml of doubly distilled water by shaking for 2 minutes, and discard the aqueous layer.

9.5 Cautiously add 50 ml concentrated sulfuric acid and shake for 10 minutes. Allow the mixture to stand until layers separate (approximately 10 minutes), and remove and discard the acid layer. Repeat acid washing until no color is visible in the acid layer.

9.6 Add 50 ml of doubly distilled water to the organic extract and shake for 2 minutes. Remove and discard the aqueous layer and dry the organic layer by adding 10g of anhydrous sodium sulfate.

9.7 Concentrate the extract to incipient dryness by heating in a 55° C water bath and simultaneously flowing a stream of prepurified nitrogen over the extract. Quantitatively transfer the residue to an alumina microcolumn fabricated as follows:

9.7.1 Cut off the top section of a 10 ml disposable Pyrex pipette at the 4.0 ml mark and insert a plug of silanized glass wool into the tip of the lower portion of the pipette.

9.7.2 Add 2.8g of Woelm basic alumina (previously activated at 600° C overnight and then cooled to room temperature in a desiccator just prior to use).

9.7.3 Transfer sample extract with a small volume of methylene chloride.

9.8 Elute the microcolumn with 10 ml of 3% methylene chloride-in-hexane followed by 15 ml of 20% methylene chloride-in-hexane and discard these effluents. Elute the column with 15 ml of 50% methylene chloride-in-hexane and concentrate this effluent (55° C water bath, stream of prepurified nitrogen) to about 0.3-0.5 ml.

9.9 Quantitatively transfer the residue (using methylene chloride to rinse the container) to a silanized Reacti-Vial (Pierce Chemical Co.). Evaporate, using a stream of prepurified nitrogen, almost to dryness, rinse the walls of the vessel with approximately 0.5 ml methylene chloride, evaporate just to dryness, and tightly cap the vial. Store the vial at 5° C until analysis, at which time the sample is reconstituted by the addition of tridecane.

9.10 Approximately 1 hour before GC-MS (HRGC-LRMS) analysis, dilute the residue in the micro-reaction vessel with an appropriate quantity of tridecane. Gently swirl the tridecane on the lower portion of the vessel to ensure dissolution of the CDDs and CDFs. Analyze a sample by GC/EC to provide insight into the complexity of the problem, and to determine the manner in which the mass spectrometer should be used. Inject an appropriate aliquot of the sample into the GC-MS instrument, using a syringe.

9.11 If, upon preliminary GC-MS analysis, the sample appears to contain interfering substances which obscure the analyses for CDDs and CDFs, high performance liquid chromatographic (HPLC) cleanup of the extract is accomplished, prior to further GC-MS analysis.

10. *HPLC Cleanup Procedure*[7]

10.1 Place approximately 2 ml of hexane in a 50 ml flint glass sample bottle fitted with a Teflon-lined cap.

10.2 At the appropriate retention time, position sample bottle to collect the required fraction.

[7] For cleanup see also method #8320 or #8330, SW-846, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (1982).

10.3 Add 2 ml of 5% (w/v) sodium carbonate to the sample fraction collected and shake for one minute.

10.4 Quantitatively remove the hexane layer (top layer) and transfer to a micro-reaction vessel.

10.5 Concentrate the fraction to dryness and retain for further analysis.

11. *GC/MS Analysis*

11.1 The following column conditions are recommended: Glass capillary column conditions: SP-2250 coated on a 30 m long x 0.25 mm I.D. glass column (Supelco No. 2-3714, or equivalent) with helium carrier gas at 30 cm/sec linear velocity, run splitless. Column temperature is 210°C. Under these conditions the retention time for TCDDs is about 9.5 minutes. Calibrate the system daily with, a minimum, three injections of standard mixtures.

11.2 Calculate response factors for standards relative to ^{37}Cl-TCDD/F (see Section 12).

11.3 Analyze samples with selected ion monitoring of at least two ions from Table 3. Proof of the presence of CDD or CDF exists if the following conditions are met:

11.3.1 The retention time of the peak in the sample must match that in the standard, within the performance specifications of the analytical system.

11.3.2 The ratio of ions must agree within 10% with that of the standard.

11.3.3 The retention time of the peak maximum for the ions of interest must exactly match that of the peak.

TABLE 3—LIST OF ACCURATE MASSES MONITORED USING GC SELECTED-ION MONITORING, LOW RESOLUTION, MASS SPECTROMETRY FOR SIMULTANEOUS DETERMINATION OF TETRA-, PENTA-, AND HEXACHLORINATED DIBENZO-*p*-DIOXINS AND DIBENZOFURANS

Class of chlorinated dibenzodioxin or dibenzofuran	Number of chlorine substituents (x)	Monitored m/z for dibenzodioxins $C_{12}H_{8-x}O_2Cl_x$	Monitored m/z for dibenzofurans $C_{12}H_{8-x}OCl_x$	Approximate theoretical ratio expected on basis of isotopic abundance
Tetra	4	[1] 319.897	[1] 303.902	0.74
		321.894	305.903	1.00
		[2] 327.885	[2] 311.894	
		[3] 256.933		0.21
		[3] 258.930		0.20
Penta	5	[1] 353.858	[1] 337.863	0.57
		355.855	339.860	1.00
Hexa	6	389.816	373.821	1.00
		391.813	375.818	0.87

[1] Molecular ion peak.
[2] Cl_4—labelled standard peaks.
[3] Ions which can be monitored in TCDD analyses for confirmation purposes.

11.4 Quantitate the CDD and CDF peaks from the response relative to the ^{37}Cl-TCDD/F internal standards. Recovery of the internal standard should be greater than 50 percent.

11.5 If a response is obtained for the appropriate set of ions, but is outside the expected ratio, a co-eluting impurity may be suspected. In this case, another set of ions characteristic of the CDD/CDF molecules should be analyzed. For TCDD a good choice of ions is m/e 257 and m/e 259. For TCDF a good choice of ions is m/e 241 and 243. These ions are useful in characterizing the molecular structure to TCDD or TCDF. For analysis of TCDD good analytical technique would require using all four ions, m/e 257, 320, 322, and 328, to verify detection and signal to noise ratio of 5 to 1. Suspected impurities such as DDE, DDD, or PCB residues can be confirmed by checking for their major fragments. These materials can be removed by the cleanup columns. Failure to meet criteria should be explained in the report, or the sample reanalyzed.

11.6 If broad background interference restricts the sensitivity of the GC/MS analysis, the analyst should employ cleanup procedures and reanalyze by GC/MS. See section 10.0.

11.7 In those circumstances where these procedures do not yield a definitive conclusion, the use of high resolution mass spectrometry is suggested.

12. *Calculations*

12.1 Determine the concentration of individual compounds according to the formula:

$$\text{Concentration, } \mu g/gm = \frac{A \times A_s}{G \times A_{is} \times R_f}$$

where:

A = μg of internal standard added to the sample [8]

G = gm of sample extracted

A_s = area of characteristic ion of the compound being quantified.

A_{is} = area of characteristic ion of the internal standard

R_f = response factor [9]

Response factors are calculated using data obtained from the analysis of standards according to the formula:

$$Rf \quad \frac{A_s \times C_{is}}{A_{is} \times C_s}$$

where:

C_{is} = concentration of the internal standard

C_s = concentration of the standard compound

12.2 Report results in micrograms per gram without correction for recovery data. When duplicate and spiked samples are analyzed, all data obtained should be reported.

12.3 Accuracy and Precision. No data are available at this time.

[50 FR 2001, Jan. 14, 1985]

PART 262—STANDARDS APPLICABLE TO GENERATORS OF HAZARDOUS WASTE

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APPENDIX—UNIFORM HAZARDOUS WASTE MANIFEST AND INSTRUCTIONS (EPA FORMS 8700-22 AND 8700-22A AND THEIR INSTRUCTIONS)

AUTHORITY: 42 U.S.C. 6906, 6912, 6922, 6923, 6924, 6925, and 6937.

SOURCE: 45 FR 33142, May 19, 1980, unless otherwise noted.

Subpart A—General

§ 262.10 Purpose, scope, and applicability.

(a) These regulations establish standards for generators of hazardous waste.

(b) A generator who treats, stores, or disposes of hazardous waste on-site must only comply with the following sections of this part with respect to that waste: Section 262.11 for determining whether or not he has a hazardous waste, § 262.12 for obtaining an EPA identification number, § 262.34 for accumulation of hazadous waste, § 262.40 (c) and (d) for recordkeeping, § 262.43 for additional reporting and if applicable, § 262.51 for farmers.

(c) Any person who imports hazardous waste into the United States must comply with the standards applicable to generators established in this part.

(d) A farmer who generates waste pesticides which are hazardous waste and who complies with all of the requirements of § 262.51 is not required to comply with other standards in this part or 40 CFR Parts 270, 264, or 265 with respect to such pesticides.

(e) A person who generates a hazardous waste as defined by 40 CFR Part 261 is subject to the compliance requirements and penalties prescribed in section 3008 of the Act if he does not comply with the requirements of this part.

(f) An owner or operator who initiates a shipment of hazardous waste from a treatment, storage, or disposal facility must comply with the generator standards established in this part.

NOTE 1: The provisions of § 262.34 are applicable to the on-site accumulation of hazardous waste by generators. Therefore, the provisions of § 262.34 only apply to owners or operators who are shipping hazardous waste which they generated at that facility.

NOTE 2: A generator who treats, stores, or disposes of hazardous waste on-site must comply with the applicable standards and permit requirements set forth in 40 CFR Parts 264, 265, and 266 and Part 270.

[45 FR 33142, May 19, 1980, as amended at 45 FR 86970, Dec. 31, 1980; 47 FR 1251, Jan. 11, 1982; 48 FR 14294, Apr. 1, 1983]

§ 262.11 Hazardous waste determination.

A person who generates a solid waste, as defined in 40 CFR 261.2, must determine if that waste is a hazardous waste using the following method:

(a) He should first determine if the waste is excluded from regulation under 40 CFR 261.4.

(b) He must then determine if the waste is listed as a hazardous waste in Subpart D of 40 CFR Part 261.

NOTE: Even if the waste is listed, the generator still has an opportunity under 40 CFR 260.22 to demonstrate to the Administrator that the waste from his particular facility or operation is not a hazardous waste.

(c) If the waste is not listed as a hazardous waste in Subpart D of 40 CFR Part 261, he must determine whether the waste is identified in Subpart C of 40 CFR Part 261 by either:

(1) Testing the waste according to the methods set forth in Subpart C of 40 CFR Part 261, or according to an equivalent method approved by the Administrator under 40 CFR 260.21; or

(2) Applying knowledge of the hazard characteristic of the waste in light of the materials or the processes used.

(d) If the waste is determined to be hazardous, the generator must refer to Parts 264, 265, 268 of this chapter for possible exclusions or restrictions pertaining to management of his specific waste.

[45 FR 33142, May 19, 1980, as amended at 45 FR 76624, Nov. 19, 1980; 51 FR 40637, Nov. 7, 1986]

§ 262.12 EPA identification numbers.

(a) A generator must not treat, store, dispose of, transport, or offer for transportation, hazardous waste without having received an EPA identification number from the Administrator.

(b) A generator who has not received an EPA identification number may obtain one by applying to the Administrator using EPA form 8700-12. Upon receiving the request the Administrator will assign an EPA identification number to the generator.

(c) A generator must not offer his hazardous waste to transporters or to treatment, storage, or disposal facilities that have not received an EPA identification number.

Subpart B—The Manifest

§ 262.20 General requirements.

(a) A generator who transports, or offers for transportation, hazardous waste for offsite treatment, storage, or disposal must prepare a Manifest OMB control number 2000-0404 on EPA form 8700-22, and, if necessary, EPA form 8700-22A, according to the instructions included in the Appendix to Part 262.

[8] The proper amount of standard to be used is determined from the calibration curve (See Section 6.0).

[9] If standards for PCDDs/Fs and HxCDDs/Fs are not available, response factors for ions derived from these congeners are calculated relative to ^{37}Cl-TCDD/F. The analyst may use response factors for 1,2,3,4- or 2,3,7,8-TCDD, 1,2,3,4,7-PeCDD, or 1,2,3,4,7,8-HxCDD for quantitation of TCDDs/Fs, PeCDDs/Fs and HxCDDs/Fs, respectively. Implicit in this requirement is the assumption that the same response is obtained from PCDDs/Fs ccontaining the same numbers of chlorine atoms.

(b) A generator must designate on the manifest one facility which is permitted to handle the waste described on the manifest.

(c) A generator may also designate on the manifest one alternate facility which is permitted to handle his waste in the event an emergency prevents delivery of the waste to the primary designated facility.

(d) If the transporter is unable to deliver the hazardous waste to the designated facility or the alternate facility, the generator must either designate another facility or instruct the transporter to return the waste.

(e) The requirements of this subpart do not apply to hazardous waste produced by generators of greater than 100 kg but less than 1000 kg in a calendar month where:

(1) The waste is reclaimed under a contractual agreement pursuant to which:

(i) The type of waste and frequency of shipments are specified in the agreement;

(ii) 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 of the waste; and

(2) The generator maintains a copy of the reclamation agreement in his files for a period of at least three years after termination or expiration of the agreement.

[45 FR 33142, May 19, 1980, as amended at 49 FR 10500, Mar. 20, 1984; 51 FR 10175, Mar. 24, 1986]

§ 262.21 Acquisition of manifests.

(a) If the State to which the shipment is manifested (consignment State) supplies the manifest and requires its use, then the generator must use that manifest.

(b) If the consignment State does not supply the manifest, but the State in which the generator is located (generator State) supplies the manifest and requires its use, then the generator must use that State's manifest.

(c) If neither the generator State nor the consignment State supplies the manifest, then the generator may obtain the manifest from any source.

[49 FR 10500, Mar. 20, 1984]

§ 262.22 Number of copies.

The manifest consists of at least the number of copies which will provide the generator, each transporter, and the owner or operator of the designated facility with one copy each for their records and another copy to be returned to the generator.

§ 262.23 Use of the manifest.

(a) The generator must:

(1) Sign the manifest certification by hand; and

(2) Obtain the handwritten signature of the initial transporter and date of acceptance on the manifest; and

(3) Retain one copy, in accordance with § 262.40(a).

(b) The generator must give the transporter the remaining copies of the manifest.

(c) For shipments of hazardous waste within the United States solely by water (bulk shipments only), the generator must send three copies of the manifest dated and signed in accordance with this section to the owner or operator of the designated facility or the last water (bulk shipment) transporter to handle the waste in the United States if exported by water. Copies of the manifest are not required for each transporter.

(d) For rail shipments of hazardous waste within the United States which originate at the site of generation, the generator must send at least three copies of the manifest dated and signed in accordance with this section to:

(1) The next non-rail transporter, if any; or

(2) The designated facility if transported solely by rail; or

(3) The last rail transporter to handle the waste in the United States if exported by rail.

NOTE: See § 263.20(e) and (f) for special provisions for rail or water (bulk shipment) transporters.

[45 FR 33142, May 19, 1980, as amended at 45 FR 86973, Dec. 31, 1980]

Subpart C—Pre-Transport Requirements

§ 262.30 Packaging.

Before transporting hazardous waste or offering hazardous waste for transportation off-site, a generator must package the waste in accordance with the applicable Department of Transportation regulations on packaging under 49 CFR Parts 173, 178, and 179.

§ 262.31 Labeling.

Before transporting or offering hazardous waste for transportation off-site, a generator must label each package in accordance with the applicable Department of Transportation regulations on hazardous materials under 49 CFR Part 172.

§ 262.32 Marking.

(a) Before transporting or offering hazardous waste for transportation off-site, a generator must mark each package of hazardous waste in accordance with the applicable Department of Transportation regulations on hazardous materials under 49 CFR Part 172;

(b) Before transporting hazardous waste or offering hazardous waste for transportation off-site, a generator must mark each container of 110 gallons or less used in such transportation with the following words and information displayed in accordance with the requirements of 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 _____.

§ 262.33 Placarding.

Before transporting hazardous waste or offering hazardous waste for transportation off-site, a generator must placard or offer the initial transporter the appropriate placards according to Department of Transportation regulations for hazardous materials under 49 CFR Part 172, Subpart F.

§ 262.34 Accumulation time.

(a) Except as provided in paragraphs (d), (e), and (f) of this section, a generator may accumulate hazardous waste on-site for 90 days or less without a permit or without having interim status, provided that:

(1) The waste is placed in containers and the generator complies with Subpart I of 40 CFR Part 265, or the waste is placed in tanks and the generator complies with Subpart J of 40 CFR Part 265, except § 265.197(c), and § 265.200. In addition, such a generator is exempt from all the requirements in Subparts G and H of 40 CFR Part 265, except for § 265.111 and § 265.114.

(2) The date upon which each period of accumulation begins is clearly marked and visible for inspection on each container;

(3) While being accumulated on-site, each container and tank is labeled or marked clearly with the words, "Hazardous Waste"; and

(4) The generator complies with the requirements for owners or operators in Subparts C and D in 40 CFR Part 265 and with § 265.16.

(b) A generator who accumulates hazardous waste for more than 90 days is an operator of a storage facility and is subject to the requirements of 40 CFR Parts 264 and 265 and the permit requirements of 40 CFR Part 270 unless he has been granted an extension to the 90-day period. Such extension may be granted by EPA if hazardous wastes must remain on-site for longer than 90 days due to unforeseen, temporary, and uncontrollable circumstances. An extension of up to 30 days may be granted at the discretion of the Regional Administrator on a case-by-case basis.

(c)(1) A generator may accumulate as much as 55 gallons of hazardous waste or one quart of acutely hazardous waste listed in § 261.33(e) in containers at or near any point of generation where wastes initially accumulate, which is under the control of the operator of the process generating the waste, without a permit or interim status and without complying with paragraph (a) of this section provided he:

(i) Complies with §§ 265.171, 265.172, and 265.173(a) of this chapter; and

(ii) Marks his containers either with the words "Hazardous Waste" or with other words that identify the contents of the containers.

(2) A generator who accumulates either hazardous waste or acutely hazardous waste listed in § 261.33(e) in excess of the amounts listed in paragraph (c)(1) of this section at or near any point of generation must, with respect to that amount of excess waste, comply within three days with paragraph (a) of this section or other applicable provisions of this chapter. During the three day period the generator must continue to comply with paragraphs (c)(1)(i) through (ii) of this section. The generator must mark the container holding the excess accumulation of hazardous waste with the date the excess amount began accumulating.

(d) A generator who generates greater than 100 kilograms but less than 1000 kilograms of hazardous waste in a calendar month may accumulate hazardous waste on-site for 180 days or less without a permit or without having interim status provided that:

(1) The quantity of waste accumulated on-site never exceeds 6000 kilograms;

(2) The generator complies with the requirements of Subpart I of Part 265, except § 265.176;

(3) The generator complies with the requirements of § 265.201 in Subpart J of Part 265;

(4) The generator complies with the requirements of paragraphs (a)(2) and (a)(3) of this section and the requirements of Subpart C of Part 265; and

(5) The generator complies with the following requirements:

(i) At all times there must be at least one employee either on the premises or on call (*i.e.*, available to respond to an emergency by reaching the facility within a short period of time) with the responsibility for coordinating all emergency response measures specified in paragraph (d)(5)(iv) of this section. This employee is the emergency coordinator.

(ii) The generator must post the following information next to the telephone:

(A) The name and telephone number of the emergency coordinator;

(B) Location of fire extinguishers and spill control material, and, if present, fire alarm; and

(C) The telephone number of the fire department, unless the facility has a direct alarm.

(iii) The generator must ensure that all employees are thoroughly familiar with proper waste handling and emergency procedures, relevant to their responsibilities during normal facility operations and emergencies;

(iv) The emergency coordinator or his designee must respond to any emergencies that arise. The applicable responses are as follows:

(A) In the event of a fire, call the fire department or attempt to extinguish it using a fire extinguisher;

(B) In the event of a spill, contain the flow of hazardous waste to the extent possible, and as soon as is practicable, clean up the hazardous waste and any contaminated materials or soil;

(C) In the event of a fire, explosion, or other release which could threaten human health outside the facility or when the generator has knowledge that a spill has reached surface water, the generator must immediately notify the National Response Center (using their 24-hour toll free number 800/424-8802). The report must include the following information:

(1) The name, address, and U.S. EPA Identification Number of the generator;

(2) Date, time, and type of incident (*e.g.*, spill or fire);

(3) Quantity and type of hazardous waste involved in the incident;

(4) Extent of injuries, if any; and

(5) Estimated quantity and disposition of recovered materials, if any.

(e) A generator who generates greater than 100 kilograms but less than 1000 kilograms of hazardous waste in a calendar month and who must transport his waste, or offer his waste for transportation, over a distance of 200 miles or more for off-site treatment, storage or disposal may accumulate hazardous waste on-site for 270 days or less without a permit or without having interim status provided that he

complies with the requirements of paragraph (d) of this section.

(f) A generator who generates greater than 100 kilograms but less than 1000 kilograms of hazardous waste in a calendar month and who accumulates hazardous waste in quantities exceeding 6000 kg or accumulates hazardous waste for more than 180 days (or for more than 270 days if he must transport his waste, or offer his waste for transportation, over a distance of 200 miles or more) is an operator of a storage facility and is subject to the requirements of 40 CFR Parts 264 and 265 and the permit requirements of 40 CFR Part 270 unless he has been granted an extension to the 180-day (or 270-day if applicable) period. Such extension may be granted by EPA if hazardous wastes must remain on-site for longer than 180 days (or 270 days if applicable) due to unforeseen, temporary, and uncontrollable circumstances. An extension of up to 30 days may be granted at the discretion of the Regional Administrator on a case-by-case basis.

[47 FR 1251, Jan. 11, 1982, as amended at 48 FR 14294, Apr. 1, 1983; 49 FR 49571, Dec. 20, 1984; 51 FR 10175, Mar. 24, 1986; 51 FR 25472, July 14, 1986]

Subpart D—Recordkeeping and Reporting

§ 262.40 Recordkeeping.

(a) A generator must keep a copy of each manifest signed in accordance with § 262.23(a) for three years or until he receives a signed copy from the designated facility which received the waste. This signed copy must be retained as a record for at least three years from the date the waste was accepted by the initial transporter.

(b) A generator must keep a copy of each Biennial Report and Exception Report for a period of at least three years from the due date of the report.

(c) A generator must keep records of any test results, waste analyses, or other determinations made in accordance with § 262.11 for at least three years from the date that the waste was last sent to on-site or off-site treatment, storage, or disposal.

(d) The periods or retention referred to in this section are extended automatically during the course of any unresolved enforcement action regarding the regulated activity or as requested by the Administrator.

[45 FR 33142, May 19, 1980, as amended at 48 FR 3981, Jan. 28, 1983]

§ 262.41 Biennial report.

(a) A generator who ships any hazardous waste off-site to a treatment, storage or disposal facility within the United States must prepare and submit a single copy of a Biennial Report to the Regional Administrator by March 1 of each even numbered year. The Biennial Report must be submitted on EPA Form 8700-13A, must cover generator activities during the previous year, and must include the following information:

(1) The EPA identification number, name, and address of the generator;

(2) The calendar year covered by the report;

(3) The EPA identification number, name, and address for each off-site treatment, storage, or disposal facility in the United States to which waste was shipped during the year;

(4) The name and EPA identification number of each transporter used during the reporting year for shipments to a treatment, storage or disposal facility within the United States;

(5) A description, EPA hazardous waste number (from 40 CFR Part 261, Subpart C or D), DOT hazard class, and quantity of each hazardous waste shipped off-site for shipments to a treatment, storage or disposal facility within the United States. This information must be listed by EPA identification number of each such off-site facility to which waste was shipped.

(6) A description of the efforts undertaken during the year to reduce the volume and toxicity of waste generated.

(7) A description of the changes in volume and toxicity of waste actually achieved during the year in comparison to previous years to the extent such information is available for years prior to 1984.

(8) The certification signed by the generator or authorized representative.

(b) Any generator who treats, stores, or disposes of hazardous waste on-site must submit a biennial report covering those wastes in accordance with the provisions of 40 CFR Parts 270, 264, 265, and 266. Reporting for exports of hazardous waste is not required on the Biennial Report form. A separate annual report requirement is set forth at 40 CFR 262.56.

[48 FR 3981, Jan. 28, 1983, as amended at 48 FR 14294, Apr. 1, 1983; 50 FR 28746, July 15, 1985; 51 FR 28682, Aug. 8, 1986]

§ 262.42 Exception reporting.

(a)(1) A generator of greater than 1000 kilograms of hazardous waste in a calendar month who does not receive a copy of the manifest with the handwritten signature of the owner or operator of the designated facility within 35 days of the date the waste was accepted by the initial transporter must contact the transporter and/or the owner or operator of the designated facility to determine the status of the hazardous waste.

(2) A generator of greater than 1000 kilograms of hazardous waste in a calendar month must submit an Exception Report to the EPA Regional Administrator for the Region in which the generator is located if he has not received a copy of the manifest with the handwritten signature of the owner or operator of the designated facility within 45 days of the date the waste was accepted by the initial transporter. The Exception Report must include:

(i) A legible copy of the manifest for which the generator does not have confirmation of delivery;

(ii) A cover letter signed by the generator or his authorized representative explaining the efforts taken to locate the hazardous waste and the results of those efforts.

(b) A generator of greater than 100 kilograms but less than 1000 kilograms of hazardous waste in a calendar month who does not receive a copy of the manifest with the handwritten signature of the owner or operator of the designated facility within 60 days of the date the waste was accepted by the initial transporter must submit a legible copy of the manifest, with some indication that the generator has not received confirmation of delivery, to the EPA Regional Administrator for the Region in which the generator is located.

NOTE: The submission to EPA need only be a handwritten or typed note on the manifest itself, or on an attached sheet of paper, stating that the return copy was not received.

(Information collection requirements approved by the Office of Management and Budget under control number 2050-0039)

[52 FR 35898, Sept. 23, 1987]

§ 262.43 Additional reporting.

The Administrator, as he deems necessary under sections 2002(a) and 3002(6) of the Act, may require generators to furnish additional reports concerning the quantities and disposition of wastes identified or listed in 40 CFR Part 261.

§ 262.44 Special requirements for generators of between 100 and 1000 kg/mo.

A generator of greater than 100 kilograms but less than 1000 kilograms of hazardous waste in a calendar month is subject only to the following requirements in this subpart:

(a) Section 262.40(a), (c), and (d), recordkeeping;

(b) Section 262.42(b), exception reporting; and

(c) Section 262.43, additional reporting.

(Information collection requirements approved by the Office of Management and Budget under control number 2050-0039)

[52 FR 35899, Sept. 23, 1987]

Subpart E—Exports of Hazardous Waste

SOURCE: 51 FR 28682, Aug. 8, 1986, unless otherwise noted.

§ 262.50 Applicability.

This subpart establishes requirements applicable to exports of hazardous waste. Except to the extent § 262.58 provides otherwise, a primary exporter of hazardous waste must comply with the special requirements

of this subpart and a transporter transporting hazardous waste for export must comply with applicable requirements of Part 263. Section 262.58 sets forth the requirements of international agreements between the United States and receiving countries which establish different notice, export, and enforcement procedures for the transportation, treatment, storage and disposal of hazardous waste for shipments between the United States and those countries.

§ 262.51 Farmers.

A farmer disposing of waste pesticides from his own use which are hazardous wastes is not required to comply with the standards in this part or other standards in 40 CFR Part 264, 265, 268, or 270 for those wastes provided he triple rinses each emptied pesticide container in accordance with § 261.7(b)(3) and disposes of the pesticide residues on his own farm in a manner consistent with the disposal instructions on the pesticide label.

[52 FR 25787, July 8, 1987]

§ 262.52 General requirements.

Exports of hazardous waste are prohibited except in compliance with the applicable requirements of this Subpart and Part 263. Exports of hazardous waste are prohibited unless:

(a) Notification in accordance with § 262.53 has been provided;

(b) The receiving country has consented to accept the hazardous waste;

(c) A copy of the EPA Acknowledgment of Consent to the shipment accompanies the hazardous waste shipment and, unless exported by rail, is attached to the manifest (or shipping paper for exports by water (bulk shipment)).

(d) The hazardous waste shipment conforms to the terms of the receiving country's written consent as reflected in the EPA Acknowledgment of Consent.

(Approved by the Office of Management and Budget under control number 2050-0035)

§ 262.53 Notification of intent to export.

(a) A primary exporter of hazardous waste must notify EPA of an intended export before such waste is scheduled to leave the United States. A complete notification should be submitted sixty (60) days before the initial shipment is intended to be shipped off site. This notification may cover export activities extending over a twelve (12) month or lesser period. The notification must be in writing, signed by the primary exporter, and include the following information:

(1) Name, mailing address, telephone number and EPA ID number of the primary exporter;

(2) By consignee, for each hazardous waste type:

(i) A description of the hazardous waste and the EPA hazardous waste number (from 40 CFR Part 261, Subparts C and D), U.S. DOT proper shipping name, hazard class and ID number (UN/NA) for each hazardous waste as identified in 49 CFR Parts 171 through 177;

(ii) The estimated frequency or rate at which such waste is to be exported and the period of time over which such waste is to be exported.

(iii) The estimated total quantity of the hazardous waste in units as specified in the instructions to the Uniform Hazardous Waste Manifest Form (8700-22);

(iv) All points of entry to and departure from each foreign country through which the hazardous waste will pass;

(v) A description of the means by which each shipment of the hazardous waste will be transported (e.g., mode of transportation vehicle (air, highway, rail, water, etc.), type(s) of container (drums, boxes, tanks, etc.));

(vi) A description of the manner in which the hazardous waste will be treated, stored or disposed of in the receiving country (e.g., land or ocean incineration, other land disposal, ocean dumping, recycling);

(vii) The name and site address of the consignee and any alternate consignee; and

(viii) The name of any transit countries through which the hazardous waste will be sent and a description of the approximate length of time the hazardous waste will remain in such country and the nature of its handling while there;

(b) Notification shall be sent to the Office of International Activities (A-106), EPA, 401 M Street, SW., Washington, DC 20460 with "Attention: Notification to Export" prominently displayed on the front of the envelope.

(c) Except for changes to the telephone number in paragraph (a)(1) of this section, changes to paragraph (a)(2)(v) of this section and decreases in the quantity indicated pursuant to paragraph (a)(2)(iii) of this section when the conditions specified on the original notification change (including any exceedance of the estimate of the quantity of hazardous waste specified in the original notification), the primary exporter must provide EPA with a written renotification of the change. The shipment cannot take place until consent of the receiving country to the changes (except for changes to paragraph (a)(2)(viii) of this section and in the ports of entry to and departure from transit countries pursuant to paragraph (a)(2)(iv) of this section) has been obtained and the primary exporter receives an EPA Acknowledgment of Consent reflecting the receiving country's consent to the changes.

(d) Upon request by EPA, a primary exporter shall furnish to EPA any additional information which a receiving country requests in order to respond to a notification.

(e) In conjunction with the Department of State, EPA will provide a complete notification to the receiving country and any transit countries. A notification is complete when EPA receives a notification which EPA determines satisfies the requirements of paragraph (a) of this section. Where a claim of confidentiality is asserted with respect to any notification information required by paragraph (a) of this section, EPA may find the notification not complete until any such claim is resolved in accordance with 40 CFR 260.2.

(f) Where the receiving country consents to the receipt of the hazardous waste, EPA will forward an EPA Acknowledgment of Consent to the primary exporter for purposes of § 262.54(h). Where the receiving country objects to receipt of the hazardous waste or withdraws a prior consent, EPA will notify the primary exporter in writing. EPA will also notify the primary exporter of any responses from transit countries.

(Approved by the Office of Management and Budget under control number 2050-0035)

§ 262.54 Special manifest requirements.

A primary exporter must comply with the manifest requirements of 40 CFR 262.20 through 262.23 except that:

(a) In lieu of the name, site address and EPA ID number of the designated permitted facility, the primary exporter must enter the name and site address of the consignee;

(b) In lieu of the name, site address and EPA ID number of a permitted alternate facility, the primary exporter may enter the name and site address of any alternate consignee.

(c) In Special Handling Instructions and Additional Information, the primary exporter must identify the point of departure from the United States;

(d) The following statement must be added to the end of the first sentence of the certification set forth in Item 16 of the Uniform Hazardous Waste Manifest Form: "and conforms to the terms of the attached EPA Acknowledgment of Consent";

(e) In lieu of the requirements of § 262.21, the primary exporter must obtain the manifest form from the primary exporter's State if that State supplies the manifest form and requires its use. If the primary exporter's State does not supply the manifest form, the primary exporter may obtain a manifest form from any source.

(f) The primary exporter must require the consignee to confirm in writing the delivery of the hazardous waste to that facility and to describe any significant discrepancies (as defined in 40 CFR 264.72(a)) between the manifest and the shipment. A copy of the manifest signed by such facility may be used to confirm delivery of the hazardous waste.

(g) In lieu of the requirements of § 262.20(d), where a shipment cannot be delivered for any reason to the designated or alternate consignee, the primary exporter must:

(1) Renotify EPA of a change in the conditions of the original notification to allow shipment to a new consignee in accordance with § 262.53(c) and obtain an EPA Acknowledgment of Consent prior to delivery; or

(2) Instruct the transporter to return the waste to the primary exporter in the United States or designate another facility within the United States; and

(3) Instruct the transporter to revise the manifest in accordance with the primary exporter's instructions.

(h) The primary exporter must attach a copy of the EPA Acknowledgment of Consent to the shipment to the manifest which must accompany the hazardous waste shipment. For exports by rail or water (bulk shipment), the primary exporter must provide the transporter with an EPA Acknowledgment of Consent which must accompany the hazardous waste but which need not be attached to the manifest except that for exports by water (bulk shipment) the primary exporter must attach the copy of the EPA Acknowledgment of Consent to the shipping paper.

(i) The primary exporter shall provide the transporter with an additional copy of the manifest for delivery to the U.S. Customs official at the point the hazardous waste leaves the United States in accordance with § 263.20(g)(4).

(Approved by the Office of Management and Budget under control number 2050-0035)

§ 262.55 Exception reports.

In lieu of the requirements of § 262.42, a primary exporter must file an exception report with the Administrator if:

(a) He has not received a copy of the manifest signed by the transporter stating the date and place of departure from the United States within forty-five (45) days from the date it was accepted by the initial transporter;

(b) Within ninety (90) days from the date the waste was accepted by the initial transporter, the primary exporter has not received written confirmation from the consignee that the hazardous waste was received;

(c) The waste is returned to the United States.

(Approved by the Office of Management and Budget and assigned under control number 2050-0035)

§ 262.56 Annual reports.

(a) Primary exporters of hazardous waste shall file with the Administrator no later than March 1 of each year, a report summarizing the types, quantities, frequency, and ultimate destination of all hazardous waste exported during the previous calendar year. Such reports shall include the following:

(1) The EPA identification number, name, and mailing and site address of the exporter;

(2) The calendar year covered by the report;

(3) The name and site address of each consignee;

(4) By consignee, for each hazardous waste exported, a description of the hazardous waste, the EPA hazardous waste number (from 40 CFR Part 261, Subpart C or D), DOT hazard class, the name and US EPA ID number (where applicable) for each transporter used, the total amount of waste shipped and number of shipments pursuant to each notification;

(5) Except for hazardous waste produced by exporters of greater than 100 kg but less than 1000 kg in a calendar month, unless provided pursuant to § 262.41, in even numbered years:

(i) A description of the efforts undertaken during the year to reduce the volume and toxicity of waste generated; and

(ii) A description of the changes in volume and toxicity of waste actually achieved during the year in comparison to previous years to the extent such information is available for years prior to 1984.

(6) A certification signed by the primary exporter which states:

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately rsponsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for sub-

mitting false information including the possibility of fine and imprisonment.

(b) Reports shall be sent to the following address: Office of International Activities (A-106), Environmental Protection Agency, 401 M Street SW., Washington, DC 20460.

(Approved by the Office of Management and Budget under control number 2050-0035)

§ 262.57 Recordkeeping.

(a) For all exports a primary exporter must:

(1) Keep a copy of each notification of intent to export for a period of at least three years from the date the hazardous waste was accepted by the initial transporter;

(2) Keep a copy of each EPA Acknowledgment of Consent for a period of at least three years from the date the hazardous waste was accepted by the initial transporter;

(3) Keep a copy of each confirmation of delivery of the hazardous waste from the consignee for at least three years from the date the hazardous waste was accepted by the initial transporter; and

(4) Keep a copy of each annual report for a period of at least three years from the due date of the report.

(b) The periods of retention referred to in this section are extended automatically during the course of any unresolved enforcement action regarding the regulated activity or as requested by the Administrator.

(Approved by the Office of Management and Budget under control number 2050-0035)

§ 262.58 International agreements. [(Reserved)]

Subpart F—Imports of Hazardous Waste

§ 262.60 Imports of hazardous waste.

(a) Any person who imports hazardous waste from a foreign country into the United States must comply with the requirements of this part and the special requirements of this subpart.

(b) When importing hazardous waste, a person must meet all the requirements of § 262.20(a) for the manifest except that:

(1) In place of the generator's name, address and EPA identification number, the name and address of the foreign generator and the importer's name, address and EPA identification number must be used.

(2) In place of the generator's signature on the certification statement, the U.S. importer or his agent must sign and date the certification and obtain the signature of the initial transporter.

(c) A person who imports hazardous waste must obtain the manifest form from the consignment State if the State supplies the manifest and requires its use. If the consignment State does not supply the manifest form, then the manifest form may be obtained from any source.

[51 FR 28685, Aug. 8, 1986]

Subpart G—Farmers

§ 262.70 Farmers.

A farmer disposing of waste pesticides from his own use which are hazardous wastes is not required to comply with the standards in this part or other standards in 40 CFR Part 270, 264 or 265 for those wastes provided he triple rinses each emptied pesticide container in accordance with § 261.7(b)(3) and disposes of the pesticide residues on his own farm in a manner consistent with the disposal instructions on the pesticide label.

[51 FR 28685, Aug. 8, 1986]

APPENDIX—UNIFORM HAZARDOUS WASTE MANIFEST AND INSTRUCTIONS (EPA FORMS 8700-22 AND 8700-22A AND THEIR INSTRUCTIONS)

U.S. EPA Form 8700-22

Read all instructions before completing this form.

This form has been designed for use on a 12-pitch (elite) typewriter; a firm point pen may also be used—press down hard.

Federal regulations require generators and transporters of hazardous waste and owners or operators of hazardous waste treatment, storage, and disposal facilities to use this form (8700-22) and, if necessary,

the continuation sheet (Form 8700-22A) for both inter and intrastate transportation.

Federal regulations also require generators and transporters of hazardous waste and owners or operators of hazardous waste treatment, storage and disposal facilities to complete the following information:

* * * * *

Please print or type (Form designed for use on elite (12 pitch) typewriter)

Form Approved OMB No 2050-0039 Expires 9-30-88

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. | Manifest Document No. | 2. Page 1 of | Information in the shaded areas is not required by Federal law

3. Generator's Name and Mailing Address | A. State Manifest Document Number | B. State Generator's ID

4. Generator's Phone ( )

5. Transporter 1 Company Name | 6. US EPA ID Number | C. State Transporter's ID | D. Transporter's Phone

7. Transporter 2 Company Name | 8. US EPA ID Number | E. State Transporter's ID | F. Transporter's Phone

9. Designated Facility Name and Site Address | 10. US EPA ID Number | G. State Facility's ID | H. Facility's Phone

GENERATOR

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No	Type	13. Total Quantity	14. Unit Wt./Vol.	I. Waste No
a.					
b.					
c.					
d.					

J. Additional Descriptions for Materials Listed Above | K. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name | Signature | Month Day Year

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name | Signature | Month Day Year

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name | Signature | Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in item 19

Printed/Typed Name | Signature | Month Day Year

EPA Form 8700-22 (Rev. 9-86) Previous editions are obsolete

GENERATORS

Item 1. Generator's U.S. EPA ID Number—Manifest Document Number

Enter the generator's U.S. EPA twelve digit identification number and the unique five digit number assigned to this Manifest (e.g., 00001) by the generator.

Item 2. Page 1 of ——

Enter the total number of pages used to complete this Manifest, i.e., the first page (EPA Form 8700-22) plus the number of Continuation Sheets (EPA Form 8700-22A), if any.

Item 3. Generator's Name and Mailing Address

Enter the name and mailing address of the generator. The address should be the location that will manage the returned Manifest forms.

Item 4. Generator's Phone Number

Enter a telephone number where an authorized agent of the generator may be reached in the event of an emergency.

Item 5. Transporter 1 Company Name

Enter the company name of the first transporter who will transport the waste.

Item 6. U.S. EPA ID Number

Enter the U.S. EPA twelve digit identification number of the first transporter identified in item 5.

Item 7. Transporter 2 Company Name

If applicable, enter the company name of the second transporter who will transport the waste. If more than two transporters are used to transport the waste, use a Continuation Sheet(s) (EPA Form 8700-22A) and list the transporters in the order they will be transporting the waste.

Item 8. U.S. EPA ID Number

If applicable, enter the U.S. EPA twelve digit identification number of the second transporter identified in item 7.

NOTE: If more than two transporters are used, enter each additional transporter's company name and U.S. EPA twelve digit identification number in items 24-27 on the Continuation Sheet (EPA Form 8700-22A). Each Continuation Sheet has space to record two additional transporters. Every transporter used between the generator and the designated facility must be listed.

Item 9. Designated Facility Name and Site Address

Enter the company name and site address of the facility designated to receive the waste listed on this Manifest. The address must be the site address, which may differ from the company mailing address.

Item 10. U.S. EPA ID Number

Enter the U.S. EPA twelve digit identification number of the designated facility identified in item 9.

Item 11. U.S. DOT Description [Including Proper Shipping Name, Hazard Class, and ID Number (UN/NA)]

Enter the U.S. DOT Proper Shipping Name, Hazard Class, and ID Number (UN/NA) for each waste as identified in 49 CFR 171 through 177.

NOTE: If additional space is needed for waste descriptions, enter these additional descriptions in item 28 on the Continuation Sheet (EPA Form 8700-22A).

Item 12. Containers (No. and Type)

Enter the number of containers for each waste and the appropriate abbreviation from Table I (below) for the type of container.

Table I—Types of Containers

DM=Metal drums, barrels, kegs
DW=Wooden drums, barrels, kegs
DF=Fiberboard or plastic drums, barrels, kegs
TP=Tanks portable
TT=Cargo tanks (tank trucks)
TC=Tank cars
DT=Dump truck
CY=Cylinders
CM=Metal boxes, cartons, cases (including roll-offs)
CW=Wooden boxes, cartons, cases
CF=Fiber or plastic boxes, cartons, cases
BA=Burlap, cloth, paper or plastic bags

Item 13. Total Quantity

Enter the total quantity of waste described on each line.

Item 14. Unit (Wt./Vol.)

Enter the appropriate abbreviation from Table II (below) for the unit of measure.

Table II—Units of Measure

G=Gallons (liquids only)
P=Pounds
T=Tons (2000 lbs)
Y=Cubic yards
L=Liters (liquids only)
K=Kilograms
M=Metric tons (1000 kg)
N=Cubic meters

Item 15. Special Handling Instructions and Additional Information

Generators may use this space to indicate special transportation, treatment, storage, or disposal information or Bill of Lading information. States may not require additional, new, or different information in this space. For international shipments, generators must enter in this space the point of departure (City and State) for those shipments destined for treatment, storage, or disposal outside the jurisdiction of the United States.

Item 16. Generator's Certification

The generator must read, sign (by hand), and date the certification statement. If a mode *other than* highway is used, the word "highway" should be lined out and the appropriate mode (rail, water, or air) inserted in the space below. If another mode *in addition to* the highway mode is used, enter the appropriate additional mode (e.g., *and rail*) in the space below.

Primary exporters shipping hazardous wastes to a facility located outside of the United States must add to the end of the first sentence of the certification the following words "and conforms to the terms of the EPA Acknowledgment of Consent to the shipment."

In signing the waste minimization certification statement, those generators who have not been exempted by statute or regulation from the duty to make a waste minimization certification under section 3002(b) of RCRA are also certifying that they have complied with the waste minimization requirements.

Generators may preprint the words, "On behalf of" in the signature block or may hand write this statement in the signature block prior to signing the generator certifications.

NOTE: All of the above information *except* the handwritten signature required in item 16 may be preprinted.

* * * * *

TRANSPORTERS

Item 17. Transporter 1 Acknowledgement of Receipt of Materials

Enter the name of the person accepting the waste on behalf of the first transporter. That person must acknowledge acceptance of the waste described on the Manifest by signing and entering the date of receipt.

Item 18. Transporter 2 Acknowledgement of Receipt of Materials

Enter, if applicable, the name of the person accepting the waste on behalf of the second transporter. That person must acknowledge acceptance of the waste described on the Manifest by signing and entering the date of receipt.

NOTE: International Shipments—Transporter Responsibilities.

Exports—Transporters must sign and enter the date the waste left the United States in item 15 of Form 8700-22.

Imports—Shipments of hazardous waste regulated by RCRA and transported into the United States from another country must upon entry be accompanied by the U.S. EPA Uniform Hazardous Waste Manifest. Transporters who transport hazardous waste into the United States from another country are responsible for completing the Manifest (40 CFR 263.10(c)(1)).

Owners and Operators of Treatment, Storage, or Disposal Facilities

Item 19. Discrepancy Indication Space

The authorized representative of the designated (or alternate) facility's owner or operator must note in this space any significant discrepancy between the waste described on the Manifest and the waste actually received at the facility.

Owners and operators of facilities located in unauthorized States (i.e., the U.S. EPA administers the hazardous waste management program) who cannot resolve significant discrepancies within 15 days of receiving the waste must submit to their Regional Administrator (see list below) a letter with a copy of the Manifest at issue describing the discrepancy and attempts to reconcile it (40 CFR 264.72 and 265.72).

Owners and operators of facilities located in authorized States (i.e., those States that have received authorization from the U.S. EPA to administer the hazardous waste program) should contact their State agency for information on State Discrepancy Report requirements.

EPA Regional Administrators

Regional Administrator, U.S. EPA Region I, J.F. Kennedy Fed. Bldg., Boston, MA 02203
Regional Administrator, U.S. EPA Region II, 26 Federal Plaza, New York, NY 10278
Regional Administrator, U.S. EPA Region III, 6th and Walnut Sts., Philadelphia, PA 19106
Regional Administrator, U.S. EPA Region IV, 345 Courtland St., NE., Atlanta, GA 30365
Regional Administrator, U.S. EPA Region V, 230 S. Dearborn St., Chicago, IL 60604
Regional Administrator, U.S. EPA Region VI, 1201 Elm Street, Dallas, TX 75270
Regional Administrator, U.S. EPA Region VII, 324 East 11th Street, Kansas City, MO 64106

Regional Administrator, U.S. EPA Region VIII, 1860 Lincoln Street, Denver, CO 80295
Regional Administrator, U.S. EPA Region IX, 215 Freemont Street, San Francisco, CA 94105
Regional Administrator, U.S. EPA Region X, 1200 Sixth Avenue, Seattle, WA 98101

Item 20. Facility Owner or Operator: Certification of Receipt of Hazardous Materials Covered by This Manifest Except as Noted in Item 19

Print or type the name of the person accepting the waste on behalf of the owner or operator of the facility. That person must acknowledge acceptance of the waste described on the Manifest by signing and entering the date of receipt.

Items A-K are not required by Federal regulations for intra- or interstate transportation. However, States may require generators and owners or operators of treatment, storage, or disposal facilities to complete some or all of items A-K as part of State manifest reporting requirements. Generators and owners and operators of treatment, storage, or disposal facilities are advised to contact State officials for guidance on completing the shaded areas of the Manifest.

20-142 O—88——16

Please print or type (Fi[illegible]ed for use on elite (12 pitch) typewriter.) Form Approved OMB No. 2050-0039 Expires 9-30-88

UNIFORM HA[illegible]DOUS WASTE MA[illegible]FEST
(Continuation Sheet)

21 Generator's US EPA ID No. | Manifest Document No. | 22 Page | Information in the shaded areas is not required by Federal law

23 Generator's Name | L State Manifest Document Number | M State Generator's ID

24 Transporter ___ Company Name | 25 US EPA ID Number | N State Transporter's ID | O Transporter's Phone

26 Transporter ___ Company Name | 27 US EPA ID Number | P State Transporter's ID | Q Transporter's Phone

GENERATOR

28 US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	29 Containers No.	Type	30 Total Quantity	31 Unit Wt./Vol.	R Waste No.
a					
b					
c					
d					
e					
f					
g					
h					
i					

S Additional Descriptions for Materials Listed Above | T Handling Codes for Wastes Listed Above

32 Special Handling Instructions and Additional Information

TRANSPORTER

33 Transporter ___ Acknowledgement of Receipt of Materials
Printed/Typed Name | Signature | Date (Month Day Year)

34 Transporter ___ Acknowledgement of Receipt of Materials
Printed/Typed Name | Signature | Date (Month Day Year)

FACILITY

35 Discrepancy Indication Space

EPA Form 8700-22A (Rev. 9-88) Previous edition is obsolete.

INSTRUCTIONS—CONTINUATION SHEET, U.S. EPA FORM 8700-22A

Read all instructions before completing this form.

This form has been designed for use on a 12-pitch (elite) typewriter; a firm point pen may also be used—press down hard.

This form must be used as a continuation sheet to U.S. EPA Form 8700-22 if:

- More than two transporters are to be used to transport the waste;
- More space is required for the U.S. DOT description and related information in Item 11 of U.S. EPA Form 8700-22.

Federal regulations require generators and transporters of hazardous waste and owners or operators of hazardous waste treatment, storage, or disposal facilities to use the uniform hazardous waste manifest (EPA Form 8700-22) and, if necessary, this continuation sheet (EPA Form 8700-22A) for both inter- and intrastate transportation.

GENERATORS

Item 21. Generator's U.S. EPA ID Number—Manifest Document Number

Enter the generator's U.S. EPA twelve digit identification number and the unique five digit number assigned to this Manifest (e.g., 00001) as it appears in item 1 on the first page of the Manifest.

Item 22. Page ——

Enter the page number of this Continuation Sheet.

Item 23. Generator's Name

Enter the generator's name as it appears in item 3 on the first page of the Manifest.

Item 24. Transporter —— Company Name

If additional transporters are used to transport the waste described on this Manifest, enter the company name of each additional transporter in the order in which they will transport the waste. Enter after the word "Transporter" the order of the transporter. For example, Transporter 3 Company Name. Each Continuation Sheet will record the names of two additional transporters.

Item 25. U.S. EPA ID Number

Enter the U.S. EPA twelve digit identification number of the transporter described in item 24.

Item 26. Transporter —— Company Name

If additional transporters are used to transport the waste described on this Manifest, enter the company name of each additional transporter in the order in which they will transport the waste. Enter after the word "Transporter" t[illegible]rder of the transporter. For example [illegible]nsporter 4 Company Name. Each Con[illegible]uation Sheet will record the names of two additional transporters.

Item 27. U.S. EPA ID Number

Enter the U.S. EPA twelve digit identification number of the transporter described in item 26.

Item 28. U.S. DOT Description Including Proper Shipping Name, Hazardous Class, and ID Number (UN/NA)

Refer to item 11.

Item 29. Containers (No. and Type)

Refer to item 12.

Item 30. Total Quantity

Refer to item 13.

Item 31. Unit (Wt./Vol.)

Refer to item 14.

Item 32. Special Handling Instructions

Generators may use this space to indicate special transportation, treatment, storage, or disposal information or Bill of Lading information. States are *not* authorized to require additional, new, or different information in this space.

* * * * *

TRANSPORTERS

Item 33. Transporter —— Acknowledgement of Receipt of Materials

Enter the same number of the Transporter as identified in item 24. Enter also the name of the person accepting the waste on behalf of the Transporter (Company Name) identified in item 24. That person must acknowledge acceptance of the waste described on the Manifest by signing and entering the date of receipt.

Item 34. Transporter —— Acknowledgement of Receipt of Materials

Enter the same number as identified in item 26. Enter also the name of the person accepting the waste on behalf of the Transporter (Company Name) identified in item 26. That person must acknowledge acceptance of the waste described on the Manifest by signing and entering the date of receipt.

* * * * *

OWNERS AND OPERATORS OF TREATMENT, STORAGE, OR DISPOSAL FACILITIES

Item 35. Discrepancy Indication Space

Refer to item 19.

Items L-R are not required by Federal regulations for intra- or interstate transportation. However, States may require generators and owners or operators of treatment, storage, or disposal facilities to complete some or all of items L-R as part of State manifest reporting requirements. Generators and owners and operators of treatment, storage, or disposal facilities are advised to contact State officials for guidance on completing the shaded areas of the manifest.

[49 FR 10501, Mar. 20, 1984, as amended at 51 FR 28685, Aug. 8, 1986; 51 FR 35192, Oct. 1, 1986]

PART 263—STANDARDS APPLICABLE TO TRANSPORTERS OF HAZARDOUS WASTE

Subpart A—General

Sec.
263.10 Scope.
263.11 EPA identification number.
263.12 Transfer facility requirements.

Subpart B—Compliance With the Manifest System and Recordkeeping

263.20 The manifest system.
263.21 Compliance with the manifest.
263.22 Recordkeeping.

Subpart C—Hazardous Waste Discharges

263.30 Immediate action.
263.31 Discharge clean up.

AUTHORITY: Secs. 2002(a), 3002, 3003, 3004 and 3005 of the Solid Waste Disposal Act as amended by the Resource Conservation and Recovery Act of 1976 and as amended by the Quiet Communities Act of 1978, (42 U.S.C. 6912a, 6922, 6923, 6924, 6925).

SOURCE: 45 FR 33151, May 19, 1980, unless otherwise noted.

Subpart A—General

§ 263.10 Scope.

(a) These regulations establish standards which apply to persons transporting hazardous waste within the United States if the transportation requires a manifest under 40 CFR Part 262.

NOTE: The regulations set forth in Parts 262 and 263 establish the responsibilities of generators and transporters of hazardous waste in the handling, transportation, and management of that waste. In these regulations, EPA has expressly adopted certain regulations of the Department of Transportation (DOT) governing the transportation of hazardous materials. These regulations concern, among other things, labeling, marking, placarding, using proper containers, and reporting discharges. EPA has expressly adopted these regulations in order to satisfy its statutory obligation to promulgate regulations which are necessary to protect human health and the environment in the transportation of hazardous waste. EPA's adoption of these DOT regulations ensures consistency with the requirements of DOT and thus avoids the establishment of duplicative or conflicting requirements with respect to these matters. These EPA regulations which apply to both interstate and intrastate transportation of hazardous waste are enforceable by EPA.

DOT has revised its hazardous materials transportation regulations in order to encompass the transportation of hazardous waste and to regulate intrastate, as well as interstate, transportation of hazardous waste. Transporters of hazardous waste are cautioned that DOT's regulations are fully applicable to their activities and enforceable by DOT. These DOT regulations are codified in Title 49, Code of Federal Regulations, Subchapter C.

EPA and DOT worked together to develop standards for transporters of hazardous waste in order to avoid conflicting requirements. Except for transporters of bulk shipments of hazardous waste by water, a transporter who meets all applicable requirements of 49 CFR Parts 171 through 179 and the requirements of 40 CFR 263.11 and 263.31 will be deemed in compliance with this part. Regardless of DOT's action, EPA retains its authority to enforce these regulations.

(b) These regulations do not apply to on-site transportation of hazardous waste by generators or by owners or operators of permitted hazardous waste management facilities.

(c) A transporter of hazardous waste must also comply with 40 CFR Part 262, Standards Applicable to Generators of Hazardous Waste, if he:

(1) Transports hazardous waste into the United States from abroad; or

(2) Mixes hazardous wastes of different DOT shipping descriptions by placing them into a single container.

[45 FR 33151, May 19, 1980, as amended at 45 FR 86968, Dec. 31, 1980]

§ 263.11 EPA identification number.

(a) A transporter must not transport hazardous wastes without having received an EPA identification number from the Administrator.

(b) A transporter who has not received an EPA identification number may obtain one by applying to the Administrator using EPA Form 8700-12. Upon receiving the request, the Administrator will assign an EPA identification number to the transporter.

§ 263.12 Transfer facility requirements.

A transporter who stores manifested shipments of hazardous waste in containers meeting the requirements of § 262.30 at a transfer facility for a period of ten days or less is not subject to regulation under Parts 270, 264, 265, and 268 of this chapter with respect to the storage of those wastes.

[45 FR 86968, Dec. 31, 1980, as amended at 48 FR 14294, Apr. 1, 1983; 51 FR 40637, Nov. 7, 1986]

Subpart B—Compliance With the Manifest System and Recordkeeping

§ 263.20 The manifest system.

(a) A transporter may not accept hazardous waste from a generator unless it is accompanied by a manifest signed in accordance with the provisions of 40 CFR 262.20. In the case of exports, a transporter may not accept such waste from a primary exporter or other person (1) if he knows the shipment does not conform to the EPA Acknowledgment of Consent; and (2) unless, in addition to a manifest signed in accordance with the provisions of 40 CFR 262.20, such waste is also accompanied by an EPA Acknowledgment of Consent which, except for shipment by rail, is attached to the manifest (or shipping paper for exports by water (bulk shipment)).

(b) Before transporting the hazardous waste, the transporter must sign and date the manifest acknowledging acceptance of the hazardous waste from the generator. The transporter must return a signed copy to the generator before leaving the generator's property.

(c) The transporter must ensure that the manifest accompanies the hazardous waste. In the case of exports, the transporter must ensure that a copy of the EPA Acknowledgment of Consent also accompanies the hazardous waste.

(d) A transporter who delivers a hazardous waste to another transporter or to the designated facility must:

(1) Obtain the date of delivery and the handwritten signature of that transporter or of the owner or operator of the designated facility on the manifest; and

(2) Retain one copy of the manifest in accordance with § 263.22; and

(3) Give the remaining copies of the manifest to the accepting transporter or designated facility.

(e) The requirements of paragraphs (c), (d) and (f) of this section do not apply to water (bulk shipment) transporters if:

(1) The hazardous waste is delivered by water (bulk shipment) to the designated facility; and

(2) A shipping paper containing all the information required on the manifest (excluding the EPA identification numbers, generator certification, and signatures) and, for exports, an EPA Acknowledgment of Consent accompanies the hazardous waste; and

(3) The delivering transporter obtains the date of delivery and handwritten signature of the owner or operator of the designated facility on either the manifest or the shipping paper; and

(4) The person delivering the hazardous waste to the initial water (bulk shipment) transporter obtains the date of delivery and signature of the water (bulk shipment) transporter on the manifest and forwards it to the designated facility; and

(5) A copy of the shipping paper or manifest is retained by each water (bulk shipment) transporter in accordance with § 263.22.

(f) For shipments involving rail transportation, the requirements of paragraphs (c), (d) and (e) do not apply and the following requirements do apply:

(1) When accepting hazardous waste from a non-rail transporter, the initial rail transporter must:

(i) Sign and date the manifest acknowledging acceptance of the hazardous waste;

(ii) Return a signed copy of the manifest to the non-rail transporter;

(iii) Forward at least three copies of the manifest to:

(A) The next non-rail transporter, if any; or,

(B) The designated facility, if the shipment is delivered to that facility by rail; or

(C) The last rail transporter designated to handle the waste in the United States;

(iv) Retain one copy of the manifest and rail shipping paper in accordance with § 263.22.

(2) Rail transporters must ensure that a shipping paper containing all the information required on the manifest (excluding the EPA identification numbers, generator certification, and signatures) and, for exports an EPA Acknowledgment of Consent accompanies the hazardous waste at all times.

NOTE: Intermediate rail transporters are not required to sign either the manifest or shipping paper.

(3) When delivering hazardous waste to the designated facility, a rail transporter must:

(i) Obtain the date of delivery and handwritten signature of the owner or operator of the designated facility on the manifest or the shipping paper (if the manifest has not been received by the facility); and

(ii) Retain a copy of the manifest or signed shipping paper in accordance with § 263.22.

(4) When delivering hazardous waste to a non-rail transporter a rail transporter must:

(i) Obtain the date of delivery and the handwritten signature of the next non-rail transporter on the manifest; and

(ii) Retain a copy of the manifest in accordance with § 263.22.

(5) Before accepting hazardous waste from a rail transporter, a non-rail transporter must sign and date the manifest and provide a copy to the rail transporter.

(g) Transporters who transport hazardous waste out of the United States must:

(1) Indicate on the manifest the date the hazardous waste left the United States; and

(2) Sign the manifest and retain one copy in accordance with § 263.22(c); and

(3) Return a signed copy of the manifest to the generator; and

(4) Give a copy of the manifest to a U.S. Customs official at the point of departure from the United States.

(h) A transporter transporting hazardous waste from a generator who generates greater than 100 kilograms but less than 1000 kilograms of hazardous waste in a calendar month need not comply with the requirements of this section or those of § 263.22 provided that:

(1) The waste is being transported pursuant to a reclamation agreement as provided for in § 262.20(e);

(2) The transporter records, on a log or shipping paper, the following information for each shipment:

(i) The name, address, and U.S. EPA Identification Number of the generator of the waste;

(ii) The quantity of waste accepted;

(iii) All DOT-required shipping information;

(iv) The date the waste is accepted; and

(3) The transporter carries this record when transporting waste to the reclamation facility; and

(4) The transporter retains these records for a period of at least three years after termination or expiration of the agreement.

[45 FR 33151, May 19, 1980, as amended at 45 FR 86973, Dec. 31, 1980; 51 FR 10176, Mar. 24, 1986; 51 FR 28685, Aug. 8, 1986]

§ 263.21 Compliance with the manifest.

(a) The transporter must deliver the entire quantity of hazardous waste which he has accepted from a generator or a transporter to:

(1) The designated facility listed on the manifest; or

(2) The alternate designated facility, if the hazardous waste cannot be delivered to the designated facility because an emergency prevents delivery; or

(3) The next designated transporter; or

(4) The place outside the United States designated by the generator.

(b) If the hazardous waste cannot be delivered in accordance with paragraph (a) of this section, the transporter must contact the generator for further directions and must revise the manifest according to the generator's instructions.

§ 263.22 Recordkeeping.

(a) A transporter of hazardous waste must keep a copy of the manifest signed by the generator, himself, and the next designated transporter or the owner or operator of the designated facility for a period of three years from the date the hazardous waste was accepted by the initial transporter.

(b) For shipments delivered to the designated facility by water (bulk shipment), each water (bulk shipment) transporter must retain a copy of the shipping paper containing all the information required in § 263.20(e)(2) for a period of three years from the date the hazardous waste was accepted by the initial transporter.

(c) For shipments of hazardous waste by rail within the United States:

(i) The initial rail transporter must keep a copy of the manifest and shipping paper with all the information required in § 263.20(f)(2) for a period of three years from the date the hazardous waste was accepted by the initial transporter; and

(ii) The final rail transporter must keep a copy of the signed manifest (or the shipping paper if signed by the designated facility in lieu of the manifest) for a period of three years from the date the hazardous waste was accepted by the initial transporter.

NOTE: Intermediate rail transporters are not required to keep records pursuant to these regulations.

(d) A transporter who transports hazardous waste out of the United States must keep a copy of the manifest indicating that the hazardous waste left the United States for a period of three years from the date the hazardous waste was accepted by the initial transporter.

(e) The periods of retention referred to in this Section are extended automatically during the course of any unresolved enforcement action regarding the regulated activity or as requested by the Administrator.

[45 FR 33151, May 19, 1980, as amended at 45 FR 86973, Dec. 31, 1980]

Subpart C—Hazardous Waste Discharges

§ 263.30 Immediate action.

(a) In the event of a discharge of hazardous waste during transportation, the transporter must take appropriate immediate action to protect human health and the environment (e.g., notify local authorities, dike the discharge area).

(b) If a discharge of hazardous waste occurs during transportation and an official (State or local government or a Federal Agency) acting within the scope of his official responsibilities determines that immediate removal of the waste is necessary to protect human health or the environment, that official may authorize the removal of the waste by transporters who do not have EPA identification numbers and without the preparation of a manifest.

(c) An air, rail, highway, or water transporter who has discharged hazardous waste must:

(1) Give notice, if required by 49 CFR 171.15, to the National Response Center (800-424-8802 or 202-426-2675); and

(2) Report in writing as required by 49 CFR 171.16 to the Director, Office of Hazardous Materials Regulations, Materials Transportation Bureau, Department of Transportation, Washington, DC 20590.

(d) A water (bulk shipment) transporter who has discharged hazardous waste must give the same notice as required by 33 CFR 153.203 for oil and hazardous substances.

§ 263.31 Discharge clean up.

A transporter must clean up any hazardous waste discharge that occurs during transportation or take such action as may be required or approved by Federal, State, or local officials so

that the hazardous waste discharge no longer presents a hazard to human health or the environment.

PART 264—STANDARDS FOR OWNERS AND OPERATORS OF HAZARDOUS WASTE TREATMENT, STORAGE, AND DISPOSAL FACILITIES

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AUTHORITY: 42 U.S.C. 6905, 6912(a), 6924, and 6925.

SOURCE: 45 FR 33221, May 19, 1980, unless otherwise noted.

Subpart A—General

§ 264.1 Purpose, scope and applicability.

(a) The purpose of this part is to establish minimum national standards which define the acceptable management of hazardous waste.

(b) The standards in this part apply to owners and operators of all facilities which treat, store, or dispose of hazardous waste, except as specifically provided otherwise in this part or Part 261 of this chapter.

(c) The requirements of this part apply to a person disposing of hazardous waste by means of ocean disposal subject to a permit issued under the Marine Protection, Research, and Sanctuaries Act only to the extent they are included in a RCRA permit by rule granted to such a person under Part 270 of this chapter.

[*Comment:* These Part 264 regulations do apply to the treatment or storage of hazardous waste before it is loaded onto an ocean vessel for incineration or disposal at sea.]

(d) The requirements of this part apply to a person disposing of hazardous waste by means of underground injection subject to a permit issued under an Underground Injection Control (UIC) program approved or promulgated under the Safe Drinking Water Act only to the extent they are required by § 144.14 of this chapter.

[*Comment:* These Part 264 regulations do apply to the above-ground treatment or storage of hazardous waste before it is injected underground.]

(e) The requirements of this part apply to the owner or operator of a POTW which treats, stores, or disposes of hazardous waste only to the extent they are included in a RCRA permit by rule granted to such a person under Part 270 of this chapter.

(f) The requirements of this part do not apply to a person who treats, stores, or disposes of hazardous waste in a State with a RCRA hazardous waste program authorized under Subpart A of Part 271 of this chapter, or in a State authorized under Subpart B of Part 271 of this chapter for the component or components of Phase II interim authorization which correspond to the person's treatment, storage or disposal processes; except that this part will apply:

(1) As stated in paragraph (d) of this section, if the authorized State RCRA program does not cover disposal of hazardous waste by means of underground injection; and

(2) To a person who treats, stores or disposes of hazardous waste in a State authorized under Subpart A of Part 271 of this chapter, at a facility which was not covered by standards under this part when the State obtained authorization, and for which EPA promulgates standards under this part after the State is authorized. This paragraph will only apply until the State is authorized to permit such facilities under Subpart A of Part 271 of this chapter.

(3) To a person who treats, stores, or disposes of hazardous waste in a State which is authorized under Subpart A or B of Part 271 of this chapter if the State has not been authorized to carry out the requirements and prohibitions applicable to the treatment, storage, or disposal of hazardous waste at his facility which are imposed pursuant to the Hazardous and Solid Waste Amendments of 1984. The requirements and prohibitions that are applicable until a State receives authorization to carry them out include all Federal program requirements identified in § 271.1(j).

(g) The requirements of this part do not apply to:

(1) The owner or operator of a facility permitted, licensed, or registered by a State to manage municipal or industrial solid waste, if the only hazardous waste the facility treats, stores, or disposes of is excluded from regulation under this part by § 261.5 of this chapter;

(2) The owner or operator of a facility managing recyclable materials described in § 261.6(a) (2) and (3) of this chapter (except to the extent that requirements of this part are referred to in Subparts C, D, F, or G of Part 266 of this chapter).

(3) A generator accumulating waste on-site in compliance with § 262.34 of this chapter;

(4) A farmer disposing of waste pesticides from his own use in compliance with § 262.51 of this chapter; or

(5) The owner or operator of a totally enclosed treatment facility, as defined in § 260.10.

(6) The owner or operator of an elementary neutralization unit or a wastewater treatment unit as defined in § 260.10 of this chapter.

(7) [Reserved]

(8)(i) Except as provided in paragraph (g)(8)(ii) of this section, a person engaged in treatment or containment activities during immediate response to any of the following situations:

(A) A discharge of a hazardous waste;

(B) An imminent and substantial threat of a discharge of hazardous waste;

(C) A discharge of a material which, when discharged, becomes a hazardous waste.

(ii) An owner or operator of a facility otherwise regulated by this part must comply with all applicable requirements of Subparts C and D.

(iii) Any person who is covered by paragraph (g)(8)(i) of this section and who continues or initiates hazardous waste treatment or containment activities after the immediate response is over is subject to all applicable requirements of this part and Parts 122 through 124 of this chapter for those activities.

(9) A transporter storing manifested shipments of hazardous waste in containers meeting the requirements of 40 CFR 262.30 at a transfer facility for a period of ten days or less.

(10) The addition of absorbent material to waste in a container (as defined in § 260.10 of this chapter) or the addition of waste to absorbent material in a container, provided that these actions occur at the time waste is first placed in the container; and §§ 264.17(b), 264.171, and 264.172 are complied with.

(h) The requirements of this part apply to owners or operators of all facilities which treat, store, or dispose of hazardous wastes referred to in Part 268.

[45 FR 33221, May 19, 1980, as amended at 45 FR 76075, Nov. 17, 1980; 45 FR 86968, Dec. 31, 1980; 46 FR 27480, May 20, 1981; 47 FR 8306, Feb. 25, 1982; 47 FR 32384, July 26, 1982; 48 FR 2511, Jan. 19, 1983; 48 FR 14294, Apr. 1, 1983; 50 FR 665, Jan. 4, 1985; 50 FR 28746, July 15, 1985; 52 FR 21016, June 4, 1987]

§ 264.2 [Reserved]

§ 264.3 Relationship to interim status standards.

A facility owner or operator who has fully complied with the requirements for interim status—as defined in section 3005(e) of RCRA and regulations under § 270.70 of this chapter—must comply with the regulations specified in Part 265 of this chapter in lieu of the regulations in this part, until final administrative disposition of his permit application is made.

[*Comment:* As stated in section 3005(a) of RCRA, after the effective date of regulations under that section, i.e., Parts 270 and 124 of this chapter, the treatment, storage, or disposal of hazardous waste is prohibited except in accordance with a permit. Section 3005(e) of RCRA provides for the continued operation of an existing facility which meets certain conditions until final administrative disposition of the owner's or operator's permit application is made.]

[45 FR 33221, May 19, 1980, as amended at 48 FR 14294, Apr. 1, 1983]

§ 264.4 Imminent hazard action.

Notwithstanding any other provisions of these regulations, enforce-

ment actions may be brought purusant to section 7003 of RCRA.

Subpart B—General Facility Standards

§ 264.10 Applicability.

(a) The regulations in this subpart apply to owners and operators of all hazardous waste facilities, except as provided in § 264.1 and in paragraph (b) of this section.

(b) Section 264.18(b) applies only to facilities subject to regulation under Subparts I through O and Subpart X of this part.

[46 FR 2848, Jan. 12, 1981, as amended at 52 FR 46963, Dec. 10, 1987]

§ 264.11 Identification number.

Every facility owner or operator must apply to EPA for an EPA identification number in accordance with the EPA notification procedures (45 FR 12746).

(Approved by the Office of Management and Budget under control number 2050-0028)

[45 FR 33221, May 19, 1980, as amended at 50 FR 4514, Jan. 31, 1985]

§ 264.12 Required notices.

(a) The owner or operator of a facility that has arranged to receive hazardous waste from a foreign source must notify the Regional Administrator in writing at least four weeks in advance of the date the waste is expected to arrive at the facility. Notice of subsequent shipments of the same waste from the same foreign source is not required.

(b) The owner or operator of a facility that receives hazardous waste from an off-site source (except where the owner or operator is also the generator) must inform the generator in writing that he has the appropriate permit(s) for, and will accept, the waste the generator is shipping. The owner or operator must keep a copy of this written notice as part of the operating record.

(c) Before transferring ownership or operation of a facility during its operating life, or of a disposal facility during the post-closure care period, the owner or operator must notify the new owner or operator in writing of the requirements of this part and Part 270 of this chapter.

[*Comment:* An owner's or operator's failure to notify the new owner or operator of the requirements of this part in no way relieves the new owner or operator of his obligation to comply with all applicable requirements.]

(Approved by the Office of Management and Budget under control number 2050-0012)

[45 FR 33221, May 19, 1980, as amended at 48 FR 14294, Apr. 1, 1983; 50 FR 4514, Jan. 31, 1985]

§ 264.13 General waste analysis.

(a)(1) Before an owner or operator treats, stores, or disposes of any hazardous waste, he must obtain a detailed chemical and physical analysis of a representative sample of the waste. At a minimum, this analysis must contain all the information which must be known to treat, store, or dispose of the waste in accordance with the requirements of this part and Part 268 of this chapter or with the conditions of a permit issued under Part 270 and Part 124 of this chapter.

(2) The analysis may include data developed under Part 261 of this chapter, and existing published or documented data on the hazardous waste or on hazardous waste generated from similar processes.

[*Comment:* For example, the facility's records of analyses performed on the waste before the effective date of these regulations, or studies conducted on hazardous waste generated from processes similar to that which generated the waste to be managed at the facility, may be included in the data base required to comply with paragraph (a)(1) of this section. The owner or operator of an off-site facility may arrange for the generator of the hazardous waste to supply part or all of the information required by paragraph (a)(1) of this section. If the generator does not supply the information, and the owner or operator chooses to accept a hazardous waste, the owner or operator is responsible for obtaining the information required to comply with this section.]

(3) The analysis must be repeated as necessary to ensure that it is accurate and up to date. At a minimum, the analysis must be repeated:

(i) When the owner or operator is notified, or has reason to believe, that the process or operation generating the hazardous waste has changed; and

(ii) For off-site facilities, when the results of the inspection required in paragraph (a)(4) of this section indicate that the hazardous waste received at the facility does not match the waste designated on the accompanying manifest or shipping paper.

(4) The owner or operator of an off-site facility must inspect and, if necessary, analyze each hazardous waste movement received at the facility to determine whether it matches the identity of the waste specified on the accompanying manifest or shipping paper.

(b) The owner or operator must develop and follow a written waste analysis plan which describes the procedures which he will carry out to comply with paragraph (a) of this section. He must keep this plan at the facility. At a minimum, the plan must specify:

(1) The parameters for which each hazardous waste will be analyzed and the rationale for the selection of these parameters (i.e., how analysis for these parameters will provide sufficient information on the waste's properties to comply with paragraph (a) of this section);

(2) The test methods which will be used to test for these parameters;

(3) The sampling method which will be used to obtain a representative sample of the waste to be analyzed. A representative sample may be obtained using either:

(i) One of the sampling methods described in Appendix I of Part 261 of this chapter; or

(ii) An equivalent sampling method.

[*Comment:* See § 260.21 of this chapter for related discussion.]

(4) The frequency with which the initial analysis of the waste will be reviewed or repeated to ensure that the analysis is accurate and up to date; and

(5) For off-site facilities, the waste analyses that hazardous waste generators have agreed to supply.

(6) Where applicable, the methods which will be used to meet the additional waste analysis requirements for specific waste management methods as specified in §§ 264.17, 264.314, 264.341 and 268.7 of this chapter.

(7) For surface impoundments exempted from land disposal restrictions under § 268.4(a), the procedures and schedules for:

(i) The sampling of impoundment contents;

(ii) The analysis of test data; and,

(iii) The annual removal of residues which are not delisted under § 260.22 of this chapter and do not exhibit a characteristic of hazardous waste, and which do not meet the treatment standards of Part 268 Subpart D of this chapter or, where no treatment standards have been established, the annual removal of residues which do not meet the applicable prohibition levels in Part 268 Subpart C or RCRA section 3004(d).

(c) For off-site facilities, the waste analysis plan required in paragraph (b) of this section must also specify the procedures which will be used to in-spect and, if necessary, analyze each movement of hazardous waste received at the facility to ensure that it matches the identity of the waste designated on the accompanying manifest or shipping paper. At a minimum, the plan must describe:

(1) The procedures which will be used to determine the identity of each movement of waste managed at the facility; and

(2) The sampling method which will be used to obtain a representative sample of the waste to be identified, if the identification method includes sampling.

[*Comment:* Part 270 of this chapter requires that the waste analysis plan be submitted with Part B of the permit application.]

(Approved by the Office of Management and Budget under control number 2050-0012)

[45 FR 33221, May 19, 1980, as amended at 46 FR 2848, Jan. 12, 1981; 50 FR 4514, Jan. 31, 1985; 51 FR 40637, Nov. 7, 1986; 52 FR 21016, June 4, 1987; 52 FR 25787, July 8, 1987]

§ 264.14 Security.

(a) The owner or operator must prevent the unknowing entry, and minimize the possibility for the unauthorized entry, of persons or livestock onto

the active portion of his facility, *unless* he can demonstrate to the Regional Administrator that:

(1) Physical contact with the waste, structures, or equipment within the active portion of the facility will not injure unknowing or unauthorized persons or livestock which may enter the active portion of a facility; and

(2) Disturbance of the waste or equipment, by the unknowing or unauthorized entry of persons or livestock onto the active portion of a facility, will not cause a violation of the requirements of this part.

[*Comment:* Part 270 of this chapter requires that an owner or operator who wishes to make the demonstration referred to above must do so with Part B of the permit application.]

(b) Unless the owner or operator has made a successful demonstration under paragraphs (a)(1) and (2) of this section, a facility must have:

(1) A 24-hour surveillance system (e.g., television monitoring or surveillance by guards or facility personnel) which continuously monitors and controls entry onto the active portion of the facility; or

(2)(i) An artificial or natural barrier (e.g., a fence in good repair or a fence combined with a cliff), which completely surrounds the active portion of the facility; and

(ii) A means to control entry, at all times, through the gates or other entrances to the active portion of the facility (e.g., an attendant, television monitors, locked entrance, or controlled roadway access to the facility).

[*Comment:* The requirements of paragraph (b) of this section are satisfied if the facility or plant within which the active portion is located itself has a surveillance system, or a barrier and a means to control entry, which complies with the requirements of paragraph (b)(1) or (2) of this section.]

(c) Unless the owner or operator has made a successful demonstration under paragraphs (a)(1) and (2) of this section, a sign with the legend, "Danger—Unauthorized Personnel Keep Out", must be posted at each entrance to the active portion of a facility, and at other locations, in sufficient numbers to be seen from any approach to this active portion. The legend must be written in English and in any other language predominant in the area surrounding the facility (e.g., facilities in counties bordering the Canadian province of Quebec must post signs in French; facilities in counties bordering Mexico must post signs in Spanish), and must be legible from a distance of at least 25 feet. Existing signs with a legend other than "Danger—Unauthorized Personnel Keep Out" may be used if the legend on the sign indicates that only authorized personnel are allowed to enter the active portion, and that entry onto the active portion can be dangerous.

[*Comment:* See § 264.117(b) for discussion of security requirements at disposal facilities during the post-closure care period.]

(Approved by the Office of Management and Budget under control number 2050-0012)

[45 FR 33221, May 19, 1980, as amended at 46 FR 2848, Jan. 12, 1981; 48 FR 14294, Apr. 1, 1983; 50 FR 4514, Jan. 31, 1985]

§ 264.15 General inspection requirements.

(a) The owner or operator must inspect his facility for malfunctions and deterioration, operator errors, and discharges which may be causing—or may lead to—(1) release of hazardous waste constituents to the environment or (2) a threat to human health. The owner or operator must conduct these inspections often enough to identify problems in time to correct them before they harm human health or the environment.

(b)(1) The owner or operator must develop and follow a written schedule for inspecting monitoring equipment, safety and emergency equipment, security devices, and operating and structural equipment (such as dikes and sump pumps) that are important to preventing, detecting, or responding to environmental or human health hazards.

(2) He must keep this schedule at the facility.

(3) The schedule must identify the types of problems (e.g., malfunctions or deterioration) which are to be looked for during the inspection (e.g., inoperative sump pump, leaking fitting, eroding dike, etc.).

(4) The frequency of inspection may vary for the items on the schedule. However, it should be based on the rate of possible deterioration of the equipment and the probability of an environmental or human health incident if the deterioration or malfunction of any operator error goes undetected between inspections. Areas subject to spills, such as loading and unloading areas, must be inspected daily when in use. At a minimum, the inspection schedule must include the terms and frequencies called for in §§ 264.174, 264.194, 264.226, 264.253, 264.254, 264.303, 264.347, and 264.602, where applicable.

[*Comment:* Part 270 of this chapter requires the inspection schedule to be submitted with Part B of the permit application. EPA will evaluate the schedule along with the rest of the application to ensure that it adequately protects human health and the environment. As part of this review, EPA may modify or amend the schedule as may be necessary.]

(c) The owner or operator must remedy any deterioration or malfunction of equipment or structures which the inspection reveals on a schedule which ensures that the problem does not lead to an environmental or human health hazard. Where a hazard is imminent or has already occurred, remedial action must be taken immediately.

(d) The owner or operator must record inspections in an inspection log or summary. He must keep these records for at least three years from the date of inspection. At a minimum, these records must include the date and time of the inspection, the name of the inspector, a notation of the observations made, and the date and nature of any repairs or other remedial actions.

(Approved by the Office of Management and Budget under control number 2050-0012)

[45 FR 33221, May 19, 1980, as amended at 47 FR 32350, July 26, 1982; 48 FR 14294, Apr. 1, 1983; 50 FR 4514, Jan. 31, 1985; 51 FR 25472, July 14, 1986; 52 FR 46963, Dec. 10, 1987]

§ 264.16 Personnel training.

(a)(1) Facility personnel must successfully complete a program of classroom instruction or on-the-job training that teaches them to perform their duties in a way that ensures the facility's compliance with the requirements of this part. The owner or operator must ensure that this program includes all the elements described in the document required under paragraph (d)(3) of this section.

[*Comment:* Part 270 of this chapter requires that owners and operators submit with Part B of the RCRA permit application, an outline of the training program used (or to be used) at the facility and a brief description of how the training program is designed to meet actual job tasks.]

(2) This program must be directed by a person trained in hazardous waste management procedures, and must include instruction which teaches facility personnel hazardous waste management procedures (including contingency plan implementation) relevant to the positions in which they are employed.

(3) At a minimum, the training program must be designed to ensure that facility personnel are able to respond effectively to emergencies by familiarizing them with emergency procedures, emergency equipment, and emergency systems, including, where applicable:

(i) Procedures for using, inspecting, repairing, and replacing facility emergency and monitoring equipment;

(ii) Key parameters for automatic waste feed cut-off systems;

(iii) Communications or alarm systems;

(iv) Response to fires or explosions;

(v) Response to ground-water contamination incidents; and

(vi) Shutdown of operations.

(b) Facility personnel must successfully complete the program required in paragraph (a) of this section within six months after the effective date of these regulations or six months after the date of their employment or assignment to a facility, or to a new position at a facility, whichever is later. Employees hired after the effective date of these regulations must not work in unsupervised positions until they have completed the training requirements of paragraph (a) of this section.

(c) Facility personnel must take part in an annual review of the initial

training required in paragraph (a) of this section.

(d) The owner or operator must maintain the following documents and records at the facility:

(1) The job title for each position at the facility related to hazardous waste management, and the name of the employee filling each job;

(2) A written job description for each position listed under paragraph (d)(1) of this section. This description may be consistent in its degree of specificity with descriptions for other similar positions in the same company location or bargaining unit, but must include the requisite skill, education, or other qualifications, and duties of employees assigned to each position;

(3) A written description of the type and amount of both introductory and continuing training that will be given to each person filling a position listed under paragraph (d)(1) of this section;

(4) Records that document that the training or job experience required under paragraphs (a), (b), and (c) of this section has been given to, and completed by, facility personnel.

(e) Training records on current personnel must be kept until closure of the facility; training records on former employees must be kept for at least three years from the date the employee last worked at the facility. Personnel training records may accompany personnel transferred within the same company.

(Approved by the Office of Management and Budget under control number 2050-0012)

[45 FR 33221, May 19, 1980, as amended at 46 FR 2848, Jan. 12, 1981; 48 FR 14294, Apr. 1, 1983; 50 FR 4514, Jan. 31, 1985]

§ 264.17 General requirements for ignitable, reactive, or incompatible wastes.

(a) The owner or operator must take precautions to prevent accidental ignition or reaction of ignitable or reactive waste. This waste must be separated and protected from sources of ignition or reaction including but not limited to: open flames, smoking, cutting and welding, hot surfaces, frictional heat, sparks (static, electrical, or mechanical), spontaneous ignition (e.g., from heat-producing chemical reactions), and radiant heat. While ignitable or reactive waste is being handled, the owner or operator must confine smoking and open flame to specially designated locations. "No Smoking" signs must be conspicuously placed wherever there is a hazard from ignitable or reactive waste.

(b) Where specifically required by other sections of this part, the owner or operator of a facility that treats, stores or disposes ignitable or reactive waste, or mixes incompatible waste or incompatible wastes and other materials, must take precautions to prevent reactons which:

(1) Generate extreme heat or pressure, fire or explosions, or violent reactions;

(2) Produce uncontrolled toxic mists, fumes, dusts, or gases in sufficient quantities to threaten human health or the environment;

(3) Produce uncontrolled flammable fumes or gases in sufficient quantities to pose a risk of fire or explosions;

(4) Damage the structural integrity of the device or facility;

(5) Through other like means threaten human health or the environment.

(c) When required to comply with paragraph (a) or (b) of this section, the owner or operator must document that compliance. This documentation may be based on references to published scientific or engineering literature, data from trial tests (e.g., bench scale or pilot scale tests), waste analyses (as specified in § 264.13), or the results of the treatment of similar wastes by similar treatment processes and under similar operating conditions.

(Approved by the Office of Management and Budget under control number 2050-0012)

[46 FR 2848, Jan. 12, 1981, as amended at 50 FR 4514, Jan. 31, 1985]

§ 264.18 Location standards.

(a) *Seismic considerations.* (1) Portions of new facilities where treatment, storage, or disposal of hazardous waste will be conducted must not be located within 61 meters (200 feet) of a fault which has had displacement in Holocene time.

(2) As used in paragraph (a)(1) of this section:

(i) "Fault" means a fracture along which rocks on one side have been displaced with respect to those on the other side.

(ii) "Displacement" means the relative movement of any two sides of a fault measured in any direction.

(iii) "Holocene" means the most recent epoch of the Quarternary period, extending from the end of the Pleistocene to the present.

[*Comment:* Procedures for demonstrating compliance with this standard in Part B of the permit application are specified in § 270.14(b)(11). Facilities which are located in political jurisdictions other than those listed in Appendix VI of this part, are assumed to be in compliance with this requirement.]

(b) *Floodplains.* (1) A facility located in a 100-year floodplain must be designed, constructed, operated, and maintained to prevent washout or any hazardous waste by a 100-year flood, *unless* the owner or operator can demonstrate to the Regional Administrator's satisfaction that:

(i) Procedures are in effect which will cause the waste to be removed safely, before flood waters can reach the facility, to a location where the wastes will not be vulnerable to flood waters; or

(ii) For existing surface impoundments, waste piles, land treatment units, landfills, and miscellaneous units, no adverse effects on human health or the environment will result if washout occurs, considering:

(A) The volume and physical and chemical characteristics of the waste in the facility;

(B) The concentration of hazardous constituents that would potentially affect surface waters as a result of washout;

(C) The impact of such concentrations on the current or potential uses of and water quality standards established for the affected surface waters; and

(D) The impact of hazardous constituents on the sediments of affected surface waters or the soils of the 100-year floodplain that could result from washout.

[*Comment:* The location where wastes are moved must be a facility which is either permitted by EPA under Part 270 of this chapter, authorized to manage hazardous waste by a State with a hazardous waste management program authorized under Part 271 of this chapter, or in interim status under Parts 270 and 265 of this chapter.]

(2) As used in paragraph (b)(1) of this section:

(i) "100-year floodplain" means any land area which is subject to a one percent or greater chance of flooding in any given year from any source.

(ii) "Washout" means the movement of hazardous waste from the active portion of the facility as a result of flooding.

(iii) "100-year flood" means a flood that has a one percent chance of being equalled or exeeded in any given year.

[*Comment:* (1) Requirements pertaining to other Federal laws which affect the location and permitting of facilities are found in § 270.3 of this chapter. For details relative to these laws, see EPA's manual for SEA (special environmental area) requirements for hazardous waste facility permits. Through EPA is responsible for complying with these requirements, applicants are advised to consider them in planning the location of a facility to help prevent subsequent project delays.]

(c) *Salt dome formations, salt bed formations, underground mines and caves.* The placement of any noncontainerized or bulk liquid hazardous waste in any salt dome formation, salt bed formation, underground mine or cave is prohibited, except for the Department of Energy Waste Isolation Pilot Project in New Mexico.

(Approved by the Office of Management and Budget under control number 2050-0010 and 2050-0012)

[46 FR 2848, Jan. 12, 1981, as amended at 47 FR 32350, July 26, 1982; 48 FR 14294, Apr. 1, 1983; 48 FR 30115, June 30, 1983; 50 FR 4514, Jan. 31, 1985; 50 FR 28746, July 15, 1985; 52 FR 46963, Dec. 10, 1987]

Subpart C—Preparedness and Prevention

§ 264.30 Applicability.

The regulations in this subpart apply to owners and operators of all hazardous waste facilities, except as § 264.1 provides otherwise.

§ 264.31 Design and operation of facility.

Facilities must be designed, constructed, maintained, and operated to minimize the possibility of a fire, explosion, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water which could threaten human health or the environment.

§ 264.32 Required equipment.

All facilities must be equipped with the following, *unless* it can be demonstrated to the Regional Administrator that none of the hazards posed by waste handled at the facility could require a particular kind of equipment specified below:

(a) An internal communications or alarm system capable of providing immediate emergency instruction (voice or signal) to facility personnel;

(b) A device, such as a telephone (immediately available at the scene of operations) or a hand-held two-way radio, capable of summoning emergency assistance from local police departments, fire departments, or State or local emergency response teams;

(c) Portable fire extinguishers, fire control equipment (including special extinguishing equipment, such as that using foam, inert gas, or dry chemicals), spill control equipment, and decontamination equipment; and

(d) Water at adequate volume and pressure to supply water hose streams, or foam producing equipment, or automatic sprinklers, or water spray systems.

[*Comment:* Part 270 of this chapter requires that an owner or operator who wishes to make the demonstration referred to above must do so with Part B of the permit application.]

[45 FR 33221, May 19, 1980, as amended at 48 FR 14294, Apr. 1, 1983]

§ 264.33 Testing and maintenance of equipment.

All facility communications or alarm systems, fire protection equipment, spill control equipment, and decontamination equipment, where required, must be tested and maintained as necessary to assure its proper operation in time of emergency.

§ 264.34 Access to communications or alarm system.

(a) Whenever hazardous waste is being poured, mixed, spread, or otherwise handled, all personnel involved in the operation must have immediate access to an internal alarm or emergency communication device, either directly or through visual or voice contact with another employee, *unless* the Regional Administrator has ruled that such a device is not required under § 264.32.

(b) If there is ever just one employee on the premises while the facility is operating, he must have immediate access to a device, such as a telephone (immediately available at the scene of operation) or a hand-held two-way radio, capable of summoning external emergency assistance, *unless* the Regional Administrator has ruled that such a device is not required under § 264.32.

§ 264.35 Required aisle space.

The owner or operator must maintain aisle space to allow the unobstructed movement of personnel, fire protection equipment, spill control equipment, and decontamination equipment to any area of facility operation in an emergency, *unless* it can be demonstrated to the Regional Administrator that aisle space is not needed for any of these purposes.

[*Comment:* Part 270 of this chapter requires that an owner or operator who wishes to make the demonstration referred to above must do so with Part B of the permit application.]

[45 FR 33221, May 19, 1980, as amended at 48 FR 14294, Apr. 1, 1983]

§ 264.36 [Reserved]

§ 264.37 Arrangements with local authorities.

(a) The owner or operator must attempt to make the following arrangements, as appropriate for the type of waste handled at his facility and the potential need for the services of these organizations:

(1) Arrangements to familiarize police, fire departments, and emergency response teams with the layout of the facility, properties of hazardous waste handled at the facility and associated hazards, places where facility personnel would normally be working, entrances to and roads inside the facility, and possible evacuation routes;

(2) Where more than one police and fire department might respond to an emergency, agreements designating primary emergency authority to a specific police and a specific fire department, and agreements with any others to provide support to the primary emergency authority;

(3) Agreements with State emergency response teams, emergency response contractors, and equipment suppliers; and

(4) Arrangements to familiarize local hospitals with the properties of hazardous waste handled at the facility and the types of injuries or illnesses which could result from fires, explosions, or releases at the facility.

(b) Where State or local authorities decline to enter into such arrangements, the owner or operator must document the refusal in the operating record.

Subpart D—Contingency Plan and Emergency Procedures

§ 264.50 Applicability.

The regulations in this subpart apply to owners and operators of all hazardous waste facilities, except as § 264.1 provides otherwise.

§ 264.51 Purpose and implementation of contingency plan.

(a) Each owner or operator must have a contingency plan for his facility. The contingency plan must be designed to minimize hazards to human health or the environment from fires, explosions, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water.

(b) The provisions of the plan must be carried out immediately whenever there is a fire, explosion, or release of hazardous waste or hazardous waste constituents which could threaten human health or the environment.

(Approved by the Office of Management and Budget under control number 2050-0011)

[45 FR 33221, May 19, 1980, as amended at 50 FR 4514, Jan. 31, 1985]

§ 264.52 Content of contingency plan.

(a) The contingency plan must describe the actions facility personnel must take to comply with §§ 264.51 and 264.56 in response to fires, explosions, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water at the facility.

(b) If the owner or operator has already prepared a Spill Prevention, Control, and Countermeasures (SPCC) Plan in accordance with Part 112 of this chapter, or Part 1510 of Chapter V, or some other emergency or contingency plan, he need only amend that plan to incorporate hazardous waste management provisions that are sufficient to comply with the requirements of this part.

(c) The plan must describe arrangements agreed to by local police departments, fire departments, hospitals, contractors, and State and local emergency response teams to coordinate emergency services, pursuant to § 264.37.

(d) The plan must list names, addresses, and phone numbers (office and home) of all persons qualified to act as emergency coordinator (see § 264.55), and this list must be kept up to date. Where more than one person is listed, one must be named as primary emergency coordinator and others must be listed in the order in which they will assume responsibility as alternates. *For new facilities,* this information must be supplied to the Regional Administrator at the time of certification, rather than at the time of permit application.

(e) The plan must include a list of all emergency equipment at the facility (such as fire extinguishing systems, spill control equipment, communications and alarm systems (internal and external), and decontamination equipment), where this equipment is required. This list must be kept up to date. In addition, the plan must include the location and a physical description of each item on the list, and a brief outline of its capabilities.

(f) The plan must include an evacuation plan for facility personnel where

there is a possibility that evacuation could be necessary. This plan must describe signal(s) to be used to begin evacuation, evacuation routes, and alternate evacuation routes (in cases where the primary routes could be blocked by releases of hazardous waste or fires).

(Approved by the Office of Management and Budget under control number 2050-0011)

[45 FR 33221, May 19, 1980, as amended at 46 FR 27480, May 20, 1981; 50 FR 4514, Jan. 31, 1985]

§ 264.53 Copies of contingency plan.

A copy of the contingency plan and all revisions to the plan must be:

(a) Maintained at the facility; and

(b) Submitted to all local police departments, fire departments, hospitals, and State and local emergency response teams that may be called upon to provide emergency services.

[*Comment:* The contingency plan must be submitted to the Regional Administrator with Part B of the permit application under Part 270, of this chapter and, after modification or approval, will become a condition of any permit issued.]

(Approved by the Office of Management and Budget under control number 2050-0011)

[45 FR 33221, May 19, 1980, as amended at 48 FR 30115, June 30, 1983; 50 FR 4514, Jan. 31, 1985]

§ 264.54 Amendment of contingency plan.

The contingency plan must be reviewed, and immediately amended, if necessary, whenever:

(a) The facility permit is revised;

(b) The plan fails in an emergency;

(c) The facility changes—in its design, construction, operation, maintenance, or other circumstances—in a way that materially increases the potential for fires, explosions, or releases of hazardous waste or hazardous waste constituents, or changes the response necessary in an emergency;

(d) The list of emergency coordinators changes; or

(e) The list of emergency equipment changes.

[*Comment:* A change in the lists of facility emergency coordinators or equipment in the contingency plan constitutes a minor modification to the facility permit to which the plan is a condition.]

(Approved by the Office of Management and Budget under control number 2050-0011)

[45 FR 33221, May 19, 1980, as amended at 50 FR 4514, Jan. 31, 1985]

§ 264.55 Emergency coordinator.

At all times, there must be at least one employee either on the facility premises or on call (i.e., available to respond to an emergency by reaching the facility within a short period of time) with the responsibility for coordinating all emergency response measures. This emergency coordinator must be thoroughly familiar with all aspects of the facility's contingency plan, all operations and activities at the facility, the location and characteristics of waste handled, the location of all records within the facility, and the facility layout. In addition, this person must have the authority to commit the resources needed to carry out the contingency plan.

[*Comment:* The emergency coordinator's responsibilities are more fully spelled out in § 264.56. Applicable responsibilities for the emergency coordinator vary, depending on factors such as type and variety of waste(s) handled by the facility, and type and complexity of the facility.]

§ 264.56 Emergency procedures.

(a) Whenever there is an imminent or actual emergency situation, the emergency coordinator (or his designee when the emergency coordinator is on call) must immediately:

(1) Activate internal facility alarms or communication systems, where applicable, to notify all facility personnel; and

(2) Notify appropriate State or local agencies with designated response roles if their help is needed.

(b) Whenever there is a release, fire, or explosion, the emergency coordinator must immediately identify the character, exact source, amount, and areal extent of any released materials. He may do this by observation or review of facility records or manifests, and, if necessary, by chemical analysis.

(c) Concurrently, the emergency coordinator must assess possible hazards to human health or the environment that may result from the release, fire, or explosion. This assessment must consider both direct and indirect effects of the release, fire, or explosion (e.g., the effects of any toxic, irritating, or asphyxiating gases that are generated, or the effects of any hazardous surface water run-off from water or chemical agents used to control fire and heat-induced explosions).

(d) If the emergency coordinator determines that the facility has had a release, fire, or explosion which could threaten human health, or the environment, outside the facility, he must report his findings as follows:

(1) If his assessment indicates that evacuation of local areas may be advisable, he must immediately notify appropriate local authorities. He must be available to help appropriate officials decide whether local areas should be evacuated; and

(2) He must immediately notify either the government official designated as the on-scene coordinator for that geographical area, (in the applicable regional contingency plan under Part 1510 of this title) or the National Response Center (using their 24-hour toll free number 800/424-8802). The report must include:

(i) Name and telephone number of reporter;

(ii) Name and address of facility;

(iii) Time and type of incident (e.g., release, fire);

(iv) Name and quantity of material(s) involved, to the extent known;

(v) The extent of injuries, if any; and

(vi) The possible hazards to human health, or the environment, outside the facility.

(e) During an emergency, the emergency coordinator must take all reasonable measures necessary to ensure that fires, explosions, and releases do not occur, recur, or spread to other hazardous waste at the facility. These measures must include, where applicable, stopping processes and operations, collecting and containing release waste, and removing or isolating containers.

(f) If the facility stops operations in response to a fire, explosion, or release, the emergency coordinator must monitor for leaks, pressure buildup, gas generation, or ruptures in valves, pipes, or other equipment, wherever this is appropriate.

(g) Immediately after an emergency, the emergency coordinator must provide for treating, storing, or disposing of recovered waste, contaminated soil or surface water, or any other material that results from a release, fire, or explosion at the facility.

[*Comment:* Unless the owner or operator can demonstrate, in accordance with § 261.3(c) or (d) of this chapter, that the recovered material is not a hazardous waste, the owner or operator becomes a generator of hazardous waste and must manage it in accordance with all applicable requirements of Parts 262, 263, and 264 of this chapter.]

(h) The emergency coordinator must ensure that, in the affected area(s) of the facility:

(1) No waste that may be incompatible with the released material is treated, stored, or disposed of until cleanup procedures are completed; and

(2) All emergency equipment listed in the contingency plan is cleaned and fit for its intended use before operations are resumed.

(i) The owner or operator must notify the Regional Administrator, and appropriate State and local authorities, that the facility is in compliance with paragraph (h) of this section before operations are resumed in the affected area(s) of the facility.

(j) The owner or operator must note in the operating record the time, date, and details of any incident that requires implementing the contingency plan. Within 15 days after the incident, he must submit a written report on the incident to the Regional Administrator. The report must include:

(1) Name, address, and telephone number of the owner or operator;

(2) Name, address, and telephone number of the facility;

(3) Date, time, and type of incident (e.g., fire, explosion);

(4) Name and quantity of material(s) involved;

(5) The extent of injuries, if any;

(6) An assessment of actual or potential hazards to human health or the environment, where this is applicable; and

(7) Estimated quantity and disposition of recovered material that resulted from the incident.

(Approved by the Office of Management and Budget under control number 2050-0012)

[45 FR 33221, May 19, 1980, as amended at 50 FR 4514, Jan. 31, 1985]

Subpart E—Manifest System, Recordkeeping, and Reporting

§ 264.70 Applicability.

The regulations in this subpart apply to owners and operators of both on-site and off-site facilities, except as § 264.1 provides otherwise. Sections 264.71, 264.72, and 264.76 do not apply to owners and operators of on-site facilities that do not receive any hazardous waste from off-site sources. Section 264.73(b) only applies to permittees who treat, store, or dispose of hazardous wastes on-site where such wastes were generated.

[50 FR 28746, July 15, 1985]

§ 264.71 Use of manifest system.

(a) If a facility receives hazardous waste accompanied by a manifest, the owner or operator, or his agent, must:

(1) Sign and date each copy of the manifest to certify that the hazardous waste covered by the manifest was received;

(2) Note any significant discrepancies in the manifest (as defined in § 264.72(a)) on each copy of the manifest;

[*Comment:* The Agency does not intend that the owner or operator of a facility whose procedures under § 264.13(c) include waste analysis must perform that analysis before signing the manifest and giving it to the transporter. Section 264.72(b), however, requires reporting an unreconciled discrepancy discovered during later analysis.]

(3) Immediately give the transporter at least one copy of the signed manifest;

(4) Within 30 days after the delivery, send a copy of the manifest to the generator; and

(5) Retain at the facility a copy of each manifest for at least three years from the date of delivery.

(b) If a facility receives, from a rail or water (bulk shipment) transporter, hazardous waste which is accompanied by a shipping paper containing all the information required on the manifest (excluding the EPA identification numbers, generator's certification, and signatures), the owner or operator, or his agent, must:

(1) Sign and date each copy of the manifest or shipping paper (if the manifest has not been received) to certify that the hazardous waste covered by the manifest or shipping paper was received;

(2) Note any significant discrepancies (as defined in § 264.72(a)) in the manifest or shipping paper (if the manifest has not been received) on each copy of the manifest or shipping paper.

[*Comment:* The Agency does not intend that the owner or operator of a facility whose procedures under § 264.13(c) include waste analysis must perform that analysis before signing the shipping paper and giving it to the transporter. Section 264.72(b), however, requires reporting an unreconciled discrepancy discovered during later analysis.]

(3) Immediately give the rail or water (bulk shipment) transporter at least one copy of the manifest or shipping paper (if the manifest has not been received);

(4) Within 30 days after the delivery, send a copy of the signed and dated manifest to the generator; however, if the manifest has not been received within 30 days after delivery, the owner or operator, or his agent, must send a copy of the shipping paper signed and dated to the generator; and

[*Comment:* Section 262.23(c) of this chapter requires the generator to send three copies of the manifest to the facility when hazardous waste is sent by rail or water (bulk shipment).]

(5) Retain at the facility a copy of the manifest and shipping paper (if signed in lieu of the manifest at the time of delivery) for at least three years from the date of delivery.

(c) Whenever a shipment of hazardous waste is initiated from a facility, the owner or operator of that facility must comply with the requirements of Part 262 of this chapter.

[*Comment:* The provisions of § 262.34 are applicable to the on-site accumulation of hazardous wastes by generators. Therefore, the provisions of § 262.34 only apply to owners or operators who are shipping hazardous waste which they generated at that facility.]

[45 FR 33221, May 19, 1980, as amended at 45 FR 86970, 86974, Dec. 31, 1980]

§ 264.72 Manifest discrepancies.

(a) Manifest discrepancies are differences between the quantity or type of hazardous waste designated on the manifest or shipping paper, and the quantity or type of hazardous waste a facility actually receives. Significant discrepancies in quantity are:

(1) For bulk waste, variations greater than 10 percent in weight, and (2) for batch waste, any variation in piece count, such as a discrepancy of one drum in a truckload. Significant discrepancies in type are obvious differences which can be discovered by inspection or waste analysis, such as waste solvent substituted for waste acid, or toxic constituents not reported on the manifest or shipping paper.

(b) Upon discovering a significant discrepancy, the owner or operator must attempt to reconcile the discrepancy with the waste generator or transporter (e.g., with telephone conversations). If the discrepancy is not resolved within 15 days after receiving the waste, the owner or operator must immediately submit to the Regional Administrator a letter describing the discrepancy and attempts to reconcile it, and a copy of the manifest or shipping paper at issue.

(Approved by the Office of Management and Budget under control number 2050-0012)

[45 FR 33221, May 19, 1980, as amended at 50 FR 4514, Jan. 31, 1985]

§ 264.73 Operating record.

(a) The owner or operator must keep a written operating record at his facility.

(b) The following information must be recorded, as it becomes available, and maintained in the operating record until closure of the facility:

(1) A description and the quantity of each hazardous waste received, and the method(s) and date(s) of its treatment, storage, or disposal at the facility as required by Appendix I;

(2) The location of each hazardous waste within the facility and the quantity at each location. For disposal facilities, the location and quantity of each hazardous waste must be recorded on a map or diagram of each cell or disposal area. For all facilities, this information must include cross-references to specific manifest document numbers, if the waste was accompanied by a manifest;

[*Comment:* See § 264.119 for related requirements.]

(3) Records and results of waste analyses performed as specified in §§ 264.13, 264.17, 264.314, 264,341, 268.4(a), and 268.7 of this chapter.

(4) Summary reports and details of all incidents that require implementing the contingency plan as specified in § 264.56(j);

(5) Records and results of inspections as required by § 264.15(d) (except these data need be kept only three years);

(6) Monitoring, testing or analytical data, and corrective action where required by Subpart F and §§ 264.226, 264.253, 264.254, 264.276, 264.278, 264.280, 264.303, 264.309, 264.347, and 264.602;

(7) For off-site facilities, notices to generators as specified in § 264.12(b); and

(8) All closure cost estimates under § 264.142, and, for disposal facilities, all post-closure cost estimates under § 264.144.

(9) A certification by the permittee no less often than annually, that the permittee has a program in place to reduce the volume and toxicity of hazardous waste that he generates to the degree determined by the permittee to be economically practicable; and the proposed method of treatment, storage or disposal is that practicable method currently available to the permittee which minimizes the present and future threat to human health and the environment.

(10) Records of the quantities (and date of placement) for each shipment of hazardous waste placed in land disposal units under an extension to the effective date of any land disposal restriction granted pursuant to § 268.5 or a petition pursuant to § 268.6, and

the notice required by a generator under § 268.7(a)(3);

(11) For an off-site treatment facility, a copy of the notice required by a generator under § 268.7(a)(1);

(12) For an on-site treatment facility, the information contained in the notice required by a generator under § 268.7(a)(1), except for the manifest number;

(13) For an off-site land disposal facility, a copy of the notice and certification required by the owner or operator of a treatment facility under § 268.7(b) (1) and (2), or a copy of the notice and certification required by the generator under § 268.7(a)(2), whichever is applicable; and

(14) For an on-site land disposal facility, the information contained in the notice required under § 268.7(a)(2), except for the manifest number, or the information contained in the notice required by a treater under § 268.7(b)(1), except for the manifest number, whichever is applicable.

(Approved by the Office of Management and Budget under control numbers 2050-0012 and 2050-0013. The reporting and recordkeeping requirements contained in paragraph (b)(9) were approved by OMB under control number 2050-0037)

[45 FR 33221, May 19, 1980, as amended at 46 FR 2849, Jan. 12, 1981; 46 FR 7678, Jan. 23, 1981; 50 FR 4514, Jan. 31, 1985; 50 FR 18374, Apr. 30, 1985; 50 FR 28746, July 15, 1985; 51 FR 40637, Nov. 7, 1986; 52 FR 21016, June 4, 1987; 52 FR 46963, Dec. 10, 1987]

§ 264.74 Availability, retention, and disposition of records.

(a) All records, including plans, required under this part must be furnished upon request, and made available at all reasonable times for inspection, by any officer, employee, or representative of EPA who is duly designated by the Administrator.

(b) The retention period for all records required under this part is extended automatically during the course of any unresolved enforcement action regarding the facility or as requested by the Administrator.

(c) A copy of records of waste disposal locations and quantities under § 264.73(b)(2) must be submitted to the Regional Administrator and local land authority upon closure of the facility.

§ 264.75 Biennial report.

The owner or operator must prepare and submit a single copy of a biennial report to the Regional Administrator by March 1 of each even numbered year. The biennial report must be submitted on EPA form 8700-13B. The report must cover facility activities during the previous calendar year and must include:

(a) The EPA identification number, name, and address of the facility;

(b) The calendar year covered by the report;

(c) For off-site facilities, the EPA identification number of each hazardous waste generator from which the facility received a hazardous waste during the year; for imported shipments, the report must give the name and address of the foreign generator;

(d) A description and the quantity of each hazardous waste the facility received during the year. For off-site facilities, this information must be listed by EPA identification number of each generator;

(e) The method of treatment, storage, or disposal for each hazardous waste;

(f) [Reserved]

(g) The most recent closure cost estimate under § 264.142, and, for disposal facilities, the most recent post-closure cost estimate under § 264.144; and

(h) For generators who treat, store, or dispose of hazardous waste on-site, a description of the efforts undertaken during the year to reduce the volume and toxicity of waste generated.

(i) For generators who treat, store, or dispose of hazardous waste on-site, a description of the changes in volume and toxicity of waste actually achieved during the year in comparison to previous years to the extent such information is available for the years prior to 1984.

(j) The certification signed by the owner or operator of the facility or his authorized representative.

(Approved by the Office of Management and Budget under control number 2050-0024)

[45 FR 33221, May 19, 1980, as amended at 46 FR 2849, Jan. 12, 1981; 48 FR 3982, Jan. 28, 1983; 50 FR 4514, Jan. 31, 1985; 51 FR 28556, Aug. 8, 1986]

§ 264.76 Unmanifested waste report.

If a facility accepts for treatment, storage, or disposal any hazardous waste from an off-site source without an accompanying manifest, or without an accompanying shipping paper as described in § 263.20(e)(2) of this chapter, and if the waste is not excluded from the manifest requirement by § 261.5 of this chapter, then the owner or operator must prepare and submit a single copy of a report to the Regional Administrator within fifteen days after receiving the waste. The unmanifested waste report must be submitted on EPA form 8700-13B. Such report must be designated 'Unmanifested Waste Report' and include the following information:

(a) The EPA identification number, name, and address of the facility;

(b) The date the facility received the waste;

(c) The EPA identification number, name, and address of the generator and the transporter, if available;

(d) A description and the quantity of each unmanifested hazardous waste and facility received;

(e) The method of treatment, storage, or disposal for each hazardous waste;

(f) The certification signed by the owner or operator of the facility or his authorized representative; and

(g) A brief explanation of why the waste was unmanifested, if known.

[*Comment:* Small quantities of hazardous waste are excluded from regulation under this part and do not require a manifest. Where a facility receives unmanifested hazardous wastes, the Agency suggests that the owner or operator obtain from each generator a certification that the waste qualifies for exclusion. Otherwise, the Agency suggests that the owner or operator file an unmanifested waste report for the hazardous waste movement.]

(Approved by the Office of Management and Budget under control number 2050-0012)

[45 FR 33221, May 19, 1980, as amended at 48 FR 3982, Jan. 28, 1983; 50 FR 4514, Jan. 31, 1985]

§ 264.77 Additional reports.

In addition to submitting the biennial reports and unmanifested waste reports described in §§ 264.75 and 264.76, the owner or operator must also report to the Regional Administrator:

(a) Releases, fires, and explosions as specified in § 264.56(j);

(b) Facility closures specified in §264.115; and

(c) As otherwise required by Subparts F and K through N.

[46 FR 2849, Jan. 12, 1981, as amended at 47 FR 32350, July 26, 1982; 48 FR 3982, Jan. 28, 1983]

Subpart F—Releases From Solid Waste Management Units

SOURCE: 47 FR 32350, July 26, 1982, unless otherwise noted.

§ 264.90 Applicability.

(a)(1) Except as provided in paragraph (b) of this section, the regulations in this subpart apply to owners or operators of facilities that treat, store or dispose of hazardous waste. The owner or operator must satisfy the requirements identified in paragraph (a)(2) of this section for all wastes (or constituents thereof) contained in solid waste management units at the facility, regardless of the time at which waste was placed in such units.

(2) All solid waste management units must comply with the requirements in § 264.101. A surface impoundment, waste pile, and land treatment unit or landfill that receives hazardous waste after July 26, 1982 (hereinafter referred to as a "regulated unit") must comply with the requirements of §§ 264.91 through 264.100 in lieu of § 264.101 for purposes of detecting, characterizing and responding to releases to the uppermost aquifer. The finanical responsibility requirements of § 264.101 apply to regulated units.

(b) The owner or operator's regulated unit or units are not subject to regulation for releases into the uppermost aquifer under this subpart if:

(1) The owner or operator is exempted under § 264.1; or

(2) He operates a unit which the Regional Administrator finds:

(i) Is an engineered structure,

(ii) Does not receive or contain liquid waste or waste containing free liquids,

(iii) Is designed and operated to exclude liquid, precipitation, and other run-on and run-off,

(iv) Has both inner and outer layers of containment enclosing the waste,

(v) Has a leak detection system built into each containment layer,

(vi) The owner or operator will provide continuing operation and maintenance of these leak detection systems during the active life of the unit and the closure and post-closure care periods, and

(vii) To a reasonable degree of certainty, will not allow hazardous constituents to migrate beyond the outer containment layer prior to the end of the the post-closure care period.

(3) The Regional Administrator finds, pursuant to § 264.280(d), that the treatment zone of a land treatment unit that qualifies as a regulated unit does not contain levels of hazardous constituents that are above background levels of those constituents by an amount that is statistically significant, and if an unsaturated zone monitoring program meeting the requirements of § 264.278 has not shown a statistically significant increase in hazardous constituents below the treatment zone during the operating life of the unit. An exemption under this paragraph can only relieve an owner or operator of responsibility to meet the requirements of this subpart during the post-closure care period; or

(4) The Regional Administrator finds that there is no potential for migration of liquid from a regulated unit to the uppermost aquifer during the active life of the regulated unit (including the closure period) and the port-closure care period specified under § 264.117. This demonstration must be certified by a qualified geologist or geotechnical engineer. In order to provide an adequate margin of safety in the prediction of potential migration of liquid, the owner or operator must base any predictions made under this paragraph on assumptions that maximize the rate of liquid migration.

(5) He designs and operates a pile in compliance with § 264.250(c).

(c) The regulations under this subpart apply during the active life of the regulated unit (including the closure period). After closure of the regulated unit, the regulations in this subpart:

(1) Do not apply if all waste, waste residues, contaminated containment system components, and contaminated subsoils are removed or decontaminated at closure;

(2) Apply during the post-closure care period under § 264.117 if the owner or operator is conducting a detection monitoring program under § 264.98; or

(3) Apply during the compliance period under § 264.96 if the owner or operator is conducting a compliance monitoring program under § 264.99 or a corrective action program under § 264.100.

(d) Regulations in this subpart may apply to miscellaneous units when necessary to comply with §§ 264.601 through 264.603.

[47 FR 32350, July 26, 1982, as amended at 50 FR 28746, July 15, 1985; 52 FR 46963, Dec. 10, 1987]

§ 264.91 Required programs.

(a) Owners and operators subject to this subpart must conduct a monitoring and response program as follows:

(1) Whenever hazardous constituents under § 264.93 from a regulated unit are detected at the compliance point under § 264.95, the owner or operator must institute a compliance monitoring program under § 264.99;

(2) Whenever the ground-water protection standard under § 264.92 is exceeded, the owner or operator must institute a corrective action program under § 264.100;

(3) Whenever hazardous constituents under § 264.93 from a regulated unit exceed concentration limits under § 264.94 in ground water between the compliance point under § 264.95 and the downgradient facility property boundary, the owner or operator must institute a corrective action program under § 264.100; or

(4) In all other cases, the owner or operator must institute a detection monitoring program under § 264.98.

(b) The Regional Administrator will specify in the facility permit the specific elements of the monitoring and response program. The Regional Administrator may include one or more of the programs identified in paragraph (a) of this section in the facility permit as may be necessary to protect human health and the environment and will specify the circumstances under which each of the programs will be required. In deciding whether to require the owner or operator to be prepared to institute a particular program, the Regional Administrator will consider the potential adverse effects on human health and the environment that might occur before final administrative action on a permit modification application to incorporate such a program could be taken.

§ 264.92 Ground-water protection standard.

The owner or operator must comply with conditions specified in the facility permit that are designed to ensure that hazardous constituents under § 264.93 entering the ground water from a regulated unit do not exceed the concentration limits under § 264.94 in the uppermost aquifer underlying the waste management area beyond the point of compliance under § 264.95 during the compliance period under § 264.96. The Regional Administrator will establish this ground-water protection standard in the facility permit when hazardous constituents have entered the ground water from a regulated unit.

§ 264.93 Hazardous constituents.

(a) The Regional Administrator will specify in the facility permit the hazardous constituents to which the ground-water protection standard of § 264.92 applies. Hazardous constituents are constituents identified in Appendix VIII of Part 261 of this chapter that have been detected in ground water in the uppermost aquifer underlying a regulated unit and that are reasonably expected to be in or derived from waste contained in a regulated unit, unless the Regional Administrator has excluded them under paragraph (b) of this section.

(b) The Regional Administrator will exclude an Appendix VIII constituent from the list of hazardous constituents specified in the facility permit if he finds that the constituent is not capable of posing a substantial present or potential hazard to human health or the environment. In deciding whether to grant an exemption, the Regional Administrator will consider the following:

(1) Potential adverse effects on ground-water quality, considering:

(i) The physical and chemical characteristics of the waste in the regulated unit, including its potential for migration;

(ii) The hydrogeological characteristics of the facility and surrounding land;

(iii) The quantity of ground water and the direction of ground-water flow;

(iv) The proximity and withdrawal rates of ground-water users;

(v) The current and future uses of ground water in the area;

(vi) The existing quality of ground water, including other sources of contamination and their cumulative impact on the ground-water quality;

(vii) The potential for health risks caused by human exposure to waste constituents;

(viii) The potential damage to wildlife, crops, vegetation, and physical structures caused by exposure to waste constituents;

(ix) The persistence and permanence of the potential adverse effects; and

(2) Potential adverse effects on hydraulically-connected surface water quality, considering:

(i) The volume and physical and chemical characteristics of the waste in the regulated unit;

(ii) The hydrogeological characteristics of the facility and surrounding land;

(iii) The quantity and quality of ground water, and the direction of ground-water flow;

(iv) The patterns of rainfall in the region;

(v) The proximity of the regulated unit to surface waters;

(vi) The current and future uses of surface waters in the area and any water quality standards established for those surface waters;

(vii) The existing quality of surface water, including other sources of con-

tamination and the cumulative impact on surface-water quality;

(viii) The potential for health risks caused by human exposure to waste constituents;

(ix) The potential damage to wildlife, crops, vegetation, and physical structures caused by exposure to waste constituents; and

(x) The persistence and permanence of the potential adverse effects.

(c) In making any determination under paragraph (b) of this section about the use of ground water in the area around the facility, the Regional Administrator will consider any identification of underground sources of drinking water and exempted aquifers made under § 144.8 of this chapter.

[47 FR 32350, July 26, 1982, as amended at 48 FR 14294, Apr. 1, 1983]

§ 264.94 Concentration limits.

(a) The Regional Administrator will specify in the facility permit concentration limits in the ground water for hazardous constituents established under § 264.93. The concentration of a hazardous constituent:

(1) Must not exceed the background level of that constituent in the ground water at the time that limit is specified in the permit; or

(2) For any of the constituents listed in Table 1, must not exceed the respective value given in that table if the background level of the constituent is below the value given in Table 1; or

TABLE 1—MAXIMUM CONCENTRATION OF CONSTITUENTS FOR GROUND-WATER PROTECTION

Constituent	Maximum concentration [1]
Arsenic	0.05
Barium	1.0
Cadmium	0.01
Chromium	0.05
Lead	0.05
Mercury	0.002
Selenium	0.01
Silver	0.05
Endrin (1,2,3,4,10,10-hexachloro-1,7-epoxy-1,4,4a,5,6,7,8,9a-octahydro-1, 4-endo, endo-5,8-dimethano naphthalene)	0.0002
Lindane (1,2,3,4,5,6-hexachlorocyclohexane, gamma isomer)	0.004
Methoxychlor (1,1,1-Trichloro-2,2-bis (p-methoxyphenylethane)	0.1

TABLE 1—MAXIMUM CONCENTRATION OF CONSTITUENTS FOR GROUND-WATER PROTECTION—Continued

Constituent	Maximum concentration [1]
Toxaphene ($C_{10}H_{10}Cl_8$, Technical chlorinated camphene, 67-69 percent chlorine)	0.005
2,4-D (2,4-Dichlorophenoxyacetic acid)	0.1
2,4,5-TP Silvex (2,4,5-Trichlorophenoxypropionic acid)	0.01

[1] Milligrams per liter.

(3) Must not exceed an alternate limit established by the Regional Administrator under paragraph (b) of this section.

(b) The Regional Administrator will establish an alternate concentration limit for a hazardous constituent if he finds that the constituent will not pose a substantial present or potential hazard to human health or the environment as long as the alternate concentration limit is not exceeded. In establishing alternate concentration limits, the Regional Administrator will consider the following factors:

(1) Potential adverse effects on ground-water quality, considering:

(i) The physical and chemical characteristics of the waste in the regulated unit, including its potential for migration;

(ii) The hydrogeological characteristics of the facility and surrounding land;

(iii) The quantity of ground water and the direction of ground-water flow;

(iv) The proximity and withdrawal rates of ground-water users;

(v) The current and future uses of ground water in the area;

(vi) The existing quality of ground water, including other sources of contamination and their cumulative impact on the ground-water quality;

(vii) The potential for health risks caused by human exposure to waste constituents;

(viii) The potential damage to wildlife, crops, vegetation, and physical structures caused by exposure to waste constituents;

(ix) The persistence and permanence of the potential adverse effects; and

(2) Potential adverse effects on hydraulically-connected surface-water quality, considering:

(i) The volume and physical and chemical characteristics of the waste in the regulated unit;

(ii) The hydrogeological characteristics of the facility and surrounding land;

(iii) The quantity and quality of ground water, and the direction of ground-water flow;

(iv) The patterns of rainfall in the region;

(v) The proximity of the regulated unit to surface waters;

(vi) The current and future uses of surface waters in the area and any water quality standards established for those surface waters;

(vii) The existing quality of surface water, including other sources of contamination and the cumulative impact on surface water quality;

(viii) The potential for health risks caused by human exposure to waste constituents;

(ix) The potential damage to wildlife, crops, vegetation, and physical structures caused by exposure to waste constituents; and

(x) The persistence and permanence of the potential adverse effects.

(c) In making any determination under paragraph (b) of this section about the use of ground water in the area around the facility the Regional Administrator will consider any identification of underground sources of drinking water and exempted aquifers made under § 144.8 of this chapter.

[47 FR 32350, July 26, 1982, as amended at 48 FR 14294, Apr. 1, 1983]

§ 264.95 Point of compliance.

(a) The Regional Administrator will specify in the facility permit the point of compliance at which the ground-water protection standard of § 264.92 applies and at which monitoring must be conducted. The point of compliance is a vertical surface located at the hydraulically downgradient limit of the waste management area that extends down into the uppermost aquifer underlying the regulated units.

(b) The waste management area is the limit projected in the horizontal plane of the area on which waste will be placed during the active life of a regulated unit.

(1) The waste management area includes horizontal space taken up by any liner, dike, or other barrier designed to contain waste in a regulated unit.

(2) If the facility contains more than one regulated unit, the waste management area is described by an imaginary line circumscribing the several regulated units.

§ 264.96 Compliance period.

(a) The Regional Administrator will specify in the facility permit the compliance period during which the ground-water protection standard of § 264.92 applies. The compliance period is the number of years equal to the active life of the waste management area (including any waste management activity prior to permitting, and the closure period.)

(b) The compliance period begins when the owner or operator initiates a compliance monitoring program meeting the requirements of § 264.99.

(c) If the owner or operator is engaged in a corrective action program at the end of the compliance period specified in paragraph (a) of this section, the compliance period is extended until the owner or operator can demonstrate that the ground-water protection standard of § 264.92 has not been exceeded for a period of three consecutive years.

§ 264.97 General ground-water monitoring requirements.

The owner or operator must comply with the following requirements for any ground-water monitoring program developed to satisfy § 264.98, § 264.99, or § 264.100:

(a) The ground-water monitoring system must consist of a sufficient number of wells, installed at appropriate locations and depths to yield ground-water samples from the uppermost aquifer that:

(1) Represent the quality of background water that has not been affected by leakage from a regulated unit; and

(2) Represent the quality of ground water passing the point of compliance.

(b) If a facility contains more than one regulated unit, separate ground-water monitoring systems are not required for each regulated unit provided that provisions for sampling the ground water in the uppermost aquifer will enable detection and measurement at the compliance point of hazardous constituents from the regulated units that have entered the ground water in the uppermost aquifer.

(c) All monitoring wells must be cased in a manner that maintains the integrity of the monitoring-well bore hole. This casing must be screened or perforated and packed with gravel or sand, where necessary, to enable collection of ground-water samples. The annular space (i.e., the space between the bore hole and well casing) above the sampling depth must be sealed to prevent contamination of samples and the ground water.

(d) The ground-water monitoring program must include consistent sampling and analysis procedures that are designed to ensure monitoring results that provide a reliable indication of ground-water quality below the waste management area. At a minimum the program must include procedures and techniques for:

(1) Sample collection;

(2) Sample preservation and shipment;

(3) Analytical procedures; and

(4) Chain of custody control.

(e) The ground-water monitoring program must include sampling and analytical methods that are appropriate for ground-water sampling and that accurately measure hazardous constituents in ground-water samples.

(f) The ground-water monitoring program must include a determination of the ground-water surface elevation each time ground water is sampled.

(g) Where appropriate, the ground-water monitoring program must establish background ground-water quality for each of the hazardous constituents or monitoring parameters or constituents specified in the permit.

(1) In the detection monitoring program under § 264.98, background ground-water quality for a monitoring parameter or constituent must be based on data from quarterly sampling of wells upgradient from the waste management area for one year.

(2) In the compliance monitoring program under § 264.99, background ground-water quality for a hazardous constituent must be based on data from upgradient wells that:

(i) Is available before the permit is issued;

(ii) Accounts for measurement errors in sampling and analysis; and

(iii) Accounts, to the extent feasible, for seasonal fluctuations in background ground-water quality if such fluctuations are expected to affect the concentration of the hazardous constituent.

(3) Background quality may be based on sampling of wells that are not upgradient from the waste management area where:

(i) Hydrogeologic conditions do not allow the owner or operator to determine what wells are upgradient; or

(ii) Sampling at other wells will provide an indication of background ground-water quality that is as representative or more representative than that provided by the upgradient wells.

(4) In developing the data base used to determine a background value for each parameter or constituent, the owner or operator must take a minimum of one sample from each well and a minimum of four samples from the entire system used to determine background ground-water quality, each time the system is sampled.

(h) The owner or operator must use the following statistical procedure in determining whether background values or concentration limits have been exceeded:

(1) If, in a detection monitoring program, the level of a constituent at the compliance point is to be compared to the constituent's background value and that background value has a sample coefficient of variation less than 1.00:

(i) The owner or operator must take at least four portions from a sample at each well at the compliance point and determine whether the difference between the mean of the constituent at each well (using all portions taken) and the background value for the constituent is significant at the 0.05 level using the Cochran's Approximation to the Behrens-Fisher Student's t-test as described in Appendix IV of this part. If the test indicates that the difference is significant, the owner or operator must repeat the same procedure (with at least the same number of portions as used in the first test) with a fresh sample from the monitoring well. If this second round of analyses indicates that the difference is significant, the owner or operator must conclude that a statistically significant change has occurred; or

(ii) The owner or operator may use an equivalent statistical procedure for determining whether a statistically significant change has occurred. The Regional Administrator will specify such a procedure in the facility permit if he finds that the alternative procedure reasonably balances the probability of falsely identifying a non-contaminating regulated unit and the probability of failing to identify a contaminating regulated unit in a manner that is comparable to that of the statistical procedure described in paragraph (h)(1)(i) of this section.

(2) In all other situations in a detection monitoring program and in a compliance monitoring program, the owner or operator must use a statistical procedure providing reasonable confidence that the migration of hazardous constituents from a regulated unit into and through the aquifer will be indicated. The Regional Administrator will specify a statistical procedure in the facility permit that he finds:

(i) Is appropriate for the distribution of the data used to establish background values or concentration limits; and

(ii) Provides a reasonable balance between the probability of falsely identifying a non-contaminating regulated unit and the probability of failing to identify a contaminating regulated unit.

(Approved by the Office of Management and Budget under control number 2050-0033)

[47 FR 32350, July 26, 1982, as amended at 50 FR 4514, Jan. 31, 1985]

§ 264.98 Detection monitoring program.

An owner or operator required to establish a detection monitoring program under this subpart must, at a minimum, discharge the following responsibilities:

(a) The owner or operator must monitor for indicator parameters (e.g., specific conductance, total organic carbon, or total organic halogen), waste constituents, or reaction products that provide a reliable indication of the presence of hazardous constituents in ground water. The Regional Administrator will specify the parameters or constituents to be monitored in the facility permit, after considering the following factors:

(1) The types, quantities, and concentrations of constituents in wastes managed at the regulated unit;

(2) The mobility, stability, and persistance of waste constituents or their reaction products in the unsaturated zone beneath the waste management area;

(3) The detectability of indicator parameters, waste constituents, and reaction products in ground water; and

(4) The concentrations or values and coefficients of variation of proposed monitoring parameters or constituents in the ground-water background.

(b) The owner or operator must install a ground-water monitoring system at the compliance point as specified under § 264.95. The ground-water monitoring system must comply with § 264.97(a)(2), (b), and (c).

(c) The owner or operator must establish a background value for each monitoring parameter or constituent specified in the permit pursuant to paragraph (a) of this section. The permit will specify the background values for each parameter or specify the procedures to be used to calculate the background values.

(1) The owner or operator must comply with § 264.97(g) in developing the data base used to determine background values.

(2) The owner or operator must express background values in a form necessary for the determination of statistically significant increases under § 264.97(h).

(3) In taking samples used in the determination of background values, the owner or operator must use a ground-water monitoring system that complies with § 264.97(a)(1), (b), and (c).

(d) The owner or operator must determine ground-water quality at each monitoring well at the compliance point at least semi-annually during the active life of a regulated unit (including the closure period) and the post-closure care period. The owner or operator must express the ground-water quality at each monitoring well in a form necessary for the determination of statistically significant increases under § 264.97(h).

(e) The owner or operator must determine the ground-water flow rate and direction in the uppermost aquifer at least annually.

(f) The owner or operator must use procedures and methods for sampling and analysis that meet the requirements of § 264.97 (d) and (e).

(g) The owner or operator must determine whether there is a statistically significant increase over background values for any parameter or constituent specified in the permit pursuant to paragraph (a) of this section each time he determines ground-water quality at the compliance point under paragraph (d) of this section.

(1) In determining whether a statistically significant increase has occurred, the owner or operator must compare the ground-water quality at each monitoring well at the compliance point for each parameter or constituent to the background value for that parameter or constituent, according to the statistical procedure specified in the permit under § 264.97(h).

(2) The owner or operator must determine whether there has been a statistically significant increase at each monitoring well at the compliance point within a reasonable time period after completion of sampling. The Regional Administrator will specify that time period in the facility permit, after considering the complexity of the statistical test and the availability of laboratory facilities to perform the analysis of ground-water samples.

(h) If the owner or operator determines, pursuant to paragraph (g) of this section, that there is a statistically significant increase for parameters or constituents specified pursuant to paragraph (a) of this section at any monitoring well at the compliance point, he must:

(1) Notify the Regional Administrator of this finding in writing within seven days. The notification must indicate what parameters or constituents have shown statistically significant increases;

(2) Immediately sample the ground water in all monitoring wells and determine whether constituents identified in the list in Appendix IX of Part 264 are present and, if so, at what concentration.

(3) Establish a background value for each constituent that has been found at the compliance point under paragraph (h)(2) of this section, as follows:

(i) The owner or operator must comply with § 264.97(g) in developing the data base used to determine background values;

(ii) The owner or operator must express background values in a form necessary for the determination of statistically significant increases under § 264.97(h); and

(iii) In taking samples used in the determination of background values, the owner or operator must use a ground-water monitoring system that complies with § 264.97(a)(1), (b), and (c);

(4) Within 90 days, submit to the Regional Administrator an application for a permit modification to establish a compliance monitoring program meeting the requirements of § 264.99. The application must include the following information:

(i) An identification of the concentration of each constituent found in the ground water at each monitoring well at the compliance point;

(ii) Any proposed changes to the ground-water monitoring system at the facility necessary to meet the requirements of § 264.99;

(iii) Any proposed changes to the monitoring frequency, sampling and analysis procedures or methods, or statistical procedures used at the facility necessary to meet the requirements of § 264.99;

(iv) For each hazardous constituent found at the compliance point, a proposed concentration limit under § 264.94(a)(1) or (2), or a notice of intent to seek a variance under § 264.94(b); and

(5) Within 180 days, submit to the Regional Administrator:

(i) All data necessary to justify any variance sought under § 264.94(b); and

(ii) An engineering feasibility plan for a corrective action program necessary to meet the requirements of § 264.100, unless:

(A) All hazardous constituents identified under paragraph (h)(2) of this section are listed in Table 1 of § 264.94 and their concentrations do not exceed the respective values given in that Table; or

(B) The owner or operator has sought a variance under § 264.94(b) for every hazardous constituent identified under paragraph (h)(2) of this section.

(i) If the owner or operator determines, pursuant to paragraph (g) of this section, that there is a statistically significant increase of parameters or consitutents specified pursuant to paragraph (a) of this section at any monitoring well at the compliance point, he may demonstrate that a source other than a regulated unit caused the increase or that the increase resulted from error in sampling, analysis, or evaluation. While the owner or operator may make a demonstration under this paragraph in addition to, or in lieu of, submitting a permit modification application under paragraph (h)(4) of this section, he is not relieved of the requirement to submit a permit modification application within the time specified in paragraph (h)(4) of this section unless the demonstration made under this paragraph successfully shows that a source other than a regulated unit caused the increase or that the increase resulted from error in sampling, analysis, or evaluation. In making a demonstration under this paragraph, the owner or operator must:

(1) Notify the Regional Administrator in writing within seven days of determining a statistically significant increase at the compliance point that he intends to make a demonstration under this paragraph;

(2) Within 90 days, submit a report to the Regional Administrator which demonstrates that a source other than a regulated unit caused the increase, or that the increase resulted from error in sampling, analysis, or evaluation;

(3) Within 90 days, submit to the Regional Administrator an application for a permit modification to make any appropriate changes to the detection monitoring program at the facility; and

(4) Continue to monitor in accordance with the detection monitoring program established under this section.

(j) If the owner or operator determines that the detection monitoring program no longer satisfies the requirements of this section, he must, within 90 days, submit an application for a permit modification to make any appropriate changes to the program.

(k) The owner or operator must assure that monitoring and corrective action measures necessary to achieve compliance with the ground-water protection standard under § 264.92 are taken during the term of the permit.

(Approved by the Office of Management and Budget under control number 2050-0033)

[47 FR 32350, July 26, 1982, as amended at 50 FR 4514, Jan. 31, 1985; 52 FR 25946, July 9, 1987]

§ 264.99 Compliance monitoring program.

An owner or operator required to establish a compliance monitoring program under this subpart must, at a minimum, discharge the following responsibilities:

(a) The owner or operator must monitor the ground water to determine whether regulated units are in compliance with the ground-water protection standard under § 264.92. The Regional Administrator will specify the ground-water protection standard in the facility permit, including:

(1) A list of the hazardous constituents identified under § 264.93;

(2) Concentration limits under § 264.94 for each of those hazardous constituents;

(3) The compliance point under § 264.95; and

(4) The compliance period under § 264.96.

(b) The owner or operator must install a ground-water monitoring system at the compliance point as

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specified under § 264.95. The ground-water monitoring system must comply with § 264.97(a)(2), (b), and (c).

(c) Where a concentration limit established under paragraph (a)(2) of this section is based on background ground-water quality, the Regional Administrator will specify the concentration limit in the permit as follows:

(1) If there is a high temporal correlation between upgradient and compliance point concentrations of the hazardous constitutents, the owner or operator may establish the concentration limit through sampling at upgradient wells each time ground water is sampled at the compliance point. The Regional Administrator will specify the procedures used for determining the concentration limit in this manner in the permit. In all other cases, the concentration limit will be the mean of the pooled data on the concentration of the hazardous constituent.

(2) If a hazardous constituent is identified on Table 1 under § 264.94 and the difference between the respective concentration limit in Table 1 and the background value of that constituent under § 264.97(g) is not statistically significant, the owner or operator must use the background value of the constituent as the concentration limit. In determining whether this difference is statistically significant, the owner or operator must use a statistical procedure providing reasonable confidence that a real difference will be indicated. The statistical procedure must:

(i) Be appropriate for the distribution of the data used to establish background values; and

(ii) Provide a reasonable balance between the probability of falsely identifying a significant difference and the probability of failing to identify a significant difference.

(3) The owner or operator must:

(i) Comply with § 264.97(g) in developing the data base used to determine background values;

(ii) Express background values in a form necessary for the determination of statistically significant increases under § 264.97(h); and

(iii) Use a ground-water monitoring system that complies with § 264.97(a)(1), (b), and (c).

(d) The owner or operator must determine the concentration of hazardous constituents in ground water at each monitoring well at the compliance point at least quarterly during the compliance period. The owner or operator must express the concentration at each monitoring well in a form necessary for the determination of statistically significant increases under § 264.97(h).

(e) The owner or operator must determine the ground-water flow rate and direction in the uppermost aquifer at least annually.

(f) The owner or operator must analyze samples from all monitoring wells at the compliance point to determine whether constituents identified in the list in Appendix IX to Part 264 of this chapter are present and, if so, at what concentration. The analysis must be conducted at least annually to determine whether additional Appendix IX constituents are present in the uppermost aquifer. If the owner or operator finds constituents from Appendix IX in the ground water that are not already identified in the permit as monitoring constituents, the owner or operator must report the concentration of these additional constituents to the Regional Administrator within seven days after completion of the analysis.

(g) The owner or operator must use procedures and methods for sampling and analysis that meet the requirements of § 264.97(d) and (e).

(h) The owner or operator must determine whether there is a statistically significant increase over the concentration limits for any hazardous constituents specified in the permit pursuant to paragraph (a) of this section each time he determines the concentration of hazardous constituents in ground water at the compliance point.

(1) In determining whether a statistically significant increase has occurred, the owner or operator must compare the ground-water quality at each monitoring well at the compliance point for each hazardous constituent to the concentration limit for that constituent according to the statistical procedures specified in the permit under § 264.97(h).

(2) The owner or operator must determine whether there has been a statistically significant increase at each monitoring well at the compliance point, within a reasonable time period after completion of sampling. The Regional Administrator will specify that time period in the facility permit, after considering the complexity of the statistical test and the availability of laboratory facilities to perform the analysis of ground-water samples.

(i) If the owner or operator determines, pursuant to paragraph (h) of this section, that the ground-water protection standard is being exceeded at any monitoring well at the point of compliance, he must:

(1) Notify the Regional Administrator of this finding in writing within seven days. The notification must indicate what concentration limits have been exceeded.

(2) Submit to the Regional Administrator an application for a permit modification to establish a corrective action program meeting the requirements of § 264.100 within 180 days, or within 90 days if an engineering feasibility study has been previously submitted to the Regional Administrator under § 264.98(h)(5). The application must at a minimum include the following information:

(i) A detailed description of corrective actions that will achieve compliance with the ground-water protection standard specified in the permit under paragraph (a) of this section; and

(ii) A plan for a ground-water monitoring program that will demonstrate the effectiveness of the corrective action. Such a ground-water monitoring program may be based on a compliance monitoring program developed to meet the requirements of this section.

(j) If the owner or operator determines, pursuant to paragraph (h) of this section, that the ground-water protection standard is being exceeded at any monitoring well at the point of compliance, he may demonstrate that a source other than a regulated unit caused the increase or that the increase resulted from error in sampling, analysis or evaluation. While the owner or operator may make a demonstration under this paragraph in addition to, or in lieu of, submitting a permit modification application under paragraph (i)(2) of this section, he is not relieved of the requirement to submit a permit modification application within the time specified in paragraph (i)(2) of this section unless the demonstration made under this paragraph successfully shows that a source other than a regulated unit caused the increase or that the increase resulted from error in sampling, analysis, or evaluation. In making a demonstration under this paragraph, the owner or operator must:

(1) Notify the Regional Administrator in writing within seven days that he intends to make a demonstration under this paragraph;

(2) Within 90 days, submit a report to the Regional Administrator which demonstrates that a source other than a regulated unit caused the standard to be exceeded or that the apparent noncompliance with the standards resulted from error in sampling, analysis, or evaluation;

(3) Within 90 days, submit to the Regional Administrator an application for a permit modification to make any appropriate changes to the compliance monitoring program at the facility; and

(4) Continue to monitor in accord with the compliance monitoring program established under this section.

(k) If the owner or operator determines that the compliance monitoring program no longer satisfies the requirements of this section, he must, within 90 days, submit an application for a permit modification to make any appropriate changes to the program.

(l) The owner or operator must assure that monitoring and corrective action measures necessary to achieve compliance with the ground-water protection standard under § 264.92 are taken during the term of the permit.

(Approved by the Office of Management and Budget under control number 2050-0033)

[47 FR 32350, July 26, 1982, as amended at 50 FR 4514, Jan. 31, 1985; 52 FR 25946, July 9, 1987]

§ 264.100 Corrective action program.

An owner or operator required to establish a corrective action program under this subpart must, at a mini-

mum, discharge the following responsibilities:

(a) The owner or operator must take corrective action to ensure that regulated units are in compliance with the ground-water protection standard under § 264.92. The Regional Administrator will specify the ground-water protection standard in the facility permit, including:

(1) A list of the hazardous constituents identified under § 264.93;

(2) Concentration limits under § 264.94 for each of those hazardous constituents;

(3) The compliance point under § 264.95; and

(4) The compliance period under § 264.96.

(b) The owner or operator must implement a corrective action program that prevents hazardous constituents from exceeding their respective concentration limits at the compliance point by removing the hazardous waste constituents or treating them in place. The permit will specify the specific measures that will be taken.

(c) The owner or operator must begin corrective action within a reasonable time period after the ground-water protection standard is exceeded. The Regional Administrator will specify that time period in the facility permit. If a facility permit includes a corrective action program in addition to a compliance monitoring program, the permit will specify when the corrective action will begin and such a requirement will operate in lieu of § 264.99(i)(2).

(d) In conjunction with a corrective action program, the owner or operator must establish and implement a ground-water monitoring program to demonstrate the effectiveness of the corrective action program. Such a monitoring program may be based on the requirements for a compliance monitoring program under § 264.99 and must be as effective as that program in determining compliance with the ground-water protection standard under § 264.92 and in determining the success of a corrective action program under paragraph (e) of this section, where appropriate.

(e) In addition to the other requirements of this section, the owner or operator must conduct a corrective action program to remove or treat in place any hazardous constituents under § 264.93 that exceed concentration limits under § 264.94 in ground-water:

(1) Between the compliance point under § 264.95 and the downgradient property boundary; and

(2) Beyond the facility boundary, where necessary to protect human health and the environment, unless the owner or operator demonstrates to the satisfaction of the Regional Administrator that, despite the owner's or operator's best efforts, the owner or operator was unable to obtain the necessary permission to undertake such action. The owner/operator is not relieved of all responsibility to clean up a release that has migrated beyond the facility boundary where off-site access is denied. On-site measures to address such releases will be determined on a case-by-case basis.

(3) Corrective action measures under this paragraph must be initiated and completed within a reasonable period of time considering the extent of contamination.

(4) Corrective action measures under this paragraph may be terminated once the concentration of hazardous constituents under § 264.93 is reduced to levels below their respective concentration limits under § 264.94.

(f) The owner or operator must continue corrective action measures during the compliance period to the extent necessary to ensure that the ground-water protection standard is not exceeded. If the owner or operator is conducting corrective action at the end of the compliance period, he must continue that corrective action for as long as necessary to achieve compliance with the ground-water protection standard. The owner or operator may terminate corrective action measures taken beyond the period equal to the active life of the waste management area (including the closure period) if he can demonstrate, based on data from the ground-water monitoring program under paragraph (d) of this section, that the ground-water protection standard of § 264.92 has not been exceeded for a period of three consecutive years.

(g) The owner or operator must report in writing to the Regional Administrator on the effectiveness of the corrective action program. The owner or operator must submit these reports semi-annually.

(h) If the owner or operator determines that the corrective action program no longer satisfies the requirements of this section, he must, within 90 days, submit an application for a permit modification to make any appropriate changes to the program.

(Approved by the Office of Management and Budget under control number 2050-0033)

[47 FR 32350, July 26, 1985, as amended at 50 FR 4514, Jan. 31, 1985; 52 FR 45798, Dec. 1, 1987]

§ 264.101 Corrective action for solid waste management units.

(a) The owner or operator of a facility seeking a permit for the treatment, storage or disposal of hazardous waste must institute corrective action as necessary to protect human health and the environment for all releases of hazardous waste or constituents from any solid waste management unit at the facility, regardless of the time at which waste was placed in such unit.

(b) Corrective action will be specified in the permit. The permit will contain schedules of compliance for such corrective action (where such corrective action cannot be completed prior to issuance of the permit) and assurances of financial responsibility for completing such corrective action.

(c) The owner or operator must implement corrective actions beyond the facility property boundary, where necessary to protect human health and the environment, unless the owner or operator demonstrates to the satisfaction of the Regional Administrator that, despite the owner's or operator's best efforts, the owner or operator was unable to obtain the necessary permission to undertake such actions. The owner/operator is not relieved of all responsibility to clean up a release that has migrated beyond the facility boundary where off-site access is denied. On-site measures to address such releases will be determined on a case-by-case basis. Assurances of financial responsibility for such corrective action must be provided.

[50 FR 28747, July 15, 1985, as amended at 52 FR 45798, Dec. 1, 1987]

Subpart G—Closure and Post-Closure

SOURCE: 51 FR 16444, May 2, 1986, unless otherwise noted.

§ 264.110 Applicability.

Except as § 264.1 provides otherwise:

(a) Sections 264.111 through 264.115 (which concern closure) apply to the owners and operators of all hazardous waste management facilities; and

(b) Sections 264.116 through 264.120 (which concern post-closure care) apply to the owners and operators of:

(1) All hazardous waste disposal facilities; and

(2) Waste piles and surface impoundments from which the owner or operator intends to remove the wastes at closure to the extent that these sections are made applicable to such facilities in § 264.228 or § 264.258.

(3) Tank systems that are required under § 264.197 to meet the requirements for landfills.

[51 FR 16444, May 2, 1986, as amended at 51 FR 25472, July 14, 1986]

§ 264.111 Closure performance standard.

The owner or operator must close the facility in a manner that:

(a) Minimizes the need for further maintenance; and

(b) Controls, minimizes or eliminates, to the extent necessary to protect human health and the environment, post-closure escape of hazardous waste, hazardous constituents, leachate, contaminated run-off, or hazardous waste decomposition products to the ground or surface waters or to the atmosphere; and

(c) Complies with the closure requirements of this subpart, including, but not limited to, the requirements of §§ 264.178, 264.197, 264.228, 264.258, 264.280, 264.310, 264.351, and 264.601 through 264.603.

[51 FR 16444, May 2, 1986, as amended at 52 FR 46963, Dec. 10, 1987]

§ 264.112 Closure plan; amendment of plan.

(a) *Written plan.* (1) The owner or operator of a hazardous waste management facility must have a written closure plan. In addition, certain surface impoundments and waste piles from which the owner or operator intends to remove or decontaminate the hazardous waste at partial or final closure are required by §§ 264.228(c)(1)(i) and 264.258(c)(1)(i) to have contingent closure plans. The plan must be submitted with the permit application, in accordance with § 270.14(b)(13) of this chapter, and approved by the Regional Administrator as part of the permit issuance procedures under Part 124 of this chapter. In accordance with § 270.32 of this chapter, the approved closure plan will become a condition of any RCRA permit.

(2) The Director's approval of the plan must ensure that the approved closure plan is consistent with §§ 264.111 through 264.115 and the applicable requirements of §§ 264.90 *et seq.*, 264.178, 264.197, 264.228, 264.258, 264.280, 264.310, 264.351, and 264.601. Until final closure is completed and certified in accordance with § 264.115, a copy of the approved plan and all approved revisions must be furnished to the Director upon request, including request by mail.

(b) *Content of plan.* The plan must identify steps necessary to perform partial and/or final closure of the facility at any point during its active life. The closure plan must include, at least:

(1) A description of how each hazardous waste management unit at the facility will be closed in accordance with § 264.111;

(2) A description of how final closure of the facility will be conducted in accordance with § 264.111. The description must identify the maximum extent of the operations which will be unclosed during the active life of the facility; and

(3) An estimate of the maximum inventory of hazardous wastes ever onsite over the active life of the facility and a detailed description of the methods to be used during partial closures and final closure, including, but not limited to, methods for removing, transporting, treating, storing, or disposing of all hazardous wastes, and identification of the type(s) of the offsite hazardous waste management units to be used, if applicable; and

(4) A detailed description of the steps needed to remove or decontaminate all hazardous waste residues and contaminated containment system components, equipment, structures, and soils during partial and final closure, including, but not limited to, procedures for cleaning equipment and removing contaminated soils, methods for sampling and testing surrounding soils, and criteria for determining the extent of decontamination required to satisfy the closure performance standard; and

(5) A detailed description of other activities necessary during the closure period to ensure that all partial closures and final closure satisfy the closure performance standards, including, but not limited to, ground-water monitoring, leachate collection, and run-on and run-off control; and

(6) A schedule for closure of each hazardous waste management unit and for final closure of the facility. The schedule must include, at a minimum, the total time required to close each hazardous waste management unit and the time required for intervening closure activities which will allow tracking of the progress of partial and final closure. (For example, in the case of a landfill unit, estimates of the time required to treat or dispose of all hazardous waste inventory and of the time required to place a final cover must be included.)

(7) For facilities that use trust funds to establish financial assurance under § 264.143 or § 264.145 and that are expected to close prior to the expiration of the permit, an estimate of the expected year of final closure.

(c) *Amendment of plan.* The owner or operator must submit a written request for a permit modification to authorize a change in operating plans, facility design, or the approved closure plan in accordance with the procedures in Parts 124 and 270. The written request must include a copy of the amended closure plan for approval by the Regional Administrator.

(1) The owner or operator may submit a written request to the Regional Administrator for a permit modification to amend the closure plan at any time prior to the notification of partial or final closure of the facility.

(2) The owner or operator must submit a written request for a permit modification to authorize a change in the approved closure plan whenever:

(i) Changes in operating plans or facility design affect the closure plan, or

(ii) There is a change in the expected year of closure, if applicable, or

(iii) In conducting partial or final closure activities, unexpected events require a modification of the approved closure plan.

(3) The owner or operator must submit a written request for a permit modification including a copy of the amended closure plan for approval at least 60 days prior to the proposed change in facility design or operation, or no later than 60 days after an unexpected event has occurred which has affected the closure plan. If an unexpected event occurs during the partial or final closure period, the owner or operator must request a permit modification no later than 30 days after the unexpected event. An owner or operator of a surface impoundment or waste pile that intends to remove all hazardous waste at closure and is not otherwise required to prepare a contingent closure plan under § 264.228(c)(1)(i) or § 264.258(c)(1)(i), must submit an amended closure plan to the Regional Administrator no later than 60 days from the date that the owner or operator or Regional Administrator determines that the hazardous waste management unit must be closed as a landfill, subject to the requirements of § 264.310, or no later than 30 days from that date if the determination is made during partial or final closure. The Regional Administrator will approve, disapprove, or modify this amended plan in accordance with the procedures in Parts 124 and 270. In accordance with § 270.32 of this chapter, the approved closure plan will become a condition of any RCRA permit issued.

(4) The Regional Administrator may request modifications to the plan under the conditions described in § 264.112(c)(2). The owner or operator must submit the modified plan within 60 days of the Regional Administrator's request, or within 30 days if the change in facility conditions occurs during partial or final closure. Any modifications requested by the Regional Administrator will be approved in accordance with the procedures in Parts 124 and 270.

(d) *Notification of partial closure and final closure.* (1) The owner or operator must notify the Regional Administrator in writing at least 60 days prior to the date on which he expects to begin closure of a surface impoundment, waste pile, land treatment or landfill unit, or final closure of a facility with such a unit. The owner or operator must notify the Regional Administrator in writing at least 45 days prior to the date on which he expects to begin final closure of a facility with only treatment or storage tanks, container storage, or incinerator units to be closed.

(2) The date when he "expects to begin closure" must be either no later than 30 days after the date on which any hazardous waste management unit receives the known final volume of hazardous wastes or, if there is a reasonable possibility that the hazardous waste management unit will receive additional hazardous wastes, no later than one year after the date on which the unit received the most recent volume of hazardous waste. If the owner or operator of a hazardous waste management unit can demonstrate to the Regional Administrator that the hazardous waste management unit or facility has the capacity to receive additional hazardous wastes and he has taken, and will continue to take, all steps to prevent threats to human health and the environment, including compliance with all applicable permit requirements, the Regional Administrator may approve an extension to this one-year limit.

(3) If the facility's permit is terminated, or if the facility is otherwise ordered, by judicial decree or final order under section 3008 of RCRA, to cease receiving hazardous wastes or to close, then the requirements of this paragraph do not apply. However, the

owner or operator must close the facility in accordance with the deadlines established in § 264.113.

(e) *Removal of wastes and decontamination or dismantling of equipment.* Nothing in this section shall preclude the owner or operator from removing hazardous wastes and decontaminating or dismantling equipment in accordance with the approved partial or final closure plan at any time before or after notification of partial or final closure.

[51 FR 16444, May 2, 1986, as amended at 52 FR 46963, Dec. 10, 1987]

§ 264.113 Closure; time allowed for closure.

(a) Within 90 days after receiving the final volume of hazardous wastes at a hazardous waste management unit or facility, the owner or operator must treat, remove from the unit or facility, or dispose of on-site, all hazardous wastes in accordance with the approved closure plan. The Regional Administrator may approve a longer period if the owner or operator complies with all applicable requirements for requesting a modification to the permit and demonstrates that:

(1)(i) The activities required to comply with this paragraph will, of necessity, take longer than 90 days to complete; or

(ii)(A) The hazardous waste management unit or facility has the capacity to receive additional hazardous wastes; and

(B) There is a reasonable likelihood that he or another person will recommence operation of the hazardous waste management unit or the facility within one year; and

(C) Closure of the hazardous waste management unit or facility would be incompatible with continued operation of the site; and

(2) He has taken and will continue to take all steps to prevent threats to human health and the environment, including compliance with all applicable permit requirements.

(b) The owner or operator must complete partial and final closure activities in accordance with the approved closure plan and within 180 days after receiving the final volume of hazardous wastes at the hazardous waste management unit or facility. The Regional Administrator may approve an extension to the closure period if the owner or operator complies with all applicable requirements for requesting a modification to the permit and demonstrates that:

(1)(i) The partial or final closure activities will, of necessity, take longer than 180 days to complete; or

(ii)(A) The hazardous waste management unit or facility has the capacity to receive additional hazardous wastes; and

(B) There is reasonable likelihood that he or another person will recommence operation of the hazardous waste management unit or the facility within one year; and

(C) Closure of the hazardous waste management unit or facility would be incompatible with continued operation of the site; and

(2) He has taken and will continue to take all steps to prevent threats to human health and the environment from the unclosed but not operating hazardous waste management unit or facility, including compliance with all applicable permit requirements.

(c) The demonstrations referred to in § 264.113(a) and (b) must be made as follows: (1) The demonstrations in paragraph (a) must be made at least 30 days prior to the expiration of the 90-day period in paragraph (a); and (2) the demonstration in paragraph (b) must be made at least 30 days prior to the expiration of the 180-day period in paragraph (b) of this section.

§ 264.114 Disposal or decontamination of equipment, structures and soils.

During the partial and final closure periods, all contaminated equipment, structures, and soils must be properly disposed of or decontaminated, unless otherwise specified in §§ 264.228, 264.258, 264.280, or § 264.310, or under the authority of §§ 264.601 and 264.603. By removing any hazardous wastes or hazardous constituents during partial and final closure, the owner or operator may become a generator of hazardous waste and must handle that waste in accordance with all applicable requirements of Part 262 of this chapter.

[51 FR 16444, May 2, 1986, as amended at 52 FR 46963, Dec. 10, 1987]

§ 264.115 Certification of closure.

Within 60 days of completion of closure of each hazardous waste surface impoundment, waste pile, land treatment, and landfill unit, and within 60 days of the completion of final closure, the owner or operator must submit to the Regional Administrator, by registered mail, a certification that the hazardous waste management unit or facility, as applicable, has been closed in accordance with the specifications in the approved closure plan. The certification must be signed by the owner or operator and by an independent registered professional engineer. Documentation supporting the independent registered professional engineer's certification must be furnished to the Regional Administrator upon request until he releases the owner or operator from the financial assurance requirements for closure under § 264.143(i).

§ 264.116 Survey plat.

No later than the submission of the certification of closure of each hazardous waste disposal unit, the owner or operator must submit to the local zoning authority, or the authority with jurisdiction over local land use, and to the Regional Administrator, a survey plat indicating the location and dimensions of landfills cells or other hazardous waste disposal units with respect to permanently surveyed benchmarks. This plat must be prepared and certified by a professional land surveyor. The plat filed with the local zoning authority, or the authority with jurisdiction over local land use, must contain a note, prominently displayed, which states the owner's or operator's obligation to restrict disturbance of the hazardous waste disposal unit in accordance with the applicable Subpart G regulations.

§ 264.117 Post-closure care and use of property.

(a)(1) Post-closure care for each hazardous waste management unit subject to the requirements of §§ 264.117 through 264.120 must begin after completion of closure of the unit and continue for 30 years after that date and must consist of at least the following:

(i) Monitoring and reporting in accordance with the requirements of Subparts F, K, L, M, N, and X of this part; and

(ii) Maintenance and monitoring of waste containment systems in accordance with the requirements of Subparts F, K, L, M, N, and X of this part.

(2) Any time preceding partial closure of a hazardous waste management unit subject to post-closure care requirements or final closure, or any time during the post-closure period for a particular unit, the Regional Administrator may, in accordance with the permit modification procedures in Parts 124 and 270:

(i) Shorten the post-closure care period applicable to the hazardous waste management unit, or facility, if all disposal units have been closed, if he finds that the reduced period is sufficient to protect human health and the environment (e.g., leachate or ground-water monitoring results, characteristics of the hazardous wastes, application of advanced technology, or alternative disposal, treatment, or reuse techniques indicate that the hazardous waste management unit or facility is secure); or

(ii) Extend the post-closure care period applicable to the hazardous waste management unit or facility if he finds that the extended period is necessary to protect human health and the environment (e.g., leachate or ground-water monitoring results indicate a potential for migration of hazardous wastes at levels which may be harmful to human health and the environment).

(b) The Regional Administrator may require, at partial and final closure, continuation of any of the security requirements of § 264.14 during part or all of the post-closure period when:

(1) Hazardous wastes may remain exposed after completion of partial or final closure; or

(2) Access by the public or domestic livestock may pose a hazard to human health.

(c) Post-closure use of property on or in which hazardous wastes remain after partial or final closure must never be allowed to disturb the integri-

ty of the [illegible]l cover, liner(s), or any other com[illegible]ents of the containment system, or the function of the facility's monitoring systems, unless the Regional Administrator finds that the disturbance:

(1) Is necessary to the proposed use of the property, and will not increase the potential hazard to human health or the environment; or

(2) Is necessary to reduce a threat to human health or the environment.

(d) All post-closure care activities must be in accordance with the provisions of the approved post-closure plan as specified in § 264.118.

[51 FR 16444, May 2, 1986, as amended at 52 FR 46963, Dec. 10, 1987]

§ 264.118 Post-closure plan; amendment of plan.

(a) *Written Plan.* The owner or operator of a hazardous waste disposal unit must have a written post-closure plan. In addition, certain surface impoundments and waste piles from which the owner or operator intends to remove or decontaminate the hazardous wastes at partial or final closure are required by §§ 264.228(c)(1)(ii) and 264.258(c)(1)(ii) to have contingent post-closure plans. Owners or operators of surface impoundments and waste piles not otherwise required to prepare contingent post-closure plans under §§ 264.228(c)(1)(ii) and 264.258(c)(1)(ii) must submit a post-closure plan to the Regional Administrator within 90 days from the date that the owner or operator or Regional administrator determines that the hazardous waste management unit must be closed as a landfill, subject to the requirements of §§ 264.117 through 264.120. The plan must be submitted with the permit application, in accordance with § 270.14(b)(13) of this chapter, and approved by the Regional Administrator as part of the permit issuance procedures under Part 124 of this chapter. In accordance with § 270.32 of this chapter, the approved post-closure plan will become a condition of any RCRA permit issued.

(b) For each hazardous waste management unit subject to the requirements of this section, the post-closure plan must identify the activities that will be carried on after closure of each disposal unit and the frequency of these activities, and include at least:

(1) A description of the planned monitoring activities and frequencies at which they will be performed to comply with Subparts F, K, L, M, N, and X of this part during the post-closure care period; and

(2) A description of the planned maintenance activities, and frequencies at which they will be performed, to ensure:

(i) The integrity of the cap and final cover or other containment systems in accordance with the requirements of Subparts F, K, L, M, N, and X of this part; and

(ii) The function of the monitoring equipment in accordance with the requirements of Subparts, F, K, L, M, N, and X of this part; and

(3) The name, address, and phone number of the person or office to contact about the hazardous waste disposal unit or facility during the post-closure care period.

(c) Until final closure of the facility, a copy of the approved post-closure plan must be furnished to the Regional Administrator upon request, including request by mail. After final closure has been certified, the person or office specified in § 264.188(b)(3) must keep the approved post-closure plan during the remainder of the post-closure period.

(d) *Amendment of plan.* The owner or operator must request a permit modification to authorize a change in the approved post-closure plan in accordance with the applicable requirements of Parts 124 and 270. The written request must include a copy of the amended post-closure plan for approval by the Regional Administrator.

(1) The owner or operator may submit a written request to the Regional Administrator for a permit modification to amend the post-closure plan at any time during the active life of the facility or during the post-closure care period.

(2) The owner or operator must submit a written request for a permit modification to authorize a change in the approved post-closure plan whenever:

(i) Changes in operating plans or facility design affect the approved post-closure plan, or

(ii) There is a change in the expected year of final closure, if applicable, or

(iii) Events which occur during the active life of the facility, including partial and final closures, affect the approved post-closure plan.

(3) The owner or operator must submit a written request for a permit modification at least 60 days prior to the proposed change in facility design or operation, or no later than 60 days after an unexpected event has occurred which has affected the post-closure plan. An owner or operator of a surface impoundment or waste pile that intends to remove all hazardous waste at closure and is not otherwise required to submit a contingent post-closure plan under §§ 264.228(c)(1)(ii) and 264.258(c)(1)(ii) must submit a post-closure plan to the Regional Administrator no later than 90 days after the date that the owner or operator or Regional Administrator determines that the hazardous waste management unit must be closed as a landfill, subject to the requirements of § 264.310. The Regional Administrator will approve, disapprove or modify this plan in accordance with the procedures in Parts 124 and 270. In accordance with § 270.32 of this chapter, the approved post-closure plan will become a permit condition.

(4) The Regional Administrator may request modifications to the plan under the conditions described in § 264.118(d)(2). The owner or operator must submit the modified plan no later than 60 days after the Regional Administrator's request, or no later than 90 days if the unit is a surface impoundment or waste pile not previously required to prepare a contingent post-closure plan. Any modifications requested by the Regional Administrator will be approved, disapproved, or modified in accordance with the procedures in Parts 124 and 270.

[51 FR 16444, May 2, 1986, as amended at 52 FR 46964, Dec. 10, 1987]

§ 264.119 Post-closure notices.

(a) No later than 60 days after certification of closure of each hazardous waste disposal unit, the [illegible]er or operator must submit to th[illegible]cal zoning authority, or the authority with jurisdiction over local land use, and to the Regional Administrator a record of the type, location, and quantity of hazardous wastes disposed of within each cell or other disposal unit of the facility. For hazardous wastes disposed of before January 12, 1981, the owner or operator must identify the type, location, and quantity of the hazardous wastes to the best of his knowledge and in accordance with any records he has kept.

(b) Within 60 days of certification of closure of the first hazardous waste disposal unit and within 60 days of certification of closure of the last hazardous waste disposal unit, the owner or operator must:

(1) Record, in accordance with State law, a notation on the deed to the facility property—or on some other instrument which is normally examined during title search—that will in perpetuity notify any potential purchaser of the property that:

(i) The land has been used to manage hazardous wastes; and

(ii) Its use is restricted under 40 CFR Subpart G regulations; and

(iii) The survey plat and record of the type, location, and quantity of hazardous wastes disposed of within each cell or other hazardous waste disposal unit of the facility required by §§ 264.116 and 264.119(a) have been filed with the local zoning authority or the authority with jurisdiction over local land use and with the Regional Administrator; and

(2) Submit a certification, signed by the owner or operator, that he has recorded the notation specified in paragraph (b)(1) of this section, including a copy of the document in which the notation has been placed, to the Regional Administrator.

(c) If the owner or operator or any subsequent owner or operator of the land upon which a hazardous waste disposal unit is located wishes to remove hazardous wastes and hazardous waste residues, the liner, if any, or contaminated soils, he must request a modification to the post-closure permit in accordance with the applicable requirements in Parts 124 and 270.

The owner or operator must demonstrate that the removal of hazardous wastes will satisfy the criteria of § 264.117(c). By removing hazardous waste, the owner or operator may become a generator of hazardous waste and must manage it in accordance with all applicable requirements of this chapter. If he is granted a permit modification or otherwise granted approval to conduct such removal activities, the owner or operator may request that the Regional Administrator approve either:

(1) The removal of the notation on the deed to the facility property or other instrument normally examined during title search; or

(2) The addition of a notation to the deed or instrument indicating the removal of the hazardous waste.

§ 264.120 Certification of completion of post-closure care.

No later than 60 days after completion of the established post-closure care period for each hazardous waste disposal unit, the owner or operator must submit to the Regional Administrator, by registered mail, a certification that the post-closure care period for the hazardous waste disposal unit was performed in accordance with the specifications in the approved post-closure plan. The certification must be signed by the owner or operator and an independent registered professional engineer. Documentation supporting the independent registered professional engineer's certification must be furnished to the Regional Administrator upon request until he releases the owner or operator from the financial assurance requirements for post-closure care under § 264.145(i).

Subpart H—Financial Requirements

SOURCE: 47 FR 15047, Apr. 7, 1982, unless otherwise noted.

§ 264.140 Applicability.

(a) The requirements of §§ 264.142, 264.143, and 264.147 through 264.151 apply to owners and operators of all hazardous waste facilities, except as provided otherwise in this section or in § 264.1.

(b) The requirements of §§ 264.144 and 264.145 apply only to owners and operators of:

(1) Disposal facilities, and

(2) Piles, and surface impoundments from which the owner or operator intends to remove the wastes at closure, to the extent that these sections are made applicable to such facilities in §§ 264.228 and 264.258.

(3) Tank systems that are required under § 264.197 to meet the requirements for landfills.

(c) States and the Federal government are exempt from the requirements of this subpart.

[47 FR 15047, Apr. 7, 1982, as amended at 47 FR 32357, July 26, 1982; 51 FR 25472, July 14, 1986]

§ 264.141 Definitions of terms as used in this subpart.

(a) "*Closure plan*" means the plan for closure prepared in accordance with the requirements of § 264.112.

(b) "*Current closure cost estimate*" means the most recent of the estimates prepared in accordance with § 264.142 (a), (b), and (c).

(c) "*Current post-closure cost estimate*" means the most recent of the estimates prepared in accordance with § 264.144 (a), (b), and (c).

(d) "*Parent corporation*" means a corporation which directly owns at least 50 percent of the voting stock of the corporation which is the facility owner or operator; the latter corporation is deemed a "subsidiary" of the parent corporation.

(e) "*Post-closure plan*" means the plan for post-closure care prepared in accordance with the requirements of §§ 264.117 through 264.120.

(f) The following terms are used in the specifications for the financial tests for closure, post-closure care, and liability coverage. The definitions are intended to assist in the understanding of these regulations and are not intended to limit the meanings of terms in a way that conflicts with generally accepted accounting practices.

"*Assets*" means all existing and all probable future economic benefits obtained or controlled by a particular entity.

"*Current assets*" means cash or other assets or resources commonly identified as those which are reasonably expected to be realized in cash or sold or consumed during the normal operating cycle of the business.

"*Current liabilities*" means obligations whose liquidation is reasonably expected to require the use of existing resources properly classifiable as current assets or the creation of other current liabilities.

"*Current plugging and abandonment cost estimate*" means the most recent of the estimates prepared in accordance with § 144.62(a), (b), and (c) of this title.

"*Independently audited*" refers to an audit performed by an independent certified public accountant in accordance with generally accepted auditing standards.

"*Liabilities*" means probable future sacrifices of economic benefits arising from present obligations to transfer assets or provide services to other entities in the future as a result of past transactions or events.

"*Net working capital*" means current assets minus current liabilities.

"*Net worth*" means total assets minus total liabilities and is equivalent to owner's equity.

"*Tangible net worth*" means the tangible assets that remain after deducting liabilities; such assets would not include intangibles such as goodwill and rights to patents or royalties.

(g) In the liability insurance requirements the terms "*bodily injury*" and "*property damage*" shall have the meanings given these terms by applicable State law. However, these terms do not include those liabilities which, consistent with standard industry practices, are excluded from coverage in liability policies for bodily injury and property damage. The Agency intends the meanings of other terms used in the liability insurance requirements to be consistent with their common meanings within the insurance industry. The definitions given below of several of the terms are intended to assist in the understanding of these regulations and are not intended to limit their meanings in a way that conflicts with general insurance industry usage.

"*Accidental occurrence*" means an accident, including continuous or repeated exposure to conditions, which results in bodily injury or property damage neither expected nor intended from the standpoint of the insured.

"*Legal defense costs*" means any expenses that an insurer incurs in defending against claims of third parties brought under the terms and conditions of an insurance policy.

"*Nonsudden accidental occurrence*" means an occurrence which takes place over time and involves continuous or repeated exposure.

"*Sudden accidental occurrence*" means an occurrence which is not continuous or repeated in nature.

[47 FR 16554, Apr. 16, 1982, as amended at 51 FR 16447, May 2, 1986]

§ 264.142 Cost estimate for closure.

(a) The owner or operator must have a detailed written estimate, in current dollars, of the cost of closing the facility in accordance with the requirements in §§ 264.111 through 264.115 and applicable closure requirements in §§ 264.178, 264.197, 264.228, 264.258, 264.280, 264.310, 264.351, and 264.601 through 264.603.

(1) The estimate must equal the cost of final closure at the point in the facility's active life when the extent and manner of its operation would make closure the most expensive, as indicated by its closure plan (see § 264.112(b)); and

(2) The closure cost estimate must be based on the costs to the owner or operator of hiring a third party to close the facility. A third party is a party who is neither a parent nor a subsidiary of the owner or operator. (See definition of parent corporation in § 264.141(d).) The owner or operator may use costs for on-site disposal if he can demonstrate that on-site disposal capacity will exist at all times over the life of the facility.

(3) The closure cost estimate may not incorporate any salvage value that may be realized with the sale of hazardous wastes, facility structures or equipment, land, or other assets associated with the facility at the time of partial or final closure.

(4) The owner or operator may not incorporate zero cost for hazardous wastes that might have economic value.

(b) During the active life of the facility, the owner or operator must adjust the closure cost estimate for inflation within 60 days prior to the anniversary date of the establishment of the financial instrument(s) used to comply with § 264.143. For owners and operators using the financial test or corporate guarantee, the closure cost estimate must be updated for inflation within 30 days after the close of the firm's fiscal year and before submission of updated information to the Regional Administrator as specified in § 264.143(f)(3). The adjustment may be made by recalculating the maximum costs of closure in current dollars, or by using an inflation factor derived from the most recent Implicit Price Deflator for Gross National Product published by the U.S. Department of Commerce in its *Survey of Current Business*, as specified in paragraphs (b)(1) and (2) of this section. The inflation factor is the result of dividing the latest published annual Deflator by the Deflator for the previous year.

(1) The first adjustment is made by multiplying the closure cost estimate by the inflation factor. The result is the adjusted closure cost estimate.

(2) Subsequent adjustments are made by mutliplying the lastest adjusted closure cost estimate by the latest inflation factor.

(c) During the active life of the facility, the owner or operator must revise the closure cost estimate no later than 30 days after the Regional Administrator has approved the request to modify the closure plan, if the change in the closure plan increases the cost of closure. The revised closure cost estimate must be adjusted for inflation as specified in § 264.142(b).

(d) The owner or operator must keep the following at the facility during the operating life of the facility: The latest closure cost estimate prepared in accordance with § 264.142 (a) and (c) and, when this estimate has been adjusted in accordance with § 264.142(b), the latest adjusted closure cost estimate.

(Approved by the Office of Management and Budget under control number 2050-0036)

[47 FR 15047, Apr. 7, 1982, as amended at 50 FR 4514, Jan. 31, 1985; 51 FR 16447, May 2, 1986; 52 FR 46964, Dec. 10, 1987]

§ 264.143 Financial assurance for closure.

An owner or operator of each facility must establish financial assurance for closure of the facility. He must choose from the options as specified in paragraphs (a) through (f) of this section.

(a) *Closure trust fund.* (1) An owner or operator may satisfy the requirements of this section by establishing a closure trust fund which conforms to the requirements of this paragraph and submitting an originally signed duplicate of the trust agreement to the Regional Administrator. An owner or operator of a new facility must submit the originally signed duplicate of the trust agreement to the Regional Administrator at least 60 days before the date on which hazardous waste is first received for treatment, storage, or disposal. The trustee must be an entity which has the authority to act as a trustee and whose trust operations are regulated and examined by a Federal or State agency.

(2) The wording of the trust agreement must be identical to the wording specified in § 264.151(a)(1), and the trust agreement must be accompanied by a formal certification of acknowledgment (for example, see § 264.151(a)(2)). Schedule A of the trust agreement must be updated within 60 days after a change in the amount of the current closure cost estimate covered by the agreement.

(3) Payments into the trust fund must be made annually by the owner or operator over the term of the initial RCRA permit or over the remaining operating life of the facility as estimated in the closure plan, whichever period is shorter; this period is hereafter referred to as the "pay-in period." The payments into the closure trust fund must be made as follows:

(i) For a new facility, the first payment must be made before the initial receipt of hazardous waste for treatment, storage, or disposal. A receipt from the trustee for this payment must be submitted by the owner or operator to the Regional Administrator before this initial receipt of hazardous waste. The first payment must be at least equal to the current closure cost estimate, except as provided in § 264.143(g), divided by the number of years in the pay-in period. Subsequent payments must be made no later than 30 days after each anniversary date of the first payment. The amount of each subsequent payment must be determined by this formula:

$$\text{Next payment} = \frac{CE - CV}{Y}$$

where CE is the current closure cost estimate, CV is the current value of the trust fund, and Y is the number of years remaining in the pay-in period.

(ii) If an owner or operator establishes a trust fund as specified in § 265.143(a) of this chapter, and the value of that trust fund is less than the current closure cost estimate when a permit is awarded for the facility, the amount of the current closure cost estimate still to be paid into the trust fund must be paid in over the pay-in period as defined in paragraph (a)(3) of this section. Payments must continue to be made no later than 30 days after each anniversary date of the first payment made pursuant to Part 265 of this chapter. The amount of each payment must be determined by this formula:

$$\text{Next payment} = \frac{CE - CV}{Y}$$

where CE is the current closure cost estimate, CV is the current value of the trust fund, and Y is the number of years remaining in the pay-in period.

(4) The owner or operator may accelerate payments into the trust fund or he may deposit the full amount of the current closure cost estimate at the time the fund is established. However, he must maintain the value of the fund at no less than the value that the fund would have if annual payments were made as specified in paragraph (a)(3) of this section.

(5) If the owner or operator establishes a closure trust fund after having used one or more alternate mechanisms specified in this section or in § 265.143 of this chapter, his first payment must be in at least the amount that the fund would contain if the trust fund were established initially and annual payments made according to specifications of this paragraph and § 265.143(a) of this chapter, as applicable.

(6) After the pay-in period is completed, whenever the current closure cost estimate changes, the owner or operator must compare the new estimate with the trustee's most recent annual valuation of the trust fund. If the value of the fund is less than the amount of the new estimate, the owner or operator, within 60 days after the change in the cost estimate, must either deposit an amount into the fund so that its value after this deposit at least equals the amount of the current closure cost estimate, or obtain other financial assurance as specified in this section to cover the difference.

(7) If the value of the trust fund is greater than the total amount of the current closure cost estimate, the owner or operator may submit a written request to the Regional Administrator for release of the amount in excess of the current closure cost estimate.

(8) If an owner or operator substitutes other financial assurance as specified in this section for all or part of the trust fund, he may submit a written request to the Regional Administrator for release of the amount in excess of the current closure cost estimate covered by the trust fund.

(9) Within 60 days after receiving a request from the owner or operator for release of funds as specified in paragraph (a)(7) or (8) of this section, the Regional Administrator will instruct the trustee to release to the owner or operator such funds as the Regional Administrator specifies in writing.

(10) After beginning partial or final closure, an owner or operator or another person authorized to conduct partial or final closure may request reimbursements for partial or final clo-

sure expenditures by submitting itemized bills to the Regional Administrator. The owner or operator may request reimbursements for partial closure only if sufficient funds are remaining in the trust fund to cover the maximum costs of closing the facility over its remaining operating life. Within 60 days after receiving bills for partial or final closure activities, the Regional Administrator will instruct the trustee to make reimbursements in those amounts as the Regional Administrator specifies in writing, if the Regional Administrator determines that the partial or final closure expenditures are in accordance with the approved closure plan, or otherwise justified. If the Regional Administrator has reason to believe that the maximum cost of closure over the remaining life of the facility will be significantly greater than the value of the trust fund, he may withhold reimbursements of such amounts as he deems prudent until he determines, in accordance with § 264.143(i) that the owner or operator is no longer required to maintain financial assurance for final closure of the facility. If the Regional Administrator does not instruct the trustee to make such reimbursements, he will provide the owner or operator with a detailed written statement of reasons.

(11) The Regional Administrator will agree to termination of the trust when:

(i) An owner or operator substitutes alternate financial assurance as specified in this section; or

(ii) The Regional Administrator releases the owner or operator from the requirements of this section in accordance with § 264.143(i).

(b) *Surety bond guaranteeing payment into a closure trust fund.* (1) An owner or operator may satisfy the requirements of this section by obtaining a surety bond which conforms to the requirements of this paragraph and submitting the bond to the Regional Administrator. An owner or operator of a new facility must submit the bond to the Regional Administrator at least 60 days before the date on which hazardous waste is first received for treatment, storage, or disposal. The bond must be effective before this initial receipt of hazardous waste. The surety company issuing the bond must, at a minimum, be among those listed as acceptable sureties on Federal bonds in Circular 570 of the U.S. Department of the Treasury.

(2) The wording of the surety bond must be identical to the wording specified in § 264.151(b).

(3) The owner or operator who uses a surety bond to satisfy the requirements of this section must also establish a standby trust fund. Under the terms of the bond, all payments made thereunder will be deposited by the surety directly into the standby trust fund in accordance with instructions from the Regional Administrator. This standby trust fund must meet the requirements specified in § 264.143(a), except that:

(i) An originally signed duplicate of the trust agreement must be submitted to the Regional Administrator with the surety bond; and

(ii) Until the standby trust fund is funded pursuant to the requirements of this section, the following are not required by these regulations:

(A) Payments into the trust fund as specified in § 264.143(a);

(B) Updating of Schedule A of the trust agreement (see § 264.151(a)) to show current closure cost estimates;

(C) Annual valuations as required by the trust agreement; and

(D) Notices of nonpayment as required by the trust agreement.

(4) The bond must guarantee that the owner or operator will:

(i) Fund the standby trust fund in an amount equal to the penal sum of the bond before the beginning of final closure of the facility; or

(ii) Fund the standby trust fund in an amount equal to the penal sum within 15 days after an administrative order to begin final closure issued by the Regional Administrator becomes final, or within 15 days after an order to begin final closure is issued by a U.S. district court or other court of competent jurisdiction; or

(iii) Provide alternate financial assurance as specified in this section, and obtain the Regional Administrator's written approval of the assurance provided, within 90 days after receipt by both the owner or operator and the Regional Administrator of a notice of cancellation of the bond from the surety.

(5) Under the terms of the bond, the surety will become liable on the bond obligation when the owner or operator fails to perform as guaranteed by the bond.

(6) The penal sum of the bond must be in an amount at least equal to the current closure cost estimate, except as provided in § 264.143(g).

(7) Whenever the current closure cost estimate increases to an amount greater then the penal sum, the owner or operator, within 60 days after the increase, must either cause the penal sum to be increased to an amount at least equal to the current closure cost estimate and submit evidence of such increase to the Regional Administrator, or obtain other financial assurance as specified in this section to cover the increase. Whenever the current closure cost estimate decreases, the penal sum may be reduced to the amount of the current closure cost estimate following written approval by the Regional Administrator.

(8) Under the terms of the bond, the surety may cancel the bond by sending notice of cancellation by certified mail to the owner or operator and to the Regional Administrator. Cancellation may not occur, however, during the 120 days beginning on the date of receipt of the notice of cancellation by both the owner or operator and the Regional Administrator, as evidence by the return receipts.

(9) The owner or operator may cancel the bond if the Regional Administrator has given prior written consent based on his receipt of evidence of alternate financial assurance as specified in this section.

(c) *Surety bond guaranteeing performance of closure.* (1) An owner or operator may satisfy the requirements of this section by obtaining a surety bond which conforms to the requirements of this paragraph and submitting the bond to the Regional Administrator. An owner or operator of a new facility must submit the bond to the Regional Administrator at least 60 days before the date on which hazardous waste is first received for treatment, storage, or disposal. The bond must be effective before this initial receipt of hazardous waste. The surety company issuing the bond must, at a minimum, be among those listed as acceptable sureties on Federal bonds in Circular 570 of the U.S. Department of the Treasury.

(2) The wording of the surety bond must be identical to the wording specified in § 264.151(c).

(3) The owner or operator who uses a surety bond to satisfy the requirements of this section must also establish a standby trust fund. Under the terms of the bond, all payments made thereunder will be deposited by the surety directly into the standby trust fund in accordance with instructions from the Regional Administrator. This standby trust must meet the requirements specified in § 264.143(a), except that:

(i) An originally signed duplicate of the trust agreement must be submitted to the Regional Administrator with the surety bond; and

(ii) Unless the standby trust fund is funded pursuant to the requirements of this section, the following are not required by these regulations:

(A) Payments into the trust fund as specified in § 264.143(a);

(B) Updating of Schedule A of the trust agreement (see § 264.151(a)) to show current closure cost estimates;

(C) Annual valuations as required by the trust agreement; and

(D) Notices of nonpayment as required by the trust agreement.

(4) The bond must guarantee that the owner or operator will:

(i) Perform final closure in accordance with the closure plan and other requirements of the permit for the facility whenever required to do so; or

(ii) Provide alternate financial assurance as specified in this section, and obtain the Regional Administrator's written approval of the assurance provided, within 90 days after receipt by both the owner or operator and the Regional Administrator of a notice of cancellation of the bond from the surety.

(5) Under the terms of the bond, the surety will become liable on the bond obligation when the owner or operator fails to perform as guaranteed by the bond. Following a final administrative

determination pursuant to section 3008 of RCRA that the owner or operator has failed to perform final closure in accordance with the approved closure plan and other permit requirements when required to do so, under the terms of the bond the surety will perform final closure as guaranteed by the bond or will deposit the amount of the penal sum into the standby trust fund.

(6) The penal sum of the bond must be in an amount at least equal to the current closure cost estimate.

(7) Whenever the current closure cost estimate increases to an amount greater than the penal sum, the owner or operator, within 60 days after the increase, must either cause the penal sum to be increased to an amount at least equal to the current closure cost estimate and submit evidence of such increase to the Regional Administrator, or obtain other financial assurance as specified in this section. Whenever the current closure cost estimate decreases, the penal sum may be reduced to the amount of the current closure cost estimate following written approval by the Regional Administrator.

(8) Under the terms of the bond, the surety may canel the bond by sending notice of cancellation by certified mail to the owner or operator and to the Regional Administrator. Cancellation may not occur, however, during the 120 days beginning on the date of receipt of the notice of cancellation by both the owner or operator and the Regional Administrator, as evidenced by the return receipts.

(9) The owner or operator may cancel the bond if the Regional Administrator has given prior written consent. The Regional Administrator will provide such written consent when:

(i) An owner or operator substitutes alternate financial assurance as specified in this section; or

(ii) The Regional Administrator releases the owner or operator from the requirements of this section in accordance with § 264.143(i).

(10) The surety will not be liable for deficiencies in the performance of closure by the owner or operator after the Regional Administrator releases the owner or operator from the requirements of this section in accordance with § 264.143(i).

(d) *Closure letter of credit.* (1) An owner or operator may satisfy the requirements of this section by obtaining an irrevocable standby letter of credit which conforms to the requirements of this paragraph and submitting the letter to the Regional Administrator. An owner or operator of a new facility must submit the letter of credit to the Regional Administrator at least 60 days before the date on which hazardous waste is first received for treatment, storage, or disposal. The letter of credit must be effective before this initial receipt of hazardous waste. The issuing institution must be an entity which has the authority to issue letters of credit and whose letter-of-credit operations are regulated and examined by a Federal or State agency.

(2) The wording of the letter of credit must be identical to the wording specified in § 264.151(d).

(3) An owner or operator who uses a letter of credit to satisfy the requirements of this section must also establish a standby trust fund. Under the terms of the letter of credit, all amounts paid pursuant to a draft by the Regional Administrator will be deposited by the issuing institution directly into the standby trust fund in accordance with instructions from the Regional Administrator. This standby trust fund must meet the requirements of the trust fund specified in § 264.143(a), except that:

(i) An originally signed duplicate of the trust agreement must be submitted to the Regional Administrator with the letter of credit; and

(ii) Unless the standby trust fund is funded pursuant to the requirements of this section, the following are not required by these regulations:

(A) Payments into the trust fund as specified in § 264.143(a);

(B) Updating of Schedule A of the trust agreement (see § 264.151(a)) to show current closure cost estimates;

(C) Annual valuations as required by the trust agreement; and

(D) Notices of nonpayment as required by the trust agreement.

(4) The letter of credit must be accompanied by a letter from the owner or operator referring to the letter of credit by number, issuing institution, and date, and providing the following information: the EPA Identification Number, name, and address of the facility, and the amount of funds assured for closure of the facility by the letter of credit.

(5) The letter of credit must be irrevocable and issued for a period of at least 1 year. The letter of credit must provide that the expiration date will be automatically extended for a period of at least 1 year unless, at least 120 days before the current expiration date, the issuing institution notifies both the owner or operator and the Regional Administrator by certified mail of a decision not to extend the expiration date. Under the terms of the letter of credit, the 120 days will begin on the date when both the owner or operator and the Regional Administrator have received the notice, as evidenced by the return receipts.

(6) The letter of credit must be issued in an amount at least equal to the current closure cost estimate, except as provided in § 264.143(g).

(7) Whenever the current closure cost estimate increases to an amount greater than the amount of the credit, the owner or operator, within 60 days after the increase, must either cause the amount of the credit to be increased so that it at least equals the current closure cost estimate and submit evidence of such increase to the Regional Administrator, or obtain other financial assurance as specified in this section to cover the increase. Whenever the current closure cost estimate decreases, the amount of the credit may be reduced to the amount of the current closure cost estimate following written approval by the Regional Administrator.

(8) Following a final administrative determination pursuant to section 3008 of RCRA that the owner or operator has failed to perform final closure in accordance with the closure plan and other permit requirements when required to do so, the Regional Administrator may draw on the letter of credit.

(9) If the owner or operator does not establish alternate financial assurance as specified in this section and obtain written approval of such alternate assurance from the Regional Administrator within 90 days after receipt by both the owner or operator and the Regional Administrator of a notice from issuing institution that it has decided not to extend the letter of credit beyond the current expiration date, the Regional Administrator will draw on the letter of credit. The Regional Administrator may delay the drawing if the issuing institution grants an extension of the term of the credit. During the last 30 days of any such extension the Regional Administrator will draw on the letter of credit if the owner or operator has failed to provide alternate financial assurance as specified in this section and obtain written approval of such assurance from the Regional Administrator.

(10) The Regional Administrator will return the letter of credit to the issuing institution for termination when:

(i) An owner or operator substitutes alternate financial assurance as specified in this section; or

(ii) The Regional Administrator releases the owner or operator from the requirements of this section in accordance with § 264.143(i).

(e) *Closure insurance.* (1) An owner or operator may satisfy the requirements of this section by obtaining closure insurance which conforms to the requirements of this paragraph and submitting a certificate of such insurance to the Regional Administrator. An owner or operator of a new facility must submit the certificate of insurance to the Regional Administrator at least 60 days before the date on which hazardous waste is first received for treatment, storage, or disposal. The insurance must be effective before this initial receipt of hazardous waste. At a minimum, the insurer must be licensed to transact the business of insurance, or eligible to provide insurance as an excess or suplus lines insurer, in one or more States.

(2) The wording of the certificate of insurance must be identical to the wording specified in § 264.151(e).

(3) The closure insurance policy must be issued for a face amount at

sure expenditures by submitting itemized bills to the Regional Administrator. The owner or operator may request reimbursements for partial closure only if sufficient funds are remaining in the trust fund to cover the maximum costs of closing the facility over its remaining operating life. Within 60 days after receiving bills for partial or final closure activities, the Regional Administrator will instruct the trustee to make reimbursements in those amounts as the Regional Administrator specifies in writing, if the Regional Administrator determines that the partial or final closure expenditures are in accordance with the approved closure plan, or otherwise justified. If the Regional Administrator has reason to believe that the maximum cost of closure over the remaining life of the facility will be significantly greater than the value of the trust fund, he may withhold reimbursements of such amounts as he deems prudent until he determines, in accordance with § 264.143(i) that the owner or operator is no longer required to maintain financial assurance for final closure of the facility. If the Regional Administrator does not instruct the trustee to make such reimbursements, he will provide the owner or operator with a detailed written statement of reasons.

(11) The Regional Administrator will agree to termination of the trust when:

(i) An owner or operator substitutes alternate financial assurance as specified in this section; or

(ii) The Regional Administrator releases the owner or operator from the requirements of this section in accordance with § 264.143(i).

(b) *Surety bond guaranteeing payment into a closure trust fund.* (1) An owner or operator may satisfy the requirements of this section by obtaining a surety bond which conforms to the requirements of this paragraph and submitting the bond to the Regional Administrator. An owner or operator of a new facility must submit the bond to the Regional Administrator at least 60 days before the date on which hazardous waste is first received for treatment, storage, or disposal. The bond must be effective before this initial receipt of hazardous waste. The surety company issuing the bond must, at a minimum, be among those listed as acceptable sureties on Federal bonds in Circular 570 of the U.S. Department of the Treasury.

(2) The wording of the surety bond must be identical to the wording specified in § 264.151(b).

(3) The owner or operator who uses a surety bond to satisfy the requirements of this section must also establish a standby trust fund. Under the terms of the bond, all payments made thereunder will be deposited by the surety directly into the standby trust fund in accordance with instructions from the Regional Administrator. This standby trust fund must meet the requirements specified in § 264.143(a), except that:

(i) An originally signed duplicate of the trust agreement must be submitted to the Regional Administrator with the surety bond; and

(ii) Until the standby trust fund is funded pursuant to the requirements of this section, the following are not required by these regulations:

(A) Payments into the trust fund as specified in § 264.143(a);

(B) Updating of Schedule A of the trust agreement (see § 264.151(a)) to show current closure cost estimates;

(C) Annual valuations as required by the trust agreement; and

(D) Notices of nonpayment as required by the trust agreement.

(4) The bond must guarantee that the owner or operator will:

(i) Fund the standby trust fund in an amount equal to the penal sum of the bond before the beginning of final closure of the facility; or

(ii) Fund the standby trust fund in an amount equal to the penal sum within 15 days after an administrative order to begin final closure issued by the Regional Administrator becomes final, or within 15 days after an order to begin final closure is issued by a U.S. district court or other court of competent jurisdiction; or

(iii) Provide alternate financial assurance as specified in this section, and obtain the Regional Administrator's written approval of the assurance provided, within 90 days after receipt by both the owner or operator and the Regional Administrator of a notice of cancellation of the bond from the surety.

(5) Under the terms of the bond, the surety will become liable on the bond obligation when the owner or operator fails to perform as guaranteed by the bond.

(6) The penal sum of the bond must be in an amount at least equal to the current closure cost estimate, except as provided in § 264.143(g).

(7) Whenever the current closure cost estimate increases to an amount greater then the penal sum, the owner or operator, within 60 days after the increase, must either cause the penal sum to be increased to an amount at least equal to the current closure cost estimate and submit evidence of such increase to the Regional Administrator, or obtain other financial assurance as specified in this section to cover the increase. Whenever the current closure cost estimate decreases, the penal sum may be reduced to the amount of the current closure cost estimate following written approval by the Regional Administrator.

(8) Under the terms of the bond, the surety may cancel the bond by sending notice of cancellation by certified mail to the owner or operator and to the Regional Administrator. Cancellation may not occur, however, during the 120 days beginning on the date of receipt of the notice of cancellation by both the owner or operator and the Regional Administrator, as evidence by the return receipts.

(9) The owner or operator may cancel the bond if the Regional Administrator has given prior written consent based on his receipt of evidence of alternate financial assurance as specified in this section.

(c) *Surety bond guaranteeing performance of closure.* (1) An owner or operator may satisfy the requirements of this section by obtaining a surety bond which conforms to the requirements of this paragraph and submitting the bond to the Regional Administrator. An owner or operator of a new facility must submit the bond to the Regional Administrator at least 60 days before the date on which hazardous waste is first received for treatment, storage, or disposal. The bond must be effective before this initial receipt of hazardous waste. The surety company issuing the bond must, at a minimum, be among those listed as acceptable sureties on Federal bonds in Circular 570 of the U.S. Department of the Treasury.

(2) The wording of the surety bond must be identical to the wording specified in § 264.151(c).

(3) The owner or operator who uses a surety bond to satisfy the requirements of this section must also establish a standby trust fund. Under the terms of the bond, all payments made thereunder will be deposited by the surety directly into the standby trust fund in accordance with instructions from the Regional Administrator. This standby trust must meet the requirements specified in § 264.143(a), except that:

(i) An originally signed duplicate of the trust agreement must be submitted to the Regional Administrator with the surety bond; and

(ii) Unless the standby trust fund is funded pursuant to the requirements of this section, the following are not required by these regulations:

(A) Payments into the trust fund as specified in § 264.143(a);

(B) Updating of Schedule A of the trust agreement (see § 264.151(a)) to show current closure cost estimates;

(C) Annual valuations as required by the trust agreement; and

(D) Notices of nonpayment as required by the trust agreement.

(4) The bond must guarantee that the owner or operator will:

(i) Perform final closure in accordance with the closure plan and other requirements of the permit for the facility whenever required to do so; or

(ii) Provide alternate financial assurance as specified in this section, and obtain the Regional Administrator's written approval of the assurance provided, within 90 days after receipt by both the owner or operator and the Regional Administrator of a notice of cancellation of the bond from the surety.

(5) Under the terms of the bond, the surety will become liable on the bond obligation when the owner or operator fails to perform as guaranteed by the bond. Following a final administrative

determination pursuant to section 3008 of RCRA that the owner or operator has failed to perform final closure in accordance with the approved closure plan and other permit requirements when required to do so, under the terms of the bond the surety will perform final closure as guaranteed by the bond or will deposit the amount of the penal sum into the standby trust fund.

(6) The penal sum of the bond must be in an amount at least equal to the current closure cost estimate.

(7) Whenever the current closure cost estimate increases to an amount greater than the penal sum, the owner or operator, within 60 days after the increase, must either cause the penal sum to be increased to an amount at least equal to the current closure cost estimate and submit evidence of such increase to the Regional Administrator, or obtain other financial assurance as specified in this section. Whenever the current closure cost estimate decreases, the penal sum may be reduced to the amount of the current closure cost estimate following written approval by the Regional Administrator.

(8) Under the terms of the bond, the surety may canel the bond by sending notice of cancellation by certified mail to the owner or operator and to the Regional Administrator. Cancellation may not occur, however, during the 120 days beginning on the date of receipt of the notice of cancellation by both the owner or operator and the Regional Administrator, as evidenced by the return receipts.

(9) The owner or operator may cancel the bond if the Regional Administrator has given prior written consent. The Regional Administrator will provide such written consent when:

(i) An owner or operator substitutes alternate financial assurance as specified in this section; or

(ii) The Regional Administrator releases the owner or operator from the requirements of this section in accordance with § 264.143(i).

(10) The surety will not be liable for deficiencies in the performance of closure by the owner or operator after the Regional Administrator releases the owner or operator from the requirements of this section in accordance with § 264.143(i).

(d) *Closure letter of credit.* (1) An owner or operator may satisfy the requirements of this section by obtaining an irrevocable standby letter of credit which conforms to the requirements of this paragraph and submitting the letter to the Regional Administrator. An owner or operator of a new facility must submit the letter of credit to the Regional Administrator at least 60 days before the date on which hazardous waste is first received for treatment, storage, or disposal. The letter of credit must be effective before this initial receipt of hazardous waste. The issuing institution must be an entity which has the authority to issue letters of credit and whose letter-of-credit operations are regulated and examined by a Federal or State agency.

(2) The wording of the letter of credit must be identical to the wording specified in § 264.151(d).

(3) An owner or operator who uses a letter of credit to satisfy the requirements of this section must also establish a standby trust fund. Under the terms of the letter of credit, all amounts paid pursuant to a draft by the Regional Administrator will be deposited by the issuing institution directly into the standby trust fund in accordance with instructions from the Regional Administrator. This standby trust fund must meet the requirements of the trust fund specified in § 264.143(a), except that:

(i) An originally signed duplicate of the trust agreement must be submitted to the Regional Administrator with the letter of credit; and

(ii) Unless the standby trust fund is funded pursuant to the requirements of this section, the following are not required by these regulations:

(A) Payments into the trust fund as specified in § 264.143(a);

(B) Updating of Schedule A of the trust agreement (see § 264.151(a)) to show current closure cost estimates;

(C) Annual valuations as required by the trust agreement; and

(D) Notices of nonpayment as required by the trust agreement.

(4) The letter of credit must be accompanied by a letter from the owner or operator referring to the letter of credit by number, issuing institution, and date, and providing the following information: the EPA Identification Number, name, and address of the facility, and the amount of funds assured for closure of the facility by the letter of credit.

(5) The letter of credit must be irrevocable and issued for a period of at least 1 year. The letter of credit must provide that the expiration date will be automatically extended for a period of at least 1 year unless, at least 120 days before the current expiration date, the issuing institution notifies both the owner or operator and the Regional Administrator by certified mail of a decision not to extend the expiration date. Under the terms of the letter of credit, the 120 days will begin on the date when both the owner or operator and the Regional Administrator have received the notice, as evidenced by the return receipts.

(6) The letter of credit must be issued in an amount at least equal to the current closure cost estimate, except as provided in § 264.143(g).

(7) Whenever the current closure cost estimate increases to an amount greater than the amount of the credit, the owner or operator, within 60 days after the increase, must either cause the amount of the credit to be increased so that it at least equals the current closure cost estimate and submit evidence of such increase to the Regional Administrator, or obtain other financial assurance as specified in this section to cover the increase. Whenever the current closure cost estimate decreases, the amount of the credit may be reduced to the amount of the current closure cost estimate following written approval by the Regional Administrator.

(8) Following a final administrative determination pursuant to section 3008 of RCRA that the owner or operator has failed to perform final closure in accordance with the closure plan and other permit requirements when required to do so, the Regional Administrator may draw on the letter of credit.

(9) If the owner or operator does not establish alternate financial assurance as specified in this section and obtain written approval of such alternate assurance from the Regional Administrator within 90 days after receipt by both the owner or operator and the Regional Administrator of a notice from issuing institution that it has decided not to extend the letter of credit beyond the current expiration date, the Regional Administrator will draw on the letter of credit. The Regional Administrator may delay the drawing if the issuing institution grants an extension of the term of the credit. During the last 30 days of any such extension the Regional Administrator will draw on the letter of credit if the owner or operator has failed to provide alternate financial assurance as specified in this section and obtain written approval of such assurance from the Regional Administrator.

(10) The Regional Administrator will return the letter of credit to the issuing institution for termination when:

(i) An owner or operator substitutes alternate financial assurance as specified in this section; or

(ii) The Regional Administrator releases the owner or operator from the requirements of this section in accordance with § 264.143(i).

(e) *Closure insurance.* (1) An owner or operator may satisfy the requirements of this section by obtaining closure insurance which conforms to the requirements of this paragraph and submitting a certificate of such insurance to the Regional Administrator. An owner or operator of a new facility must submit the certificate of insurance to the Regional Administrator at least 60 days before the date on which hazardous waste is first received for treatment, storage, or disposal. The insurance must be effective before this initial receipt of hazardous waste. At a minimum, the insurer must be licensed to transact the business of insurance, or eligible to provide insurance as an excess or suplus lines insurer, in one or more States.

(2) The wording of the certificate of insurance must be identical to the wording specified in § 264.151(e).

(3) The closure insurance policy must be issued for a face amount at

determination pursuant to section 3008 of RCRA that the owner or operator has failed to perform final closure in accordance with the approved closure plan and other permit requirements when required to do so, under the terms of the bond the surety will perform final closure as guaranteed by the bond or will deposit the amount of the penal sum into the standby trust fund.

(6) The penal sum of the bond must be in an amount at least equal to the current closure cost estimate.

(7) Whenever the current closure cost estimate increases to an amount greater than the penal sum, the owner or operator, within 60 days after the increase, must either cause the penal sum to be increased to an amount at least equal to the current closure cost estimate and submit evidence of such increase to the Regional Administrator, or obtain other financial assurance as specified in this section. Whenever the current closure cost estimate decreases, the penal sum may be reduced to the amount of the current closure cost estimate following written approval by the Regional Administrator.

(8) Under the terms of the bond, the surety may canel the bond by sending notice of cancellation by certified mail to the owner or operator and to the Regional Administrator. Cancellation may not occur, however, during the 120 days beginning on the date of receipt of the notice of cancellation by both the owner or operator and the Regional Administrator, as evidenced by the return receipts.

(9) The owner or operator may cancel the bond if the Regional Administrator has given prior written consent. The Regional Administrator will provide such written consent when:

(i) An owner or operator substitutes alternate financial assurance as specified in this section; or

(ii) The Regional Administrator releases the owner or operator from the requirements of this section in accordance with § 264.143(i).

(10) The surety will not be liable for deficiencies in the performance of closure by the owner or operator after the Regional Administrator releases the owner or operator from the requirements of this section in accordance with § 264.143(i).

(d) *Closure letter of credit.* (1) An owner or operator may satisfy the requirements of this section by obtaining an irrevocable standby letter of credit which conforms to the requirements of this paragraph and submitting the letter to the Regional Administrator. An owner or operator of a new facility must submit the letter of credit to the Regional Administrator at least 60 days before the date on which hazardous waste is first received for treatment, storage, or disposal. The letter of credit must be effective before this initial receipt of hazardous waste. The issuing institution must be an entity which has the authority to issue letters of credit and whose letter-of-credit operations are regulated and examined by a Federal or State agency.

(2) The wording of the letter of credit must be identical to the wording specified in § 264.151(d).

(3) An owner or operator who uses a letter of credit to satisfy the requirements of this section must also establish a standby trust fund. Under the terms of the letter of credit, all amounts paid pursuant to a draft by the Regional Administrator will be deposited by the issuing institution directly into the standby trust fund in accordance with instructions from the Regional Administrator. This standby trust fund must meet the requirements of the trust fund specified in § 264.143(a), except that:

(i) An originally signed duplicate of the trust agreement must be submitted to the Regional Administrator with the letter of credit; and

(ii) Unless the standby trust fund is funded pursuant to the requirements of this section, the following are not required by these regulations:

(A) Payments into the trust fund as specified in § 264.143(a);

(B) Updating of Schedule A of the trust agreement (see § 264.151(a)) to show current closure cost estimates;

(C) Annual valuations as required by the trust agreement; and

(D) Notices of nonpayment as required by the trust agreement.

(4) The letter of credit must be accompanied by a letter from the owner or operator referring to the letter of credit by number, issuing institution, and date, and providing the following information: the EPA Identification Number, name, and address of the facility, and the amount of funds assured for closure of the facility by the letter of credit.

(5) The letter of credit must be irrevocable and issued for a period of at least 1 year. The letter of credit must provide that the expiration date will be automatically extended for a period of at least 1 year unless, at least 120 days before the current expiration date, the issuing institution notifies both the owner or operator and the Regional Administrator by certified mail of a decision not to extend the expiration date. Under the terms of the letter of credit, the 120 days will begin on the date when both the owner or operator and the Regional Administrator have received the notice, as evidenced by the return receipts.

(6) The letter of credit must be issued in an amount at least equal to the current closure cost estimate, except as provided in § 264.143(g).

(7) Whenever the current closure cost estimate increases to an amount greater than the amount of the credit, the owner or operator, within 60 days after the increase, must either cause the amount of the credit to be increased so that it at least equals the current closure cost estimate and submit evidence of such increase to the Regional Administrator, or obtain other financial assurance as specified in this section to cover the increase. Whenever the current closure cost estimate decreases, the amount of the credit may be reduced to the amount of the current closure cost estimate following written approval by the Regional Administrator.

(8) Following a final administrative determination pursuant to section 3008 of RCRA that the owner or operator has failed to perform final closure in accordance with the closure plan and other permit requirements when required to do so, the Regional Administrator may draw on the letter of credit.

(9) If the owner or operator does not establish alternate financial assurance as specified in this section and obtain written approval of such alternate assurance from the Regional Administrator within 90 days after receipt by both the owner or operator and the Regional Administrator of a notice from issuing institution that it has decided not to extend the letter of credit beyond the current expiration date, the Regional Administrator will draw on the letter of credit. The Regional Administrator may delay the drawing if the issuing institution grants an extension of the term of the credit. During the last 30 days of any such extension the Regional Administrator will draw on the letter of credit if the owner or operator has failed to provide alternate financial assurance as specified in this section and obtain written approval of such assurance from the Regional Administrator.

(10) The Regional Administrator will return the letter of credit to the issuing institution for termination when:

(i) An owner or operator substitutes alternate financial assurance as specified in this section; or

(ii) The Regional Administrator releases the owner or operator from the requirements of this section in accordance with § 264.143(i).

(e) *Closure insurance.* (1) An owner or operator may satisfy the requirements of this section by obtaining closure insurance which conforms to the requirements of this paragraph and submitting a certificate of such insurance to the Regional Administrator. An owner or operator of a new facility must submit the certificate of insurance to the Regional Administrator at least 60 days before the date on which hazardous waste is first received for treatment, storage, or disposal. The insurance must be effective before this initial receipt of hazardous waste. At a minimum, the insurer must be licensed to transact the business of insurance or eligible to provide insurance as an excess or suplus lines insurer, in one or more States.

(2) The wording of the certificate of insurance must be identical to the wording specified in § 264.151(e).

(3) The closure insurance policy must be issued for a face amount at

the current closure cost
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or, to such party or parties as
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may request reimbursements
re expenditures by submitting
bills to the Regional Adminis-
The owner or operator may re-
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ly if the remaining value of the
s sufficient to cover the maxi-
osts of closing the facility over
aining operating life. Within 60
after receiving bills for closure
ies, the Regional Administrator
struct the insurer to make reim-
ents in such amounts as the
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g, if the Regional Administrator
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the approved closure plan or oth-
se justified. If the Regional Ad-
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aining life of the facility will be
ficantly greater than the face
ount of the policy, he may with-
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at the owner or operator is no
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for final closure of the facil-
ity. Regional Administrator

(6) The owner or operator must maintain the policy in full force and effect until the Regional Administrator consents to termination of the policy by the owner or operator as specified in paragraph (e)(10) of this section. Failure to pay the premium, without substitution of alternate financial assurance as specified in this section, will constitute a significant violation of these regulations, warranting such remedy as the Regional Administrator deems necessary. Such violation will be deemed to begin upon receipt by the Regional Adminstrator of a notice of future cancellation, termination, or failure to renew due to nonpayment of the premium, rather than upon the date of expiration.

(7) Each policy must contain a provision allowing assignment of the policy to a successor owner or operator. Such assignment may be conditional upon consent of the insurer, provided such consent is not unreasonably refused.

(8) The policy must provide that the insurer may not cancel, terminate, or fail to renew the policy except for failure to pay the premium. The automatic renewal of the policy must, at a minimum, provide the insured with the option of renewal at the face amount of the expiring policy. If there is a failure to pay the premium, the insurer may elect to cancel, terminate, or fail to renew the policy by sending notice by certified mail to the owner or operator and the Regional Administrator. Cancellation, termination, or failure to renew may not occur, however, during the 120 days beginning with the date of receipt of the notice by both the Regional Administrator and the owner or operator, as evidenced by the return receipts. Cancellation, termination, or failure to renew may not occur and the policy will remain in full force and effect in the event that on or before the date of expiration:

(i) The Regional Administrator deems the facility abandoned; or

(ii) The permit is terminated or revoked or a new permit is denied; or

(iii) Closure is ordered by the Regional Administrator or a U.S. district court or other court of competent ju-

proceeding under Title 11 (Bankruptcy), U.S. Code; or

(v) The premium due is paid.

(9) Whenever the current closure cost estimate increases to an amount greater than the face amount of the policy, the owner or operator, within 60 days after the increase, must either cause the face amount to be increased to an amount at least equal to the current closure cost estimate and submit evidence of such increase to the Regional Administrator, or obtain other financial assurance as specified in this section to cover the increase. Whenever the current closure cost estimate decreases, the face amount may be reduced to the amount of the current closure cost estimate following written approval by the Regional Administrator.

(10) The Regional Administrator will give written consent to the owner or operator that he may terminate the insurance policy when:

(i) An owner or operator substitutes alternate financial assurance as specified in this section; or

(ii) The Regional Administrator releases the owner or operator from the requirements of this section in accordance with § 264.143(i).

(f) *Financial test and corporate guarantee for closure.* (1) An owner or operator may satisfy the requirements of this section by demonstrating that he passes a financial test as specified in this paragraph. To pass this test the owner or operator must meet the criteria of either paragraph (f)(1)(i) or (ii) of this section:

(i) The owner or operator must have:

(A) Two of the following three ratios: a ratio of total liabilities to net worth less than 2.0; a ratio of the sum of net income plus depreciation, depletion, and amortization to total liabilities greater than 0.1; and a ratio of current assets to current liabilities greater than 1.5; and

(B) Net working capital and tangible net worth each at least six times the sum of the current closure and post-closure cost estimates and the current plugging and abandonment cost estimates; and

(C) Tangible net worth of at least

(D) Assets located in the United States amounting to at least 90 percent of total assets or at least six times the sum of the current closure and post-closure cost estimates and the current plugging and abandonment cost estimates.

(ii) The owner or operator must have:

(A) A current rating for his most recent bond issuance of AAA, AA, A, or BBB as issued by Standard and Poor's or Aaa, Aa, A, or Baa as issued by Moody's; and

(B) Tangible net worth at least six times the sum of the current closure and post-closure cost estimates and the current plugging and abandonment cost estimates; and

(C) Tangible net worth of at least $10 million; and

(D) Assets located in the United States amounting to at least 90 percent of total assets or at least six times the sum of the current closure and post-closure cost estimates and the current plugging and abandonment cost estimates.

(2) The phrase "current closure and post-closure cost estimates" as used in paragraph (f)(1) of this section refers to the cost estimates required to be shown in paragraphs 1–4 of the letter from the owner's or operator's chief financial officer (§ 264.151(f)). The phrase "current plugging and abandonment cost estimates" as used in paragraph (f)(1) of this section refers to the cost estimates required to be shown in paragraphs 1–4 of the letter from the owner's or operator's chief financial officer (§ 144.70(f) of this title).

(3) To demonstrate that he meets this test, the owner or operator must submit the following items to the Regional Administrator:

(i) A letter signed by the owner's or operator's chief financial officer and worded as specified in § 264.151(f); and

(ii) A copy of the independent certified public accountant's report on examination of the owner's or operator's financial statements for the latest completed fiscal year; and

(iii) A special report from the owner's or operator's independent certified public accountant to the owner or operator stating that:

(A) He has compared the data which the letter from the chief financial officer specifies as having been derived from the independently audited, year-end financial statements for the latest fiscal year with the amounts in such financial statements; and

(B) In connection with that procedure, no matters came to his attention which caused him to believe that the specified data should be adjusted.

(4) An owner or operator of a new facility must submit the items specified in paragraph (f)(3) of this section to the Regional Administrator at least 30 days before the date on which hazardous waste is first received for treatment, storage, or disposal.

(5) After the initial submission of items specified in paragraph (f)(3) of this section, the owner or operator must send updated information to the Regional Administrator within 90 days after the close of each succeeding fiscal year. This information must consist of all three items specified in paragraph (f)(3) of this section.

(6) If the owner or operator no longer meets the requirements of paragraph (f)(1) of this section, he must send notice to the Regional Administrator of intent to establish alternate financial assurance as specified in this section. The notice must be sent by certified mail within 90 days after the end of the fiscal year for which the year-end financial data show that the owner or operator no longer meets the requirements. The owner or operator must provide the alternate financial assurance within 120 days after the end of such fiscal year.

(7) The Regional Administrator may, based on a reasonable belief that the owner or operator may no longer meet the requirements of paragraph (f)(1) of this section, require reports of financial condition at any time from the owner or operator in addition to those specified in paragraph (f)(3) of this section. If the Regional Administrator finds, on the basis of such reports or other information, that the owner or operator no longer meets the requirements of paragraph (f)(1) of this section, the owner or operator must provide alternate financial assurance as specified in this section within 30 days after notification of such a finding.

(8) The Regional Administrator may disallow use of this test on the basis of qualifications in the opinion expressed by the independent certified public accountant in his report on examination of the owner's or operator's financial statements (see paragraph (f)(3)(ii) of this section). An adverse opinion or a disclaimer of opinion will be cause for disallowance. The Regional Administrator will evaluate other qualifications on an individual basis. The owner or operator must provide alternate financial assurance as specified in this section within 30 days after notification of the disallowance.

(9) The owner or operator is no longer required to submit the items specified in paragraph (f)(3) of this section when:

(i) An owner or operator substitutes alternate financial assurance as specified in this section; or

(ii) The Regional Administrator releases the owner or operator from the requirements of this section in accordance with § 264.143(i).

(10) An owner or operator may meet the requirements of this section by obtaining a written guarantee, hereafter referred to as "corporate guarantee." The guarantor must be the parent corporation of the owner or operator. The guarantor must meet the requirements for owners or operators in paragraphs (f)(1) through (8) of this section and must comply with the terms of the corporate guarantee. The wording of the corporate guarantee must be identical to the wording specified in § 264.151(h). The corporate guarantee must accompany the items sent to the Regional Administrator as specified in paragraph (f)(3) of this section. The terms of the corporate guarantee must provide that:

(i) If the owner or operator fails to perform final closure of a facility covered by the corporate guarantee in accordance with the closure plan and other permit requirements whenever required to do so, the guarantor will do so or establish a trust fund as specified in § 264.143(a) in the name of the owner or operator.

(ii) The corporate guarantee will remain in force unless the guarantor

sends notice of cancellation by certified mail to the owner or operator and to the Regional Administrator. Cancellation may not occur, however, during the 120 days beginning on the date of receipt of the notice of cancellation by both the owner or operator and the Regional Administrator, as evidenced by the return receipts.

(iii) If the owner or operator fails to provide alternate financial assurance as specified in this section and obtain the written approval of such alternate assurance from the Regional Administrator within 90 days after receipt by both the owner or operator and the Regional Administrator of a notice of cancellation of the corporate guarantee from the guarantor, the guarantor will provide such alternative financial assurance in the name of the owner or operator.

(g) *Use of multiple financial mechanisms.* An owner or operator may satisfy the requirements of this section by establishing more than one financial mechanism per facility. These mechanisms are limited to trust funds, surety bonds guaranteeing payment into a trust fund, letters of credit, and insurance. The mechanisms must be as specified in paragraphs (a), (b), (d), and (e), respectively, of this section, except that it is the combination of mechanisms, rather than the single mechanism, which must provide financial assurance for an amount at least equal to the current closure cost estimate. If an owner or operator uses a trust fund in combination with a surety bond or a letter of credit, he may use the trust fund as the standby trust fund for the other mechanisms. A single standby trust fund may be established for two or more mechanisms. The Regional Administrator may use any or all of the mechanisms to provide for closure of the facility.

(h) *Use of a financial mechanism for multiple facilities.* An owner or operator may use a financial assurance mechanism specified in this section to meet the requirements of this section for more than one facility. Evidence of financial assurance submitted to the Regional Administrator must include a list showing, for each facility, the EPA Identification Number, name, address, and the amount of funds for closure assured by the mechanism. If the facilities covered by the mechanism are in more than one Region, identical evidence of financial assurance must be submitted to and maintained with the Regional Administrators of all such Regions. The amount of funds available through the mechanism must be no less than the sum of funds that would be available if a separate mechanism had been established and maintained for each facility. In directing funds available through the mechanism for closure of any of the facilities covered by the mechanism, the Regional Administrator may direct only the amount of funds designated for that facility, unless the owner or operator agrees to the use of additional funds available under the mechanism.

(i) *Release of the owner or operator from the requirements of this section.* Within 60 days after receiving certifications from the owner or operator and an independent registered professional engineer that final closure has been completed in accordance with the approved closure plan, the Regional Administrator will notify the owner or operator in writing that he is no longer required by this section to maintain financial assurance for final closure of the facility, unless the Regional Administrator has reason to believe that final closure has not been in accordance with the approved closure plan. The Regional Administrator shall provide the owner or operator a detailed written statement of any such reason to believe that closure has not been in accordance with the approved closure plan.

[47 FR 15047, Apr. 7, 1982, as amended at 51 FR 16448, May 2, 1986]

§ 264.144 Cost estimate for post-closure care.

(a) The owner or operator of a disposal surface impoundment, disposal miscellaneous unit, land treatment unit, or landfill unit, or of a surface impoundment or waste pile required under §§ 264.228 and 264.258 to prepare a contingent closure and post-closure plan, must have a detailed written estimate, in current dollars, of the annual cost of post-closure monitoring and maintenance of the facility in ac-

cordance with the applicable post-closure regulations §§ 264.117 through 264.120, 264.22[illegible] 264.258, 264.280, 264.310, and 264.603.

(1) The post-closure cost estimate must be based on the costs to the owner or operator of hiring a third party to conduct post-closure care activities. A third party is a party who is neither a parent nor a subsidiary of the owner or operator. (See definition of parent corporation in § 264.141(d).)

(2) The post-closure cost estimate is calculated by multiplying the annual post-closure cost estimate by the number of years of post-closure care required under § 264.117.

(b) During the active life of the facility, the owner or operator must adjust the post-closure cost estimate for inflation within 60 days prior to the anniversary date of the establishment of the financial instrument(s) used to comply with § 264.145. For owners or operators using the financial test or corporate guarantee, the post-closure cost estimate must be updated for inflation within 30 days after the close of the firm's fiscal year and before the submission of updated information to the Regional Administrator as specified in § 264.145(f)(5). The adjustment may be made by recalculating the post-closure cost estimate in current dollars or by using an inflation factor derived from the most recent Implicit Price Deflator for Gross National Product published by the U.S. Department of Commerce in its *Survey of Current Business* as specified in § 264.145(b)(1) and (2). The inflation factor is the result of dividing the latest published annual Deflator by the Deflator for the previous year.

(1) The first adjustment is made by multiplying the post-closure cost estimate by the inflation factor. The result is the adjusted post-closure cost estimate.

(2) Subsequent adjustments are made by multiplying the latest adjusted post-closure cost estimate by the latest inflation factor.

(c) During the active life of the facility, the owner or operator must revise the post-closure cost estimate within 30 days after the Regional Administrator has approved the request to modify the post-closure plan, if the change in the post-closure plan increases the cost of post-closure care. The revised post-closure cost estimate must be adjusted for inflation as specified in § 264.144(b).

(d) The owner or operator must keep the following at the facility during the operating life of the facility: The latest post-closure cost estimate prepared in accordance with § 264.144 (a) and (c) and, when this estimate has been adjusted in accordance with § 264.144(b), the latest adjusted post-closure cost estimate.

(Approved by the Office of Management and Budget under control number 2050-0036)

[47 FR 15047, Apr. 7, 1982, as amended at 47 FR 32357, July 26, 1982; 50 FR 4514, Jan. 31, 1985; 51 FR 16449, May 2, 1986; 52 FR 46964, Dec. 10, 1987]

§ 264.145 Financial assurance for post-closure care.

The owner or operator of a hazardous waste management unit subject to the requirements of § 264.144 must establish financial assurance for post-closure care in accordance with the approved post-closure plan for the facility 60 days prior to the initial receipt of hazardous waste or the effective date of the regulation, whichever is later. He must choose from the following options:

(a) *Post-closure trust fund.* (1) An owner or operator may satisfy the requirements of this section by establishing a post-closure trust fund which conforms to the requirements of this paragraph and submitting an originally signed duplicate of the trust agreement to the Regional Administrator. An owner or operator of a new facility must submit the originally signed duplicate of the trust agreement to the Regional Administrator at least 60 days before the date on which hazardous waste is first received for disposal. The trustee must be an entity which has the authority to act as a trustee and whose trust operations are regulated and examined by a Federal or State agency.

(2) The wording of the trust agreement must be identical to the wording specified in § 264.151(a)(1), and the trust agreement must be accompanied

by a formal certification of acknowledgment (for example, see § 264.151(a)(2)). Schedule A of the trust agreement must be updated within 60 days after a change in the amount of the current post-closure cost estimate covered by the agreement.

(3) Payments into the trust fund must be made annually by the owner or operator over the term of the initial RCRA permit or over the remaining operating life of the facility as estimated in the closure plan, whichever period is shorter; this period is hereafter referred to as the "pay-in period." The payments into the post-closure trust fund must be made as follows:

(i) For a new facility, the first payment must be made before the initial receipt of hazardous waste for disposal. A receipt from the trustee for this payment must be submitted by the owner or operator to the Regional Administrator before this initial receipt of hazardous waste. The first payment must be at least equal to the current post-closure cost estimate, except as provided in § 264.145(g), divided by the number of years in the pay-in period. Subsequent payments must be made no later than 30 days after each anniversay date of the first payment. The amount of each subsequent payment must be determined by this formula:

$$\text{Next payment} = \frac{CE - CV}{Y}$$

where CE is the current post-closure cost estimate, CV is the current value of the trust fund, and Y is the number of years remaining in the pay-in period.

(ii) If an owner or operator establishes a trust fund as specified in § 265.145(a) of this chapter, and the value of that trust fund is less than the current post-closure cost estimate when a permit is awarded for the facility, the amount of the current post-closure cost estimate still to be paid into the fund must be paid in over the pay-in period as defined in paragraph (a)(3) of this section. Payments must continue to be made no later than 30 days after each anniversary date of the first payment made pursuant to Part 265 of this ch[illegible]r. The amount of each payment must be determined by this formula:

$$\text{Next payment} = \frac{CE - CV}{Y}$$

where CE is the current post-closure cost estimate, CV is the current value of the trust fund, and Y is the number of years remaining in the pay-in period.

(4) The owner or operator may accelerate payments into the trust fund or he may deposit the full amount of the current post-closure cost estimate at the time the fund is established. However, he must maintain the value of the fund at no less than the value that the fund would have if annual payments were made as specified in paragraph (a)(3) of this section.

(5) If the owner or operator establishes a post-closure trust fund after having used one or more alternate mechanisms specified in this section or in § 265.145 of this chapter, his first payment must be in at least the amount that the fund would contain if the trust fund were established initially and annual payments made according to specifications of this paragraph and § 265.145(a) of this chapter, as applicable.

(6) After the pay-in period is completed, whenever the current post-closure cost estimate changes during the operating life of the facility, the owner or operator must compare the new estimate with the trustee's most recent annual valuation of the trust fund. If the value of the fund is less than the amount of the new estimate, the owner or operator, within 60 days after the change in the cost estimate, must either deposit an amount into the fund so that its value after this deposit at least equals the amount of the current post-closure cost estimate, or obtain other financial assurance as specified in this section to cover the difference.

(7) During the operating life of the facility, if the value of the trust fund is greater than the total amount of the current post-closure cost estimate, the owner or operator may submit a

written request to the Regional Administrator for release of the amount in excess of the current post-closure cost estimate.

(8) If an owner or operator substitutes other financial assurance as specified in this section for all or part of the trust fund, he may submit a written request to the Regional Administrator for release of the amount in excess of the current post-closure cost estimate covered by the trust fund.

(9) Within 60 days after receiving a request from the owner or operator for release of funds as specified in paragraph (a) (7) or (8) of this section, the Regional Administrator will instruct the trustee to release to the owner or operator such funds as the Regional Administrator specifies in writing.

(10) During the period of post-closure care, the Regional Administrator may approve a release of funds if the owner or operator demonstrates to the Regional Administrator that the value of the trust fund exceeds the remaining cost of post-closure care.

(11) An owner or operator or any other person authorized to conduct post-closure care may request reimbursements for post-closure care expenditures by submitting itemized bills to the Regional Administrator. Within 60 days after receiving bills for post-closure care activities, the Regional Administrator will instruct the trustee to make reimbursements in those amounts as the Regional Administrator specifies in writing, if the Regional Administrator determines that the post-closure care expenditures are in accordance with the approved post-closure plan or otherwise justified. If the Regional Administrator does not instruct the trustee to make such reimbursements, he will provide the owner or operator with a detailed written statement of reasons.

(12) The Regional Administrator will agree to termination of the trust when:

(i) An owner or operator substitutes alternate financial assurance as specified in this section; or

(ii) The Regional Administrator releases the owner or operator from the requirements of this section in accordance with § 264.145(i).

(b) *Surety bond guaranteeing payment into a post-closure trust fund.* (1) An owner or operator may satisfy the requirements of this section by obtaining a surety bond which conforms to the requirements of this paragraph and submitting the bond to the Regional Administrator. An owner or operator of a new facility must submit the bond to the Regional Administrator at least 60 days before the date on which hazardous waste is first received for disposal. The bond must be effective before this initial receipt of hazardous waste. The surety company issuing the bond must, at a minimum, be among those listed as acceptable sureties on Federal bonds in Circular 570 of the U.S. Department of the Treasury.

(2) The wording of the surety bond must be identical to the wording specified in § 264.151(b).

(3) The owner or operator who uses a surety bond to satisfy the requirements of this section must also establish a standby trust fund. Under the terms of the bond, all payments made thereunder will be deposited by the surety directly into the standby trust fund in accordance with instructions from the Regional Administrator. This standby trust fund must meet the requirements specified in § 264.145(a), except that:

(i) An originally signed duplicate of the trust agreement must be submitted to the Regional Administrator with the surety bond; and

(ii) Until the standby trust fund is funded pursuant to the requirements of this section, the following are not required by these regulations:

(A) Payments into the trust fund as specified in § 264.145(a);

(B) Updating of Schedule A of the trust agreement (see § 264.151(a)) to show current post-closure cost estimates;

(C) Annual valuations as required by the trust agreement; and

(D) Notices of nonpayment as required by the trust agreement.

(4) The bond must guarantee that the owner or operator will:

(i) Fund the standby trust fund in an amount equal to the penal sum of the bond before the beginning of final closure of the facility; or

(ii) Fund the standby trust fund in an amount equal to the penal sum within 15 days after an administrative order to begin final closure issued by the Regional Administrator becomes final, or within 15 days after an order to begin final closure is issued by a U.S. district court or other court of competent jurisdiction; or

(iii) Provide alternate financial assurance as specified in this section, and obtain the Regional Administrator's written approval of the assurance provided, within 90 days after receipt by both the owner or operator and the Regional Administrator of a notice of cancellation of the bond from the surety.

(5) Under the terms of the bond, the surety will become liable on the bond obligation when the owner or operator fails to perform as guaranteed by the bond.

(6) The penal sum of the bond must be in an amount at least equal to the current post-closure cost estimate, except as provided in § 264.145(g).

(7) Whenever the current post-closure cost estimate increases to an amount greater than the penal sum, the owner or operator, within 60 days after the increase, must either cause the penal sum to be increased to an amount at least equal to the current post-closure cost estimate and submit evidence of such increase to the Regional Administrator, or obtain other financial assurance as specified in this section to cover the increase. Whenever the current post-closure cost estimate decreases, the penal sum may be reduced to the amount of the current post-closure cost estimate following written approval by the Regional Administrator.

(8) Under the terms of the bond, the surety may cancel the bond by sending notice of cancellation by certified mail to the owner or operator and to the Regional Administrator. Cancellation may not occur, however, during the 120 days beginning on the date of receipt of the notice of cancellation by both the owner or operator and the Regional Administrator, as evidenced by the return receipts.

(9) The owner or operator may cancel the bond if the Regional Administrator has given prior written consent based on his receipt of evidence of alternate financial assurance as specified in this section.

(c) *Surety bond guaranteeing performance of post-closure care.* (1) An owner or operator may satisfy the requirements of this section by obtaining a surety bond which conforms to the requirements of this paragraph and submitting the bond to the Regional Administrator. An owner or operator of a new facility must submit the bond to the Regional Administrator at least 60 days before the date on which hazardous waste is first received for disposal. The bond must be effective before this initial receipt of hazardous waste. The surety company issuing the bond must, at a minimum, be among those listed as acceptable sureties on Federal bonds in Circular 570 of the U.S. Department of the Treasury.

(2) The wording of the surety bond must be identical to the wording specified in § 264.151(c).

(3) The owner or operator who uses a surety bond to satisfy the requirements of this section must also establish a standby trust fund. Under the terms of the bond, all payments made thereunder will be deposited by the surety directly into the standby trust fund in accordance with instructions from the Regional Administrator. This standby trust fund must meet the requirements specified in § 264.145(a), except that:

(i) An originally signed duplicate of the trust agreement must be submitted to the Regional Administrator with the surety bond; and

(ii) Unless the standby trust fund is funded pursuant to the requirements of this section, the following are not required by these regulations:

(A) Payments into the trust fund as specified in § 264.145(a);

(B) Updating of Schedule A of the trust agreement (see § 264.151(a)) to show current post-closure cost estimates;

(C) Annual valuations as required by the trust agreement; and

(D) Notices of nonpayment as required by the trust agreement.

cordance with the applicable post-closure regulations §§ 264.117 through 264.120, 264.22[illegible], 264.258, 264.280, 264.310, and 264.603.

(1) The post-closure cost estimate must be based on the costs to the owner or operator of hiring a third party to conduct post-closure care activities. A third party is a party who is neither a parent nor a subsidiary of the owner or operator. (See definition of parent corporation in § 264.141(d).)

(2) The post-closure cost estimate is calculated by multiplying the annual post-closure cost estimate by the number of years of post-closure care required under § 264.117.

(b) During the active life of the facility, the owner or operator must adjust the post-closure cost estimate for inflation within 60 days prior to the anniversary date of the establishment of the financial instrument(s) used to comply with § 264.145. For owners or operators using the financial test or corporate guarantee, the post-closure cost estimate must be updated for inflation within 30 days after the close of the firm's fiscal year and before the submission of updated information to the Regional Administrator as specified in § 264.145(f)(5). The adjustment may be made by recalculating the post-closure cost estimate in current dollars or by using an inflation factor derived from the most recent Implicit Price Deflator for Gross National Product published by the U.S. Department of Commerce in its *Survey of Current Business* as specified in § 264.145(b)(1) and (2). The inflation factor is the result of dividing the latest published annual Deflator by the Deflator for the previous year.

(1) The first adjustment is made by multiplying the post-closure cost estimate by the inflation factor. The result is the adjusted post-closure cost estimate.

(2) Subsequent adjustments are made by multiplying the latest adjusted post-closure cost estimate by the latest inflation factor.

(c) During the active life of the facility, the owner or operator must revise the post-closure cost estimate within 30 days after the Regional Administrator has approved the request to modify the post-closure plan, if the change in the post-closure plan increases the cost of post-closure care. The revised post-closure cost estimate must be adjusted for inflation as specified in § 264.144(b).

(d) The owner or operator must keep the following at the facility during the operating life of the facility: The latest post-closure cost estimate prepared in accordance with § 264.144 (a) and (c) and, when this estimate has been adjusted in accordance with § 264.144(b), the latest adjusted post-closure cost estimate.

(Approved by the Office of Management and Budget under control number 2050-0036)

[47 FR 15047, Apr. 7, 1982, as amended at 47 FR 32357, July 26, 1982; 50 FR 4514, Jan. 31, 1985; 51 FR 16449, May 2, 1986; 52 FR 46964, Dec. 10, 1987]

§ 264.145 Financial assurance for post-closure care.

The owner or operator of a hazardous waste management unit subject to the requirements of § 264.144 must establish financial assurance for post-closure care in accordance with the approved post-closure plan for the facility 60 days prior to the initial receipt of hazardous waste or the effective date of the regulation, whichever is later. He must choose from the following options:

(a) *Post-closure trust fund.* (1) An owner or operator may satisfy the requirements of this section by establishing a post-closure trust fund which conforms to the requirements of this paragraph and submitting an originally signed duplicate of the trust agreement to the Regional Administrator. An owner or operator of a new facility must submit the originally signed duplicate of the trust agreement to the Regional Administrator at least 60 days before the date on which hazardous waste is first received for disposal. The trustee must be an entity which has the authority to act as a trustee and whose trust operations are regulated and examined by a Federal or State agency.

(2) The wording of the trust agreement must be identical to the wording specified in § 264.151(a)(1), and the trust agreement must be accompanied

by a formal certification of acknowledgment (for example, see § 264.151(a)(2)). Schedule A of the trust agreement must be updated within 60 days after a change in the amount of the current post-closure cost estimate covered by the agreement.

(3) Payments into the trust fund must be made annually by the owner or operator over the term of the initial RCRA permit or over the remaining operating life of the facility as estimated in the closure plan, whichever period is shorter; this period is hereafter referred to as the "pay-in period." The payments into the post-closure trust fund must be made as follows:

(i) For a new facility, the first payment must be made before the initial receipt of hazardous waste for disposal. A receipt from the trustee for this payment must be submitted by the owner or operator to the Regional Administrator before this initial receipt of hazardous waste. The first payment must be at least equal to the current post-closure cost estimate, except as provided in § 264.145(g), divided by the number of years in the pay-in period. Subsequent payments must be made no later than 30 days after each anniversay date of the first payment. The amount of each subsequent payment must be determined by this formula:

$$\text{Next payment} = \frac{CE - CV}{Y}$$

where CE is the current post-closure cost estimate, CV is the current value of the trust fund, and Y is the number of years remaining in the pay-in period.

(ii) If an owner or operator establishes a trust fund as specified in § 265.145(a) of this chapter, and the value of that trust fund is less than the current post-closure cost estimate when a permit is awarded for the facility, the amount of the current post-closure cost estimate still to be paid into the fund must be paid in over the pay-in period as defined in paragraph (a)(3) of this section. Payments must continue to be made no later than 30 days after each anniversary date of the first payment made pursuant to Part 265 of this chapter. The amount of each payment must be determined by this formula:

$$\text{Next payment} = \frac{CE - CV}{Y}$$

where CE is the current post-closure cost estimate, CV is the current value of the trust fund, and Y is the number of years remaining in the pay-in period.

(4) The owner or operator may accelerate payments into the trust fund or he may deposit the full amount of the current post-closure cost estimate at the time the fund is established. However, he must maintain the value of the fund at no less than the value that the fund would have if annual payments were made as specified in paragraph (a)(3) of this section.

(5) If the owner or operator establishes a post-closure trust fund after having used one or more alternate mechanisms specified in this section or in § 265.145 of this chapter, his first payment must be in at least the amount that the fund would contain if the trust fund were established initially and annual payments made according to specifications of this paragraph and § 265.145(a) of this chapter, as applicable.

(6) After the pay-in period is completed, whenever the current post-closure cost estimate changes during the operating life of the facility, the owner or operator must compare the new estimate with the trustee's most recent annual valuation of the trust fund. If the value of the fund is less than the amount of the new estimate, the owner or operator, within 60 days after the change in the cost estimate, must either deposit an amount into the fund so that its value after this deposit at least equals the amount of the current post-closure cost estimate, or obtain other financial assurance as specified in this section to cover the difference.

(7) During the operating life of the facility, if the value of the trust fund is greater than the total amount of the current post-closure cost estimate, the owner or operator may submit a

(A) He has compared the data which the letter from the chief financial officer specifies as having been derived from the independently audited, year-end financial statements for the latest fiscal year with the amounts in such financial statements; and

(B) In connection with that procedure, no matters came to his attention which caused him to believe that the specified data should be adjusted.

(4) An owner or operator of a new facility must submit the items specified in paragraph (f)(3) of this section to the Regional Administrator at least 60 days before the date on which hazardous waste is first received for treatment, storage, or disposal.

(5) After the initial submission of items specified in paragraph (f)(3) of this section, the owner or operator must send updated information to the Regional Administrator within 90 days after the close of each succeeding fiscal year. This information must consist of all three items specified in paragraph (f)(3) of this section.

(6) If the owner or operator no longer meets the requirements of paragraph (f)(1) of this section, he must send notice to the Regional Administrator of intent to establish alternate financial assurance as specified in this section. The notice must be sent by certified mail within 90 days after the end of the fiscal year for which the year-end financial data show that the owner or operator no longer meets the requirements. The owner or operator must provide the alternate financial assurance within 120 days after the end of such fiscal year.

(7) The Regional Administrator may, based on a reasonable belief that the owner or operator may no longer meet the requirements of paragraph (f)(1) of this section, require reports of financial condition at any time from the owner or operator in addition to those specified in paragraph (f)(3) of this section. If the Regional Administrator finds, on the basis of such reports or other information, that the owner or operator no longer meets the requirements of paragraph (f)(1) of this section, the owner or operator must provide alternate financial assurance as specified in this section within 30 days after notification of such a finding.

(8) The Regional Administrator may disallow use of this test on the basis of qualifications in the opinion expressed by the independent certified public accountant in his report on examination of the owner's or operator's financial statements (see paragraph (f)(3)(ii) of this section). An adverse opinion or a disclaimer of opinion will be cause for disallowance. The Regional Administrator will evaluate other qualifications on an individual basis. The owner or operator must provide alternate financial assurance as specified in this section within 30 days after notification of the disallowance.

(9) The owner or operator is no longer required to submit the items specified in paragraph (f)(3) of this section when:

(i) An owner or operator substitutes alternate financial assurance as specified in this section; or

(ii) The Regional Administrator releases the owner or operator from the requirements of this section in accordance with § 264.143(i).

(10) An owner or operator may meet the requirements of this section by obtaining a written guarantee, hereafter referred to as "corporate guarantee." The guarantor must be the parent corporation of the owner or operator. The guarantor must meet the requirements for owners or operators in paragraphs (f)(1) through (8) of this section and must comply with the terms of the corporate guarantee. The wording of the corporate guarantee must be identical to the wording specified in § 264.151(h). The corporate guarantee must accompany the items sent to the Regional Administrator as specified in paragraph (f)(3) of this section. The terms of the corporate guarantee must provide that:

(i) If the owner or operator fails to perform final closure of a facility covered by the corporate guarantee in accordance with the closure plan and other permit requirements whenever required to do so, the guarantor will do so or establish a trust fund as specified in § 264.143(a) in the name of the owner or operator.

(ii) The corporate guarantee will remain in force unless the guarantor

sends notice of cancellation by certified mail to the owner or operator and to the Regional Administrator. Cancellation may not occur, however, during the 120 days beginning on the date of receipt of the notice of cancellation by both the owner or operator and the Regional Administrator, as evidenced by the return receipts.

(iii) If the owner or operator fails to provide alternate financial assurance as specified in this section and obtain the written approval of such alternate assurance from the Regional Administrator within 90 days after receipt by both the owner or operator and the Regional Administrator of a notice of cancellation of the corporate guarantee from the guarantor, the guarantor will provide such alternative financial assurance in the name of the owner or operator.

(g) *Use of multiple financial mechanisms.* An owner or operator may satisfy the requirements of this section by establishing more than one financial mechanism per facility. These mechanisms are limited to trust funds, surety bonds guaranteeing payment into a trust fund, letters of credit, and insurance. The mechanisms must be as specified in paragraphs (a), (b), (d), and (e), respectively, of this section, except that it is the combination of mechanisms, rather than the single mechanism, which must provide financial assurance for an amount at least equal to the current closure cost estimate. If an owner or operator uses a trust fund in combination with a surety bond or a letter of credit, he may use the trust fund as the standby trust fund for the other mechanisms. A single standby trust fund may be established for two or more mechanisms. The Regional Administrator may use any or all of the mechanisms to provide for closure of the facility.

(h) *Use of a financial mechanism for multiple facilities.* An owner or operator may use a financial assurance mechanism specified in this section to meet the requirements of this section for more than one facility. Evidence of financial assurance submitted to the Regional Administrator must include a list showing, for each facility, the EPA Identification Number, name, address, and the amount of funds for closure assured by the mechanism. If the facilities covered by the mechanism are in more than one Region, identical evidence of financial assurance must be submitted to and maintained with the Regional Administrators of all such Regions. The amount of funds available through the mechanism must be no less than the sum of funds that would be available if a separate mechanism had been established and maintained for each facility. In directing funds available through the mechanism for closure of any of the facilities covered by the mechanism, the Regional Administrator may direct only the amount of funds designated for that facility, unless the owner or operator agrees to the use of additional funds available under the mechanism.

(i) *Release of the owner or operator from the requirements of this section.* Within 60 days after receiving certifications from the owner or operator and an independent registered professional engineer that final closure has been completed in accordance with the approved closure plan, the Regional Administrator will notify the owner or operator in writing that he is no longer required by this section to maintain financial assurance for final closure of the facility, unless the Regional Administrator has reason to believe that final closure has not been in accordance with the approved closure plan. The Regional Administrator shall provide the owner or operator a detailed written statement of any such reason to believe that closure has not been in accordance with the approved closure plan.

[47 FR 15047, Apr. 7, 1982, as amended at 51 FR 16448, May 2, 1986]

§ 264.144 Cost estimate for post-closure care.

(a) The owner or operator of a disposal surface impoundment, disposal miscellaneous unit, land treatment unit, or landfill unit, or of a surface impoundment or waste pile required under §§ 264.228 and 264.258 to prepare a contingent closure and post-closure plan, must have a detailed written estimate, in current dollars, of the annual cost of post-closure monitoring and maintenance of the facility in ac-

cordance with the applicable post-closure regulations § 264.117 through 264.120, 264.228, 264.258, 264.280, 264.310, and 264.603.

(1) The post-closure cost estimate must be based on the costs to the owner or operator of hiring a third party to conduct post-closure care activities. A third party is a party who is neither a parent nor a subsidiary of the owner or operator. (See definition of parent corporation in § 264.141(d).)

(2) The post-closure cost estimate is calculated by multiplying the annual post-closure cost estimate by the number of years of post-closure care required under § 264.117.

(b) During the active life of the facility, the owner or operator must adjust the post-closure cost estimate for inflation within 60 days prior to the anniversary date of the establishment of the financial instrument(s) used to comply with § 264.145. For owners or operators using the financial test or corporate guarantee, the post-closure cost estimate must be updated for inflation within 30 days after the close of the firm's fiscal year and before the submission of updated information to the Regional Administrator as specified in § 264.145(f)(5). The adjustment may be made by recalculating the post-closure cost estimate in current dollars or by using an inflation factor derived from the most recent Implicit Price Deflator for Gross National Product published by the U.S. Department of Commerce in its *Survey of Current Business* as specified in § 264.145(b)(1) and (2). The inflation factor is the result of dividing the latest published annual Deflator by the Deflator for the previous year.

(1) The first adjustment is made by multiplying the post-closure cost estimate by the inflation factor. The result is the adjusted post-closure cost estimate.

(2) Subsequent adjustments are made by multiplying the latest adjusted post-closure cost estimate by the latest inflation factor.

(c) During the active life of the facility, the owner or operator must revise the post-closure cost estimate within 30 days after the Regional Administrator has approved the request to modify the post-closure plan, if the change in the post-closure plan increases the cost of post-closure care. The revised post-closure cost estimate must be adjusted for inflation as specified in § 264.144(b).

(d) The owner or operator must keep the following at the facility during the operating life of the facility: The latest post-closure cost estimate prepared in accordance with § 264.144 (a) and (c) and, when this estimate has been adjusted in accordance with § 264.144(b), the latest adjusted post-closure cost estimate.

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[47 FR 15047, Apr. 7, 1982, as amended at 47 FR 32357, July 26, 1982; 50 FR 4514, Jan. 31, 1985; 51 FR 16449, May 2, 1986; 52 FR 46964, Dec. 10, 1987]

§ 264.145 Financial assurance for post-closure care.

The owner or operator of a hazardous waste management unit subject to the requirements of § 264.144 must establish financial assurance for post-closure care in accordance with the approved post-closure plan for the facility 60 days prior to the initial receipt of hazardous waste or the effective date of the regulation, whichever is later. He must choose from the following options:

(a) *Post-closure trust fund.* (1) An owner or operator may satisfy the requirements of this section by establishing a post-closure trust fund which conforms to the requirements of this paragraph and submitting an originally signed duplicate of the trust agreement to the Regional Administrator. An owner or operator of a new facility must submit the originally signed duplicate of the trust agreement to the Regional Administrator at least 60 days before the date on which hazardous waste is first received for disposal. The trustee must be an entity which has the authority to act as a trustee and whose trust operations are regulated and examined by a Federal or State agency.

(2) The wording of the trust agreement must be identical to the wording specified in § 264.151(a)(1), and the trust agreement must be accompanied

by a formal certification of acknowledgment (for example, see § 264.151(a)(2)). Schedule A of the trust agreement must be updated within 60 days after a change in the amount of the current post-closure cost estimate covered by the agreement.

(3) Payments into the trust fund must be made annually by the owner or operator over the term of the initial RCRA permit or over the remaining operating life of the facility as estimated in the closure plan, whichever period is shorter; this period is hereafter referred to as the "pay-in period." The payments into the post-closure trust fund must be made as follows:

(i) For a new facility, the first payment must be made before the initial receipt of hazardous waste for disposal. A receipt from the trustee for this payment must be submitted by the owner or operator to the Regional Administrator before this initial receipt of hazardous waste. The first payment must be at least equal to the current post-closure cost estimate, except as provided in § 264.145(g), divided by the number of years in the pay-in period. Subsequent payments must be made no later than 30 days after each anniversay date of the first payment. The amount of each subsequent payment must be determined by this formula:

$$\text{Next payment} = \frac{CE - CV}{Y}$$

where CE is the current post-closure cost estimate, CV is the current value of the trust fund, and Y is the number of years remaining in the pay-in period.

(ii) If an owner or operator establishes a trust fund as specified in § 265.145(a) of this chapter, and the value of that trust fund is less than the current post-closure cost estimate when a permit is awarded for the facility, the amount of the current post-closure cost estimate still to be paid into the fund must be paid in over the pay-in period as defined in paragraph (a)(3) of this section. Payments must continue to be made no later than 30 days after each anniversary date of the first payment made pursuant to Part 265 of this chapter. The amount of each payment must be determined by this formula:

$$\text{Next payment} = \frac{CE - CV}{Y}$$

where CE is the current post-closure cost estimate, CV is the current value of the trust fund, and Y is the number of years remaining in the pay-in period.

(4) The owner or operator may accelerate payments into the trust fund or he may deposit the full amount of the current post-closure cost estimate at the time the fund is established. However, he must maintain the value of the fund at no less than the value that the fund would have if annual payments were made as specified in paragraph (a)(3) of this section.

(5) If the owner or operator establishes a post-closure trust fund after having used one or more alternate mechanisms specified in this section or in § 265.145 of this chapter, his first payment must be in at least the amount that the fund would contain if the trust fund were established initially and annual payments made according to specifications of this paragraph and § 265.145(a) of this chapter, as applicable.

(6) After the pay-in period is completed, whenever the current post-closure cost estimate changes during the operating life of the facility, the owner or operator must compare the new estimate with the trustee's most recent annual valuation of the trust fund. If the value of the fund is less than the amount of the new estimate, the owner or operator, within 60 days after the change in the cost estimate, must either deposit an amount into the fund so that its value after this deposit at least equals the amount of the current post-closure cost estimate, or obtain other financial assurance as specified in this section to cover the difference.

(7) During the operating life of the facility, if the value of the trust fund is greater than the total amount of the current post-closure cost estimate, the owner or operator may submit a

written request to the Regional Administrator for release of the amount in excess of the current post-closure cost estimate.

(8) If an owner or operator substitutes other financial assurance as specified in this section for all or part of the trust fund, he may submit a written request to the Regional Administrator for release of the amount in excess of the current post-closure cost estimate covered by the trust fund.

(9) Within 60 days after receiving a request from the owner or operator for release of funds as specified in paragraph (a)(7) or (8) of this section, the Regional Administrator will instruct the trustee to release to the owner or operator such funds as the Regional Administrator specifies in writing.

(10) During the period of post-closure care, the Regional Administrator may approve a release of funds if the owner or operator demonstrates to the Regional Administrator that the value of the trust fund exceeds the remaining cost of post-closure care.

(11) An owner or operator or any other person authorized to conduct post-closure care may request reimbursements for post-closure care expenditures by submitting itemized bills to the Regional Administrator. Within 60 days after receiving bills for post-closure care activities, the Regional Administrator will instruct the trustee to make reimbursements in those amounts as the Regional Administrator specifies in writing, if the Regional Administrator determines that the post-closure care expenditures are in accordance with the approved post-closure plan or otherwise justified. If the Regional Administrator does not instruct the trustee to make such reimbursements, he will provide the owner or operator with a detailed written statement of reasons.

(12) The Regional Administrator will agree to termination of the trust when:

(i) An owner or operator substitutes alternate financial assurance as specified in this section; or

(ii) The Regional Administrator releases the owner or operator from the requirements of this section in accordance with § 264.145(i).

(b) *Surety bond guaranteeing payment into a post-closure trust fund.* (1) An owner or operator may satisfy the requirements of this section by obtaining a surety bond which conforms to the requirements of this paragraph and submitting the bond to the Regional Administrator. An owner or operator of a new facility must submit the bond to the Regional Administrator at least 60 days before the date on which hazardous waste is first received for disposal. The bond must be effective before this initial receipt of hazardous waste. The surety company issuing the bond must, at a minimum, be among those listed as acceptable sureties on Federal bonds in Circular 570 of the U.S. Department of the Treasury.

(2) The wording of the surety bond must be identical to the wording specified in § 264.151(b).

(3) The owner or operator who uses a surety bond to satisfy the requirements of this section must also establish a standby trust fund. Under the terms of the bond, all payments made thereunder will be deposited by the surety directly into the standby trust fund in accordance with instructions from the Regional Administrator. This standby trust fund must meet the requirements specified in § 264.145(a), except that:

(i) An originally signed duplicate of the trust agreement must be submitted to the Regional Administrator with the surety bond; and

(ii) Until the standby trust fund is funded pursuant to the requirements of this section, the following are not required by these regulations:

(A) Payments into the trust fund as specified in § 264.145(a);

(B) Updating of Schedule A of the trust agreement (see § 264.151(a)) to show current post-closure cost estimates;

(C) Annual valuations as required by the trust agreement; and

(D) Notices of nonpayment as required by the trust agreement.

(4) The bond must guarantee that the owner or operator will:

(i) Fund the standby trust fund in an amount equal to the penal sum of the bond before the beginning of final closure of the facility; or

(ii) Fund the standby trust fund in an amount equal to the penal sum within 15 days after an administrative order to begin final closure issued by the Regional Administrator becomes final, or within 15 days after an order to begin final closure is issued by a U.S. district court or other court of competent jurisdiction; or

(iii) Provide alternate financial assurance as specified in this section, and obtain the Regional Administrator's written approval of the assurance provided, within 90 days after receipt by both the owner or operator and the Regional Administrator of a notice of cancellation of the bond from the surety.

(5) Under the terms of the bond, the surety will become liable on the bond obligation when the owner or operator fails to perform as guaranteed by the bond.

(6) The penal sum of the bond must be in an amount at least equal to the current post-closure cost estimate, except as provided in § 264.145(g).

(7) Whenever the current post-closure cost estimate increases to an amount greater than the penal sum, the owner or operator, within 60 days after the increase, must either cause the penal sum to be increased to an amount at least equal to the current post-closure cost estimate and submit evidence of such increase to the Regional Administrator, or obtain other financial assurance as specified in this section to cover the increase. Whenever the current post-closure cost estimate decreases, the penal sum may be reduced to the amount of the current post-closure cost estimate following written approval by the Regional Administrator.

(8) Under the terms of the bond, the surety may cancel the bond by sending notice of cancellation by certified mail to the owner or operator and to the Regional Administrator. Cancellation may not occur, however, during the 120 days beginning on the date of receipt of the notice of cancellation by both the owner or operator and the Regional Administrator, as evidenced by the return receipts.

(9) The owner or operator may cancel the bond if the Regional Administrator has given prior written consent based on his receipt of evidence of alternate financial assurance as specified in this section.

(c) *Surety bond guaranteeing performance of post-closure care.* (1) An owner or operator may satisfy the requirements of this section by obtaining a surety bond which conforms to the requirements of this paragraph and submitting the bond to the Regional Administrator. An owner or operator of a new facility must submit the bond to the Regional Administrator at least 60 days before the date on which hazardous waste is first received for disposal. The bond must be effective before this initial receipt of hazardous waste. The surety company issuing the bond must, at a minimum, be among those listed as acceptable sureties on Federal bonds in Circular 570 of the U.S. Department of the Treasury.

(2) The wording of the surety bond must be identical to the wording specified in § 264.151(c).

(3) The owner or operator who uses a surety bond to satisfy the requirements of this section must also establish a standby trust fund. Under the terms of the bond, all payments made thereunder will be deposited by the surety directly into the standby trust fund in accordance with instructions from the Regional Administrator. This standby trust fund must meet the requirements specified in § 264.145(a), except that:

(i) An originally signed duplicate of the trust agreement must be submitted to the Regional Administrator with the surety bond; and

(ii) Unless the standby trust fund is funded pursuant to the requirements of this section, the following are not required by these regulations:

(A) Payments into the trust fund as specified in § 264.145(a);

(B) Updating of Schedule A of the trust agreement (see § 264.151(a)) to show current post-closure cost estimates;

(C) Annual valuations as required by the trust agreement; and

(D) Notices of nonpayment as required by the trust agreement.

(4) The bond must guarantee that the owner or operator will:

(i) Perform post-closure care in accordance with the post-closure plan and other requirements of the permit for the facility; or

(ii) Provide alternate financial assurance as specified in this section, and obtain the Regional Administrator's written approval of the assurance provided, within 90 days of receipt by both the owner or operator and the Regional Administrator of a notice of cancellation of the bond from the surety.

(5) Under the terms of the bond, the surety will become liable on the bond obligation when the owner or operator fails to perform as guaranteed by the bond. Following a final administrative determination pursuant to section 3008 of RCRA that the owner or operator has failed to perform post-closure care in accordance with the approved post-closure plan and other permit requirements, under the terms of the bond the surety will perform post-closure care in accordance with the post-closure plan and other permit requirements or will deposit the amount of the penal sum into the standby trust fund.

(6) The penal sum of the bond must be in an amount at least equal to the current post-closure cost estimate.

(7) Whenever the current post-closure cost estimate increases to an amount greater than the penal sum during the operating life of the facility, the owner or operator, within 60 days after the increase, must either cause the penal sum to be increased to an amount at least equal to the current post-closure cost estimate and submit evidence of such increase to the Regional Administrator, or obtain other financial assurance as specified in this section. Whenever the current post-closure cost estimate decreases during the operating life of the facility, the penal sum may be reduced to the amount of the current post-closure cost estimate following written approval by the Regional Administrator.

(8) During the period of post-closure care, the Regional Administrator may approve a decrease in the penal sum if the owner or operator demonstrates to the Regional Administrator that the amount exceeds the remaining cost of post-closure care.

(9) Under the terms of the bond, the surety may cancel the bond by sending notice of cancellation by certified mail to the owner or operator and to the Regional Administrator. Cancellation may not occur, however, during the 120 days beginning on the date of receipt of the notice of cancellation by both the owner or operator and the Regional Administrator, as evidenced by the return receipts.

(10) The owner or operator may cancel the bond if the Regional Administrator has given prior written consent. The Regional Administrator will provide such written consent when:

(i) An owner or operator substitutes alternate financial assurance as specified in this section; or

(ii) The Regional Administrator releases the owner or operator from the requirements of this section in accordance with § 264.145(i).

(11) The surety will not be liable for deficiencies in the performance of post-closure care by the owner or operator after the Regional Administrator releases the owner or operator from the requirements of this section in accordance with § 264.145(i).

(d) *Post-closure letter of credit.* (1) An owner or operator may satisfy the requirements of this section by obtaining an irrevocable standby letter of credit which conforms to the requirements of this paragraph and submitting the letter to the Regional Administrator. An owner or operator of a new facility must submit the letter of credit to the Regional Administrator at least 60 days before the date on which hazardous waste is first received for disposal. The letter of credit must be effective before this initial receipt of hazardous waste. The issuing institution must be an entity which has the authority to issue letters of credit and whose letter-of-credit operations are regulated and examined by a Federal or State agency.

(2) The wording of the letter of credit must be identical to the wording specified in § 264.151(d).

(3) An owner or operator who uses a letter of credit to satisfy the requirements of this section must also establish a standby trust fund. Under the terms of the letter of credit, all amounts paid pursuant to a draft by the Regional Administrator will be deposited by the issuing institution directly into the standby trust fund in accordance with instructions from the Regional Administrator. This standby trust fund must meet the requirements of the trust fund specified in § 264.145(a), except that:

(i) An originally signed duplicate of the trust agreement must be submitted to the Regional Administrator with the letter of credit; and

(ii) Unless the standby trust fund is funded pursuant to the requirements of this section, the following are not required by these regulations:

(A) Payments into the trust fund as specified in § 264.145(a);

(B) Updating of Schedule A of the trust agreement (see § 264.151(a)) to show current post-closure cost estimates;

(C) Annual valuations as required by the trust agreement; and

(D) Notices of nonpayment as required by the trust agreement.

(4) The letter of credit must be accompanied by a letter from the owner or operator referring to the letter of credit by number, issuing institution, and date, and providing the following information: the EPA Identification Number, name, and address of the facility, and the amount of funds assured for post-closure care of the facility by the letter of credit.

(5) The letter of credit must be irrevocable and issued for a period of at least 1 year. The letter of credit must provide that the expiration date will be automatically extended for a period of at least 1 year unless, at least 120 days before the current expiration date, the issuing institution notifies both the owner or operator and the Regional Administrator by certified mail of a decision not to extend the expiration date. Under the terms of the letter of credit, the 120 days will begin on the date when both the owner or operator and the Regional Administrator have received the notice, as evidenced by the return receipts.

(6) The letter of credit must be issued in a amount at least equal to the current post-closure cost estimate, except as provided in § 264.145(g).

(7) Whenever the current post-closure cost estimate increases to an amount greater than the amount of the credit during the operating life of the facility, the owner or operator, within 60 days after the increase, must either cause the amount of the credit to be increased so that it at least equals the current post-closure cost estimate and submit evidence of such increase to the Regional Administrator, or obtain other financial assurance as specified in this section to cover the increase. Whenever the current post-closure cost estimate decreases during the operating life of the facility, the amount of the credit may be reduced to the amount of the current post-closure cost estimate following written approval by the Regional Administrator.

(8) During the period of post-closure care, the Regional Administrator may approve a decrease in the amount of the letter of credit if the owner or operator demonstrates to the Regional Administrator that the amount exceeds the remaining cost of post-closure care.

(9) Following a final administrative determination pursuant to section 3008 of RCRA that the owner or operator has failed to perform post-closure care in accordance with the approved post-closure plan and other permit requirements, the Regional Administrator may draw on the letter of credit.

(10) If the owner or operator does not establish alternate financial assurance as specified in this section and obtain written approval of such alternate assurance from the Regional Administrator within 90 days after receipt by both the owner or operator and the Regional Administrator of a notice from the issuing institution that it has decided not to extend the letter of credit beyond the current expiration date, the Regional Administrator will draw on the letter of credit. The Regional Administrator may delay the drawing if the issuing institution grants an extension of the term of the credit. During the last 30 days of any such extension the Regional Administrator will draw on the letter of credit if the owner or operator has

failed to provide alternate financial assurance as specified in this section and obtain written approval of such assurance from the Regional Administrator.

(11) The Regional Administrator will return the letter of credit to the issuing institution for termination when:

(i) An owner or operator substitutes alternate financial assurance as specified in this section; or

(ii) The Regional Administrator releases the owner or operator from the requirements of this section in accordance with § 264.145(i).

(e) *Post-closure insurance.* (1) An owner or operator may satisfy the requirements of this section by obtaining post-closure insurance which conforms to the requirements of this paragraph and submitting a certificate of such insurance to the Regional Administrator. An owner or operator of a new facility must submit the certificate of insurance to the Regional Administrator at least 60 days before the date on which hazardous waste is first received for disposal. The insurance must be effective before this initial receipt of hazardous waste. At a minimum, the insurer must be licensed to transact the business of insurance, or eligible to provide insurance as an excess or surplus lines insurer, in one or more States.

(2) The wording of the certificate of insurance must be identical to the wording specified in § 264.151(e).

(3) The post-closure insurance policy must be issued for a face amount at least equal to the current post-closure cost estimate, except as provided in § 264.145(g). The term "face amount" means the total amount the insurer is obligated to pay under the policy. Actual payments by the insurer will not change the face amount, although the insurer's future liability will be lowered by the amount of the payments.

(4) The post-closure insurance policy must guarantee that funds will be available to provide post-closure care of the facility whenever the post-closure period begins. The policy must also guarantee that once post-closure care begins, the insurer will be responsible for paying out funds, up to an amount equal to the face amount of the policy, upon the direction of the Regional Administrator, to such party or parties as the Regional Administrator specifies.

(5) An owner or operator or any other person authorized to conduct post-closure care may request reimbursements for post-closure care expenditures by submitting itemized bills to the Regional Administrator. Within 60 days after receiving bills for post-closure care activities, the Regional Administrator will instruct the insurer to make reimbursements in those amounts as the Regional Administrator specifies in writing, if the Regional Administrator determines that the post-closure care expenditures are in accordance with the approved post-closure plan or otherwise justified. If the Regional Administrator does not instruct the insurer to make such reimbursements, he will provide the owner or operator with a detailed written statement of reasons.

(6) The owner or operator must maintain the policy in full force and effect until the Regional Administrator consents to termination of the policy by the owner or operator as specified in paragraph (e)(11) of this section. Failure to pay the premium, without substitution of alternate financial assurance as specified in this section, will constitute a significant violation of these regulations, warranting such remedy as the Regional Administrator deems necessary. Such violation will be deemed to begin upon receipt by the Regional Administrator of a notice of future cancellation, termination, or failure to renew due to nonpayment of the premium, rather than upon the date of expiration.

(7) Each policy must contain a provision allowing assignment of the policy to a successor owner or operator. Such assignment may be conditional upon consent of the insurer, provided such consent is not unreasonably refused.

(8) The policy must provide that the insurer may not cancel, terminate, or fail to renew the policy except for failure to pay the premium. The automatic renewal of the policy must, at a minimum, provide the insured with the option of renewal at the face amount of the expiring policy. If there is a failure to pay the premium, the insurer may elect to cancel, terminate, or fail to renew the policy by sending notice by certified mail to the owner or operator and the Regional Administrator. Cancellation, termination, or failure to renew may not occur, however, during the 120 days beginning with the date of receipt of the notice by both the Regional Administrator and the owner or operator, as evidenced by the return receipts. Cancellation, termination, or failure to renew may not occur and the policy will remain in full force and effect in the event that on or before the date of expiration:

(i) The Regional Administrator deems the facility abandoned; or

(ii) The permit is terminated or revoked or a new permit is denied; or

(iii) Closure is ordered by the Regional Administrator or a U.S. district court or other court of competent jurisdiction; or

(iv) The owner or operator is named as debtor in a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code; or

(v) The premium due is paid.

(9) Whenever the current post-closure cost estimate increases to an amount greater than the face amount of the policy during the operating life of the facility, the owner or operator, within 60 days after the increase, must either cause the face amount to be increased to an amount at least equal to the current post-closure cost estimate and submit evidence of such increase to the Regional Administrator, or obtain other financial assurance as specified in this section to cover the increase. Whenever the current post-closure cost estimate decreases during the operating life of the facility, the face amount may be reduced to the amount of the current post-closure cost estimate following written approval by the Regional Administrator.

(10) Commencing on the date that liability to make payments pursuant to the policy accrues, the insurer will thereafter annually increase the face amount of the policy. Such increase must be equivalent to the face amount of the policy, less any payments made, multiplied by an amount equivalent to 85 percent of the most recent investment rate or of the equivalent coupon-issue yield announced by the U.S. Treasury for 26-week Treasury securities.

(11) The Regional Administrator will give written consent to the owner or operator that he may terminate the insurance policy when:

(i) An owner or operator substitutes alternate financial assurance as specified in this section; or

(ii) The Regional Administrator releases the owner or operator from the requirements of this section in accordance with § 264.145(i).

(f) *Financial test and corporate guarantee for post-closure care.* (1) An owner or operator may satisfy the requirements of this section by demonstrating that he passes a financial test as specified in this paragraph. To pass this test the owner or operator must meet the criteria of either paragraph (f)(1)(i) or (ii) of this section:

(i) The owner or operator must have:

(A) Two of the following three ratios: a ratio of total liabilities to net worth less than 2.0; a ratio of the sum of net income plus depreciation, depletion, and amortization to total liabilities greater than 0.1; and a ratio of current assets to current liabilities greater than 1.5; and

(B) Net working capital and tangible net worth each at least six times the sum of the current closure and post-closure cost estimates and the current plugging and abandonment cost estimates; and

(C) Tangible net worth of at least $10 million; and

(D) Assets in the United States amounting to at least 90 percent of his total assets or at least six times the sum of the current closure and post-closure cost estimates and the current plugging and abandonment cost estimates.

(ii) The owner or operator must have:

(A) A current rating for his most recent bond issuance of AAA, AA, A, or BBB as issued by Standard and Poor's or Aaa, Aa, A or Baa as issued by Moody's; and

(B) Tangible net worth at least six times the sum of the current closure and post-closure cost estimates and the current plugging and abandonment cost estimates; and

(C) Tangible net worth of at least $10 million; and

(D) Assets located in the United States amounting to at least 90 percent of his total assets or at least six times the sum of the current closure and post-closure cost estimates and the current plugging and abandonment cost estimates.

(2) The phrase "current closure and post-closure cost estimates" as used in paragraph (f)(1) of this section refers to the cost estimates required to be shown in paragraphs 1-4 of the letter from the owner's or operator's chief financial officer (§ 264.151(f)). The phrase "current plugging and abandonment cost estimates" as used in paragraph (f)(1) of this section refers to the cost estimates required to be shown in paragraphs 1-4 of the letter from the owner's or operator's chief financial officer (§ 144.70(f) of this title).

(3) To demonstrate that he meets this test, the owner or operator must submit the following items to the Regional Administrator:

(i) A letter signed by the owner's or operator's chief financial officer and worded as specified in § 264.151(f); and

(ii) A copy of the independent certified public accountant's report on examination of the owner's or operator's financial statements for the latest completed fiscal year; and

(iii) A special report from the owner's or operator's independent certified public accountant to the owner or operator stating that:

(A) He has compared the data which the letter from the chief financial officer specifies as having been derived from the independently audited, year-end financial statements for the latest fiscal year with the amounts in such financial statements; and

(B) In connection with that procedure, no matters came to his attention which caused him to believe that the specified data should be adjusted.

(4) An owner or operator of a new facility must submit the items specified in paragraph (f)(3) of this section to the Regional Administrator at least 60 days before the date on which hazardous waste is first received for disposal.

(5) After the initial submission of items specified in paragraph (f)(3) of this section, the owner or operator must send updated information to the Regional Administrator within 90 days after the close of each succeeding fiscal year. This information must consist of all three items specified in paragraph (f)(3) of this section.

(6) If the owner or operator no longer meets the requirements of paragraph (f)(1) of this section, he must send notice to the Regional Administrator of intent to establish alternate financial assurance as specified in this section. The notice must be sent by certified mail within 90 days after the end of the fiscal year for which the year-end financial data show that the owner or operator no longer meets the requirements. The owner or operator must provide the alternate financial assurance within 120 days after the end of such fiscal year.

(7) The Regional Administrator may, based on a reasonable belief that the owner or operator may no longer meet the requirements of paragraph (f)(1) of this section, require reports of financial condition at any time from the owner or operator in addition to those specified in paragraph (f)(3) of this section. If the Regional Administrator finds, on the basis of such reports or other information, that the owner or operator no longer meets the requirements of paragraph (f)(1) of this section, the owner or operator must provide alternate financial assurance as specified in this section within 30 days after notification of such a finding.

(8) The Regional Administrator may disallow use of this test on the basis of qualifications in the opinion expressed by the independent certified public accountant in his report on examination of the owner's or operator's financial statements (see paragraph (f)(3)(ii) of this section). An adverse opinion or a disclaimer of opinion will be cause for disallowance. The Regional Administrator will evaluate other qualifications on an individual basis. The owner or operator must provide alternate financial assurance as specified in this section within 30 days after notification of the disallowance.

(9) During the period of post-closure care, the Regional Administrator may approve a decrease in the current post-closure cost estimate for which this test demonstrates financial assurance if the owner or operator demonstrates to the Regional Administrator that the amount of the cost estimate exceeds the remaining cost of post-closure care.

(10) The owner or operator is no longer required to submit the items specified in paragraph (f)(3) of this section when:

(i) An owner or operator substitutes alternate financial assurance as specified in this section; or

(ii) The Regional Administrator releases the owner or operator from the requirements of this section in accordance with § 264.145(i).

(11) An owner or operator may meet the requirements of this section by obtaining a written guarantee, hereafter referred to as "corporate guarantee." The guarantor must be the parent corporation of the owner or operator. The guarantor must meet the requirements for owners or operators in paragraphs (f)(1) through (9) of this section and must comply with the terms of the corporate guarantee. The wording of the corporate guarantee must be identical to the wording specified in § 264.151(h). The corporate guarantee must accompany the items sent to the Regional Administrator as specified in paragraph (f)(3) of this section. The terms of the corporate guarantee must provide that:

(i) If the owner or operator fails to perform post-closure care of a facility covered by the corporate guarantee in accordance with the post-closure plan and other permit requirements whenever required to do so, the guarantor will do so or establish a trust fund as specified in § 264.145(a) in the name of the owner or operator.

(ii) The corporate guarantee will remain in force unless the guarantor sends notice of cancellation by certified mail to the owner or operator and to the Regional Administrator. Cancellation may not occur, however, during the 120 days beginning on the date of receipt of the notice of cancellation by both the owner or operator and the Regional Administrator, as evidenced by the return receipts.

(iii) If the owner or operator fails to provide alternate financial assurance as specified in this section and obtain the written approval of such alternate assurance from the Regional Administrator within 90 days after receipt by both the owner or operator and the Regional Administrator of a notice of cancellation of the corporate guarantee from the guarantor, the guarantor will provide such alternate financial assurance in the name of the owner or operator.

(g) *Use of multiple financial mechanisms.* An owner or operator may satisfy the requirements of this section by establishing more than one financial mechanism per facility. These mechanisms are limited to trust funds, surety bonds guaranteeing payment into a trust fund, letters of credit, and insurance. The mechanisms must be as specified in paragraphs (a), (b), (d), and (e), respectively, of this section, except that it is the combination of mechanisms, rather than the single mechanism, which must provide financial assurance for an amount at least equal to the current post-closure cost estimate. If an owner or operator uses a trust fund in combination with a surety bond or a letter of credit, he may use the trust fund as the standby trust fund for the other mechanisms. A single standby trust fund may be established for two or more mechanisms. The Regional Administrator may use any or all of the mechanisms to provide for post-closure care of the facility.

(h) *Use of a financial mechanism for multiple facilities.* An owner or operator may use a financial assurance mechanism specified in this section to meet the requirements of this section for more than one facility. Evidence of financial assurance submitted to the Regional Administrator must include a list showing, for each facility, the EPA Identification Number, name, address, and the amount of funds for post-closure care assured by the mechanism. If the facilities covered by the mechanism are in more than one Region, identical evidence of financial assurance must be submitted to and maintained with the Regional Administra-

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tors of all such Regions. The amount of funds available through the mechanism must be no less than the sum of funds that would be available if a separate mechanism had been established and maintained for each facility. In directing funds available through the mechanism for post-closure care of any of the facilities covered by the mechanism, the Regional Administrator may direct only the amount of funds designated for that facility, unless the owner or operator agrees to the use of additional funds available under the mechanism.

(i) *Release of the owner or operator from the requirements of this section.* Within 60 days after receiving certifications from the owner or operator and an independent registered professional engineer that the post-closure care period has been completed for a hazardous waste disposal unit in accordance with the approved plan, the Regional Administrator will notify the owner or operator that he is no longer required to maintain financial assurance for post-closure care of that unit, unless the Regional Administrator has reason to believe that post-closure care has not been in accordance with the approved post-closure plan. The Regional Administrator shall provide the owner or operator with a detailed written statement of any such reason to believe that post-closure care has not been in accordance with the approved post-closure plan.

[47 FR 15047, Apr. 7, 1982, as amended at 51 FR 16449, May 2, 1986]

§ 264.146 Use of a mechanism for financial assurance of both closure and post-closure care.

An owner or operator may satisfy the requirements for financial assurance for both closure and post-closure care for one or more facilities by using a trust fund, surety bond, letter of credit, insurance, financial test, or corporate guarantee that meets the specifications for the mechanism in both §§ 264.143 and 264.145. The amount of funds available through the mechanism must be no less than the sum of funds that would be available if a separate mechanism had been established and maintained for financial assurance of closure and of post-closure care.

§ 264.147 Liability requirements.

(a) *Coverage for sudden accidental occurrences.* An owner or operator of a hazardous waste treatment, storage, or disposal facility, or a group of such facilities, must demonstrate financial responsibility for bodily injury and property damage to third parties caused by sudden accidental occurrences arising from operations of the facility or group of facilities. The owner or operator must have and maintain liability coverage for sudden accidental occurrences in the amount of at least $1 million per occurrence with an annual aggregate of at least $2 million, exclusive of legal defense costs. This liability coverage may be demonstrated in one of three ways, as specified in paragraphs (a)(1), (2), and (3) of this section:

(1) An owner or operator may demonstrate the required liability coverage by having liability insurance as specified in this paragraph.

(i) Each insurance policy must be amended by attachment of the Hazardous Waste Facility Liability Endorsement or evidenced by a Certificate of Liability Insurance. The wording of the endorsement must be identical to the wording specified in § 264.151(i). The wording of the certificate of insurance must be identical to the wording specified in § 264.151(j). The owner or operator must submit a signed duplicate original of the endorsement or the certificate of insurance to the Regional Administrator, or Regional Administrators if the facilities are located in more than one Region. If requested by a Regional Administrator, the owner or operator must provide a signed duplicate original of the insurance policy. An owner or operator of a new facility must submit the signed duplicate original of the Hazardous Waste Facility Liability Endorsement or the Certificate of Liability Insurance to the Regional Administrator at least 60 days before the date on which hazardous waste is first received for treatment, storage, or disposal. The insurance must be effective before this initial receipt of hazardous waste.

(ii) Each insurance policy must be issued by an insurer which, at a minimum, is licensed to transact the business of insurance, or eligible to provide insurance as an excess or surplus lines insurer, in one or more States.

(2) An owner operator may meet the requirements of this section by passing a financial test or using the corporate guarantee for liability coverage as specified in paragraph (g) of this section.

(3) An owner or operator may demonstrate the required liability coverage through use of the financial test, insurance, the corporate guarantee, a combination of the financial test and insurance, or a combination of the corporate guarantee and insurance. The amount of coverage demonstrated must total at least the minimum amounts required by this paragraph.

(b) *Coverage for nonsudden accidental occurrences.* An owner or operator of a surface impoundment, landfill, land treatment facility, or miscellaneous disposal unit that is used to manage hazardous waste, or a group of such facilities, must demonstrate financial responsibility for bodily injury and property damage to third parties caused by nonsudden accidental occurrences arising from operations of the facility or group of facilities. The owner or operator must have and maintain liability coverage for nonsudden accidental occurrences in the amount of at least $3 million per occurrence with an annual aggregate of at least $6 million, exclusive of legal defense costs. This liability coverage may be demonstrated in one of three ways, as specified in paragraphs (b)(1), (2), and (3) of this section:

(1) An owner or operator may demonstrate the required liability coverage by having liability insurance as specified in this paragraph.

(i) Each insurance policy must be amended by attachment of the Hazardous Waste Facility Liability Endorsement or evidenced by a Certificate of Liability Insurance. The wording of the endorsement must be identical to the wording specified in § 264.151(i). The wording of the certificate of insurance must be identical to the wording specified in § 264.151(j). The owner or operator must submit a signed duplicate original of the endorsement or the certificate of insurance to the Regional Administrator, or Regional Administrators if the facilities are located in more than one Region. If requested by a Regional Administrator, the owner or operator must provide a signed duplicate original of the insurance policy. An owner or operator of a new facility must submit the signed duplicate original of the Hazardous Waste Facility Liability Endorsement or the Certificate of Liability Insurance to the Regional Administrator at least 60 days before the date on which hazardous waste is first received for treatment, storage, or disposal. The insurance must be effective before this initial receipt of hazardous waste.

(ii) Each insurance policy must be issued by an insurer which, at a minimum, is licensed to transact the business of insurance, or eligible to provide insurance as an excess or surplus lines insurer, in one or more States.

(2) An owner or operator may meet the requirements of this section by passing a financial test or using the corporate guarantee for liability coverage as specified in paragraphs (f) and (g) of this section.

(3) An owner or operator may demonstrate the required liability coverage through use of the financial test, insurance, the corporate guarantee, a combination of the financial test and insurance, or a combination of the corporate guarantee and insurance. The amounts of coverage demonstrated must total at least the minimum amounts required by this paragraph.

(4) For existing facilities, the required liability coverage for nonsudden accidental occurrences must be demonstrated by the dates listed below. The total sales or revenues of the owner or operator in all lines of business, in the fiscal year preceding the effective date of these regulations, will determine which of the dates applies. If the owner and operator of a facility are two different parties, or if there is more than one owner or operator, the sales or revenues of the owner or operator with the largest sales or revenues will determine the

date by which the coverage must be demonstrated. The dates are as follows:

(i) For an owner or operator with sales or revenues totalling $10 million or more, 6 months after the effective date of these regulations.

(ii) For an owner or operator with sales or revenues greater than $5 million but less than $10 million, 18 months after the effective date of these regulations.

(iii) All other owners or operators, 30 months after the effective date of these regulations.

(c) *Request for variance.* If an owner or operator can demonstrate to the satisfaction of the Regional Administrator that the levels of financial responsibility required by paragraph (a) or (b) of this section are not consistent with the degree and duration of risk associated with treatment, storage, or disposal at the facility or group of facilities, the owner or operator may obtain a variance from the Regional Administrator. The request for a variance must be submitted to the Regional Administrator as part of the application under § 270.14 of this chapter for a facility that does not have a permit, or pursuant to the procedures for permit modification under § 124.5 of this chapter for a facility that has a permit. If granted, the variance will take the form of an adjusted level of required liability coverage, such level to be based on the Regional Administrator's assessment of the degree and duration of risk associated with the ownership or operation of the facility or group of facilities. The Regional Administrator may require an owner or operator who requests a variance to provide such technical and engineering information as is deemed necessary by the Regional Administrator to determine a level of financial responsibility other than that required by paragraph (a) or (b) of this section. Any request for a variance for a permitted facility will be treated as a request for a permit modification under §§ 270.41(a)(5) and 124.5 of this chapter.

(d) *Adjustments by the Regional Administrator.* If the Regional Administrator determines that the levels of financial responsibility required by paragraph (a) or (b) of this section are not consistent with the degree and duration of risk associated with treatment, storage, or disposal at the facility or group of facilities, the Regional Administrator may adjust the level of financial responsibility required under paragraph (a) or (b) of this section as may be necessary to protect human health and the environment. This adjusted level will be based on the Regional Administrator's assessment of the degree and duration of risk associated with the ownership or operation of the facility or group of facilities. In addition, if the Regional Administrator determines that there is a significant risk to human health and the environment from nonsudden accidental occurrences resulting from the operations of a facility that is not a surface impoundment, landfill, or land treatment facility, he may require that an owner or operator of the facility comply with paragraph (b) of this section. An owner or operator must furnish to the Regional Administrator, within a reasonable time, any information which the Regional Administrator requests to determine whether cause exists for such adjustments of level or type of coverage. Any adjustment of the level or type of coverage for a facility that has a permit will be treated as a permit modification under §§ 270.41(a)(5) and 124.5 of this chapter.

(e) *Period of coverage.* Within 60 days after receiving certifications from the owner or operator and an independent registered professional engineer that final closure has been completed in accordance with the approved closure plan, the Regional Administrator will notify the owner or operator in writing that he is no longer required by this section to maintain liability coverage for that facility, unless the Regional Administrator has reason to believe that closure has not been in accordance with the approved closure plan.

(f) *Financial test for liability coverage.* (1) An owner or operator may satisfy the requirements of this section by demonstrating that he passes a financial test as specified in this paragraph. To pass this test the owner or operator must meet the criteria of paragraph (f)(1)(i) or (ii):

(i) The owner or operator must have:

(A) Net working capital and tangible net worth each at least six times the amount of liability coverage to be demonstrated by this test; and

(B) Tangible net worth of at least $10 million; and

(C) Assets in the United States amounting to either: (*1*) At least 90 percent of his total assets; or (*2*) at least six times the amount of liability coverage to be demonstrated by this test.

(ii) The owner or operator must have:

(A) A current rating for his most recent bond issuance of AAA, AA, A, or BBB as issued by Standard and Poor's, or Aaa, Aa, A, or Baa as issued by Moody's; and

(B) Tangible net worth of at least $10 million; and

(C) Tangible net worth at least six times the amount of liability coverage to be demonstrated by this test; and

(D) Assets in the United States amounting to either: (*1*) At least 90 percent of his total assets; or (*2*) at least six times the amount of liability coverage to be demonstrated by this test.

(2) The phrase "amount of liability coverage" as used in paragraph (f)(1) of this section refers to the annual aggregate amounts for which coverage is required under paragraphs (a) and (b) of this section.

(3) To demonstrate that he meets this test, the owner or operator must submit the following three items to the Regional Administrator:

(i) A letter signed by the owner's or operator's chief financial officer and worded as specified in § 264.151(g). If an owner or operator is using the financial test to demonstrate both assurance for closure or post-closure care, as specified by §§ 264.143(f), 264.145(f), 265.143(e), and 265.145(e), and liability coverage, he must submit the letter specified in § 264.151(g) to cover both forms of financial responsibility; a separate letter as specified in § 264.151(f) is not required.

(ii) A copy of the independent certified public accountant's report on examination of the owner's or operator's financial statements for the latest completed fiscal year.

(iii) A special report from the owner's or operator's independent certified public accountant to the owner or operator stating that:

(A) He has compared the data which the letter from the chief financial officer specifies as having been derived from the independently audited, year-end financial statements for the latest fiscal year with the amounts in such financial statements; and

(B) In connection with that procedure, no matters came to his attention which caused him to believe that the specified data should be adjusted.

(4) An owner or operator of a new facility must submit the items specified in paragraph (f)(3) of this section to the Regional Administrator at least 60 days before the date on which hazardous waste is first received for treatment, storage, or disposal.

(5) After the initial submission of items specified in paragraph (f)(3) of this section, the owner or operator must send updated information to the Regional Administrator within 90 days after the close of each succeeding fiscal year. This information must consist of all three items specified in paragraph (f)(3) of this section.

(6) If the owner or operator no longer meets the requirements of paragraph (f)(1) of this section, he must obtain insurance for the entire amount of required liability coverage as specified in this section. Evidence of insurance must be submitted to the Regional Administrator within 90 days after the end of the fiscal year for which the year-end financial data show that the owner or operator no longer meets the test requirements.

(7) The Regional Administrator may disallow use of this test on the basis of qualifications in the opinion expressed by the independent certified public accountant in his report on examination of the owner's or operator's financial statements (see paragraph (f)(3)(ii) of this section). An adverse opinion or a disclaimer of opinion will be cause for disallowance. The Regional Administrator will evaluate other qualifications on an individual basis. The owner or operator must provide evidence of insurance for the entire

amount of required liability coverage as specified in this section within 30 days after notification of disallowance.

(g) Corporate guarantee for liability coverage. (1) Subject to paragraph (g)(2) of this section, an owner or operator may meet the requirements of this section by obtaining a written guarantee, hereinafter referred to as "corporate guarantee." The guarantor must be the parent corporation of the owner or operator. The guarantee must meet the requirements for owners or operators in paragraphs (f)(1) through (7) of this section. The wording of the corporate guarantee must be identical to the wording specified in § 264.151(h)(2). A certified copy of the corporate guarantee must accompany the items sent to the Regional Administrator as specified in paragraph (f)(3) of this section. The terms of the corporate guarantee must provide that:

(i) If the owner or operator fails to satisfy a judgment based on a determination of liability for bodily injury or property damage to third parties caused by sudden or nonsudden accidental occurrences (or both as the case may be), arising from the operation of facilities covered by this corporate guarantee, or fails to pay an amount agreed to in settlement of claims arising from or alleged to arise from such injury or damage, the guarantor will do so up to the limits of coverage.

(ii) The corporate guarantee will remain in force unless the guarantor sends notice of cancellation by certified mail to the owner or operator and to the Regional Administrator(s). This guarantee may not be terminated unless and until the EPA Regional Administrator(s) approve(s) alternate liability coverage complying with section 264.147 and/or 265.147.

(2)(i) In the case of corporations incorporated in the United States, a corporate guarantee may be used to satisfy the requirements of this section only if the Attorneys General or Insurance Commissioners of (A) the State in which the guarantor is incorporated, and (B) each State in which a facility covered by the guarantee is located have submitted a written statement to EPA that a corporate guarantee executed as described in this section and § 264.151(h)(2) is a legally valid and enforceable obligation in that State.

(ii) In the case of corporations incorporated outside the United States, a corporate guarantee may be used to satisfy the requirements of this section only if (A) the non-U.S. corporation has identified a registered agent for service of process in each State in which a facility covered by the guarantee is located and in the State in which it has its principal place of business, and (B) the Attorney General or Insurance Commissioner of each State in which a facility covered by the guarantee is located and the State in which the guarantor corporation has its principal place of business, has submitted a written statement to EPA that a corporate guarantee executed as described in this section and § 264.151(h)(2) is a legally valid and enforceable obligation in that State.

(h) Notwithstanding any other provision of this part, an owner or operator using liability insurance to satisfy the requirements of this section may use, until October 16, 1982, a Hazardous Waste Facility Liability Endorsement or Certificate of Liability Insurance that does not certify that the insurer is licensed to transact the business of insurance, or eligible as an excess or surplus lines insurer, in one or more States.

(Approved by the Office of Management and Budget under control number 2000-0445, for paragraphs (a)(1)(i), (b)(1)(i), (c), (d), and (f)(3) through (6))

[47 FR 16554, Apr. 16, 1982, as amended at 47 FR 28627, July 1, 1982; 47 FR 30447, July 13, 1982; 48 FR 30115, June 30, 1983; 51 FR 16450, May 2, 1986; 51 FR 25354, July 11, 1986; 52 FR 44320, Nov. 18, 1987; 52 FR 46964, Dec. 10, 1987]

§ 264.148 Incapacity of owners or operators, guarantors, or financial institutions.

(a) An owner or operator must notify the Regional Administrator by certified mail of the commencement of a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code, naming the owner or operator as debtor, within 10 days after commencement of the proceeding. A guarantor of a corporate guarantee as specified in §§ 264.143(f) and 264.145(f) must make such a notification if he is named as debtor, as required under the terms of the corporate guarantee (§ 264.151(h)).

(b) An owner or operator who fulfills the requirements of § 264.143, § 264.145, or § 264.147 by obtaining a trust fund, surety bond, letter of credit, or insurance policy will be deemed to be without the required financial assurance or liability coverage in the event of bankruptcy of the trustee or issuing institution, or a suspension or revocation of the authority of the trustee institution to act as trustee or of the institution issuing the surety bond, letter of credit, or insurance policy to issue such instruments. The owner or operator must establish other financial assurance or liability coverage within 60 days after such an event.

§ 264.149 Use of State-required mechanisms.

(a) For a facility located in a State where EPA is administering the requirements of this subpart but where the State has hazardous waste regulations that include requirements for financial assurance of closure or post-closure care or liability coverage, an owner or operator may use State-required financial mechanisms to meet the requirements of § 264.143, § 264.145, or § 264.147, if the Regional Administrator determines that the State mechanisms are at least equivalent to the financial mechanism specified in this subpart. The Regional Administrator will evaluate the equivalency of the mechanisms principally in terms of (1) certainty of the availability of funds for the required closure or post-closure care activities or liability coverage and (2) the amount of funds that will be made available. The Regional Administrator may also consider other factors as he deems appropriate. The owner or operator must submit to the Regional Administrator evidence of the establishment of the mechanism together with a letter requesting that the State-required mechanism be considered acceptable for meeting the requirements of this subpart. The submission must include the following information: The facility's EPA Identification Number, name, and address, and the amount of funds for closure or post-closure care or liability coverage assured by the mechanism. The Regional Administrator will notify the owner or operator of his determination regarding the mechanism's acceptability in lieu of financial mechanisms specified in this subpart. The Regional Administrator may require the owner or operator to submit additional information as is deemed necessary to make this determination. Pending this determination, the owner or operator will be deemed to be in compliance with the requirements of § 264.143, § 264.145, or § 264.147, as applicable.

(b) If a State-required mechanism is found acceptable as specified in paragraph (a) of this section except for the amount of funds available, the owner or operator may satisfy the requirements of this subpart by increasing the funds available through the State-required mechanism or using additional financial mechanisms as specified in this subpart. The amount of funds available through the State and Federal mechanisms must at least equal the amount required by this subpart.

§ 264.150 State assumption of responsibility.

(a) If a State either assumes legal responsibility for an owner's or operator's compliance with the closure, post-closure care, or liability requirements of this part or assures that funds will be available from State sources to cover those requirements, the owner or operator will be in compliance with the requirements of § 264.143, § 264.145, or § 264.147 if the Regional Administrator determines that the State's assumption of responsibility is at least equivalent to the financial mechanisms specified in this subpart. The Regional Administrator will evaluate the equivalency of State guarantees principally in terms of (1) certainty of the availability of funds for the required closure or post-closure care activities or liability coverage and (2) the amount of funds that will be made available. The Regional Administrator may also consider other factors as he deems appropriate. The

owner or operator must submit to the Regional Administrator a letter from the State describing the nature of the State's assumption of responsibility together with a letter from the owner or operator requesting that the State's assumption of responsibility be considered acceptable for meeting the requirements of this subpart. The letter from the State must include, or have attached to it, the following information: the facility's EPA Identification Number, name, and address, and the amount of funds for closure or post-closure care or liability coverage that are guaranteed by the State. The Regional Administrator will notify the owner or operator of his determination regarding the acceptability of the State's guarantee in lieu of financial mechanisms specified in this subpart. The Regional Administrator may require the owner or operator to submit additional information as is deemed necessary to make this determination. Pending this determination, the owner or operator will be deemed to be in compliance with the requirements of § 264.143, § 264.145, or § 264.147, as applicable.

(b) If a State's assumption of responsibility is found acceptable as specified in paragraph (a) of this section except for the amount of funds available, the owner or operator may satisfy the requirements of this subpart by use of both the State's assurance *and* additional financial mechanisms as specified in this subpart. The amount of funds available through the State and Federal mechanisms must at least equal the amount required by this subpart.

§ 264.151 Wording of the instruments.

(a)(1) A trust agreement for a trust fund, as specified in § 264.143(a) or § 264.145(a) or § 265.143(a) or § 265.145(a) of this chapter, must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

TRUST AGREEMENT

Trust Agreement, the "Agreement," entered into as of [date] by and between [name of the owner or operator], a [name of State] [insert "corporation," "partnership," "association," or "proprietorship"], the "Grantor," and [name of corporate trustee], [insert "incorporated in the State of ——" or "a national bank"], the "Trustee."

Whereas, the United States Environmental Protection Agency, "EPA," an agency of the United States Government, has established certain regulations applicable to the Grantor, requiring that an owner or operator of a hazardous waste management facility shall provide assurance that funds will be available when needed for closure and/or post-closure care of the facility,

Whereas, the Grantor has elected to establish a trust to provide all or part of such financial assurance for the facilities identified herein,

Whereas, the Grantor, acting through its duly authorized officers, has selected the Trustee to be the trustee under this agreement, and the Trustee is willing to act as trustee,

Now, Therefore, the Grantor and the Trustee agree as follows:

Section 1. Definitions. As used in this Agreement:

(a) The term "Grantor" means the owner or operator who enters into this Agreement and any successors or assigns of the Grantor.

(b) The term "Trustee" means the Trustee who enters into this Agreement and any successor Trustee.

Section 2. Identification of Facilities and Cost Estimates. This Agreement pertains to the facilities and cost estimates identified on attached Schedule A [on Schedule A, for each facility list the EPA Identification Number, name, address, and the current closure and/or post-closure cost estimates, or portions thereof, for which financial assurance is demonstrated by this Agreement].

Section 3. Establishment of Fund. The Grantor and the Trustee hereby establish a trust fund, the "Fund," for the benefit of EPA. The Grantor and the Trustee intend that no third party have access to the Fund except as herein provided. The Fund is established initially as consisting of the property, which is acceptable to the Trustee, described in Schedule B attached hereto. Such property and any other property subsequently transferred to the Trustee is referred to as the Fund, together with all earnings and profits thereon, less any payments or distributions made by the Trustee pursuant to this Agreement. The Fund shall be held by the Trustee, IN TRUST, as hereinafter provided. The Trustee shall not be responsible nor shall it undertake any responsibility for the amount or adequacy of, nor any duty to collect from the Grantor, any payments necessary to discharge any liabilities of the Grantor established by EPA.

Section 4. Payment for Closure and Post-Closure Care. The Trustee shall make payments from the Fund as the EPA Regional Administrator shall direct, in writing, to provide for the payment of the costs of closure and/or post-closure care of the facilities covered by this Agreement. The Trustee shall reimburse the Grantor or other persons as specified by the EPA Regional Administrator from the Fund for closure and post-closure expenditures in such amounts as the EPA Regional Administrator shall direct in writing. In addition, the Trustee shall refund to the Grantor such amounts as the EPA Regional Administrator specifies in writing. Upon refund, such funds shall no longer constitute part of the Fund as defined herein.

Section 5. Payments Comprising the Fund. Payments made to the Trustee for the Fund shall consist of cash or securities acceptable to the Trustee.

Section 6. Trustee Management. The Trustee shall invest and reinvest the principal and income of the Fund and keep the Fund invested as a single fund, without distinction between principal and income, in accordance with general investment policies and guidelines which the Grantor may communicate in writing to the Trustee from time to time, subject, however, to the provisions of this section. In investing, reinvesting, exchanging, selling, and managing the Fund, the Trustee shall discharge his duties with respect to the trust fund solely in the interest of the beneficiary and with the care, skill, prudence, and diligence under the circumstances then prevailing which persons of prudence, acting in a like capacity and familiar with such matters, would use in the conduct of an enterprise of a like character and with like aims; *except that:*

(i) Securities or other obligations of the Grantor, or any other owner or operator of the facilities, or any of their affiliates as defined in the Investment Company Act of 1940, as amended, 15 U.S.C. 80a-2.(a), shall not be acquired or held, unless they are securities or other obligations of the Federal or a State government;

(ii) The Trustee is authorized to invest the Fund in time or demand deposits of the Trustee, to the extent insured by an agency of the Federal or State government; and

(iii) The Trustee is authorized to hold cash awaiting investment or distribution uninvested for a reasonable time and without liability for the payment of interest thereon.

Section 7. Commingling and Investment. The Trustee is expressly authorized in its discretion:

(a) To tranfer from time to time any or all of the assets of the Fund to any common, commingled, or collective trust fund created by the Trustee in which the Fund is eligible to participate, subject to all of the provisions thereof, to be commingled with the assets of other trusts participating therein; and

(b) To purchase shares in any investment company registered under the Investment Company Act of 1940, 15 U.S.C. 80a-1 et seq., including one which may be created, managed, underwritten, or to which investment advice is rendered or the shares of which are sold by the Trustee. The Trustee may vote such shares in its discretion.

Section 8. Express Powers of Trustee. Without in any way limiting the powers and discretions conferred upon the Trustee by the other provisions of this Agreement or by law, the Trustee is expressly authorized and empowered:

(a) To sell, exchange, convey, transfer, or otherwise dispose of any property held by it, by public or private sale. No person dealing with the Trustee shall be bound to see to the application of the purchase money or to inquire into the validity or expediency of any such sale or other disposition;

(b) To make, execute, acknowledge, and deliver any and all documents of transfer and conveyance and any and all other instruments that may be necessary or appropriate to carry out the powers herein granted;

(c) To register any securities held in the Fund in its own name or in the name of a nominee and to hold any security in bearer form or in book entry, or to combine certificates representing such securities with certificates of the same issue held by the Trustee in other fiduciary capacities, or to deposit or arrange for the deposit of such securities in a qualified central depositary even though, when so deposited, such securities may be merged and held in bulk in the name of the nominee of such depositary with other securities deposited therein by another person, or to deposit or arrange for the deposit of any securities issued by the United States Government, or any agency or instrumentality thereof, with a Federal Reserve bank, but the books and records of the Trustee shall at all times show that all such securities are part of the Fund;

(d) To deposit any cash in the Fund in interest-bearing accounts maintained or savings certificates issued by the Trustee, in its separate corporate capacity, or in any other banking institution affiliated with the Trustee, to the extent insured by an agency of the Federal or State government; and

(e) To compromise or otherwise adjust all claims in favor of or against the Fund.

Section 9. Taxes and Expenses. All taxes of any kind that may be assessed or levied against or in respect of the Fund and all brokerage commissions incurred by the Fund shall be paid from the Fund. All other expenses incurred by the Trustee in connection with the administration of this Trust, including fees for legal services rendered to the Trustee, the compensation of the Trustee to the extent not paid directly by the

Grantor, and all other proper charges and disbursements of the Trustee shall be paid from the Fund.

Section 10. Annual Valuation. The Trustee shall annually, at least 30 days prior to the anniversary date of establishment of the Fund, furnish to the Grantor and to the appropriate EPA Regional Administrator a statement confirming the value of the Trust. Any securities in the Fund shall be valued at market value as of no more than 60 days prior to the anniversary date of establishment of the Fund. The failure of the Grantor to object in writing to the Trustee within 90 days after the statement has been furnished to the Grantor and the EPA Regional Administrator shall constitute a conclusively binding assent by the Grantor, barring the Grantor from asserting any claim or liability against the Trustee with respect to matters disclosed in the statement.

Section 11. Advice of Counsel. The Trustee may from time to time consult with counsel, who may be counsel to the Grantor, with respect to any question arising as to the construction of this Agreement or any action to be taken hereunder. The Trustee shall be fully protected, to the extent permitted by law, in acting upon the advice of counsel.

Section 12. Trustee Compensation. The Trustee shall be entitled to reasonable compensation for its services as agreed upon in writing from time to time with the Grantor.

Section 13. Successor Trustee. The Trustee may resign or the Grantor may replace the Trustee, but such resignation or replacement shall not be effective until the Grantor has appointed a successor trustee and this successor accepts the appointment. The successor trustee shall have the same powers and duties as those conferred upon the Trustee hereunder. Upon the successor trustee's acceptance of the appointment, the Trustee shall assign, transfer, and pay over to the successor trustee the funds and properties then constituting the Fund. If for any reason the Grantor cannot or does not act in the event of the resignation of the Trustee, the Trustee may apply to a court of competent jurisdiction for the appointment of a successor trustee or for instructions. The successor trustee shall specify the date on which it assumes administration of the trust in a writing sent to the Grantor, the EPA Regional Administrator, and the present Trustee by certified mail 10 days before such change becomes effective. Any expenses incurred by the Trustee as a result of any of the acts contemplated by this Section shall be paid as provided in Section 9.

Section 14. Instructions to the Trustee. All orders, requests, and instructions by the Grantor to the Trustee shall be in writing, signed by such persons as are designated in the attached Exhibit A or such other designees as the Grantor may designate by amendment to Exhibit A. The Trustee shall be fully protected in acting without inquiry in accordance with the Grantor's orders, requests, and instructions. All orders, requests, and instructions by the EPA Regional Administrator to the Trustee shall be in writing, signed by the EPA Regional Administrators of the Regions in which the facilities are located, or their designees, and the Trustee shall act and shall be fully protected in acting in accordance with such orders, requests, and instructions. The Trustee shall have the right to assume, in the absence of written notice to the contrary, that no event constituting a change or a termination of the authority of any person to act on behalf of the Grantor or EPA hereunder has occurred. The Trustee shall have no duty to act in the absence of such orders, requests, and instructions from the Grantor and/or EPA, except as provided for herein.

Section 15. Notice of Nonpayment. The Trustee shall notify the Grantor and the appropriate EPA Regional Administrator, by certified mail within 10 days following the expiration of the 30-day period after the anniversary of the establishment of the Trust, if no payment is received from the Grantor during that period. After the payin period is completed, the Trustee shall not be required to send a notice of nonpayment.

Section 16. Amendment of Agreement. This Agreement may be amended by an instrument in writing executed by the Grantor, the Trustee, and the appropriate EPA Regional Administrator, or by the Trustee and the appropriate EPA Regional Administrator if the Grantor ceases to exist.

Section 17. Irrevocability and Termination. Subject to the right of the parties to amend this Agreement as provided in Section 16, this Trust shall be irrevocable and shall continue until terminated at the written agreement of the Grantor, the Trustee, and the EPA Regional Administrator, or by the Trustee and the EPA Regional Administrator, if the Grantor ceases to exist. Upon termination of the Trust, all remaining trust property, less final trust administration expenses, shall be delivered to the Grantor.

Section 18. Immunity and Indemnification. The Trustee shall not incur personal liability of any nature in connection with any act or omission, made in good faith, in the administration of this Trust, or in carrying out any directions by the Grantor or the EPA Regional Administrator issued in accordance with this Agreement. The Trustee shall be indemnified and saved harmless by the Grantor or from the Trust Fund, or both, from and against any personal liability to which the Trustee may be subjected by reason of any act or conduct in its official capacity, including all expenses reasonably incurred in its defense in the event the Grantor fails to provide such defense.

Section 19. Choice of Law. This Agreement shall be administered, construed, and enforced according to the laws of the State of [insert name of State].

Section 20. Interpretation. As used in this Agreement, words in the singular include the plural and words in the plural include the singular. The descriptive headings for each Section of this Agreement shall not affect the interpretation or the legal efficacy of this Agreement.

In Witness Whereof the parties have caused this Agreement to be executed by their respective officers duly authorized and their corporate seals to be hereunto affixed and attested as of the date first above written: The parties below certify that the wording of this Agreement is identical to the wording specified in 40 CFR 264.151(a)(1) as such regulations were constituted on the date first above written.

[Signature of Grantor]
[Title]

Attest:
[Title]
[Seal]

[Signature of Trustee]

Attest:
[Title]
[Seal]

(2) The following is an example of the certification of acknowledgment which must accompany the trust agreement for a trust fund as specified in §§ 264.143(a) and 264.145(a) or §§ 265.143(a) or 265.145(a) of this chapter. State requirements may differ on the proper content of this acknowledgment.

State of _____
County of _____

On this [date], before me personally came [owner or operator] to me known, who, being by me duly sworn, did depose and say that she/he resides at [address], that she/he is [title] of [corporation], the corporation described in and which executed the above instrument; that she/he knows the seal of said corporation; that the seal affixed to such instrument is such corporate seal; that it was so affixed by order of the Board of Directors of said corporation, and that she/he signed her/his name thereto by like order.

[Signature of Notary Public]

(b) A surety bond guaranteeing payment into a trust fund, as specified in § 264.143(b) or § 264.145(b) or § 265.143(b) or § 265.145(b) of this chapter, must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

FINANCIAL GUARANTEE BOND

Date bond executed:
Effective date:
Principal: [legal name and business address of owner or operator]
Type of Organization: [insert "individual," "joint venture," "partnership," or "corporation"]
State of incorporation: _____
Surety(ies): [name(s) and business address(es)]
EPA Identification Number, name, address and closure and/or post-closure amount(s) for each facility guaranteed by this bond [indicate closure and post-closure amounts separately]: _____
Total penal sum of bond: $ _____
Surety's bond number: _____

Know All Persons By These Presents, That we, the Principal and Surety(ies) hereto are firmly bound to the U.S. Environmental Protection Agency (hereinafter called EPA), in the above penal sum for the payment of which we bind ourselves, our heirs, executors, administrators, successors, and assigns jointly and severally; provided that, where the Surety(ies) are corporations acting as co-sureties, we, the Sureties, bind ourselves in such sum "jointly and severally" only for the purpose of allowing a joint action or actions against any or all of us, and for all other purposes each Surety binds itself, jointly and severally with the Principal, for the payment of such sum only as is set forth opposite the name of such Surety, but if no limit of liability is indicated, the limit of liability shall be the full amount of the penal sum.

Whereas said Principal is required, under the Resource Conservation and Recovery Act as amended (RCRA), to have a permit or interim status in order to own or operate each hazardous waste management facility identified above, and

Whereas said Principal is required to provide financial assurance for closure, or closure and post-closure care, as a condition of the permit or interim status, and

Whereas said Principal shall establish a standby trust fund as is required when a surety bond is used to provide such financial assurance;

Now, Therefore, the conditions of the obligation are such that if the Principal shall faithfully, before the beginning of final closure of each facility identified above, fund the standby trust fund in the amount(s) identified above for the facility,

Or, if the Principal shall fund the standby trust fund in such amount(s) within 15 days after a final order to begin closure is issued

by an EPA Regional Administrator or a U.S. district court or other court of competent jurisdiction.

(c) A surety bond guaranteeing performance of closure and/or post-closure care, as specified in § 264.143(c) or § 264.145(c), must be worded as follows, except that the instructions in brackets are to be replaced with the relevant information and the brackets deleted:

PERFORMANCE BOND

Date bond executed: ———

Effective date: ———

Principal: [legal name and business address of owner or operator]

Type of organization: [insert "individual," "joint venture," "partnership," or "corporation"]

State of incorporation: ———

Surety(ies): [name(s) and business address(es)] ———

EPA Identification Number, name, address, and closure and/or post-closure amount(s) for each facility guaranteed by this bond [indicate closure and post-closure amounts separately]: ———

Total penal sum of bond: $ ———

Surety's bond number: ———

Know All Persons By These Presents, That we, the Principal and Surety(ies) hereto are firmly bound to the U.S. Environmental Protection Agency (hereinafter called EPA), in the above penal sum for the payment of which we bind ourselves, our heirs, executors, administrators, successors, and assigns jointly and severally; provided that, where the Surety(ies) are corporations acting as co-sureties, we, the Sureties, bind ourselves in such sum "jointly and severally" only for the purpose of allowing a joint action or actions against any or all of us, and for all other purposes each Surety binds itself, jointly and severally with the Principal, for the payment of such sum only as is set forth opposite the name of such Surety, but if no limit of liability is indicated, the limit of liability shall be the full amount of the penal sum.

Whereas said Principal is required, under the Resource Conservation and Recovery Act as amended (RCRA), to have a permit in order to own or operate each hazardous waste management facility indentified above, and

Whereas said Principal is required to provide financial assurance for closure, or closure and post-closure care, as a condition of the permit, and

Whereas said Principal shall establish a standby trust fund as is required when a surety bond is used to provide such financial assurance;

Now, Therefore, the conditions of this obligation are such that if the Principal shall faithfully perform closure, whenever required to do so, of each facility for which this bond guarantees closure, in accordance with the closure plan and other requirements of the permit as such plan and permit may be amended, pursuant to all applicable laws, statutes, rules, and regulations, as such laws, statutes, rules, and regulations may be amended,

And, if the Principal shall faithfully perform post-closure care of each facility for which this bond guarantees post-closure care, in accordance with the post-closure plan and other requirements of the permit, as such plan and permit may be amended, pursuant to all applicable laws, statutes, rules, and regulations, as such laws, statutes, rules, and regulations may be amended,

Or, if the Principal shall provide alternate financial assurance as specified in Subpart H of 40 CFR Part 264, and obtain the EPA Regional Administrator's written approval of such assurance, within 90 days after the date notice of cancellation is received by both the Principal and the EPA Regional Administrator(s) from the Surety(ies), then this obligation shall be null and void, otherwise it is to remain in full force and effect.

The Surety(ies) shall become liable on this bond obligation only when the Principal has failed to fulfill the conditions described above.

Upon notification by an EPA Regional Administrator that the Principal has been found in violation of the closure requirements of 40 CFR Part 264, for a facility for which this bond guarantees performance of closure, the Surety(ies) shall either perform closure in accordance with the closure plan and other permit requirements or place the closure amount guaranteed for the facility into the standby trust fund as directed by the EPA Regional Administrator.

Upon notification by an EPA Regional Administrator that the Principal has been found in violation of the post-closure requirements of 40 CFR Part 264 for a facility for which this bond guarantees performance of post-closure care, the Surety(ies) shall either perform post-closure care in accordance with the post-closure plan and other permit requirements or place the post-closure amount guaranteed for the facility into the standby trust fund as directed by the EPA Regional Administrator.

Upon notification by an EPA Regional Administrator that the Principal has failed to provide alternate financial assurance as specified in Subpart H of 40 CFR Part 264, and obtain written approval of such assurance from the EPA Regional Administrator(s) during the 90 days following receipt by both the Principal and the EPA Regional Administrator(s) of a notice of cancellation of the bond, the Surety(ies) shall place funds in the amount guaranteed for the facility(ies) into the standby trust fund as directed by the EPA Regional Administrator.

The surety(ies) hereby waive(s) notification of amendments to closure plans, permits, applicable laws, statutes, rules, and regulations and agrees that no such amendment shall in any way alleviate its (their) obligation on this bond.

The liability of the Surety(ies) shall not be discharged by any payment or succession of payments hereunder, unless and until such payment or payments shall amount in the aggregate to the penal sum of the bond, but in no event shall the obligation of the Surety(ies) hereunder exceed the amount of said penal sum.

The Surety(ies) may cancel the bond by sending notice of cancellation by certified mail to the owner or operator and to the EPA Regional Administrator(s) for the Region(s) in which the facility(ies) is (are) located, provided, however, that cancellation shall not occur during the 120 days beginning on the date of receipt of the notice of cancellation by both the Principal and the EPA Regional Administrator(s), as evidenced by the return receipts.

The principal may terminate this bond by sending written notice to the Surety(ies), provided, however, that no such notice shall become effective until the Surety(ies) receive(s) written authorization for termination of the bond by the EPA Regional Administrator(s) of the EPA Region(s) in which the bonded facility(ies) is (are) located.

[The following paragraph is an *optional* rider that may be included but is not required.]

Principal and Surety(ies) hereby agree to adjust the penal sum of the bond yearly so that it guarantees a new closure and/or post-closure amount, provided that the penal sum does not increase by more than 20 percent in any one year, and no decrease in the penal sum takes place without the written permission of the EPA Regional Administrator(s).

In Witness Whereof, The Principal and Surety(ies) have executed this Performance Bond and have affixed their seals on the date set forth above.

The persons whose signatures appear below hereby certify that they are authorized to execute this surety bond on behalf of the Principal and Surety(ies) and that the wording of this surety bond is identical to the wording specified in 40 CFR 264.151(c) as such regulation was constituted on the date this bond was executed.

Principal

[Signature(s)]

[Name(s)]

[Title(s)]

[Corporate seal]

Corporate Surety(ies)

[Name and address]

State of incorporation: ———

Liability limit: $ ———

[Signature(s)]

[Name(s) and title(s)]

[Corporate seal]

[For every co-surety, provide signature(s), corporate seal, and other information in the same manner as for Surety above.]

Bond premium: $ ———

(d) A letter of credit, as specified in § 264.143(d) or § 264.145(d) or § 265.143(c) or § 265.145(c) of this chapter, must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

IRREVOCABLE STANDBY LETTER OF CREDIT

Regional Administrator(s)
Region(s) ———
U.S. Environmental Protection Agency

Dear Sir or Madam: We hereby establish our Irrevocable Standby Letter of Credit No.—— in your favor, at the request and for the account of [owner's or operator's name and address] up to the aggregate amount of [in words] U.S. dollars $——, available upon presentation [insert, if more than one Regional Administrator is a beneficiary, "by any one of you"] of

(1) your sight draft, bearing reference to this letter of credit No.——, and

(2) your signed statement reading as follows: "I certify that the amount of the draft is payable pursuant to regulations issued under authority of the Resource Conservation and Recovery Act of 1976 as amended."

This letter of credit is effective as of [date] and shall expire on [date at least 1 year later], but such expiration date shall be automatically extended for a period of [at least 1 year] on [date] and on each successive expiration date, unless, at least 120 days before the current expiration date, we notify both you and [owner's or operator's name] by certified mail that we have decided not to extend this letter of credit beyond the current expiration date. In the event you are so notified, any unused portion of the credit shall be available upon presentation of your sight draft for 120 days after the date of receipt by both you and [owner's

or operator's name], as shown on the signed return receipts.

Whenever this letter of credit is drawn on under and in compliance with the terms of this credit, we shall duly honor such draft upon presentation to us, and we shall deposit the amount of the draft directly into the standby trust fund of [owner's or operator's name] in accordance with your instructions.

We certify that the wording of this letter of credit is identical to the wording specified in 40 CFR 264.151(d) as such regulations were constituted on the date shown immediately below.

[Signature(s) and title(s) of official(s) of issuing institution] [Date]

This credit is subject to [insert "the most recent edition of the Uniform Customs and Practice for Documentary Credits, published by the International Chamber of Commerce," or "the Uniform Commercial Code"].

(e) A certificate of insurance, as specified in § 264.143(e) or § 264.145(e) or § 265.143(d) or § 265.145(d) of this chapter, must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

CERTIFICATE OF INSURANCE FOR CLOSURE OR POST-CLOSURE CARE

Name and Address of Insurer (herein called the "Insurer"): _____

Name and Address of Insured (herein called the "Insured"): _____

Facilities Covered: [List for each facility: The EPA Identification Number, name, address, and the amount of insurance for closure and/or the amount for post-closure care (these amounts for all facilities covered must total the face amount shown below).]

Face Amount: _____

Policy Number: _____

Effective Date: _____

The Insurer hereby certifies that it has issued to the Insured the policy of insurance identified above to provide financial assurance for [insert "closure" or "closure and post-closure care" or "post-closure care"] for the facilities identified above. The Insurer further warrants that such policy conforms in all respects with the requirements of 40 CFR 264.143(e), 264.145(e), 265.143(d), and 265.145(d), as applicable and as such regulations were constituted on the date shown immediately below. It is agreed that any provision of the policy inconsistent with such regulations is hereby amended to eliminate such inconsistency.

Whenever requested by the EPA Regional Administrator(s) of the U.S. Environmental Protection Agency, the Insurer agrees to furnish to the EPA Regional Administrator(s) a duplicate original of the policy listed above, including all endorsements thereon.

I hereby certify that the wording of this certificate is identical to the wording specified in 40 CFR 264.151(e) as such regulations were constituted on the date shown immediately below.

[Authorized signature for Insurer]
[Name of person signing]
[Title of person signing]
Signature of witness or notary: _____
[Date]

(f) A letter from the chief financial officer, as specified in § 264.143(f) or § 264.145(f) or § 265.143(e) or § 265.145(e) of this chapter, must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

LETTER FROM CHIEF FINANCIAL OFFICER

[Address to Regional Administrator of every Region in which facilities for which financial responsibility is to be demonstrated through the financial test are located.]

I am the chief financial officer of [name and address of firm]. This letter is in support of this firm's use of the financial test to demonstrate financial assurance, as specified in Subpart H of 40 CFR Parts 264 and 265.

[Fill out the following four paragraphs regarding facilities and associated cost estimates. If your firm has no facilities that belong in a particular paragraph, write "None" in the space indicated. For each facility, include its EPA Identification Number, name, address, and current closure and/or post-closure cost estimates. Identify each cost estimate as to whether it is for closure or post-closure care.]

1. This firm is the owner or operator of the following facilities for which financial assurance for closure or post-closure care is demonstrated through the financial test specified in Subpart H of 40 CFR Parts 264 and 265. The current closure and/or post-closure cost estimates covered by the test are shown for each facility: _____.

2. This firm guarantees, through the corporate guarantee specified in Subpart H of 40 CFR Parts 264 and 265, the closure or post-closure care of the following facilities owned or operated by subsidiaries of this firm. The current cost estimates for the closure or post-closure care so guaranteed are shown for each facility: _____.

3. In States where EPA is not administering the financial requirements of Subpart H of 40 CFR Part 264 or 235, this firm, as owner or operator or guarantor, is demonstrating financial assurance for the closure or post-closure care of the following facilities through the use of a test equivalent or substantially equivalent to the financial test specified in Subpart H of 40 CFR Parts 264 and 265. The current closure and/or post-closure cost estimates covered by such a test are shown for each facility: _____.

4. This firm is the owner or operator of the following hazardous waste management facilities for which financial assurance for closure or, if a disposal facility, post-closure care, is *not* demonstrated either to EPA or a State through the financial test or any other financial assurance mechanism specified in Subpart H of 40 CFR Parts 264 and 265 or equivalent or substantially equivalent State mechanisms. The current closure and/or post-closure cost estimates not covered by such financial assurance are shown for each facility: _____.

This firm [insert "is required" or "is not required"] to file a Form 10K with the Securities and Exchange Commission (SEC) for the latest fiscal year.

The fiscal year of this firm ends on [month, day]. The figures for the following items marked with an asterisk are derived from this firm's independently audited, year-end financial statements for the latest completed fiscal year, ended [date].

[Fill in Alternative I if the criteria of paragraph (f)(1)(i) of § 264.143 or § 264.145, or of paragraph (e)(1)(i) of § 265.143 or § 265.145 of this chapter are used. Fill in Alternative II if the criteria of paragraph (f)(1)(ii) of § 264.143 or § 264.145, or of paragraph (e)(1)(ii) of § 265.143 or § 265.145 of this chapter are used.]

ALTERNATIVE I

1. Sum of current closure and post-closure cost estimates [total of *all* cost estimates shown in the four paragraphs above]	$.....
*2. Total liabilities [if any portion of the closure or post-closure cost estimates is included in total liabilities, you may deduct the amount of that portion from this line and add that amount to lines 3 and 4]	.....
*3. Tangible net worth	.....
*4. Net worth	.....
*5. Current assets	.....
*6. Current liabilities	.....
7. Net working capital [line 5 minus line 6]	.....
*8. The sum of net income plus depreciation, depletion, and amortization	.....
*9. Total assets in U.S. (required only if less than 90% of firm's assets are located in the U.S.)	.....

	Yes	No
10. Is line 3 at least $10 million?	.....	.....
11. Is line 3 at least 6 times line 1?	.....	.....
12. Is line 7 at least 6 times line 1?	.....	.....
*13. Are at least 90% of firm's assets located in the U.S.? If not, complete line 14.	.....	.....
14. Is line 9 at least 6 times line 1?	.....	.....
15. Is line 2 divided by line 4 less than 2.0?	.....	.....
16. Is line 8 divided by line 2 greater than 0.1?	.....	.....
17. Is line 5 divided by line 6 greater than 1.5?	.....	.....

ALTERNATIVE II

1. Sum of current closure and post-closure cost estimates [total of *all* cost estimates shown in the four paragraphs above]	$_____
2. Current bond rating of most recent issuance of this firm and name of rating service	_____
3. Date of issuance of bond	_____
4. Date of maturity of bond	_____
*5. Tangible net worth [if any portion of the closure and post-closure cost estimates is included in "total liabilities" on your firm's financial statements, you may add the amount of that portion to this line]	$_____
*6. Total assets in U.S. (required only if less than 90% of firm's assets are located in the U.S.)	$_____

	Yes	No
7. Is line 5 at least $10 million?	____	____
8. Is line 5 at least 6 times line 1?	____	____
*9. Are at least 90% of firm's assets located in the U.S.? If not, complete line 10.	____	____
10. Is line 6 at least 6 times line 1?	____	____

I hereby certify that the wording of this letter is identical to the wording specified in 40 CFR 264.151(f) as such regulations were constituted on the date shown immediately below.

[Signature]
[Name]
[Title]
[Date]

5. This firm is the owner or operator of the following UIC facilities for which financial assurance for plugging and abandonment is required under Part 144. The current closure cost estimates as required by 40 CFR 144.62 are shown for each facility:

(g) A letter from the chief financial officer, as specified in § 264.147(f) or § 265.147(f) of this chapter, must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

LETTER FROM CHIEF FINANCIAL OFFICER

[Address to Regional Administrator of every Region in which facilities for which financial responsibility is to be demonstrated through the financial test are located.]

I am the chief financial officer of [firm's name and address]. This letter is in support of the use of the financial test to demonstrate financial responsibility for liability coverage [insert "and closure and/or post-closure care" if applicable] as specified in Subpart H of 40 CFR Parts 264 and 265.

[Fill out the following paragraphs regarding facilities and liability coverage. If there are no facilities that belong in a particular paragraph, write "None" in the space indicated. For each facility, include its EPA Identification Number, name, and address.]

The firm identified above is the owner or operator of the following facilities for which liability coverage for [insert "sudden" or "nonsudden" or "both sudden and nonsudden"] accidental occurrences is being demonstrated through the financial test specified in Subpart H of 40 CFR Parts 264 and 265:_____.

The firm identified above guarantees, through the corporate guarantee specified in Subpart H of 40 CFR Parts 264 and 265, liability coverage for [insert "sudden" or "nonsudden" or "both sudden and nonsudden"] accidental occurrences at the following facilities owned or operated by the following subsidiaries of the firm:_____.

[If you are using the financial test to demonstrate coverage of both liability and closure and post-closure care, fill in the following four paragraphs regarding facilities and associated closure and post-closure cost estimates. If there are no facilities that belong in a particular paragraph, write "None" in the space indicated. For each facility, include its EPA Identification Number, name, address, and current closure and/or post-closure cost estimates. Identify each cost estimate as to whether it is for closure or post-closure care.]

1. The firm identified above owns or operates the following facilities for which financial assurance for closure or post-closure care is demonstrated through the financial test specified in Subpart H of 40 CFR Parts 264 and 265. The current closure and/or post-closure cost estimates covered by the test are shown for each facility:_____.

2. The firm identified above guarantees, through the corporate guarantee specified in Subpart H of 40 CFR Parts 264 and 265, the closure and post-closure care of the following facilities owned or operated by its subsidiaries. The current cost estimates for the closure or post-closure care so guaranteed are shown for each facility:_____.

3. In States where EPA is not administering the financial requirements of Subpart H of 40 CFR Parts 264 and 265, this firm is demonstrating financial assurance for the closure or post-closure care of the following facilities through the use of a test equivalent or substantially equivalent to the financial test specified in Subpart H of 40 CFR Parts 264 and 265. The current closure or post-closure cost estimates covered by such a test are shown for each facility:_____.

4. The firm identified above owns or operates the following hazardous waste management facilities for which financial assurance for closure or, if a disposal facility, post-closure care, is not demonstrated either to EPA or a State through the financial test or any other financial assurance mechanisms specified in Subpart H of 40 CFR Parts 264 and 265 or equivalent or substantially equivalent State mechanisms. The current closure and/or post-closure cost estimates not covered by such financial assurance are shown for each facility:_____.

5. This firm is the owner or operator of the following UIC facilities for which financial assurance for plugging and abandonment is required under Part 144. The current closure cost estimates as required by 40 CFR 144.62 are shown for each facility:_____.

This firm [insert "is required" or "is not required"] to file a Form 10K with the Securities and Exchange Commission (SEC) for the latest fiscal year.

The fiscal year of this form ends on [month, day]. The figures for the following items marked with an asterisk are derived from this firm's independently audited, year-end financial statements for the latest completed fiscal year, ended [date].

(h)(1) A corporate guarantee, as specified in § 264.143(f) or § 264.145(f) or § 265.143(e) or § 265.145(e) of this chapter, must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

CORPORATE GUARANTEE FOR CLOSURE OR POST-CLOSURE CARE

Guarantee made this [date] by [name of guaranteeing entity], a business corporation organized under the laws of the State of [insert name of State], herein referred to as guarantor, to the United States Environmental Protection Agency (EPA), obligee, on behalf of our subsidiary [owner or operator] of [business address].

Recitals

1. Guarantor meets or exceeds the financial test criteria and agrees to comply with the reporting requirements for guarantors as specified in 40 CFR 264.143(f), 264.145(f), 265.143(e), and 265.145(e).

2. [Owner or operator] owns or operates the following hazardous waste management facility(ies) covered by this guarantee: [List for each facility: EPA Identification Number, name, and address. Indicate for each whether guarantee is for closure, post-closure care, or both.]

3. "Closure plans" and "post-closure plans" as used below refer to the plans maintained as required by Subpart G of 40 CFR Parts 264 and 265 for the closure and post-closure care of facilities as identified above.

4. For value received from [owner or operator], guarantor guarantees to EPA that in the event that [owner or operator] fails to perform [insert "closure," "post-closure care" or "closure and post-closure care"] of the above facility(ies) in accordance with the closure or post-closure plans and other permit or interim status requirements whenever required to do so, the guarantor shall do so or establish a trust fund as specified in Subpart H of 40 CFR Part 264 or 265, as applicable, in the name of [owner or operator] in the amount of the current closure or post-closure cost estimates as specified in Subpart H of 40 CFR Parts 264 and 265.

5. Guarantor agrees that if, at the end of any fiscal year before termination of this guarantee, the guarantor fails to meet the financial test criteria, guarantor shall send within 90 days, by certified mail, notice to the EPA Regional Administrator(s) for the Region(s) in which the facility(ies) is (are) located and to [owner or operator] that he intends to provide alternate financial assurance as specified in Subpart H of 40 CFR Part 264 or 265, as applicable, in the name of [owner or operator]. Within 120 days after the end of such fiscal year, the guarantor shall establish such financial assurance unless [owner or operator] has done so.

6. The guarantor agrees to notify the EPA Regional Administrator by certified mail, of a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code, naming guarantor as debtor, within 10 days after commencement of the proceeding.

7. Guarantor agrees that within 30 days after being notified by an EPA Regional Administrator of a determination that guarantor no longer meets the financial test criteria or that he is disallowed from continuing as a guarantor of closure or post-closure care, he shall establish alternate financial assurance as specified in Subpart H of 40 CFR Part 264 or 265, as applicable, in the name of [owner or operator] unless [owner or operator] has done so.

8. Guarantor agrees to remain bound under this guarantee notwithstanding any or all of the following: amendment or modification of the closure or post-closure plan, amendment or modification of the permit, the extension or reduction of the time of performance of closure or post-closure, or any other modification or alteration of an obligation of the owner or operator pursuant to 40 CFR Part 264 or 265.

9. Guarantor agrees to remain bound under this guarantee for so long as [owner or operator] must comply with the applicable financial assurance requirements of Subpart H of 40 CFR Parts 264 and 265 for the above-listed facilities, except that guarantor may cancel this guarantee by sending notice by certified mail to the EPA Regional Administrator(s) for the Region(s) in which the facility(ies) is (are) located and to [owner or operator], such cancellation to become effective no earlier than 120 days after receipt of such notice by both EPA and [owner or operator], as evidenced by the return receipts.

10. Guarantor agrees that if [owner or operator] fails to provide alternate financial assurance as specified in Subpart H of 40 CFR Part 264 or 265, as applicable, and obtain written approval of such assurance from the EPA Regional Administrator(s) within 90 days after a notice of cancellation by the guarantor is received by an EPA Regional Administrator from guarantor, guarantor shall provide such alternate financial assurance in the name of [owner or operator].

11. Guarantor expressly waives notice of acceptance of this guarantee by the EPA or by [owner or operator]. Guarantor also expressly waives notice of amendments or modifications of the closure and/or post-closure plan and of amendments or modifications of the facility permit(s).

I hereby certify that the wording of this guarantee is identical to the wording specified in 40 CFR 264.151(h) as such regulations were constitituted on the date first above written.

Effective date: _____

[Name of guarantor]

[Authorized signature for guarantor]

[Name of person signing]

[Title of person signing]

Signature of witness or notary: _____

(2) A corporate guarantee, as specified in § 264.147(g) or § 265.147(g) of this chapter, must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

CORPORATE GUARANTEE FOR LIABILITY COVERAGE

Guarantee made this [date] by [name of guaranteeing entity], a business corporation organized under the laws of [if incorporated within the United States insert "the State of ——" and insert name of State; if incorporated outside the United States insert the name of the country in which incorporated, the principal place of business within the United States, and the name and address of the registered agent in the State of the principal place of business], herein referred

to as guarantor. This guarantee is made on behalf of our subsidiary [owner or operator] of [business address], to any and all third parties who have sustained or may sustain bodily injury or property damage caused by [sudden and/or nonsudden] accidental occurrences arising from operation of the facility(ies) covered by this guarantee.

RECITALS

1. Guarantor meets or exceeds the financial test criteria and agrees to comply with the reporting requirements for guarantors as specified in 40 CFR 264.147(g) and 265.147(g).

2. [Owner or operator] owns or operates the following hazardous waste management facility(ies) covered by this guarantee: [List for each facility: EPA Identification Number, name, and address; and if guarantor is incorporated outside the United States list the name and address of the guarantor's registered agent in each State.] This corporate guarantee satisfies RCRA third-party liability requirements for [insert "sudden" or "nonsudden" or "both sudden and nonsudden"] accidental occurrences in above-named owner or operator facilities for coverage in the amount of [insert dollar amount] for each occurrence and [insert dollar amount] annual aggregate.

3. For value received from [owner or operator], guarantor guarantees to any and all third parties who have sustained or may sustain bodily injury or property damage caused by [sudden and/or nonsudden] accidental occurrences arising from operations of the facility(ies) covered by this guarantee that in the event that [owner or operator] fails to satisfy a judgment or award based on a determination of liability for bodily injury or property damage to third parties caused by [sudden and/or nonsudden] accidental occurrences, arising from the operation of the above-named facilities, or fails to pay an amount agreed to in settlement of a claim arising from or alleged to arise from such injury or damage, the guarantor will satisfy such judgment(s), award(s) or settlement agreement(s) up to the limits of coverage identified above.

4. Guarantor agrees that if, at the end of any fiscal year before termination of this guarantee, the guarantor fails to meet the financial test criteria, guarantor shall send within 90 days, by certified mail, notice to the EPA Regional Administrator[s] for the Region[s] in which the facility[ies] is[are] located and to [owner or operator] that he intends to provide alternate liability coverage as specified in 40 CFR 264.147 and 265.147, as applicable, in the name of [owner or operator]. Within 120 days after the end of such fiscal year, the guarantor shall establish such liability coverage unless [owner or operator] has done so.

5. The guarantor agrees to notify the EPA Regional Administrator by certified mail of a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code, naming guarantor as debtor, within 10 days after commencement of the proceeding.

6. Guarantor agrees that within 30 days after being notified by an EPA Regional Administrator of a determination that guarantor no longer meets the financial test criteria or that he is disallowed from continuing as a guarantor, he shall establish alternate liability coverage as specified in 40 CFR 264.147 or 265.147 in the name of [owner or operator], unless [owner or operator] has done so.

7. Guarantor reserves the right to modify this agreement to take into account amendment or modification of the liability requirements set by 40 CFR 264.147 and 265.147, provided that such modification shall become effective only if a Regional Administrator does not disapprove the modification within 30 days of receipt of notification of the modification.

8. Guarantor agrees to remain bound under this guarantee for so long as [owner or operator] must comply with the applicable requirements of 40 CFR 264.147 and 265.147 for the above-listed facility(ies) except as provided in paragraph 9 of this agreement.

9. Guarantor may terminate this guarantee by sending notice by certified mail to the EPA Regional Administrator[s] for the Region[s] in which the facility[ies] is[are] located and to [owner or operator], provided that this guarantee may not be terminated unless and until [the owner or operator] obtains, and the EPA Regional Administrator[s] approve[s] alternate liability coverage complying with 40 CFR 264.147 and/or 265.147.

10. Guarantor hereby expressly waives notice of acceptance of this guarantee by any party.

11. Guarantor agrees that this guarantee is in addition to and does not affect any other responsibility or liability of the guarantor with respect to the covered facilities.

12. Exclusions

This corporate guarantee does not apply to:

(i) Bodily injury or property damage for which the owner or operator is obligated to pay damages by reason of the assumption of liability in a contract or agreement. This exclusion does not apply to liability for damages that the owner or operator would be obligated to pay in the absence of the contract or agreement.

(ii) Any obligation of the owner or operator under a workers' compensation, disability benefits, or unemployment compensation law or any similar law.

(iii) Bodily injury to:

[A] An employee of the owner or operator arising from, and in the course of, employment by the owner or operator; or

[B] The spouse, child, parent, brother or sister of that employeee as a consequence of, or arising from, and in the course of, employment by the owner or operator.

This exclusion applies:

[1] Whether the owner or operator may be liable as an employer or in any other capacity; and

[2] To any obligation to share damages with or repay another person who must pay damages because of the injury to persons identified in paragraphs [A] and [B].

(iv) Bodily injury or property damage arising out of the ownership, maintenance, use, or entrustment to others of any aircraft, motor vehicle or watercraft.

(v) Property damage to:

[A] Any property owned, rented, or occupied by the owner or operator;

[B] Premises that are sold, given away or abandoned by the owner or operator if the property damage arises out of any part of those premises;

[C] Property loaned to the owner or operator;

[D] Personal property in the care, custody or control of the owner or operator;

[E] That particular part of real property on which the owner or operator or any contractors or subcontractors working directly or indirectly on behalf of the owner or operator are performing operations, if the property damage arises out of these operations.

I hereby certify that the wording of the guarantee is identical to the wording specified in 40 CFR 264.151(h)(2).

Effective date: _____

[Name of guarantor]

[Authorized signature for guarantor]

[Name of person signing]

[Title of person signing]

Signature of witness or notary:

(i) A hazardous waste facility liability endorsement as required in § 264.147 or § 265.147 must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

HAZARDOUS WASTE FACILITY LIABILITY ENDORSEMENT

1. This endorsement certifies that the policy to which the endorsement is attached provides liability insurance covering bodily injury and property damage in connection with the insured's obligation to demonstrate financial responsibility under 40 CFR 264.147 or 265.147. The coverage applies at [list EPA Identification Number, name, and address for each facility] for [insert "sudden accidental occurrences," "nonsudden accidental occurrences," or "sudden and nonsudden accidental occurrences"; if coverage is for multiple facilities and the coverage is different for different facilities, indicate which facilities are insured for sudden accidental occurrences, which are insured for nonsudden accidental occurrences, and which are insured for both]. The limits of liability are [insert the dollar amount of the "each occurrence" and "annual aggregate" limits of the Insurer's liability], exclusive of legal defense costs.

2. The insurance afforded with respect to such occurrences is subject to all of the terms and conditions of the policy; provided, however, that any provisions of the policy inconsistent with subsections (a) through (e) of this Paragraph 2 are hereby amended to conform with subsections (a) through (e):

(a) Bankruptcy or insolvency of the insured shall not relieve the Insurer of its obligations under the policy to which this endorsement is attached.

(b) The Insurer is liable for the payment of amounts within any deductible applicable to the policy, with a right of reimbursement by the insured for any such payment made by the Insurer. This provision does not apply with respect to that amount of any deductible for which coverage is demonstrated as specified in 40 CFR 264.147(f) or 265.147(f).

(c) Whenever requested by a Regional Administrator of the U.S. Environmental Protection Agency (EPA), the Insurer agrees to furnish to the Regional Administrator a signed duplicate original of the policy and all endorsements.

(d) Cancellation of this endorsement, whether by the Insurer or the insured, will be effective only upon written notice and only after the expiration of sixty (60) days after a copy of such written notice is received by the Regional Administrator(s) of the EPA Region(s) in which the facility(ies) is (are) located.

(e) Any other termination of this endorsement will be effective only upon written notice and only after the expiration of thirty (30) days after a copy of such written notice is received by the Regional Administrator(s) of the EPA Region(s) in which the facility(ies) is (are) located.

Attached to and forming part of policy No. ——— issued by [name of Insurer], herein called the Insurer, of [address of Insurer] to [name of insured] of [address] this — day of ———, 19—. The effective date of said policy is — day of ———, 19—.

I hereby certify that the wording of this endorsement is identical to the wording specified in 40 CFR 264.151(i) as such regulation was constituted on the date first above written, and that the Insurer is licensed to transact the business of insurance,

or eligible to provide insurance as an excess or surplus lines insurer, in one or more States.

[Signature of Authorized Representative of Insurer]
[Type name]
[Title], Authorized Representive of [name of Insurer]
[Address of Representative]

(j) A certificate of liability insurance as required in § 264.147 or § 265.147 must be worded as follows, except that the instructions in brackets are to be replaced with the relevant information and the brackets deleted:

HAZARDOUS WASTE FACILITY CERTIFICATE OF LIABILITY INSURANCE

1. [Name of Insurer], (the "Insurer"), of [address of Insurer] hereby certifies that it has issued liability insurance covering bodily injury and property damage to [name of insured], (the "insured"), of [address of insured] in connection with the insured's obligation to demonstrate financial responsibility under 40 CFR 264.147 or 265.147. The coverage applies at [list EPA Identification Number, name, and address for each facility] for [insert "sudden accidental occurrences," "nonsudden accidental occurrences," or "sudden and nonsudden accidental occurrences"; if coverage is for multiple facilities and the coverage is different for different facilities, indicate which facilities are insured for sudden accidental occurrences, which are insured for nonsudden accidental occurrences, and which are insured for both]. The limits of liability are [insert the dollar amount of the "each occurrence" and "annual aggregate" limits of the Insurer's liability], exclusive of legal defense costs. The coverage is provided under policy number ——, issued on [date]. The effective date of said policy is [date].

2. The Insurer further certifies the following with respect to the insurance described in Paragraph 1:

(a) Bankruptcy or insolvency of the insured shall not relieve the Insurer of its obligations under the policy.

(b) The Insurer is liable for the payment of amounts within any deductible applicable to the policy, with a right of reimbursement by the insured for any such payment made by the Insurer. This provision does not apply with respect to that amount of any deductible for which coverage is demonstrated as specified in 40 CFR 264.147(f) or 265.147(f).

(c) Whenever requested by a Regional Administrator of the U.S. Environmental Protection Agency (EPA), the Insurer agrees to furnish to the Regional Administrator a signed duplicate original of the policy and all endorsements.

(d) Cancellation of the insurance, whether by the Insurer or the insured, will be effective only upon written notice and only after the expiration of sixty (60) days after a copy of such written notice is received by the Regional Administrator(s) of the EPA Region(s) in which the facility(ies) is (are) located.

(e) Any other termination of the insurance will be effective only upon written notice and only after the expiration of thirty (30) days after a copy of such written notice is received by the Regional Administrator(s) of the EPA Region(s) in which the facility(ies) is (are) located.

I hereby certify that the wording of this instrument is identical to the wording specified in 40 CFR 264.151(j) as such regulation was constituted on the date first above written, and that the Insurer is licensed to transact the business of insurance, or eligible to provide insurance as an excess or surplus lines insurer, in one or more States.

[Signature of authorized representative of Insurer]
[Type name]
[Title], Authorized Representative of [name of Insurer]
[Address of Representative]

(Approved by the Office of Management and Budget under control number 2000-0445, for paragraphs (g), (i), and (j))

[47 FR 15059, Apr. 7, 1982, as amended at 47 FR 16556, Apr. 16, 1982; 47 FR 17989, Apr. 27, 1982; 47 FR 19995, May 10, 1982; 47 FR 28627, July 1, 1982; 51 FR 16450, May 2, 1986; 51 FR 25354, July 11, 1986; 52 FR 44320, Nov. 18, 1987]

Subpart I—Use and Management of Containers

SOURCE: 46 FR 2866, Jan. 12, 1981, unless otherwise noted.

§ 264.170 Applicability.

The regulations in this subpart apply to owners and operators of all hazardous waste facilities that store containers of hazardous waste, except as § 264.1 provides otherwise.

[*Comment:* Under § 261.7 and § 261.33(c), if a hazardous waste is emptied from a container the residue remaining in the container is not considered a hazardous waste if the container is "empty" as defined in § 261.7. In that event, management of the container is exempt from the requirements of this subpart.]

§ 264.171 Condition of containers.

If a container holding hazardous waste is not in good condition (e.g., severe rusting, apparent structural defects) or if it begins to leak, the owner or operator must transfer the hazardous waste from this container to a container that is in good condition or manage the waste in some other way that complies with the requirements of this part.

§ 264.172 Compatibility of waste with containers.

The owner or operator must use a container made of or lined with materials which will not react with, and are otherwise compatible with, the hazardous waste to be stored, so that the ability of the container to contain the waste is not impaired.

§ 264.173 Management of containers.

(a) A container holding hazardous waste must always be closed during storage, except when it is necessary to add or remove waste.

(b) A container holding hazardous waste must not be opened, handled, or stored in a manner which may rupture the container or cause it to leak.

[*Comment:* Reuse of containers in transportation is governed by U.S. Department of Transportation regulations including those set forth in 49 CFR 173.28.]

§ 264.174 Inspections.

At least weekly, the owner or operator must inspect areas where containers are stored, looking for leaking containers and for deterioration of containers and the containment system caused by corrosion or other factors.

[*Comment:* See §§ 264.15(c) and 264.171 for remedial action required if deterioration or leaks are detected.]

§ 264.175 Containment.

(a) Container storage areas must have a containment system that is designed and operated in accordance with paragraph (b) of this section, except as otherwise provided by paragraph (c) of this section.

(b) A containment system must be designed and operated as follows:

(1) A base must underly the containers which is free of cracks or gaps and is sufficiently impervious to contain leaks, spills, and accumulated precipitation until the collected material is detected and removed;

(2) The base must be sloped or the containment system must be otherwise designed and operated to drain and remove liquids resulting from leaks, spills, or precipitation, unless the containers are elevated or are otherwise protected from contact with accumulated liquids;

(3) The containment system must have sufficient capacity to contain 10% of the volume of containers or the volume of the largest container, whichever is greater. Containers that do not contain free liquids need not be considered in this determination;

(4) Run-on into the containment system must be prevented unless the collection system has sufficient excess capacity in addition to that required in paragraph (b)(3) of this section to contain any run-on which might enter the system; and

(5) Spilled or leaked waste and accumulated precipitation must be removed from the sump or collection area in as timely a manner as is necessary to prevent overflow of the collection system.

[*Comment:* If the collected material is a hazardous waste under Part 261 of this Chapter, it must be managed as a hazardous waste in accordance with all applicable requirements of Parts 262 through 266 of this chapter. If the collected material is discharged through a point source to waters of the United States, it is subject to the requirements of section 402 of the Clean Water Act, as amended.]

(c) Storage areas that store containers holding only wastes that do not contain free liquids need not have a containment system defined by paragraph (b) of this section, except as provided by paragraph (d) of this section or provided that:

(1) The storage area is sloped or is otherwise designed and operated to drain and remove liquid resulting from precipitation, or

(2) The containers are elevated or are otherwise protected from contact with accumulated liquid.

(d) Storage areas that store containers holding the wastes listed below that do not contain free liquids must

have a containment system defined by paragraph (b) of this section:

(1) FO20, FO21, FO22, FO23, FO26, and FO27.

(2) [Reserved]

[46 FR 55112, Nov. 6, 1981, as amended at 50 FR 2003, Jan. 14, 1985]

§ 264.176 Special requirements for ignitable or reactive waste.

Containers holding ignitable or reactive waste must be located at least 15 meters (50 feet) from the facility's property line.

[*Comment:* See § 264.17(a) for additional requirements.]

§ 264.177 Special requirements for incompatible wastes.

(a) Incompatible wastes, or incompatible wastes and materials (see Appendix V for examples), must not be placed in the same container, unless § 264.17(b) is complied with.

(b) Hazardous waste must not be placed in an unwashed container that previously held an incompatible waste or material.

[*Comment:* As required by § 264.13, the waste analysis plan must include analyses needed to comply with § 264.177. Also, § 264.17(c) requires wastes analyses, trial tests or other documentation to assure compliance with § 264.17(b). As required by § 264.73, the owner or operator must place the results of each waste analysis and trial test, and any documented information, in the operating record of the facility.]

(c) A storage container holding a hazardous waste that is incompatible with any waste or other materials stored nearby in other containers, piles, open tanks, or surface impoundments must be separated from the other materials or protected from them by means of a dike, berm, wall, or other device.

[*Comment:* The purpose of this section is to prevent fires, explosions, gaseous emission, leaching, or other discharge of hazardous waste or hazardous waste constituents which could result from the mixing of incompatible wastes or materials if containers break or leak.]

§ 264.178 Closure.

At closure, all hazardous waste and hazardous waste residues must be removed from the containment system. Remaining containers, liners, bases, and soil containing or contaminated with hazardous waste or hazardous waste residues must be decontaminated or removed.

[*Comment:* At closure, as throughout the operating period, unless the owner or operator can demonstrate in accordance with § 261.3(d) of this chapter that the solid waste removed from the containment system is not a hazardous waste, the owner or operator becomes a generator of hazardous waste and must manage it in accordance with all applicable requirements of Parts 262 through 266 of this chapter].

Subpart J—Tank Systems

SOURCE: 51 FR 25472, July 14, 1986, unless otherwise noted.

§ 264.190 Applicability.

The requirements of this Subpart apply to owners and operators of facilities that use tank systems for storing or treating hazardous waste except as otherwise provided in paragraphs (a) and (b) of this section or in § 264.1 of this part.

(a) Tanks that are used to store or treat hazardous waste which contains no free liquids and are situated inside a building with an impermeable floor are exempted from the requirements in § 264.193. To demonstrate the absence or presence of free liquids in the stored/treated waste, EPA Method 9095 (Paint Filter Liquids Test) as described in "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods" (EPA Publication No. SW-846) must be used.

(b) Tanks, including sumps, as defined in § 260.10, that serve as part of a secondary containment system to collect or contain releases of hazardous wastes are exempted from the requirements in § 264.193 of this subpart.

(Information collection requirement contained in paragraph (a) was approved by the Office of Management and Budget under control number 2050-0050)

[51 FR 25472, July 14, 1986; 51 FR 29430, Aug. 15, 1986]

§ 264.191 Assessment of existing tank system's integrity.

(a) For each existing tank system that does not have secondary containment meeting the requirements of § 264.193, the owner or operator must determine that the tank system is not leaking or is unfit for use. Except as provided in paragraph (c) of this section, the owner or operator must obtain and keep on file at the facility a written assessment reviewed and certified by an independent, qualified registered professional engineer, in accordance with § 270.11(d), that attests to the tank system's integrity by January 12, 1988.

(b) This assessment must determine that the tank system is adequately designed and has sufficient structural strength and compatibility with the waste(s) to be stored or treated, to ensure that it will not collapse, rupture, or fail. At a minimum, this assessment must consider the following:

(1) Design standard(s), if available, according to which the tank and ancillary equipment were constructed;

(2) Hazardous characteristics of the waste(s) that have been and will be handled;

(3) Existing corrosion protection measures;

(4) Documented age of the tank system, if available (otherwise, an estimate of the age); and

(5) Results of a leak test, internal inspection, or other tank integrity examination such that:

(i) For non-enterable underground tanks, the assessment must include a leak test that is capable of taking into account the effects of temperature variations, tank end deflection, vapor pockets, and high water table effects, and

(ii) For other than non-enterable underground tanks and for ancillary equipment, this assessment must include either a leak test, as described above, or other integrity examination, that is certified by an independent, qualified, registered professional engineer in accordance with § 270.11(d), that addresses cracks, leaks, corrosion, and erosion.

[NOTE: The practices described in the American Petroleum Institute (API) Publication, Guide for Inspection of Refinery Equipment, Chapter XIII, "Atmospheric and Low-Pressure Storage Tanks," 4th edition, 1981, may be used, where applicable, as guidelines in conducting other than a leak test.]

(c) Tank systems that store or treat materials that become hazardous wastes subsequent to July 14, 1986, must conduct this assessment within 12 months after the date that the waste becomes a hazardous waste.

(d) If, as a result of the assessment conducted in accordance with paragraph (a), a tank system is found to be leaking or unfit for use, the owner or operator must comply with the requirements of § 264.196.

(Information collection requirements contained in paragraphs (a) through (d) were approved by the Office of Management and Budget under control number 2050-0050.)

[51 FR 25472, July 14, 1986; 51 FR 29430, Aug. 15, 1986]

§ 264.192 Design and installation of new tank systems or components.

(a) Owners or operators of new tank systems or components must obtain and submit to the Regional Administrator, at time of submittal of Part B information, a written assessment, reviewed and certified by an independent, qualified registered professional engineer, in accordance with § 270.11(d), attesting that the tank system has sufficient structural integrity and is acceptable for the storing and treating of hazardous waste. The assessment must show that the foundation, structural support, seams, connections, and pressure controls (if applicable) are adequately designed and that the tank system has sufficient structural strength, compatibility with the waste(s) to be stored or treated, and corrosion protection to ensure that it will not collapse, rupture, or fail. This assessment, which will be used by the Regional Administrator to review and approve or disapprove the acceptability of the tank system design, must include, at a minimum, the following information:

(1) Design standard(s) according to which tank(s) and/or the ancillary equipment are constructed;

(2) Hazardous characteristics of the waste(s) to be handled;

(3) For new tank systems or components in which the external shell of a metal tank or any external metal component of the tank system will be in contact with the soil or with water, a determination by a corrosion expert of:

(i) Factors affecting the potential for corrosion, including but not limited to:

(A) Soil moisture content;

(B) Soil pH;

(C) Soil sulfides level;

(D) Soil resistivity;

(E) Structure to soil potential;

(F) Influence of nearby underground metal structures (e.g., piping);

(G) Existence of stray electric current;

(H) Existing corrosion-protection measures (e.g., coating, cathodic protection), and

(ii) The type and degree of external corrosion protection that are needed to ensure the integrity of the tank system during the use of the tank system or component, consisting of one or more of the following:

(A) Corrosion-resistant materials of construction such as special alloys, fiberglass reinforced plastic, etc.;

(B) Corrosion-resistant coating (such as epoxy, fiberglass, etc.) with cathodic protection (e.g., impressed current or sacrificial anodes); and

(C) Electrical isolation devices such as insulating joints, flanges, etc.

[NOTE: The practices described in the National Association of Corrosion Engineers (NACE) standard, "Recommended Practice (RP-02-85)—Control of External Corrosion on Metallic Buried, Partially Buried, or Submerged Liquid Storage Systems," and the American Petroleum Institute (API) Publication 1632, "Cathodic Protection of Underground Petroleum Storage Tanks and Piping Systems," may be used, where applicable, as guidelines in providing corrosion protection for tank systems.]

(4) For underground tank system components that are likely to be adversely affected by vehicular traffic, a determination of design or operational measures that will protect the tank system against potential damage; and

(5) Design considerations to ensure that:

(i) Tank foundations will maintain the load of a full tank;

(ii) Tank systems will be anchored to prevent flotation or dislodgment where the tank system is placed in a saturated zone, or is located within a seismic fault zone subject to the standards of § 264.18(a); and

(iii) Tank systems will withstand the effects of frost heave.

(b) The owner or operator of a new tank system must ensure that proper handling procedures are adhered to in order to prevent damage to the system during installation. Prior to covering, enclosing, or placing a new tank system or component in use, an independent, qualified installation inspector or an independent, qualified, registered professional engineer, either of whom is trained and experienced in the proper installation of tank systems or components, must inspect the system for the presence of any of the following items:

(1) Weld breaks;

(2) Punctures;

(3) Scrapes of protective coatings;

(4) Cracks;

(5) Corrosion;

(6) Other structural damage or inadequate construction/installation.

All discrepancies must be remedied before the tank system is covered, enclosed, or placed in use.

(c) New tank systems or components that are placed underground and that are backfilled must be provided with a backfill material that is a noncorrosive, porous, homogeneous substance and that is installed so that the backfill is placed completely around the tank and compacted to ensure that the tank and piping are fully and uniformly supported.

(d) All new tanks and ancillary equipment must be tested for tightness prior to being covered, enclosed, or placed in use. If a tank system is found not to be tight, all repairs necessary to remedy the leak(s) in the system must be performed prior to the tank system being covered, enclosed, or placed into use.

(e) Ancillary equipment must be supported and protected against physical damage and excessive stress due to settlement, vibration, expansion, or contraction.

[NOTE: The piping system installation procedures described in American Petroleum Institute (API) Publication 1615 (November 1979), "Installation of Underground Petroleum Storage Systems," or ANSI Standard B31.3, "Petroleum Refinery Piping," and ANSI Standard B31.4 "Liquid Petroleum Transportation Piping System," may be used, where applicable, as guidelines for proper installation of piping systems.]

(f) The owner or operator must provide the type and degree of corrosion protection recommended by an independent corrosion expert, based on the information provided under paragraph (a)(3) of this section, or other corrosion protection if the Regional Administrator believes other corrosion protection is necessary to ensure the integrity of the tank system during use of the tank system. The installation of a corrosion protection system that is field fabricated must be supervised by an independent corrosion expert to ensure proper installation.

(g) The owner or operator must obtain and keep on file at the facility written statements by those persons required to certify the design of the tank system and supervise the installation of the tank system in accordance with the requirements of paragraphs (b) through (f) of this section, that attest that the tank system was properly designed and installed and that repairs, pursuant to paragraphs (b) and (d) of this section, were performed. These written statements must also include the certification statement as required in § 270.11(d) of this chapter.

(Information collection requirements contained in paragraphs (a) and (g) were approved by the Office of Management and Budget under control number 2050-0050)

[51 FR 25472, July 14, 1986; 51 FR 29430, Aug. 15, 1986]

§ 264.193 Containment and detection of releases.

(a) In order to prevent the release of hazardous waste or hazardous constituents to the environment, secondary containment that meets the requirements of this section must be provided (except as provided in paragraphs (f) and (g) of this section):

(1) For all new tank systems or components, prior to their being put into service;

(2) For all existing tank systems used to store or treat EPA Hazardous Waste Nos. F020, F021, F022, F023, F026, and F027, within two years after January 12, 1987;

(3) For those existing tank systems of known and documented age, within two years after January 12, 1987 or when the tank system has reached 15 years of age, whichever comes later;

(4) For those existing tank systems for which the age cannot be documented, within eight years of January 12, 1987; but if the age of the facility is greater than seven years, secondary containment must be provided by the time the facility reaches 15 years of age, or within two years of January 12, 1987, whichever comes later; and

(5) For tank systems that store or treat materials that become hazardous wastes subsequent to January 12, 1987, within the time intervals required in paragraphs (a)(1) through (a)(4) of this section, except that the date that a material becomes a hazardous waste must be used in place of January 12, 1987.

(b) Secondary containment systems must be:

(1) Designed, installed, and operated to prevent any migration of wastes or accumulated liquid out of the system to the soil, ground water, or surface water at any time during the use of the tank system; and

(2) Capable of detecting and collecting releases and accumulated liquids until the collected material is removed.

(c) To meet the requirements of paragraph (b) of this section, secondary containment systems must be at a minimum:

(1) Constructed of or lined with materials that are compatible with the wastes(s) to be placed in the tank system and must have sufficient strength and thickness to prevent failure owing to pressure gradients (including static head and external hydrological forces), physical contact with the waste to which it is exposed, climatic conditions, and the stress of daily operation (including stresses from nearby vehicular traffic).

(2) Placed on a foundation or base capable of providing support to the secondary containment system, resistance to pressure gradients above and below the system, and capable of preventing failure due to settlement, compression, or uplift;

(3) Provided with a leak-detection system that is designed and operated so that it will detect the failure of either the primary or secondary containment structure or the presence of any release of hazardous waste or accumulated liquid in the secondary containment system within 24 hours, or at the earliest practicable time if the owner or operator can demonstrate to the Regional Administrator that existing detection technologies or site conditions will not allow detection of a release within 24 hours; and

(4) Sloped or otherwise designed or operated to drain and remove liquids resulting from leaks, spills, or precipitation. Spilled or leaked waste and accumulated precipitation must be removed from the secondary containment system within 24 hours, or in as timely a manner as is possible to prevent harm to human health and the environment, if the owner or operator can demonstrate to the Regional Administrator that removal of the released waste or accumulated precipitation cannot be accomplished within 24 hours.

[NOTE: If the collected material is a hazardous waste under Part 261 of this chapter, it is subject to management as a hazardous waste in accordance with all applicable requirements of Parts 262 through 265 of this chapter. If the collected material is discharged through a point source to waters of the United States, it is subject to the requirements of sections 301, 304, and 402 of the Clean Water Act, as amended. If discharged to a Publicly Owned Treatment Works (POTW), it is subject to the requirements of section 307 of the Clean Water Act, as amended. If the collected material is released to the environment, it may be subject to the reporting requirements of 40 CFR Part 302.]

(d) Secondary containment for tanks must include one or more of the following devices:

(1) A liner (external to the tank);

(2) A vault;

(3) A double-walled tank; or

(4) An equivalent device as approved by the Regional Administrator

(e) In addition to the requirements of paragraphs (b), (c), and (d) of this section, secondary containment systems must satisfy the following requirements:

(1) External liner systems must be:

(i) Designed or operated to contain 100 percent of the capacity of the largest tank within its boundary;

(ii) Designed or operated to prevent run-on or infiltration of precipitation into the secondary containment system unless the collection system has sufficient excess capacity to contain run-on or infiltration. Such additional capacity must be sufficient to contain precipitation from a 25-year, 24-hour rainfall event.

(iii) Free of cracks or gaps; and

(iv) Designed and installed to surround the tank completely and to cover all surrounding earth likely to come into contact with the waste if the waste is released from the tank(s) (i.e., capable of preventing lateral as well as vertical migration of the waste).

(2) Vault systems must be:

(i) Designed or operated to contain 100 percent of the capacity of the largest tank within its boundary;

(ii) Designed or operated to prevent run-on or infiltration of precipitation into the secondary containment system unless the collection system has sufficient excess capacity to contain run-on or infiltration. Such additional capacity must be sufficient to contain precipitation from a 25-year, 24-hour rainfall event:

(iii) Constructed with chemical-resistant water stops in place at all joints (if any);

(iv) Provided with an impermeable interior coating or lining that is compatible with the stored waste and that will prevent migration of waste into the concrete;

(v) Provided with a means to protect against the formation of and ignition of vapors within the vault, if the waste being stored or treated:

(A) Meets the definition of ignitable waste under § 262.21 of this chapter; or

(B) Meets the definition of reactive waste under § 262.21 of this chapter, and may form an ignitable or explosive vapor.

(vi) Provided with an exterior moisture barrier or be otherwise designed or operated to prevent migration of moisture into the vault if the vault is subject to hydraulic pressure.

(3) Double-walled tanks must be:

(i) Designed as an integral structure (i.e., an inner tank completely enveloped within an outer shell) so that any release from the inner tank is contained by the outer shell.

(ii) Protected, if constructed of metal, from both corrosion of the primary tank interior and of the external surface of the outer shell: and

(iii) Provided with a built-in continuous leak detection system capable of detecting a release within 24 hours, or at the earliest practicable time, if the owner or operator can demonstrate to the Regional Administrator, and the Regional Administrator concludes, that the existing detection technology or site conditions would not allow detection of a release within 24 hours.

[NOTE: The provisions outlined in the Steel Tank Institute's (STI) "Standard for Dual Wall Underground Steel Storage Tanks" may be used as guidelines for aspects of the design of underground steel double-walled tanks.]

(f) Ancillary equipment must be provided with secondary containment (e.g., trench, jacketing, double-walled piping) that meets the requirements of paragraphs (b) and (c) of this section except for:

(1) Aboveground piping (exclusive of flanges, joints, valves, and other connections) that are visually inspected for leaks on a daily basis;

(2) Welded flanges, welded joints, and welded connections, that are visually inspected for leaks on a daily basis;

(3) Sealless or magnetic coupling pumps, that are visually inspected for leaks on a daily basis; and

(4) Pressurized aboveground piping systems with automatic shut-off devices (e.g., excess flow check valves, flow metering shutdown devices, loss of pressure actuated shut-off devices) that are visually inspected for leaks on a daily basis.

(g) The owner or operator may obtain a variance from the requirements of this section if the Regional Administrator finds, as a result of a demonstration by the owner or operator that alternative design and operating practices, together with location characteristics, will prevent the migration of any hazardous waste or hazardous constituents into the ground water; or surface water at least as effectively as secondary containment during the active life of the tank system *or* that in the event of a release that does migrate to ground water or surface water, no substantial present or potential hazard will be posed to human health or the environment. New underground tank systems may not, per a demonstration in accordance with paragraph (g)(2) of this section, be exempted from the secondary containment requirements of this section.

(1) In deciding whether to grant a variance based on a demonstration of equivalent protection of ground water and surface water, the Regional Administrator will consider:

(i) The nature and quantity of the wastes;

(ii) The proposed alternate design and operation;

(iii) The hydrogeologic setting of the facility, including the thickness of soils present between the tank system and ground water, and

(iv) All other factors that would influence the quality and mobility of the hazardous constituents and the potential for them to migrate to ground water or surface water

(2) In deciding whether to grant a variance based on a demonstration of no substantial present or potential hazard, the Regional Administrator will consider:

(i) The potential adverse effects on ground water, surface water, and land quality taking into account:

(A) The physical and chemical characteristics of the waste in the tank system, including its potential for migration.

(B) The hydrogeological characteristics of the facility and surrounding land,

(C) The potential for health risks caused by human exposure to waste constituents,

(D) The potential for damage to wildlife, crops, vegetation, and physical structures caused by exposure to waste constituents, and

(E) The persistence and permanence of the potential adverse effects;

(ii) The potential adverse effects of a release on ground-water quality, taking into account:

(A) The quantity and quality of ground water and the direction of ground-water flow,

(B) The proximity and withdrawal rates of ground-water users,

(C) The current and future uses of ground water in the area, and

(D) The existing quality of ground water, including other sources of contamination and their cumulative impact on the ground-water quality;

(iii) The potential adverse effects of a release on surface water quality, taking into account:

(A) The quantity and quality of ground water and the direction of ground-water flow,

(B) The patterns of rainfall in the region,

(C) The proximity of the tank system to surface waters,

(D) The current and future uses of surface waters in the area and any water quality standards established for those surface waters, and

(E) The existing quality of surface water, including other sources of contamination and the cumulative impact on surface-water quality; and

(iv) The potential adverse effects of a release on the land surrounding the tank system, taking into account:

(A) The patterns of rainfall in the region, and

(B) The current and future uses of the surrounding land.

(3) The owner or operator of a tank system, for which a variance from secondary containment had been granted in accordance with the requirements of paragraph (g)(1) of this section, at which a release of hazardous waste has occurred from the primary tank system but has not migrated beyond the zone of engineering control (as established in the variance), must:

(i) Comply with the requirements of § 264.196, except paragraph (d), and

(ii) Decontaminate or remove contaminated soil to the extent necessary to:

(A) Enable the tank system for which the variance was granted to resume operation with the capability for the detection of releases at least equivalent to the capability it had prior to the release; and

(B) Prevent the migration of hazardous waste or hazardous constituents to ground water or surface water; and

(iii) If contaminated soil cannot be removed or decontaminated in accordance with paragraph (g)(3)(ii) of this section, comply with the requirement of § 264.197(b).

(4) The owner or operator of a tank system, for which a variance from secondary containment had been granted in accordance with the requirements of paragraph (g)(1) of this section, at which a release of hazardous waste has occurred from the primary tank system and has migrated beyond the zone of engineering control (as established in the variance), must:

(i) Comply with the requirements of § 264.196 (a), (b), (c), and (d); and

(ii) Prevent the migration of hazardous waste or hazardous constituents to ground water or surface water, if possible, and decontaminate or remove contaminated soil. If contaminated soil cannot be decontaminated or removed or if ground water has been contaminated, the owner or operator must comply with the requirements of § 264.197(b); and

(iii) If repairing, replacing, or reinstalling the tank system, provide secondary containment in accordance with the requirements of paragraphs (a) through (f) of this section or reapply for a variance from secondary containment and meet the requirements for new tank systems in § 264.192 if the tank system is replaced. The owner or operator must comply with these requirements even if contaminated soil can be decontaminated or removed and ground water or surface water has not been contaminated.

(h) The following procedures must be followed in order to request a variance from secondary containment:

(1) The Regional Administrator must be notified in writing by the owner or operator that he intends to

conduct and submit a demonstration for a variance from secondary containment as allowed in paragraph (g) according to the following schedule:

(i) For existing tank systems, at least 24 months prior to the date that secondary containment must be provided in accordance with paragraph (a) of this section.

(ii) For new tank systems, at least 30 days prior to entering into a contract for installation.

(2) As part of the notification, the owner or operator must also submit to the Regional Administrator a description of the steps necessary to conduct the demonstration and a timetable for completing each of the steps. The demonstration must address each of the factors listed in paragraph (g)(1) or paragraph (g)(2) of this section;

(3) The demonstration for a variance must be completed within 180 days after notifying the Regional Administrator of an intent to conduct the demonstration; and

(4) If a variance is granted under this paragraph, the Regional Administrator will require the permittee to construct and operate the tank system in the manner that was demonstrated to meet the requirements for the variance.

(i) All tank systems, until such time as secondary containment that meets the requirements of this section is provided, must comply with the following:

(1) For non-enterable underground tanks, a leak test that meets the requirements of § 264.191(b)(5) or other tank integrity method, as approved or required by the Regional Administrator, must be conducted at least annually.

(2) For other than non-enterable underground tanks, the owner or operator must either conduct a leak test as in paragraph (i)(1) of this section or develop a schedule and procedure for an assessment of the overall condition of the tank system by an independent, qualified registered professional engineer. The schedule and procedure must be adequate to detect obvious cracks, leaks, and corrosion or erosion that may lead to cracks and leaks. The owner or operator must remove the stored waste from the tank, if necessary, to allow the condition of all internal tank surfaces to be assessed. The frequency of these assessments must be based on the material of construction of the tank and its ancillary equipment, the age of the system, the type of corrosion or erosion protection used, the rate of corrosion or erosion observed during the previous inspection, and the characteristics of the waste being stored or treated.

(3) For ancillary equipment, a leak test or other integrity assessment as approved by the Regional Administrator must be conducted at least annually.

[NOTE: The practices described in the American Petroleum Institute (API) Publication Guide for Inspection of Refinery Equipment, Chapter XIII, "Atmospheric and Low-Pressure Storage Tanks," 4th edition, 1981, may be used, where applicable, as guidelines for assessing the overall condition of the tank system.]

(4) The owner or operator must maintain on file at the facility a record of the results of the assessments conducted in accordance with paragraphs (i)(1) through (i)(3) of this section.

(5) If a tank system or component is found to be leaking or unfit for use as a result of the leak test or assessment in paragraphs (i)(1) through (i)(3) of this section, the owner or operator must comply with the requirements of § 264.196.

(Information collection requirements contained in paragraphs (c), (d), (e), (g), (h), and (i) were approved by the Office of Management and Budget under control number 2050-0050)

[51 FR 25472, July 14, 1986; 51 FR 29430, Aug. 15, 1986]

§ 264.194 General operating requirements.

(a) Hazardous wastes or treatment reagents must not be placed in a tank system if they could cause the tank, its ancillary equipment, or the containment system to rupture, leak, corrode, or otherwise fail.

(b) The owner or operator must use appropriate controls and practices to prevent spills and overflows from tank or containment systems. These include at a minimum:

(1) Spill prevention controls (e.g., check valves, dry disconnect couplings);

(2) Overfill prevention controls (e.g., level sensing devices, high level alarms, automatic feed cutoff, or bypass to a standby tank); and

(3) Maintenance of sufficient freeboard in uncovered tanks to prevent overtopping by wave or wind action or by precipitation.

(c) The owner or operator must comply with the requirements of § 264.196 if a leak or spill occurs in the tank system.

[Information collection requirements contained in paragraph (c) were approved by the Office of Management and Budget under control number 2050-0050]

§ 264.195 Inspections.

(a) The owner or operator must develop and follow a schedule and procedure for inspecting overfill controls.

(b) The owner or operator must inspect at least once each operating day:

(1) Aboveground portions of the tank system, if any, to detect corrosion or releases of waste;

(2) Data gathered from monitoring and leak detection equipment (e.g., pressure or temperature gauges, monitoring wells) to ensure that the tank system is being operated according to its design; and

(3) The construction materials and the area immediately surrounding the externally accessible portion of the tank system, including the secondary containment system (e.g., dikes) to detect erosion or signs of releases of hazardous waste (e.g., wet spots, dead vegetation).

[NOTE: Section 264.15(c) requires the owner or operator to remedy any deterioration or malfunction he finds. Section 264.196 requires the owner or operator to notify the Regional Administrator within 24 hours of confirming a leak. Also, 40 CFR Part 302 may require the owner or operator to notify the National Response Center of a release.]

(c) The owner or operator must inspect cathodic protection systems, if present, according to, at a minimum, the following schedule to ensure that they are functioning properly:

(1) The proper operation of the cathodic protection system must be confirmed within six months after initial installation and annually thereafter; and

(2) All sources of impressed current must be inspected and/or tested, as appropriate, at least bimonthly (i.e., every other month).

[NOTE: The practices described in the National Association of Corrosion Engineers (NACE) standard, "Recommended Practice (RP-02-85)—Control of External Corrosion on Metallic Buried, Partially Buried, or Submerged Liquid Storage Systems," and the American Petroleum Institute (API) Publication 1632, "Cathodic Protection of Underground Petroleum Storage Tanks and Piping Systems," may be used, where applicable, as guidelines in maintaining and inspecting cathodic protection systems.]

(d) The owner or operator must document in the operating record of the facility an inspection of those items in paragraphs (a) through (c) of this section.

[Information collection requirements contained in paragraph (a) and (d) were approved by the Office of Management and Budget under control number 2050-0050]

§ 264.196 Response to leaks or spills and disposition of leaking or unfit-for-use tank systems.

A tank system or secondary containment system from which there has been a leak or spill, or which is unfit for use, must be removed from service immediately, and the owner or operator must satisfy the following requirements:

(a) *Cessation of use; prevent flow or addition of wastes.* The owner or operator must immediately stop the flow of hazardous waste into the tank system or secondary containment system and inspect the system to determine the cause of the release.

(b) *Removal of waste from tank system or secondary containment system.* (1) If the release was from the tank system, the owner/operator must, within 24 hours after detection of the leak or, if the owner/operator demonstrates that it is not possible, at the earliest practicable time, remove as much of the waste as is necessary to prevent further release of hazardous waste to the environment and to allow inspection and repair of the tank system to be performed.

(2) If the material released was to a secondary containment system, all released materials must be removed within 24 hours or in as timely a manner as is possible to prevent harm to human health and the environment.

(c) *Containment of visible releases to the environment.* The owner/operator must immediately conduct a visual inspection of the release and, based upon that inspection:

(1) Prevent further migration of the leak or spill to soils or surface water; and

(2) Remove, and properly dispose of, any visible contamination of the soil or surface water.

(d) *Notifications, reports.* (1) Any release to the environment, except as provided in paragraph (d)(2) of this section, must be reported to the Regional Administrator within 24 hours of its detection. If the release has been reported pursuant to 40 CFR Part 302, that report will satisfy this requirement.

(2) A leak or spill of hazardous waste is exempted from the requirements of this paragraph if it is:

(i) Less than or equal to a quantity of one (1) pound, and

(ii) Immediately contained and cleaned up.

(3) Within 30 days of detection of a release to the environment, a report containing the following information must be submitted to the Regional Administrator:

(i) Likely route of migration of the release;

(ii) Characteristics of the surrounding soil (soil composition, geology, hydrogeology, climate);

(iii) Results of any monitoring or sampling conducted in connection with the release (if available). If sampling or monitoring data relating to the release are not available within 30 days, these data must be submitted to the Regional Administrator as soon as they become available.

(iv) Proximity to downgradient drinking water, surface water, and populated areas; and

(v) Description of response actions taken or planned.

(e) *Provision of secondary containment, repair, or closure.* (1) Unless the owner/operator satisfies the requirements of paragraphs (e)(2) through (4) of this section, the tank system must be closed in accordance with § 264.197.

(2) If the cause of the release was a spill that has not damaged the integrity of the system, the owner/operator may return the system to service as soon as the released waste is removed and repairs, if necessary, are made.

(3) If the cause of the release was a leak from the primary tank system into the secondary containment system, the system must be repaired prior to returning the tank system to service.

(4) If the source of the release was a leak to the environment from a component of a tank system without secondary containment, the owner/operator must provide the component of the system from which the leak occurred with secondary containment that satisfies the requirements of § 264.193 before it can be returned to service, unless the source of the leak is an aboveground portion of a tank system that can be inspected visually. If the source is an aboveground component that can be inspected visually, the component must be repaired and may be returned to service without secondary containment as long as the requirements of paragraph (f) of this section are satisfied. If a component is replaced to comply with the requirements of this subparagraph, that component must satisfy the requirements for new tank systems or components in §§ 264.192 and 264.193. Additionally, if a leak has occurred in any portion of a tank system component that is not readily accessible for visual inspection (e.g., the bottom of an inground or onground tank), the entire component must be provided with secondary containment in accordance with § 264.193 prior to being returned to use.

(f) *Certification of major repairs.* If the owner/operator has repaired a tank system in accordance with paragraph (e) of this section, and the repair has been extensive (e.g., installation of an internal liner; repair of a ruptured primary containment or secondary containment vessel), the tank system must not be returned to service unless the owner/operator has obtained a certification by an independ-

ent, qualified, registered, professional engineer in accordance with § 270.11(d) that the repaired system is capable of handling hazardous wastes without release for the intended life of the system. This certification must be submitted to the Regional Administrator within seven days after returning the tank system to use.

[NOTE: The Regional Administrator may, on the basis of any information received that there is or has been a release of hazardous waste or hazardous constituents into the environment, issue an order under RCRA sections 3004(u), 3008(h), or 7003(a) requiring corrective action or such other response as deemed necessary to protect human health or the environment.]

[NOTE: See § 264.15(c) for the requirements necessary to remedy a failure. Also, 40 CFR Part 302 may require the owner or operator to notify the National Response Center of certain releases.]

(Information collection requirements contained in paragraphs (d), (e), and (f) were approved by the Office of Management and Budget under control number 2050-0050)

[51 FR 25472, July 14, 1986; 51 FR 29430, Aug. 15, 1986]

§ 264.197 Closure and post-closure care.

(a) At closure of a tank system, the owner or operator must remove or decontaminate all waste residues, contaminated containment system components (liners, etc.), contaminated soils, and structures and equipment contaminated with waste, and manage them as hazardous waste, unless § 261.3(d) of this Chapter applies. The closure plan, closure activities, cost estimates for closure, and financial responsibility for tank systems must meet all of the requirements specified in Subparts G and H of this Part.

(b) If the owner or operator demonstrates that not all contaminated soils can be practicably removed or decontaminated as required in paragraph (a) of this section, then the owner or operator must close the tank system and perform post-closure care in accordance with the closure and post-closure care requirements that apply to landfills (§ 264.310). In addition, for the purposes of closure, post-closure, and financial responsibility, such a tank system is then considered to be a landfill, and the owner or operator must meet all of the requirements for landfills specified in Subparts G and H of this part.

(c) If an owner or operator has a tank system that does not have secondary containment that meets the requirements of § 264.193 (b) through (f) and has not been granted a variance from the secondary containment requirements in accordance with § 264.193(g), then:

(1) The closure plan for the tank system must include both a plan for complying with paragraph (a) of this section and a contingent plan for complying with paragraph (b) of this section.

(2) A contingent post-closure plan for complying with paragraph (b) of this section must be prepared and submitted as part of the permit application.

(3) The cost estimates calculated for closure and post-closure care must reflect the costs of complying with the contingent closure plan and the contingent post-closure plan, if those costs are greater than the costs of complying with the closure plan prepared for the expected closure under paragraph (a) of this section.

(4) Financial assurance must be based on the cost estimates in paragraph (c)(3) of this section.

(5) For the purposes of the contingent closure and post-closure plans, such a tank system is considered to be a landfill, and the contingent plans must meet all of the closure, post-closure, and financial responsibility requirements for landfills under Subparts G and H of this Part.

(Information collection requirements contained in paragraphs (a)-(c) were approved by the Office of Management and Budget under control number 2050-0050)

[51 FR 25472, July 14, 1986; 51 FR 29430, Aug. 15, 1986]

§ 264.198 Special requirements for ignitable or reactive wastes.

(a) Ignitable or reactive waste must not be placed in tank systems, unless:

(1) The waste is treated, rendered, or mixed before or immediately after placement in the tank system so that:

(i) The resulting waste, mixture, or dissolved material no longer meets the definition of ignitable or reactive waste under §§ 261.21 or 261.23 of this Chapter, and

(ii) Section 264.17(b) is complied with; or

(2) The waste is stored or treated in such a way that it is protected from any material or conditions that may cause the waste to ignite or react; or

(3) The tank system is used solely for emergencies.

(b) The owner or operator of a facility where ignitable or reactive waste is stored or treated in a tank must comply with the requirements for the maintenance of protective distances between the waste management area 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," (1977 or 1981), (incorporated by reference, see § 260.11).

§ 264.199 Special requirements for incompatible wastes.

(a) Incompatible wastes, or incompatible wastes and materials, must not be placed in the same tank system, unless § 264.17(b) is complied with.

(b) Hazardous waste must not be placed in a tank system that has not been decontaminated and that previously held an incompatible waste or material, unless § 264.17(b) is complied with.

Subpart K—Surface Impoundments

SOURCE: 47 FR 32357, July 26, 1982, unless otherwise noted.

§ 264.220 Applicability.

The regulations in this subpart apply to owners and operators of facilities that use surface impoundments to treat, store, or dispose of hazardous waste except as § 264.1 provides otherwise.

§ 264.221 Design and operating requirements.

(a) Any surface impoundment that is not covered by paragraph (c) of this section or § 265.221 of this chapter must have a liner for all portions of the impoundment (except for existing portions of such impoundments). The liner must be designed, co[illegible]ucted, and installed to prevent any migration of wastes out of the impoundment to the adjacent subsurface soil or ground water or surface water at any time during the active life (including the closure period) of the impoundment. The liner may be constructed of materials that may allow wastes to migrate into the liner (but not into the adjacent subsurface soil or ground water or surface water) during the active life of the facility, provided that the impoundment is closed in accordance with § 264.228(a)(1). For impoundments that will be closed in accordance with § 264.228(a)(2), the liner must be constructed of materials that can prevent wastes from migrating into the liner during the active life of the facility. The liner must be:

(1) Constructed of materials that have appropriate chemical properties and sufficient strength and thickness to prevent failure due to pressure gradients (including static head and external hydrogeologic forces), physical contact with the waste or leachate to which they are exposed, climatic conditions, the stress of installation, and the stress of daily operation;

(2) Placed upon a foundation or base capable of providing support to the liner and resistance to pressure gradients above and below the liner to prevent failure of the liner due to settlement, compression, or uplift; and

(3) Installed to cover all surrounding earth likely to be in contact with the waste or leachate.

(b) The owner or operator will be exempted from the requirements of paragraph (a) of this section if the Regional Administrator finds, based on a demonstration by the owner or operator, that alternate design and operating practices, together with location characteristics, will prevent the migration of any hazardous constituents (see § 264.93) into the ground water or surface water at any future time. In deciding whether to grant an exemption, the Regional Administrator will consider:

(1) The nature and quantity of the wastes;

(2) The proposed alternate design and operation;

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(3) The hydrogeologic setting of the facility, including the attenuative capacity and thickness of the liners and soils present between the impoundment and ground water or surface water; and

(4) All other factors which would influence the quality and mobility of the leachate produced and the potential for it to migrate to ground water or surface water.

(c) The owner or operator of each new surface impoundment, each new surface impoundment unit at an existing facility, each replacement of an existing surface impoundment unit, and each lateral expansion of an existing surface impoundment unit, must install two or more liners and a leachate collection system between such liners. The liners and leachate collection system must protect human health and the environment. The requirements of this paragraph shall apply with respect to all waste received after the issuance of the permit. The requirement for the installation of two or more liners in this paragraph may be satisfied by the installation of a top liner designed, operated and constructed of materials to prevent the migration of any constituent into such liner during the period such facility remains in operation (including any post-closure monitoring period), and a lower liner designed, operated, and constructed to prevent the migration of any constituent through such liner during such period. For the purpose of the preceding sentence, a lower liner shall be deemed to satisfy such requirement if it is constructed of at least a 3-foot thick layer of recompacted clay or other natural material with a permeability of no more than 1×10^{-7} centimeter per second.

(d) Paragraph (c) of this section will not apply if the owner or operator demonstrates to the Regional Administrator, and the Regional Administrator finds for such surface impoundment, that alternative design and operating practices, together with location characteristics, will prevent the migration of any hazardous constituent into the ground water or surface water at least as effectively as such liners and leachate collection systems.

(e) The double liner requirement set forth in paragraph (c) of this section may be waived by the Regional Administrator for any monofill, if:

(1) The monofill contains only hazardous wastes from foundry furnace emission controls or metal casting molding sand, and such wastes do not contain constituents which would render the wastes hazardous for reasons other than the EP toxicity characteristics in § 261.24 of this chapter; and

(2)(i)(A) The monofill has at least one liner for which there is no evidence that such liner is leaking. For the purposes of this paragraph, the term "liner" means a liner designed, constructed, installed, and operated to prevent hazardous waste from passing into the liner at any time during the active life of the facility, or a liner designed, constructed, installed, and operated to prevent hazardous waste from migrating beyond the liner to adjacent subsurface soil, ground water, or surface water at any time during the active life of the facility. In the case of any surface impoundment which has been exempted from the requirements of paragraph (c) of this section on the basis of a liner designed, constructed, installed, and operated to prevent hazardous waste from passing beyond the liner, at the closure of such impoundment, the owner or operator must remove or decontaminate all waste residues, all contaminated liner material, and contaminated soil to the extent practicable. If all contaminated soil is not removed or decontaminated, the owner or operator of such impoundment will comply with appropriate post-closure requirements, including but not limited to ground-water monitoring and corrective action;

(B) The monofill is located more than one-quarter mile from an underground source of drinking water (as that term is defined in § 144.3 of this chapter); and

(C) The monofill is in compliance with generally applicable groundwater monitoring requrements for facilities with permits under RCRA section 3005(c); or

(ii) The owner or operator demonstrates that the monofill is located, designed and operated so as to assure that there will be no migration of any hazardous constituent into ground water or surface water at any future time.

(f) A surface impoundment must be designed, constructed, maintained, and operated to prevent overtopping resulting from normal or abnormal operations; overfilling; wind and wave action; rainfall; run-on; malfunctions of level controllers, alarms, and other equipment; and human error.

(g) A surface impoundment must have dikes that are designed, constructed, and maintained with sufficient structural integrity to prevent massive failure of the dikes. In ensuring structural integrity, it must not be presumed that the liner system will function without leakage during the active life of the unit.

(h) The Regional Administrator will specify in the permit all design and operating practices that are necessary to ensure that the requirements of this section are satisfied.

(Approved by the Office of Management and Budget under control number 2050-0007)

[47 FR 32357, July 26, 1982, as amended at 50 FR 4514, Jan. 31, 1985; 50 FR 28747, July 15, 1985]

§§ 264.222—264.225 [Reserved]

§ 264.226 Monitoring and inspection.

(a) During construction and installation, liners (except in the case of existing portions of surface impoundments exempt from § 264.221(a)) and cover systems (e.g., membranes, sheets, or coatings) must be inspected for uniformity, damage, and imperfections (e.g., holes, cracks, thin spots, or foreign materials). Immediately after construction or installation:

(1) Synthetic liners and covers must be inspected to ensure tight seams and joints and the absence of tears, punctures, or blisters; and

(2) Soil-based and admixed liners and covers must be inspected for imperfections including lenses, cracks, channels, root holes, or other structural non-uniformities that may cause an increase in the permeability of the liner or cover.

(b) While a surface impoundment is in operation, it must be inspected weekly and after storms to detect evidence of any of the following:

(1) Deterioration, malfunctions, or improper operation of overtopping control systems;

(2) Sudden drops in the level of the impoundment's contents; and

(3) Severe erosion or other signs of deterioration in dikes or other containment devices.

(c) Prior to the issuance of a permit, and after any extended period of time (at least six months) during which the impoundment was not in service, the owner or operator must obtain a certification from a qualified engineer that the impoundment's dike, including that portion of any dike which provides freeboard, has structural integrity. The certification must establish, in particular, that the dike:

(1) Will withstand the stress of the pressure exerted by the types and amounts of wastes to be placed in the impoundment; and

(2) Will not fail due to scouring or piping, without dependence on any liner system included in the surface impoundment construction.

(Approved by the Office of Management and Budget under control number 2050-0007)

[47 FR 32357, July 26, 1982, as amended at 50 FR 4514, Jan. 31, 1985; 50 FR 28748, July 15, 1985]

§ 264.227 Emergency repairs; contingency plans.

(a) A surface impoundment must be removed from service in accordance with paragraph (b) of this section when:

(1) The level of liquids in the impoundment suddenly drops and the drop is not known to be caused by changes in the flows into or out of the impoundment; or

(2) The dike leaks.

(b) When a surface impoundment must be removed from service as required by paragraph (a) of this section, the owner or operator must:

(1) Immediately shut off the flow or stop the addition of wastes into the impoundment;

(2) Immediately contain any surface leakage which has occurred or is occurring;

(3) Immediately stop the leak;

(4) Take any other necessary steps to stop or prevent catastrophic failure;

(5) If a leak cannot be stopped by any other means, empty the impoundment; and

(6) Notify the Regional Administrator of the problem in writing within seven days after detecting the problem.

(c) As part of the contingency plan required in Subpart D of this part, the owner or operator must specify a procedure for complying with the requirements of paragraph (b) of this section.

(d) No surface impoundment that has been removed from service in accordance with the requirements of this section may be restored to service unless the portion of the impoundment which was failing is repaired and the following steps are taken:

(1) If the impoundment was removed from service as the result of actual or imminent dike failure, the dike's structural integrity must be recertified in accordance with § 264.226(c).

(2) If the impoundment was removed from service as the result of a sudden drop in the liquid level, then:

(i) For any existing portion of the impoundment, a liner must be installed in compliance with § 264.221(a); and

(ii) For any other portion of the impoundment, the repaired liner system must be certified by a qualified engineer as meeting the design specifications approved in the permit.

(e) A surface impoundment that has been removed from service in accordance with the requirements of this section and that is not being repaired must be closed in accordance with the provisions of § 264.228.

[47 FR 32357, July 26, 1982, as amended at 50 FR 28748, July 15, 1985]

§ 264.228 Closure and post-closure care.

(a) At closure, the owner or operator must:

(1) Remove or decontaminate all waste residues, contaminated containment system components (liners, etc.), contaminated subsoils, and structures and equipment contaminated with waste and leachate, and manage them as hazardous waste unless § 261.3(d) of this chapter applies; or

(2)(i) Eliminate free liquids by removing liquid wastes or solidifying the remaining wastes and waste residues;

(ii) Stabilize remaining wastes to a bearing capacity sufficient to support final cover; and

(iii) Cover the surface impoundment with a final cover designed and constructed to:

(A) Provide long-term minimization of the migration of liquids through the closed impoundment;

(B) Function with minimum maintenance;

(C) Promote drainage and minimize erosion or abrasion of the final cover;

(D) Accommodate settling and subsidence so that the cover's integrity is maintained; and

(E) Have a permeability less than or equal to the permeability of any bottom liner system or natural subsoils present.

(b) If some waste residues or contaminated materials are left in place at final closure, the owner or operator must comply with all post-closure requirements contained in §§ 264.117 through 264.120, including maintenance and monitoring throughout the post-closure care period (specified in the permit under § 264.117). The owner or operator must:

(1) Maintain the integrity and effectiveness of the final cover, including making repairs to the cap as necessary to correct the effects of settling, subsidence, erosion, or other events;

(2) Maintain and monitor the ground-water monitoring system and comply with all other applicable requirements of Subpart F of this part; and

(3) Prevent run-on and run-off from eroding or otherwise damaging the final cover.

(c)(1) If an owner or operator plans to close a surface impoundment in accordance with paragraph (a)(1) of this section, and the impoundment does not comply with the liner requirements of § 264.221(a) and is not exempt from them in accordance with § 264.221(b), then:

(i) The closure plan for the impoundment under § 264.112 must include both a plan for complying with paragraph (a)(1) of this section and a contingent plan for complying with paragraph (a)(2) of this section in case not all contaminated subsoils can be practicably removed at closure; and

(ii) The owner or operator must prepare a contingent post-closure plan under § 264.118 for complying with paragraph (b) of this section in case not all contaminated subsoils can be practicably removed at closure.

(2) The cost estimates calculated under §§ 264.142 and 264.144 for closure and post-closure care of an impoundment subject to this paragraph must include the cost of complying with the contingent closure plan and the contingent post-closure plan, but are not required to include the cost of expected closure under paragraph (a)(1) of this section.

[47 FR 32357, July 26, 1982, as amended at 50 FR 28748, July 15, 1985]

§ 264.229 Special requirements for ignitable or reactive waste.

Ignitable or reactive waste must not be placed in a surface impoundment, unless:

(a) The waste is treated, rendered, or mixed before or immediately after placement in the impoundment so that:

(1) The resulting waste, mixture, or dissolution of material no longer meets the definition of ignitable or reactive waste under § 261.21 or § 261.23 of this chapter; and

(2) Section 264.17(b) is complied with; or

(b) The waste is managed in such a way that it is protected from any material or conditions which may cause it to ignite or react; or

(c) The surface impoundment is used solely for emergencies.

§ 264.230 Special requirements for incompatible wastes.

Incompatible wastes, or incompatible wastes and materials, (see Appendix V of this part for examples) must not be placed in the same surface impoundment, unless § 264.17(b) is complied with.

§ 264.231 Special requirements for hazardous wastes FO20, FO21, FO22, FO23, FO26, and FO27.

(a) Hazardous Wastes FO20, FO21, FO22, FO23, FO26, and FO27 must not be placed in a surface impoundment unless the owner or operator operates the surface impoundment in accordance with a management plan for these wastes that is approved by the Regional Administrator pursuant to the standards set out in this paragraph, and in accord with all other applicable requirements of this part. The factors to be considered are:

(1) The volume, physical, and chemical characteristics of the wastes, including their potential to migrate through soil or to volatilize or escape into the atmosphere;

(2) The attenuative properties of underlying and surrounding soils or other materials;

(3) The mobilizing properties of other materials co-disposed with these wastes; and

(4) The effectiveness of additional treatment, design, or monitoring techniques.

(b) The Regional Administrator may determine that additional design, operating, and monitoring requirements are necessary for surface impoundments managing hazardous wastes FO20, FO21, FO22, FO23, FO26, and FO27 in order to reduce the possibility of migration of these wastes to ground water, surface water, or air so as to protect human health and the environment.

[50 FR 2004, Jan. 14, 1985]

Subpart L—Waste Piles

SOURCE: 47 FR 32359, July 26, 1982, unless otherwise noted.

§ 264.250 Applicability.

(a) The regulations in this subpart apply to owners and operators of facilities that store or treat hazardous waste in piles, except as § 264.1 provides otherwise.

(b) The regulations in this subpart do not apply to owners or operators of waste piles that are closed with wastes left in place. Such waste piles are sub-

ject to regulation under Subpart N of this part (Landfills).

(c) The owner or operator of any waste pile that is inside or under a structure that provides protection from precipitation so that neither run-off nor leachate is generated is not subject to regulation under § 264.251 or under Subpart F of this part, provided that:

(1) Liquids or materials containing free liquids are not placed in the pile;

(2) The pile is protected from surface water run-on by the structure or in some other manner;

(3) The pile is designed and operated to control dispersal of the waste by wind, where necessary, by means other than wetting; and

(4) The pile will not generate leachate through decomposition or other reactions.

§ 264.251 Design and operating requirements.

(a) A waste pile (except for an existing portion of a waste pile) must have:

(1) A liner that is designed, constructed, and installed to prevent any migration of wastes out of the pile into the adjacent subsurface soil or ground water or surface water at any time during the active life (including the closure period) of the waste pile. The liner may be constructed of materials that may allow waste to migrate into the liner itself (but not into the adjacent subsurface soil or ground water or surface water) during the active life of the facility. The liner must be:

(i) Constructed of materials that have appropriate chemical properties and sufficient strength and thickness to prevent failure due to pressure gradients (including static head and external hydrogeologic forces), physical contact with the waste or leachate to which they are exposed, climatic conditions, the stress of installation, and the stress of daily operation;

(ii) Placed upon a foundation or base capable of providing support to the liner and resistance to pressure gradients above and below the liner to prevent failure of the liner due to settlement, compression, or uplift; and

(iii) Installed to cover all surrounding earth likely to be in contact with the waste or leachate; and

(2) A leachate collection and removal system immediately above the liner that is designed, constructed, maintained, and operated to collect and remove leachate from the pile. The Regional Administrator will specify design and operating conditions in the permit to ensure that the leachate depth over the liner does not exceed 30 cm (one foot). The leachate collection and removal system must be:

(i) Constructed of materials that are:

(A) Chemically resistent to the waste managed in the pile and the leachate expected to be generated; and

(B) Of sufficient strength and thickness to prevent collapse under the pressures exerted by overlaying wastes, waste cover materials, and by any equipment used at the pile; and

(ii) Designed and operated to function without clogging through the scheduled closure of the waste pile.

(b) The owner or operator will be exempted from the requirements of paragraph (a) of this section, if the Regional Administrator finds, based on a demonstration by the owner or operator, that alternate design and operating practices, together with location characteristics, will prevent the migration of any hazardous constituents (see § 264.93) into the ground water or surface water at any future time. In deciding whether to grant an exemption, the Regional Administrator will consider:

(1) The nature and quantity of the wastes;

(2) The proposed alternate design and operation;

(3) The hydrogeologic setting of the facility, including attenuative capacity and thickness of the liners and soils present between the pile and ground water or surface water; and

(4) All other factors which would influence the quality and mobility of the leachate produced and the potential for it to migrate to ground water or surface water.

(c) The owner or operator must design, construct, operate, and maintain a run-on control system capable of preventing flow onto the active portion of the pile during peak discharge from at least a 25-year storm.

(d) The owner or operator must design, construct, operate, and maintain a run-off management system to collect and control at least the water volume resulting from a 24-hour, 25-year storm.

(e) Collection and holding facilities (*e.g.*, tanks or basins) associated with run-on and run-off control systems must be emptied or otherwise managed expeditiously after storms to maintain design capacity of the system.

(f) If the pile contains any particulate matter which may be subject to wind dispersal, the owner or operator must cover or otherwise manage the pile to control wind dispersal.

(g) The Regional Administrator will specify in the permit all design and operating practices that are necessary to ensure that the requirements of this section are satisfied.

(Approved by the Office of Management and Budget under control number 2050-0007)

[47 FR 32359, July 26, 1982, as amended at 50 FR 4514, Jan. 31, 1985]

§§ 264.252—264.253 [Reserved]

§ 264.254 Monitoring and inspection.

(a) During construction or installation, liners (except in the case of existing portions of piles exempt from § 264.251(a)) and cover systems (*e.g.*, membranes, sheets, or coatings) must be inspected for uniformity, damage, and imperfections (*e.g.*, holes, cracks, thin spots, or foreign materials). Immediately after construction or installation:

(1) Synthetic liners and covers must be inspected to ensure tight seams and joints and the absence of tears, punctures, or blisters; and

(2) Soil-based and admixed liners and covers must be inspected for imperfections including lenses, cracks, channels, root holes, or other structural non-uniformities that may cause an increase in the permeability of the liner or cover.

(b) While a waste pile is in operation, it must be inspected weekly and after storms to detect evidence of any of the following:

(1) Deterioration, malfunctions, or improper operation of run-on and run-off control systems;

(2) Proper functioning of wind dispersal control systems, where present; and

(3) The presence of leachate in and proper functioning of leachate collection and removal systems, where present.

(Approved by the Office of Management and Budget under control number 2050-0007)

[47 FR 32359, July 26, 1982, as amended at 50 FR 4514, Jan. 31, 1985; 50 FR 28748, July 15, 1985]

§ 264.255 [Reserved]

§ 264.256 Special requirements for ignitable or reactive waste.

Ignitable or reactive waste must not be placed in a waste pile unless:

(a) The waste is treated, rendered, or mixed before or immediately after placement in the pile so that:

(1) The resulting waste, mixture, or dissolution of material no longer meets the definition of ignitable or reactive waste under § 261.21 or § 261.23 of this chapter; and

(2) Section 264.17(b) is complied with; or

(b) The waste is managed in such a way that it is protected from any material or conditions which may cause it to ignite or react.

§ 264.257 Special requirements for incompatible wastes.

(a) Incompatible wastes, or incompatible wastes and materials, (see Appendix V of this part for examples) must not be placed in the same pile, unless § 264.17(b) is complied with.

(b) A pile of hazardous waste that is incompatible with any waste or other material stored nearby in containers, other piles, open tanks, or surface impoundments must be separated from the other materials, or protected from them by means of a dike, berm, wall, or other device.

(c) Hazardous waste must not be piled on the same base where incompatible wastes or materials were previously piled, unless the base has been

decontaminated sufficiently to ensure compliance with § 264.17(b).

§ 264.258 Closure and post-closure care.

(a) At closure, the owner or operator must remove or decontaminate all waste residues, contaminated containment system components (liners, etc.), contaminated subsoils, and structures and equipment contaminated with waste and leachate, and manage them as hazardous waste unless § 261.3(d) of this chapter applies.

(b) If, after removing or decontaminating all residues and making all reasonable efforts to effect removal or decontamination of contaminated components, subsoils, structures, and equipment as required in paragraph (a) of this section, the owner or operator finds that not all contaminated subsoils can be practicably removed or decontaminated, he must close the facility and perform post-closure care in accordance with the closure and post-closure care requirements that apply to landfills (§ 264.310).

(c)(1) The owner or operator of a waste pile that does not comply with the liner requirements of § 264.251(a)(1) and is not exempt from them in accordance with § 264.250(c) or § 264.251(b), must:

(i) Include in the closure plan for the pile under § 264.112 both a plan for complying with paragraph (a) of this section and a contingent plan for complying with paragraph (b) of this section in case not all contaminated subsoils can be practicably removed at closure; and

(ii) Prepare a contingent post-closure plan under § 264.118 for complying with paragraph (b) of this section in case not all contaminated subsoils can be practicably removed at closure.

(2) The cost estimates calculated under §§ 264.142 and 264.144 for closure and post-closure care of a pile subject to this paragraph must include the cost of complying with the contingent closure plan and the contingent post-closure plan, but are not required to include the cost of expected closure under paragraph (a) of this section.

§ 264.259 Special requirements for hazardous wastes FO20, FO21, FO22, FO23, FO26, and FO27.

(a) Hazardous Wastes FO20, FO21, FO22, FO23, FO26, and FO27 must not be placed in waste piles that are not enclosed (as defined in § 264.250(c)) unless the owner or operator operates the waste pile in accordance with a management plan for these wastes that is approved by the Regional Administrator pursuant to the standards set out in this paragraph, and in accord with all other applicable requirements of this part. The factors to be considered are:

(1) The volume, physical, and chemical characteristics of the wastes, including their potential to migrate through soil or to volatilize or escape into the atmosphere;

(2) The attenuative properties of underlying and surrounding soils or other materials;

(3) The mobilizing properties of other materials co-disposed with these wastes; and

(4) The effectiveness of additional treatment, design, or monitoring techniques.

(b) The Regional Administrator may determine that additional design, operating, and monitoring requirements are necessary for piles managing hazardous wastes FO20, FO21, FO22, FO23, FO26, and, FO27 in order to reduce the possibility of migration of these wastes to ground water, surface water, or air so as to protect human health and the environment.

[50 FR 2004, Jan. 14, 1985]

Subpart M—Land Treatment

SOURCE: 47 FR 32361, July 26, 1982, unless otherwise noted.

§ 264.270 Applicability.

The regulations in this subpart apply to owners and operators of facilities that treat or dispose of hazardous waste in land treatment units, except as § 264.1 provides otherwise.

§ 264.271 Treatment program.

(a) An owner or operator subject to this subpart must establish a land treatment program that is designed to

ensure that hazardous constituents placed in or on the treatment zone are degraded, transformed, or immobilized within the treatment zone. The Regional Administrator will specify in the facility permit the elements of the treatment program, including:

(1) The wastes that are capable of being treated at the unit based on a demonstration under § 264.272;

(2) Design measures and operating practices necessary to maximize the success of degradation, transformation, and immobilization processes in the treatment zone in accordance with § 264.273(a); and

(3) Unsaturated zone monitoring provisions meeting the requirements of § 264.278.

(b) The Regional Administrator will specify in the facility permit the hazardous constituents that must be degraded, transformed, or immobilized under this subpart. Hazardous constituents are constituents identified in Appendix VIII of Part 261 of this chapter that are reasonably expected to be in, or derived from, waste placed in or on the treatment zone.

(c) The Regional Administrator will specify the vertical and horizontal dimensions of the treatment zone in the facility permit. The treatment zone is the portion of the unsaturated zone below and including the land surface in which the owner or operator intends to maintain the conditions necessary for effective degradation, transformation, or immobilization of hazardous constituents. The maximum depth of the treatment zone must be:

(1) No more than 1.5 meters (5 feet) from the initial soil surface; and

(2) More than 1 meter (3 feet) above the seasonal high water table.

(Approved by the Office of Management and Budget under control number 2050-0007)

[47 FR 32361, July 26, 1982, as amended at 50 FR 4514, Jan. 31, 1985]

§ 264.272 Treatment demonstration.

(a) For each waste that will be applied to the treatment zone, the owner or operator must demonstrate, prior to application of the waste, that hazardous constituents in the waste can be completely degraded, transformed, or immobilized in the treatment zone.

(b) In making this demonstration, the owner or operator may use field tests, laboratory analyses, available data, or, in the case of existing units, operating data. If the owner or operator intends to conduct field tests or laboratory analyses in order to make the demonstration required under paragraph (a) of this section, he must obtain a treatment or disposal permit under § 270.63. The Regional Administrator will specify in this permit the testing, analytical, design, and operating requirements (including the duration of the tests and analyses, and, in the case of field tests, the horizontal and vertical dimensions of the treatment zone, monitoring procedures, closure and clean-up activities) necessary to meet the requirements in paragraph (c) of this section.

(c) Any field test or laboratory analysis conducted in order to make a demonstration under paragraph (a) of this section must:

(1) Accurately simulate the characteristics and operating conditions for the proposed land treatment unit including:

(i) The characteristics of the waste (including the presence of Appendix VIII of Part 261 of this chapter constituents);

(ii) The climate in the area;

(iii) The topography of the surrounding area;

(iv) The characteristics of the soil in the treatment zone (including depth); and

(v) The operating practices to be used at the unit.

(2) Be likely to show that hazardous constituents in the waste to be tested will be completely degraded, transformed, or immobilized in the treatment zone of the proposed land treatment unit; and

(3) Be conducted in a manner that protects human health and the environment considering:

(i) The characteristics of the waste to be tested;

(ii) The operating and monitoring measures taken during the course of the test;

(iii) The duration of the test;

(iv) The volume of waste used in the test;

(v) In the case of field tests, the potential for migration of hazardous constituents to ground water or surface water.

[47 FR 32361, July 26, 1982, as amended at 48 FR 14294, Apr. 1, 1983]

§ 264.273 Design and operating requirements.

The Regional Administrator will specify in the facility permit how the owner or operator will design, construct, operate, and maintain the land treatment unit in compliance with this section.

(a) The owner or operator must design, construct, operate, and maintain the unit to maximize the degradation, transformation, and immobilization of hazardous constituents in the treatment zone. The owner or operator must design, construct, operate, and maintain the unit in accord with all design and operating conditions that were used in the treatment demonstration under § 264.272. At a minimum, the Regional Administrator will specify the following in the facility permit:

(1) The rate and method of waste application to the treatment zone;

(2) Measures to control soil pH;

(3) Measures to enhance microbial or chemical reactions (*e.g.*, fertilization, tilling); and

(4) Measures to control the moisture content of the treatment zone.

(b) The owner or operator must design, construct, operate, and maintain the treatment zone to minimize run-off of hazardous constituents during the active life of the land treatment unit.

(c) The owner or operator must design, construct, operate, and maintain a run-on control system capable of preventing flow onto the treatment zone during peak discharge from at least a 25-year storm.

(d) The owner or operator must design, construct, operate, and maintain a run-off management system to collect and control at least the water volume resulting from a 24-hour, 25-year storm.

(e) Collection and holding facilities (*e.g.*, tanks or basins) associated with run-on and run-off control systems must be emptied or otherwise managed expeditiously after storms to maintain the design capacity of the system.

(f) If the treatment zone contains particulate matter which may be subject to wind dispersal, the owner or operator must manage the unit to control wind dispersal.

(g) The owner or operator must inspect the unit weekly and after storms to detect evidence of:

(1) Deterioration, malfunctions, or improper operation of run-on and run-off control systems; and

(2) Improper functioning of wind dispersal control measures.

(Approved by the Office of Management and Budget under control number 2050-0007)

[47 FR 32361, July 26, 1982, as amended at 50 FR 4514, Jan. 31, 1985]

§§ 264.274—264.275 [Reserved]

§ 264.276 Food-chain crops.

The Regional Administrator may allow the growth of food-chain crops in or on the treatment zone only if the owner or operator satisfies the conditions of this section. The Regional Administrator will specify in the facility permit the specific food-chain crops which may be grown.

(a)(1) The owner or operator must demonstrate that there is no substantial risk to human health caused by the growth of such crops in or on the treatment zone by demonstrating, prior to the planting of such crops, that hazardous constituents other than cadmium:

(i) Will not be transferred to the food or feed portions of the crop by plant uptake or direct contact, and will not otherwise be ingested by food-chain animals (*e.g.*, by grazing); or

(ii) Will not occur in greater concentrations in or on the food or feed portions of crops grown on the treatment zone than in or on identical portions of the same crops grown on untreated soils under similar conditions in the same region.

(2) The owner or operator must make the demonstration required under this paragraph prior to the planting of crops at the facility for all constituents identified in Appendix VIII of Part 261 of this chapter that are reasonably expected to be in, or derived from, waste placed in or on the treatment zone.

(3) In making a demonstration under this paragraph, the owner or operator may use field tests, greenhouse studies, available data, or, in the case of existing units, operating data, and must:

(i) Base the demonstration on conditions similar to those present in the treatment zone, including soil characteristics (*e.g.*, pH, cation exchange capacity), specific wastes, application rates, application methods, and crops to be grown; and

(ii) Describe the procedures used in conducting any tests, including the sample selection criteria, sample size, analytical methods, and statistical procedures.

(4) If the owner or operator intends to conduct field tests or greenhouse studies in order to make the demonstration required under this paragraph, he must obtain a permit for conducting such activities.

(b) The owner or operator must comply with the following conditions if cadmium is contained in wastes applied to the treatment zone:

(1)(i) The pH of the waste and soil mixture must be 6.5 or greater at the time of each waste application, except for waste containing cadmium at concentrations of 2 mg/kg (dry weight) or less;

(ii) The annual application of cadmium from waste must not exceed 0.5 kilograms per hectare (kg/ha) on land used for production of tobacco, leafy vegetables, or root crops grown for human consumption. For other food-chain crops, the annual cadmium application rate must not exceed:

Time period	Annual Cd application rate (kilograms per hectare)
Present to June 30, 1984	2.0
July 1, 1984 to December 31, 1986	1.25
Beginning January 1, 1987	0.5

(iii) The cumulative application of cadmium from waste must not exceed 5 kg/ha if the waste and soil mixture has a pH of less than 6.5; and

(iv) If the waste and soil mixture has a pH of 6.5 or greater or is maintained at a pH of 6.5 or greater during crop growth, the cumulative application of cadmium from waste must not exceed: 5 kg/ha if soil cation exchange capacity (CEC) is less than 5 meq/100g; 10 kg/ha if soil CEC is 5-15 meq/100g; and 20 kg/ha if soil CEC is greater than 15 meq/100g; or

(2)(i) Animal feed must be the only food-chain crop produced;

(ii) The pH of the waste and soil mixture must be 6.5 or greater at the time of waste application or at the time the crop is planted, whichever occurs later, and this pH level must be maintained whenever food-chain crops are grown;

(iii) There must be an operating plan which demonstrates how the animal feed will be distributed to preclude ingestion by humans. The operating plan must describe the measures to be taken to safeguard against possible health hazards from cadmium entering the food chain, which may result from alternative land uses; and

(iv) Future property owners must be notified by a stipulation in the land record or property deed which states that the property has received waste at high cadmium application rates and that food-chain crops must not be grown except in compliance with paragraph (b)(2) of this section.

§ 264.277 [Reserved]

§ 264.278 Unsaturated zone monitoring.

An owner or operator subject to this subpart must establish an unsaturated zone monitoring program to discharge the following responsibilities:

(a) The owner or operator must monitor the soil and soil-pore liquid to determine whether hazardous constituents migrate out of the treatment zone.

(1) The Regional Administrator will specify the hazardous constituents to be monitored in the facility permit. The hazardous constituents to be monitored are those specified under § 264.271(b).

(2) The Regional Administrator may require monitoring for principal haz-

ardous constituents (PHCs) in lieu of the constituents specified under § 264.271(b). PHCs are hazardous constituents contained in the wastes to be applied at the unit that are the most difficult to treat, considering the combined effects of degradation, transformation, and immobilization. The Regional Administrator will establish PHCs if he finds, based on waste analyses, treatment demonstrations, or other data, that effective degradation, transformation, or immobilization of the PHCs will assure treatment at at least equivalent levels for the other hazardous constituents in the wastes.

(b) The owner or operator must install an unsaturated zone monitoring system that includes soil monitoring using soil cores and soil-pore liquid monitoring using devices such as lysimeters. The unsaturated zone monitoring system must consist of a sufficient number of sampling points at appropriate locations and depths to yield samples that:

(1) Represent the quality of background soil-pore liquid quality and the chemical make-up of soil that has not been affected by leakage from the treatment zone; and

(2) Indicate the quality of soil-pore liquid and the chemical make-up of the soil below the treatment zone.

(c) The owner or operator must establish a background value for each hazardous constituent to be monitored under paragraph (a) of this section. The permit will specify the background values for each constituent or specify the procedures to be used to calculate the background values.

(1) Background soil values may be based on a one-time sampling at a background plot having characteristics similar to those of the treatment zone.

(2) Background soil-pore liquid values must be based on at least quarterly sampling for one year at a background plot having characteristics similar to those of the treatment zone.

(3) The owner or operator must express all background values in a form necessary for the determination of statistically significant increases under paragraph (f) of this section.

(4) In taking samples used in the determination of all background values, the owner or operator must use an unsaturated zone monitoring system that complies with paragraph (b)(1) of this section.

(d) The owner or operator must conduct soil monitoring and soil-pore liquid monitoring immediately below the treatment zone. The Regional Administrator will specify the frequency and timing of soil and soil-pore liquid monitoring in the facility permit after considering the frequency, timing, and rate of waste application, and the soil permeability. The owner or operator must express the results of soil and soil-pore liquid monitoring in a form necessary for the determination of statistically significant increases under paragraph (f) of this section.

(e) The owner or operator must use consistent sampling and analysis procedures that are designed to ensure sampling results that provide a reliable indication of soil-pore liquid quality and the chemical make-up of the soil below the treatment zone. At a minimum, the owner or operator must implement procedures and techniques for:

(1) Sample collection;

(2) Sample preservation and shipment;

(3) Analytical procedures; and

(4) Chain of custody control.

(f) The owner or operator must determine whether there is a statistically significant change over background values for any hazardous constituent to be monitored under paragraph (a) of this section below the treatment zone each time he conducts soil monitoring and soil-pore liquid monitoring under paragraph (d) of this section.

(1) In determining whether a statistically significant increase has occurred, the owner or operator must compare the value of each constituent, as determined under paragraph (d) of this section, to the background value for that constituent according to the statistical procedure specified in the facility permit under this paragraph.

(2) The owner or operator must determine whether there has been a statistically significant increase below the treatment zone within a reasonable time period after completion of sampling. The Regional Administrator will specify that time period in the facility permit after considering the complexity of the statistical test and the availability of laboratory facilities to perform the analysis of soil and soil-pore liquid samples.

(3) The owner or operator must determine whether there is a statistically significant increase below the treatment zone using a statistical procedure that provides reasonable confidence that migration from the treatment zone will be identified. The Regional Administrator will specify a statistical procedure in the facility permit that he finds:

(i) Is appropriate for the distribution of the data used to establish background values; and

(ii) Provides a reasonable balance between the probability of falsely identifying migration from the treatment zone and the probability of failing to identify real migration from the treatment zone.

(g) If the owner or operator determines, pursuant to paragraph (f) of this section, that there is a statistically significant increase of hazardous constituents below the treatment zone, he must:

(1) Notify the Regional Administrator of this finding in writing within seven days. The notification must indicate what constituents have shown statistically significant increases.

(2) Within 90 days, submit to the Regional Administrator an application for a permit modification to modify the operating practices at the facility in order to maximize the success of degradation, transformation, or immobilization processes in the treatment zone.

(h) If the owner or operator determines, pursuant to paragraph (f) of this section, that there is a statistically significant increase of hazardous constituents below the treatment zone, he may demonstrate that a source other than regulated units caused the increase or that the increase resulted from an error in sampling, analysis, or evaluation. While the owner or operator may make a demonstration under this paragraph in addition to, or in lieu of, submitting a permit modification application under paragraph (g)(2) of this section, he is not relieved of the requirement to submit a permit modification application within the time specified in paragraph (g)(2) of this section unless the demonstration made under this paragraph successfully shows that a source other than regulated units caused the increase or that the increase resulted from an error in sampling, analysis, or evaluation. In making a demonstration under this paragraph, the owner or operator must:

(1) Notify the Regional Administrator in writing within seven days of determining a statistically significant increase below the treatment zone that he intends to make a determination under this paragraph;

(2) Within 90 days, submit a report to the Regional Administrator demonstrating that a source other than the regulated units caused the increase or that the increase resulted from error in sampling, analysis, or evaluation;

(3) Within 90 days, submit to the Regional Administrator an application for a permit modification to make any appropriate changes to the unsaturated zone monitoring program at the facility; and

(4) Continue to monitor in accordance with the unsaturated zone monitoring program established under this section.

(Approved by the Office of Management and Budget under control number 2050-0038)

[47 FR 32361, July 26, 1982, as amended at 50 FR 4514, Jan. 31, 1985]

§ 264.279 Recordkeeping.

The owner or operator must include hazardous waste application dates and rates in the operating record required under § 264.73.

(Approved by the Office of Management and Budget under control number 2050-0007)

[47 FR 32361, July 26, 1982, as amended at 50 FR 4514, Jan. 31, 1985]

§ 264.280 Closure and post-closure care.

(a) During the closure period the owner or operator must:

(1) Continue all operations (including pH control) necessary to maximize degradation, transformation, or immobilization of hazardous constituents within the treatment zone as required under § 264.273(a), except to the

extent such measures are inconsistent with paragraph (a)(8) of this section.

(2) Continue all operations in the treatment zone to minimize run-off of hazardous constituents as required under § 264.273(b);

(3) Maintain the run-on control system required under § 264.273(c);

(4) Maintain the run-off management system required under § 264.273(d);

(5) Control wind dispersal of hazardous waste if required under § 264.273(f);

(6) Continue to comply with any prohibitions or conditions concerning growth of food-chain crops under § 264.276;

(7) Continue unsaturated zone monitoring in compliance with § 264.278, except that soil-pore liquid monitoring may be terminated 90 days after the last application of waste to the treatment zone; and

(8) Establish a vegetative cover on the portion of the facility being closed at such time that the cover will not substantially impede degradation, transformation, or immobilization of hazardous constituents in the treatment zone. The vegetative cover must be capable of maintaining growth without extensive maintenance.

(b) For the purpose of complying with § 264.115, when closure is completed the owner or operator may submit to the Regional Administrator certification by an independent qualified soil scientist, in lieu of an independent registered professional engineer, that the facility has been closed in accordance with the specifications in the approved closure plan.

(c) During the post-closure care period the owner or operator must:

(1) Continue all operations (including pH control) necessary to enhance degradation and transformation and sustain immobilization of hazardous constituents in the treatment zone to the extent that such measures are consistent with other post-closure care activities;

(2) Maintain a vegetative cover over closed portions of the facility;

(3) Maintain the run-on control system required under § 264.273(c);

(4) Maintain the run-off management system required under § 264.273(d);

(5) Control wind dispersal of hazardous waste if required under § 264.273(f);

(6) Continue to comply with any prohibitions or conditions concerning growth of food-chain crops under § 264.276; and

(7) Continue unsaturated zone monitoring in compliance with § 264.278, expect that soil-pore liquid monitoring may be terminated 90 days after the last application of waste to the treatment zone.

(d) The owner or operator is not subject to regulation under paragraphs (a)(8) and (c) of this section if the Regional Administrator finds that the level of hazardous constituents in the treatment zone soil does not exceed the background value of those constituents by an amount that is statistically significant when using the test specified in paragraph (d)(3) of this section. The owner or operator may submit such a demonstration to the Regional Administrator at any time during the closure of post-closure care periods. For the purposes of this paragraph:

(1) The owner or operator must establish background soil values and determine whether there is a statistically significant increase over those values for all hazardous constituents specified in the facility permit under § 264.271 (b).

(i) Background soil values may be based on a one-time sampling of a background plot having characteristics similar to those of the treatment zone.

(ii) The owner or operator must express background values and values for hazardous constituents in the treatment zone in a form necessary for the determination of statistically significant increases under paragraph (d)(3) of this section.

(2) In taking samples used in the determination of background and treatment zone values, the owner or operator must take samples at a sufficient number of sampling points and at appropriate locations and depths to yield samples that represent the chemical make-up of soil that has not been affected by leakage from the treatment zone and the soil within the treatment zone, respectively.

(3) In determining whether a statistically significant increase has occurred, the owner or operator must compare the value of each constituent in the treatment zone to the background value for that constituent using a statistical procedure that provides reasonable confidence that constituent presence in the treatment zone will be identified. The owner or operator must use a statistical procedure that:

(i) Is appropriate for the distribution of the data used to establish background values; and

(ii) Provides a reasonable balance between the probability of falsely identifying hazardous constituent presence in the treatment zone and the probability of failing to identify real presence in the treatment zone.

(e) The owner or operator is not subject to regulation under Subpart F of this chapter if the Regional Administrator finds that the owner or operator satisfies paragraph (d) of this section and if unsaturated zone monitoring under § 264.278 indicates that hazardous constituents have not migrated beyond the treatment zone during the active life of the land treatment unit.

§ 264.281 Special requirements for ignitable or reactive waste.

The owner or operator must not apply ignitable or reactive waste to the treatment zone unless:

(a) The waste is immediately incorporated into the soil so that:

(1) The resulting waste, mixture, or dissolution of material no longer meets the definition of ignitable or reactive waste under § 261.21 or § 261.23 of this chapter; and

(2) Section 264.17(b) is complied with; or

(b) The waste is managed in such a way that it is protected from any material or conditions which may cause it to ignite or react.

§ 264.282 Special requirements for incompatible wastes.

The owner or operator must not place incompatible wastes, or incompatible wastes and materials (see Appendix V of this part for examples), in or on the same treatment zone, unless § 264.17(b) is complied with.

§ 264.283 Special requirements for hazardous wastes FO20, FO21, FO22, FO23, FO26, and FO27.

(a) Hazardous Wastes FO20, FO21, FO22, FO23, FO26 and, FO27 must not be placed in a land treatment unit unless the owner or operator operates the facility in accordance with a management plan for these wastes that is approved by the Regional Administrator pursuant to the standards set out in this paragraph, and in accord with all other applicable requirements of this part. The factors to be considered are:

(1) The volume, physical, and chemical characteristics of the wastes, including their potential to migrate through soil or to volatilize or escape into the atmosphere;

(2) The attenuative properties of underlying and surrounding soils or other materials;

(3) The mobilizing properties of other materials co-disposed with these wastes; and

(4) The effectiveness of additional treatment, design, or monitoring techniques.

(b) The Regional Administrator may determine that additional design, operating, and monitoring requirements are necessary for land treatment facilities managing hazardous wastes FO20, FO21, FO22, FO23, FO26, and FO27 in order to reduce the possibility of migration of these wastes to ground water, surface water, or air so as to protect human health and the environment.

[50 FR 2004, Jan. 14, 1985]

Subpart N—Landfills

SOURCE: 47 FR 32365, July 26, 1982, unless otherwise noted.

§ 264.300 Applicability.

The regulations in this subpart apply to owners and operators of facilities that dispose of hazardous waste in landfills, except as § 264.1 provides otherwise.

§ 264.301 Design and operating requirements.

(a) Any landfill that is not covered by paragraph (c) of this section or § 265.301(a) of this chapter must have a liner system for all portions of the landfill (except for existing portions of such landfill). The liner system must have:

(1) A liner that is designed, constructed, and installed to prevent any migration of wastes out of the landfill to the adjacent subsurface soil or ground water or surface water at anytime during the active life (including the closure period) of the landfill. The liner must be constructed of materials that prevent wastes from passing into the liner during the active life of the facility. The liner must be:

(i) Constructed of materials that have appropriate chemical properties and sufficient strength and thickness to prevent failure due to pressure gradients (including static head and external hydrogeologic forces), physical contact with the waste or leachate to which they are exposed, climatic conditions, the stress of installation, and the stress of daily operation;

(ii) Placed upon a foundation or base capable of providing support to the liner and resistance to pressure gradients above and below the liner to prevent failure of the liner due to settlement, compression, or uplift; and

(iii) Installed to cover all surrounding earth likely to be in contact with the waste or leachate; and

(2) A leachate collection and removal system immediately above the liner that is designed, constructed, maintained, and operated to collect and remove leachate from the landfill. The Regional Administrator will specify design and operating conditions in the permit to ensure that the leachate depth over the liner does not exceed 30 cm (one foot). The leachate collection and removal system must be:

(i) Constructed of materials that are:

(A) Chemically resistant to the waste managed in the landfill and the leachate expected to be generated; and

(B) Of sufficient strength and thickness to prevent collapse under the pressures exerted by overlying wastes, waste cover materials, and by any equipment used at the landfill; and

(ii) Designed and operated to function without clogging through the scheduled closure of the landfill.

(b) The owner or operator will be exempted from the requirements of paragraph (a) of this section if the Regional Administrator finds, based on a demonstration by the owner or operator, that alternative design and operating practices, together with location characteristics, will prevent the migration of any hazardous constituents (see § 264.93) into the ground water or surface water at any future time. In deciding whether to grant an exemption, the Regional Administrator will consider:

(1) The nature and quantity of the wastes;

(2) The proposed alternate design and operation;

(3) The hydrogeologic setting of the facility, including the attenuative capacity and thickness of the liners and soils present between the landfill and ground water or surface water; and

(4) All other factors which would influence the quality and mobility of the leachate produced and the potential for it to migrate to ground water or surface water.

(c) The owner or operator of each new landfill, each new landfill unit at an existing facility, each replacement of an existing landfill unit, and each lateral expansion of an existing landfill unit, must install two or more liners and a leachate collection system above and between the liners. The liners and leachate collection systems must protect human health and the environment. The requirement for the installation of two or more liners in this paragraph may be satisfied by the installation of a top liner designed, operated and constructed of materials to prevent the migration of any constituent into such liner during the period such facility remains in operation (including any post-closure monitoring period), and a lower liner designed, operated, and constructed to prevent the migration of any constituent through such liner during such period. For the purpose of the preceding sentence, a lower liner shall be deemed to satisfy such requirement if it is constructed of at least a 3-foot thick layer of recompacted clay or other natural material with a permeability of no more than 1×10^{-7} centimeter per second.

(d) Paragraph (c) of this section will not apply if the owner or operator demonstrates to the Regional Administrator, and the Regional Administrator finds for such landfill, that alternative design and operating practices, together with location characteristics, will prevent the migration of any hazardous constituent into the ground water or surface water at least as effectively as such liners and leachate collection systems.

(e) The double liner requirement set forth in paragraph (c) of this section may be waived by the Regional Administrator for any monofill, if:

(1) The monofill contains only hazardous wastes from foundry furnace emission controls or metal casting molding sand, and such wastes do not contain constituents which would render the wastes hazardous for reasons other than the EP toxicity characteristics in § 261.24 of this chapter; and

(2)(i)(A) The monofill has at least one liner for which there is no evidence that such liner is leaking;

(B) The monofill is located more than one-quarter mile from an underground source of drinking water (as that term is defined in § 144.3 of this chapter); and

(C) The monofill is in compliance with generally applicable groundwater monitoring requirements for facilities with permits under RCRA 3005(c); or

(ii) The owner or operator demonstrates that the monofill is located, designed and operated so as to assure that there will be no migration of any hazardous constituent into ground water or surface water at any future time.

(f) The owner or operator must design, construct, operate, and maintain a run-on control system capable of preventing flow onto the active portion of the landfill during peak discharge from at least a 25-year storm.

(g) The owner or operator must design, construct, operate, and maintain a run-off management system to collect and control at least the water volume resulting from a 24-hour, 25-year storm.

(h) Collection and holding facilities (e.g., tanks or basins) associated with run-on and run-off control systems must be emptied or otherwise managed expeditiously after storms to maintain design capacity of the system.

(i) If the landfill contains any particulate matter which may be subject to wind dispersal, the owner or operator must cover or otherwise manage the landfill to control wind dispersal.

(j) The Regional Administrator will specify in the permit all design and operating practices that are necessary to ensure that the requirements of this section are satisfied.

(k) Any permit under RCRA 3005(c) which is issued for a landfill located within the State of Alabama shall require the installation of two or more liners and a leachate collection system above and between such liners, notwithstanding any other provision of RCRA.

(Approved by the Office of Management and Budget under control number 2050-0007)

[47 FR 32365, July 26, 1982, as amended at 50 FR 4514, Jan. 31, 1985; 50 FR 28748, July 15, 1985]

§ 264.302 [Reserved]

§ 264.303 Monitoring and inspection.

(a) During construction or installation, liners (except in the case of existing portions of landfills exempt from § 264.301(a)) and cover systems (e.g., membranes, sheets, or coatings) must be inspected for uniformity, damage, and imperfections (*e.g.*, holes, cracks, thin spots, or foreign materials). Immediately after construction or installation:

(1) Synthetic liners and covers must be inspected to ensure tight seams and joints and the absence of tears, punctures, or blisters; and

(2) Soil-based and admixed liners and covers must be inspected for imperfections including lenses, cracks, channels, root holes, or other structural non-uniformities that may cause an increase in the permeability of the liner or cover.

(b) While a landfill is in operation, it must be inspected weekly and after

storms to detect evidence of any of the following:

(1) Deterioration, malfunctions, or improper operation of run-on and run-off control systems;

(2) Proper functioning of wind dispersal control systems, where present; and

(3) The presence of leachate in and proper functioning of leachate collection and removal systems, where present.

[47 FR 32365, July 26, 1982, as amended at 50 FR 28748, July 15, 1985]

§§ 264.304—264.308 [Reserved]

§ 264.309 Surveying and recordkeeping.

The owner or operator of a landfill must maintain the following items in the operating record required under § 264.73:

(a) On a map, the exact location and dimensions, including depth, of each cell with respect to permanently surveyed benchmarks; and

(b) The contents of each cell and the approximate location of each hazardous waste type within each cell.

(Approved by the Office of Management and Budget under control number 2050-0007)

[47 FR 32365, July 26, 1982, as amended at 50 FR 4514, Jan. 31, 1985]

§ 264.310 Closure and post-closure care.

(a) At final closure of the landfill or upon closure of any cell, the owner or operator must cover the landfill or cell with a final cover designed and constructed to:

(1) Provide long-term minimization of migration of liquids through the closed landfill;

(2) Function with minimum maintenance;

(3) Promote drainage and minimize erosion or abrasion of the cover;

(4) Accommodate settling and subsidence so that the cover's integrity is maintained; and

(5) Have a permeability less than or equal to the permeability of any bottom liner system or natural subsoils present.

(b) After final closure, the owner or operator must comply with all post-closure requirements contained in §§ 264.117 through 264.120, including maintenance and monitoring throughout the post-closure care period (specified in the permit under § 264.117). The owner or operator must:

(1) Maintain the integrity and effectiveness of the final cover, including making repairs to the cap as necessary to correct the effects of settling, subsidence, erosion, or other events;

(2) Continue to operate the leachate collection and removal system until leachate is no longer detected;

(3) Maintain and monitor the ground-water monitoring system and comply with all other applicable requirements of Subpart F of this part;

(4) Prevent run-on and run-off from eroding or otherwise damaging the final cover; and

(5) Protect and maintain surveyed benchmarks used in complying with § 264.309.

[47 FR 32365, July 26, 1982, as amended at 50 FR 28748, July 15, 1985]

§ 264.311 [Reserved]

§ 264.312 Special requirements for ignitable or reactive waste.

(a) Except as provided in paragraph (b) of this section, and in § 264.316, ignitable or reactive waste must not be placed in a landfill, unless the waste in treated, rendered, or mixed before or immediately after placement in a landfill so that:

(1) The resulting waste, mixture, or dissolution of material no longer meets the definition of ignitable or reactive waste under § 261.21 or § 261.23 of this chapter; and

(2) Section 264.17(b) is complied with.

(b) Ignitable wastes in containers may be landfilled without meeting the requirements of paragraph (a) of this section, provided that the wastes are disposed of in such a way that they are protected from any material or conditions which may cause them to ignite. At a minimum, ignitable wastes must be disposed of in non-leaking containers which are carefully handled and placed so as to avoid heat, sparks, rupture, or any other condition that might cause ignition of the wastes; must be covered daily with soil or other non-combustible material to minimize the potential for ignition of the wastes; and must not be disposed of in cells that contain or will contain other wastes which may generate heat sufficient to cause ignition of the waste.

§ 264.313 Special requirements for incompatible wastes.

Incompatible wastes, or incompatible wastes and materials, (see Appendix V of this part for examples) must not be placed in the same landfill cell, unless § 264.17(b) is complied with.

§ 264.314 Special requirements for bulk and containerized liquids.

(a) Bulk or non-containerized liquid waste or waste containing free liquids may be placed in a landfill prior to May 8, 1985 only if:

(1) The landfill has a liner and leachate collection and removal system that meet the requirements of § 264.301(a); or

(2) Before disposal, the liquid waste or waste containing free liquids is treated or stabilized, chemically or physically (e.g., by mixing with an absorbent solid), so that free liquids are no longer present.

(b) Effective May 8, 1985, the placement of bulk or non-containerized liquid hazardous waste or hazardous waste containing free liquids (whether or not absorbents have been added) in any landfill is prohibited.

(c) To demonstrate the absence or presence of free liquids in either a containerized or a bulk waste, the following test must be used: Method 9095 (Paint Filter Liquids Test) as described in "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods." [EPA Publication No. SW-846].

(d) Containers holding free liquids must not be placed in a landfill unless:

(1) All free-standing liquid: (i) has been removed by decanting, or other methods; (ii) has been mixed with absorbent or solidified so that free-standing liquid is no longer observed; or (iii) has been otherwise eliminated; or

(2) The container is very small, such as an ampule; or

(3) The container is designed to hold free liquids for use other than storage, such as a battery or capacitor; or

(4) The container is a lab pack as defined in § 264.316 and is disposed of in accordance with § 264.316.

(e) Effective November 8, 1985, the placement of any liquid which is not a hazardous waste in a landfill is prohibited unless the owner or operator of such landfill demonstrates to the Regional Administrator, or the Regional Administrator determines, that:

(1) The only reasonably available alternative to the placement in such landfill is placement in a landfill or unlined surface impoundment, whether or not permitted or operating under interim status, which contains, or may reasonably be anticipated to contain, hazardous waste; and

(2) Placement in such owner or operator's landfill will not present a risk of contamination of any underground source of drinking water (as that term is defined in § 144.3 of this chapter.)

(Approved by the Office of Management and Budget under control number 2050-0037)

[47 FR 32365, July 26, 1982, as amended at 50 FR 18374, Apr. 30, 1985; 50 FR 28748, July 15, 1985]

§ 264.315 Special requirements for containers.

Unless they are very small, such as an ampule, containers must be either:

(a) At least 90 percent full when placed in the landfill; or

(b) Crushed, shredded, or similarly reduced in volume to the maximum practical extent before burial in the landfill.

§ 264.316 Disposal of small containers of hazardous waste in overpacked drums (lab packs).

Small containers of hazardous waste in overpacked drums (lab packs) may be placed in a landfill if the following requirements are met:

(a) Hazardous waste must be packaged in non-leaking inside containers. The inside containers must be of a design and constructed of a material that will not react dangerously with, be decomposed by, or be ignited by the contained waste. Inside containers must be tightly and securely sealed. The inside containers must be of the size and type specified in the Depart-

ment of Transportation (DOT) hazardous materials regulations (49 CFR Parts 173, 178, and 179), if those regulations specify a particular inside container for the waste.

(b) The inside containers must be overpacked in an open head DOT-specification metal shipping container (49 CFR Parts 178 and 179) of no more than 416-liter (110 gallon) capacity and surrounded by, at a minimum, a sufficient quantity of absorbent material to completely absorb all of the liquid contents of the inside containers. The metal outer container must be full after packing with inside containers and absorbent material.

(c) The absorbent material used must not be capable of reacting dangerously with, being decomposed by, or being ignited by the contents of the inside containers in accordance with § 264.17(b).

(d) Incompatible wastes, as defined in § 260.10 of this chapter, must not be placed in the same outside container.

(e) Reactive wastes, other than cyanide- or sulfide-bearing waste as defined in § 261.23(a)(5) of this chapter, must be treated or rendered non-reactive prior to packaging in accordance with paragraphs (a) through (d) of this section. Cyanide- and sulfide-bearing reactive waste may be packed in accordance with paragraphs (a) through (d) of this section without first being treated or rendered non-reactive.

§ 264.317 Special requirements for hazardous wastes FO20, FO21, FO22, FO23, FO26, and FO27.

(a) Hazardous Wastes FO20, FO21, FO22, FO23, FO26, and FO27 must not be placed in a landfills unless the owner or operator operates the landfill in accord with a management plan for these wastes that is approved by the Regional Administrator pursuant to the standards set out in this paragraph, and in accord with all other applicable requirements of this part. The factors to be considered are:

(1) The volume, physical, and chemical characteristics of the wastes, including their potential to migrate through the soil or to volatilize or escape into the atmosphere.

(2) The attenuative properties of underlying and surrounding soils or other materials;

(3) The mobilizing properties of other materials co-disposed with these wastes; and

(4) The effectiveness of additional treatment, design, or monitoring requirements.

(b) The Regional Administrator may determine that additional design, operating, and monitoring requirements are necessary for landfills managing hazardous wastes FO20, FO21, FO22, FO23, FO26, and FO27 in order to reduce the possibility of migration of these wastes to ground water, surface water, or air so as to protect human health and the environment.

[50 FR 2004, Jan. 14, 1985]

Subpart O—Incinerators

§ 264.340 Applicability.

(a) The regulations in this subpart apply to owners or operators of facilities that incinerate hazardous waste, except as § 264.1 provides otherwise. The following facility owners or operators are considered to incinerate hazardous waste:

(1) Owners or operators of hazardous waste incinerators (as defined in § 260.10 of this chapter); and

(2) Owners or operators who burn hazardous waste in boilers or in industrial furnaces in order to destroy them, or who burn hazardous waste in boilers or in industrial furnaces for any recycling purpose and elect to be regulated under this subpart.

(b) After consideration of the waste analysis included with Part B of the permit application, the Regional Administrator, in establishing the permit conditions, must exempt the applicant from all requirements of this subpart except § 264.341 (Waste analysis) and § 264.351 (Closure),

(1) If the Regional Administrator finds that the waste to be burned is:

(i) Listed as a hazardous waste in Part 261, Subpart D, of this chapter solely because it is ignitable (Hazard Code I), corrosive (Hazard Code C), or both; or

(ii) Listed as a hazardous waste in Part 261, Subpart D, of this chapter solely because it is reactive (Hazard Code R) for characteristics other than those listed in § 261.23(a) (4) and (5), and will not be burned when other hazardous wastes are present in the combustion zone; or

(iii) A hazardous waste solely because it possesses the characteristic of ignitability, corrosivity, or both, as determined by the test for characteristics of hazardous wastes under Part 261, Subpart C, of this chapter; or

(iv) A hazardous waste solely because it possesses any of the reactivity characteristics described by § 261.23(a) (1), (2), (3), (6), (7), and (8) of this chapter, and will not be burned when other hazardous wastes are present in the combustion zone; and

(2) If the waste analysis shows that the waste contains none of the hazardous constituents listed in Part 261, Appendix VIII, of this chapter, which would reasonably be expected to be in the waste.

(c) If the waste to be burned is one which is described by paragraphs (b)(1)(i), (ii), (iii), or (iv) of this section and contains insignificant concentrations of the hazardous constituents listed in Part 261, Appendix VIII, of this chapter, then the Regional Administrator may, in establishing permit conditions, exempt the applicant from all requirements of this subpart, except § 264.341 (Waste analysis) and § 264.351 (Closure), after consideration of the waste analysis included with Part B of the permit application, unless the Regional Administrator finds that the waste will pose a threat to human health and the environment when burned in an incinerator.

(d) The owner or operator of an incinerator may conduct trial burns subject only to the requirements of § 270.62 of this chapter (Short term and incinerator permits).

[46 FR 7678, Jan. 23, 1981, as amended at 47 FR 27532, June 24, 1982; 48 FR 14295, Apr. 1, 1983; 50 FR 665, Jan. 4, 1985; 50 FR 49203, Nov. 29, 1985]

§ 264.341 Waste analysis.

(a) As a portion of the trial burn plan required by § 270.62 of this chapter, or with Part B of the permit application, the owner or operator must have included an analysis of the waste feed sufficient to provide all information required by § 270.62(b) or § 270.19 of this chapter. Owners or operators of new hazardous waste incinerators must provide the information required by § 270.62(c) or § 270.19 of this chapter to the greatest extent possible.

(b) Throughout normal operation the owner or operator must conduct sufficient waste analysis to verify that waste feed to the incinerator is within the physical and chemical composition limits specified in his permit (under § 264.345(b)).

(Approved by the Office of Management and Budget under control number 2050-0002)

[46 FR 7678, Jan. 23, 1981, as amended at 47 FR 27532, June 24, 1982; 48 FR 14295, Apr. 1, 1983; 48 FR 30115, June 30, 1983; 50 FR 4514, Jan. 31, 1985]

§ 264.342 Principal organic hazardous constituents (POHCs).

(a) Principal Organic Hazardous Constituents (POHCs) in the waste feed must be treated to the extent required by the performance standard of § 264.343.

(b)(1) One or more POHCs will be specified in the facility's permit, from among those constituents listed in Part 261, Appendix VIII of this chapter, for each waste feed to be burned. This specification will be based on the degree of difficulty of incineration of the organic constituents in the waste and on their concentration or mass in the waste feed, considering the results of waste analyses and trial burns or alternative data submitted with Part B of the facility's permit application. Organic constituents which represent the greatest degree of difficulty of incineration will be those most likely to be designated as POHCs. Constituents are more likely to be designated as POHCs if they are present in large quantities or concentrations in the waste.

(2) Trial POHCs will be designated for performance of trial burns in accordance with the procedure specified in § 270.62 of this chapter for obtaining trial burn permits.

[46 FR 7678, Jan. 23, 1981, as amended at 48 FR 14295, Apr. 1, 1983]

§ 264.343 Performance standards.

An incinerator burning hazardous waste must be designed, constructed, and maintained so that, when operated in accordance with operating requirements specified under § 264.345, it will meet the following performance standards:

(a)(1) Except as provided in paragraph (a)(2) of this section, an incinerator burning hazardous waste must achieve a destruction and removal efficiency (DRE) of 99.99% for each principal organic hazardous constituent (POHC) designated (under § 264.342) in its permit for each waste feed. DRE is determined for each POHC from the following equation:

$$DRE = \frac{(W_{in} - W_{out})}{W_{in}} \times 100\%$$

where:

W_{in} = mass feed rate of one principal organic hazardous constituent (POHC) in the waste stream feeding the incinerator

and

W_{out} = mass emission rate of the same POHC present in exhaust emissions prior to release to the atmosphere.

(2) An incinerator burning hazardous wastes FO20, FO21, FO22, FO23, FO26, or FO27 must achieve a destruction and removal efficiency (DRE) of 99.9999% for each principal organic hazardous constituent (POHC) designated (under § 264.342) in its permit. This performance must be demonstrated on POHCs that are more difficult to incinerate than tetra-, penta-, and hexachlorodibenzo-*p*-dioxins and dibenzofurans. DRE is determined for each POHC from the equation in § 264.343(a)(1). In addition, the owner or operator of the incinerator must notify the Regional Administrator of his intent to incinerate hazardous wastes FO20, FO21, FO22, FO23, FO26, or FO27.

(b) An incinerator burning hazardous waste and producing stack emissions of more than 1.8 kilograms per hour (4 pounds per hour) of hydrogen chloride (HCl) must control HCl emissions such that the rate of emission is no greater than the larger of either 1.8 kilograms per hour or 1% of the HCl in the stack gas prior to entering any pollution control equipment.

(c) An incinerator burning hazardous waste must not emit particulate matter in excess of 180 milligrams per dry standard cubic meter (0.08 grains per dry standard cubic foot) when corrected for the amount of oxygen in the stack gas according to the formula:

$$P_c = P_m \times \frac{14}{21 - Y}$$

Where P_c is the corrected concentration of particulate matter, P_m is the measured concentration of particulate matter, and Y is the measured concentration of oxygen in the stack gas, using the Orsat method for oxygen analysis of dry flue gas, presented in Part 60, Appendix A (Method 3), of this chapter. This correction procedure is to be used by all hazardous waste incinerators except those operating under conditions of oxygen enrichment. For these facilities, the Regional Administrator will select an appropriate correction procedure, to be specified in the facility permit.

(d) For purposes of permit enforcement, compliance with the operating requirements specified in the permit (under § 264.345) will be regarded as compliance with this section. However, evidence that compliance with those permit conditions is insufficient to ensure compliance with the performance requirements of this section may be "information" justifying modification, revocation, or reissuance of a permit under § 270.41 of this chapter.

[46 FR 7678, Jan. 23, 1981, as amended at 47 FR 27532, June 24, 1982; 48 FR 14295, Apr. 1, 1983; 50 FR 2005, Jan. 14, 1985]

§ 264.344 Hazardous waste incinerator permits.

(a) The owner or operator of a hazardous waste incinerator may burn only wastes specified in his permit and only under operating conditions specified for those wastes under § 264.345, except:

(1) In approved trial burns under § 270.62 of this chapter; or

(2) Under exemptions created by § 264.340.

(b) Other hazardous wastes may be burned only after operating conditions have been specified in a new permit or a permit modification as applicable. Operating requirements for new wastes may be be based on either trial burn results or alternative data included with Part B of a permit application under § 270.19 of this chapter.

(c) The permit for a new hazardous waste incinerator must establish appropriate conditions for each of the applicable requirements of this subpart, including but not limited to allowable waste feeds and operating conditions necessary to meet the requirements of § 264.345, sufficient to comply with the following standards:

(1) For the period beginning with initial introduction of hazardous waste to the incinerator and ending with initiation of the trial burn, and only for the minimum time required to establish operating conditions required in paragraph (c)(2) of this section, not to exceed a duration of 720 hours operating time for treatment of hazardous waste, the operating requirements must be those most likely to ensure compliance with the performance standards of § 264.343, based on the Regional Administrator's engineering judgment. The Regional Administrator may extend the duration of this period once for up to 720 additional hours when good cause for the extension is demonstrated by the applicant.

(2) For the duration of the trial burn, the operating requirements must be sufficient to demonstrate compliance with the performance standards of § 264.343 and must be in accordance with the approved trial burn plan;

(3) For the period immediately following completion of the trial burn, and only for the minimum period sufficient to allow sample analysis, data computation, and submission of the trial burn results by the applicant, and review of the trial burn results and modification of the facility permit by the Regional Administrator, the operating requirements must be those most likely to ensure compliance with the performance standards of § 264.343, based on the Regional Administrator's engineering judgement.

(4) For the remaining duration of the permit, the operating requirements must be those demonstrated, in a trial burn or by alternative data specified in § 270.19(c) of this chapter, as sufficient to ensure compliance with the performance standards of § 264.343.

(Approved by the Office of Management and Budget under control number 2050-0002)

[46 FR 7678, Jan. 23, 1981, as amended at 47 FR 27532, June 24, 1982; 48 FR 14295, Apr. 1, 1983; 50 FR 4514, Jan. 31, 1985]

§ 264.345 Operating requirements.

(a) An incinerator must be operated in accordance with operating requirements specified in the permit. These will be specified on a case-by-case basis as those demonstrated (in a trial burn or in alternative data as specified in § 264.344(b) and included with Part B of a facility's permit application) to be sufficient to comply with the performance standards of § 264.343.

(b) Each set of operating requirements will specify the composition of the waste feed (including acceptable variations in the physical or chemical properties of the waste feed which will not affect compliance with the performance requirement of § 264.343) to which the operating requirements apply. For each such waste feed, the permit will specify acceptable operating limits including the following conditions:

(1) Carbon monoxide (CO) level in the stack exhaust gas;

(2) Waste feed rate;

(3) Combustion temperature;

(4) An appropriate indicator of combustion gas velocity;

(5) Allowable variations in incinerator system design or operating procedures; and

(6) Such other operating requirements as are necessary to ensure that the performance standards of § 264.343 are met.

(c) During start-up and shut-down of an incinerator, hazardous waste (except wastes exempted in accordance with § 264.340) must not be fed into the incinerator unless the inciner-

ator is operating within the conditions of operation (temperature, air feed rate, etc.) specified in the permit.

(d) Fugitive emissions from the combustion zone must be controlled by:

(1) Keeping the combustion zone totally sealed against fugitive emissions; or

(2) Maintaining a combustion zone pressure lower than atmospheric pressure; or

(3) An alternate means of control demonstrated (with Part B of the permit application) to provide fugitive emissions control equivalent to maintenance of combustion zone pressure lower than atmospheric pressure.

(e) An incinerator must be operated with a functioning system to automatically cut off waste feed to the incinerator when operating conditions deviate from limits established under paragraph (a) of this section.

(f) An incinerator must cease operation when changes in waste feed, incinerator design, or operating conditions exceed limits designated in its permit.

(Approved by the Office of Management and Budget under control number 2050-0002)

[46 FR 7678, Jan. 23, 1981, as amended at 47 FR 27532, June 24, 1982; 50 FR 4514, Jan. 31, 1985]

§ 264.346 [Reserved]

§ 264.347 Monitoring and inspections.

(a) The owner or operator must conduct, as a minimum, the following monitoring while incinerating hazardous waste:

(1) Combustion temperature, waste feed rate, and the indicator of combustion gas velocity specified in the facility permit must be monitored on a continuous basis.

(2) CO must be monitored on a continuous basis at a point in the incinerator downstream of the combustion zone and prior to release to the atmosphere.

(3) Upon request by the Regional Administrator, sampling and analysis of the waste and exhaust emissions must be conducted to verify that the operating requirements established in the permit achieve the performance standards of § 264.343.

(b) The incinerator and associated equipment (pumps, valves, conveyors, pipes, etc.) must be subjected to thorough visual inspection, at least daily, for leaks, spills, fugitive emissions, and signs of tampering.

(c) The emergency waste feed cutoff system and associated alarms must be tested at least weekly to verify operability, unless the applicant demonstrates to the Regional Administrator that weekly inspections will unduly restrict or upset operations and that less frequent inspection will be adequate. At a minimum, operational testing must be conducted at least monthly.

(d) This monitoring and inspection data must be recorded and the records must be placed in the operating log required by § 264.73.

(Approved by the Office of Management and Budget under control number 2050-0002)

[46 FR 7678, Jan. 23, 1981, as amended at 47 FR 27533, June 24, 1982; 50 FR 4514, Jan. 31, 1985]

§§ 264.348—264.350 [Reserved]

§ 264.351 Closure.

At closure the owner or operator must remove all hazardous waste and hazardous waste residues (including, but not limited to, ash, scrubber waters, and scrubber sludges) from the incinerator site.

[*Comment:* At closure, as throughout the operating period, unless the owner or operator can demonstrate, in accordance with § 261.3(d) of this chapter, that the residue removed from the incinerator is not a hazardous waste, the owner or operator becomes a generator of hazardous waste and must manage it in accordance with applicable requirements of Parts 262 through 266 of this chapter.]

[46 FR 7678, Jan. 23, 1981]

Subparts P–W [Reserved]

Subpart X—Miscellaneous Units

SOURCE: 52 FR 46964, Dec. 10, 1987, unless otherwise noted.

§ 264.600 Applicability.

The requirements in this subpart apply to owners and operators of facilities that treat, store, or dispose of hazardous waste in miscellanenous units, except as § 264.1 provide otherwise.

§ 264.601 Environmental performance standards.

A miscellaneous unit must be located, designed, constructed, operated, maintained, and closed in a manner that will ensure protection of human health and the environment. Permits for miscellaneous units are to contain such terms and provisions as necessary to protect human health and the environment, including, but not limited to, as appropriate, design and operating requirements, detection and monitoring requirements, and requirements for responses to releases of hazardous waste or hazardous constituents from the unit. Permit terms and provisions shall include those requirements of Subparts I through 0 of this part, Part 270, and Part 146 that are appropriate for the miscellaneous unit being permitted. Protection of human health and the environment includes, but is not limited to:

(a) Prevention of any releases that may have adverse effects on human heath or the environment due to migration of waste constituents in the ground water or subsurface environment, considering:

(1) The volume and physical and chemical characteristics of the waste in the unit, including its potential for migration through soil, liners, or other containing structures;

(2) The hydrologic and geologic characteristics of the unit and the surrounding area;

(3) The existing quality of ground water, including other sources of contamination and their cumulative impact on the ground water;

(4) The quantity and direction of ground-water flow;

(5) The proximity to and withdrawal rates of current and potential ground-water users;

(6) The patterns of land use in the region;

(7) The potential for deposition or migration of waste constituents into subsurface physical structures, and into the root zone of food-chain crops and other vegetation;

(8) The potential for health risks caused by human exposure to waste constituents; and

(9) The potential for damage to domestic animals, wildlife, crops, vegetation, and physical structures caused by exposure to waste constituents;

(b) Prevention of any releases that may have adverse effects on human health or the environment due to migration of waste constituents in surface water, or wetlands or on the soil surface considering:

(1) The volume and physical and chemical characteristics of the waste in the unit;

(2) The effectiveness and reliability of containing, confining, and collecting systems and structures in preventing migration;

(3) The hydrologic characteristics of the unit and the surrounding area, including the topography of the land around the unit;

(4) The patterns of precipitation in the region;

(5) The quantity, quality, and direction of ground-water flow;

(6) The proximity of the unit to surface waters;

(7) The current and potential uses of nearby surface waters and any water quality standards established for those surface waters;

(8) The existing quality of surface waters and surface soils, including other sources of contamination and their cumulative impact on surface waters and surface soils;

(9) The patterns of land use in the region;

(10) The potential for health risks caused by human exposure to waste constituents; and

(11) The potential for damage to domestic animals, wildlife, crops, vegetation, and physical structures caused by exposure to waste constitutents.

(c) Prevention of any release that may have adverse effects on human health or the environment due to migration of waste constituents in the air, considering:

(1) The volume and physical and chemical characteristics of the waste in the unit, including its potential for the emission and dispersal of gases, aerosols and particulates;

(2) The effectiveness and reliability of systems and structures to reduce or prevent emissions of hazardous constituents to the air;

(3) The operating characteristics of the unit;

(4) The atmospheric, metorologic, and topographic characteristics of the unit and the surrounding area;

(5) The existing quality of the air, including other sources of contamination and their cumulative impact on the air;

(6) The potential for health risks caused by human exposure to waste constituents; and

(7) The potential for damage to domestic animals, wildlife, crops, vegetation, and physical structures caused by exposure to waste constituents.

§ 264.602 Monitoring, analysis, inspection, response, reporting, and corrective action.

Monitoring, testing, analytical data, inspections, response, and reporting procedures and frequencies must ensure compliance with §§ 264.601, 264.15, 264.33, 264.75, 264.76, 264,77, and 264.101 as well as meet any additional requirements needed to protect human health and the environment as specified in the permit.

§ 264.603 Post-closure care.

A miscellaneous unit that is a disposal unit must be maintained in a manner that complies with § 264.601 during the post-closure care period. In addition, if a treatment or storage unit has contaminated soils or ground water that cannot be completely removed or decontaminated during closure, then that unit must also meet the requirements of § 264.601 during post-closure care. The post-closure plan under § 264.118 must specify the procedures that will be used to satisfy this requirement.

APPENDIX I—RECORDKEEPING INSTRUCTIONS

The recordkeeping provisions of § 264.73 specify that an owner or operator must keep a written operating record at his facility. This appendix provides additional instructions for keeping *portions* of the operating record. See § 264.73(b) for additional recordkeeping requirements.

The following information must be recorded, as it becomes available, and maintained in the operating record until closure of the facility in the following manner:

Records of each hazardous waste received, treated, stored, or disposed of at the facility which include the following:

(1) A description by its common name and the EPA Hazardous Waste Number(s) from Part 261 of this chapter which apply to the waste. The waste description also must include the waste's physical form, i.e., liquid, sludge, solid, or contained gas. If the waste is not listed in Part 261, Subpart D, of this chapter, the description also must include the process that produced it (for example, solid filter cake from production of ----, EPA Hazardous Waste Number W051).

Each hazardous waste listed in Part 261, Subpart D, of this chapter, and each hazardous waste characteristic defined in Part 261, Subpart C, of this chapter, has a four-digit EPA Hazardous Waste Number assigned to it. This number must be used for recordkeeping and reporting purposes. Where a hazardous waste contains more than one listed hazardous waste, or where more than one hazardous waste characteristic applies to the waste, the waste description must include all applicable EPA Hazardous Waste Numbers.

(2) The estimated or manifest-reported weight, or volume and density, where applicable, in one of the units of measure specified in Table 1;

TABLE 1

Unit of measure	Symbol [1]	Density
Pounds	P	
Short tons (2000 lbs)	T	
Gallons (U.S.)	G	P/G
Cubic yards	Y	T/Y
Kilograms	K	
Tonnes (1000 kg)	M	
Liters	L	K/L
Cubic meters	C	M/C

[1] Single digit symbols are used here for data processing purposes.

(3) The method(s) (by handling code(s) as specified in Table 2) and date(s) of treatment, storage, or disposal.

TABLE 2—HANDLING CODES FOR TREATMENT, STORAGE, AND DISPOSAL METHODS

Enter the handling code(s) listed below that most closely represents the technique(s) used at the facility to treat, store, or dispose of each quantity of hazardous waste received.

1. Storage
   - S01 Container (barrel, drum, etc.)
   - S02 Tank
   - S03 Waste pile
   - S04 Surface impoundment
   - S05 Other (specify)
2. Treatment
   - (a) Thermal Treatment
   - T06 Liquid injection incinerator
   - T07 Rotary kiln incinerator
   - T08 Fluidized bed incinerator
   - T09 Multiple hearth incinerator
   - T10 Infrared furnace incinerator
   - T11 Molten salt destructor
   - T12 Pyrolysis
   - T13 Wet Air oxidation
   - T14 Calcination
   - T15 Microwave discharge
   - T16 Cement kiln
   - T17 Lime kiln
   - T18 Other (specify)
   - (b) Chemical Treatment
   - T19 Absorption mound
   - T20 Absorption field
   - T21 Chemical fixation
   - T22 Chemical oxidation
   - T23 Chemical precipitation
   - T24 Chemical reduction
   - T25 Chlorination
   - T26 Chlorinolysis
   - T27 Cyanide destruction
   - T28 Degradation
   - T29 Detoxification
   - T30 Ion exchange
   - T31 Neutralization
   - T32 Ozonation
   - T33 Photolysis
   - T34 Other (specify)
   - (c) Physical Treatment
   - (1) Separation of components
   - T35 Centrifugation
   - T36 Clarification
   - T37 Coagulation
   - T38 Decanting
   - T39 Encapsulation
   - T40 Filtration
   - T41 Flocculation
   - T42 Flotation
   - T43 Foaming
   - T44 Sedimentation
   - T45 Thickening
   - T46 Ultrafiltration
   - T47 Other (specify)
   - (2) Removal of Specific Components
   - T48 Absorption-molecular sieve
   - T49 Activated carbon
   - T50 Blending
   - T51 Catalysis
   - T52 Crystallization
   - T53 Dialysis
   - T54 Distillation
   - T55 Electrodialysis
   - T56 Electrolysis
   - T57 Evaporation
   - T58 High gradient magnetic separation
   - T59 Leaching
   - T60 Liquid ion exchange
   - T61 Liquid-liquid extraction
   - T62 Reverse osmosis
   - T63 Solvent recovery
   - T64 Stripping
   - T65 Sand filter
   - T66 Other (specify)
   - (d) Biological Treatment
   - T67 Activated sludge
   - T68 Aerobic lagoon
   - T69 Aerobic tank
   - T70 Anaerobic lagoon
   - T71 Composting
   - T72 Septic tank
   - T73 Spray irrigation
   - T74 Thickening filter
   - T75 Tricking filter
   - T76 Waste stabilization pond
   - T77 Other (specify)
   - T78-79 [Reserved]
3. Disposal
   - D80 Underground injection
   - D81 Landfill
   - D82 Land treatment
   - D83 Ocean disposal
   - D84 Surface impoundment (to be closed as a landfill)
   - D85 Other (specify)

APPENDICES II—III [RESERVED]

APPENDIX IV—COCHRAN'S APPROXIMATION TO THE BEHRENS-FISHER STUDENTS' T-TEST

Using all the available background data (n_b readings), calculate the background mean (X_b) and background variance (s_b^2). For the single monitoring well under investigation (n_m reading), calculate the monitoring mean (X_m) and monitoring variance (s_m^2).

For any set of data ($X_1, X_2, \ldots, X_n$) the mean is calculated by:

$$\bar{X} = \frac{X_1 + X_2 t \ldots + X_n}{n}$$

and the variance is calculated by:

$$s^2 = \frac{(X_1 - \bar{X})^2 + (X_2 - \bar{X})^2 t \ldots + (X_n - \bar{X})^2}{n-1}$$

where "n" denotes the number of observations in the set of data.

The t-test uses these data summary measures to calculate a t-statistic (t^*) and a comparison t-statistic (t_c). The t^* value is compared to the t_c value and a conclusion reached as to whether there has been a statistically significant change in any indicator parameter.

The t-statistic for all parameters except pH and similar monitoring parameters is:

$$t^* = \frac{\bar{X}_m - \bar{X}_b}{\sqrt{\frac{S_m^2}{n_m} + \frac{S_b^2}{n_b}}}$$

If the value of this t-statistic is negative then there is no significant difference between the monitoring data and background data. It should be noted that significantly small negative values may be indicative of a failure of the assumption made for test validity or errors have been made in collecting the background data.

The t-statistic (t_c), against which t^* will be compared, necessitates finding t_b and t_m from standard (one-tailed) tables where,

t_b=t-tables with (n_b−1) degrees of freedom, at the 0.05 level of significance.

t_m=t-tables with (n_m−1) degrees of freedom, at the 0.05 level of significance.

Finally, the special weightings W_b and W_m are defined as:

$$W_b = \frac{s_b^2}{n_b} \quad \text{and} \quad W_m = \frac{s_m^2}{n_m}$$

and so the comparison t-statistic is:

$$t_c = \frac{W_b t_b + W_m t_m}{W_b + W_m}$$

The t-statistic (t^*) is now compared with the comparison t-statistic (t_c) using the following decision-rule:

If t^* *is equal to or larger than* t_c, then conclude that there most likely *has been a significant increase* in this specific parameter.

If t^* *is less than* t_c, then conclude that most likely *there has not been a change* in this specific parameter.

The t-statistic for testing pH and similar monitoring parameters is constructed in the same manner as previously described except the negative sign (if any) is discarded and the caveat concerning the negative value is ignored. The standard (two-tailed) tables are used in the construction t_c for pH and similar monitoring parameters.

If t^* is equal to or larger than t_c, then conclude that there most likely *has been a significant increase* (if the initial t^* had been negative, this would imply a significant decrease). If t^* is less than t_c, then conclude that there most likely has been no change.

A further discussion of the test may be found in *Statistical Methods* (6th Edition, Section 4.14) by G. W. Snedecor and W. G. Cochran, or *Principles and Procedures of Statistics* (1st Edition, Section 5.8) by R. G. D. Steel and J. H. Torrie.

STANDARD T-TABLES 0.05 LEVEL OF SIGNIFICANCE

Degrees of freedom	t-values (one-tail)	t-values (two-tail)
1	6.314	12.706
2	2.920	4.303
3	2.353	3.182
4	2.132	2.776
5	2.015	2.571
6	1.943	2.447
7	1.895	2.365
8	1.860	2.306
9	1.833	2.262
10	1.812	2.228
11	1.796	2.201
12	1.782	2.179
13	1.771	2.160
14	1.761	2.145
15	1.753	2.131
16	1.746	2.120
17	1.740	2.110
18	1.734	2.101
19	1.729	2.093
20	1.725	2.086
21	1.721	2.080
22	1.717	2.074
23	1.714	2.069
24	1.711	2.064
25	1.708	2.060
30	1.697	2.042
40	1.684	2.021

Adopted from Table III of *"Statistical Tables for Biological, Agricultural, and Medical Research"* (1947, R. A. Fisher and F. Yates).

[47 FR 32367, July 26, 1982]

APPENDIX V—EXAMPLES OF POTENTIALLY INCOMPATIBLE WASTE

Many hazardous wastes, when mixed with other waste or materials at a hazardous waste facility, can produce effects which are harmful to human health and the environment, such as (1) heat or pressure, (2) fire or explosion, (3) violent reaction, (4) toxic dusts, mists, fumes, or gases, or (5) flammable fumes or gases.

Below are examples of potentially incompatible wastes, waste components, and materials, along with the harmful consequences which result from mixing materials in one group with materials in another group. The list is intended as a guide to owners or operators of treatment, storage, and disposal facilities, and to enforcement and permit granting officials, to indicate the need for special precautions when managing these potentially incompatible waste materials or components.

This list is not intended to be exhaustive. An owner or operator must, as the regulations require, adequately analyze his wastes so that he can avoid creating uncontrolled substances or reactions of the type listed below, whether they are listed below or not.

It is possible for potentially incompatible wastes to be mixed in a way that precludes a reaction (e.g., adding acid to water rather than water to acid) or that neutralizes them (e.g., a strong acid mixed with a strong base), or that controls substances produced (e.g., by generating flammable gases in a closed tank equipped so that ignition cannot occur, and burning the gases in an incinerator).

In the lists below, the mixing of a Group A material with a Group B material may have the potential consequence as noted.

GROUP 1-A

Acetylene sludge
Alkaline caustic liquids
Alkaline cleaner
Alkaline corrosive liquids
Alkaline corrosive battery fluid
Caustic wastewater
Lime sludge and other corrosive alkalies
Lime wastewater
Lime and water
Spent caustic

GROUP 1-B

Acid sludge
Acid and water
Battery acid
Chemical cleaners
Electrolyte, acid
Etching acid liquid or solvent
Pickling liquor and other corrosive acids
Spent acid
Spent mixed acid
Spent sulfuric acid

Potential consequences: Heat generation; violent reaction.

GROUP 2-A

Aluminum
Beryllium
Calcium
Lithium
Magnesium
Potassium
Sodium
Zinc powder
Other reactive metals and metal hydrides

GROUP 2-B

Any waste in Group 1-A or 1-B

Potential consequences: Fire or explosion; generation of flammable hydrogen gas.

GROUP 3-A

Alcohols
Water

GROUP 3-B

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

Alcohols
Aldehydes
Halogenated hydrocarbons
Nitrated hydrocarbons
Unsaturated hydrocarbons
Other reactive organic compounds and solvents

GROUP 4-B

Concentrated Group 1-A or 1-B wastes
Group 2-A wastes

Potential consequences: Fire, explosion, or violent reaction.

GROUP 5-A

Spent cyanide and sulfide solutions

GROUP 5-B

Group 1-B wastes

Potential consequences: Generation of toxic hydrogen cyanide or hydrogen sulfide gas.

GROUP 6-A

Chlorates
Chlorine
Chlorites
Chromic acid
Hypochlorites
Nitrates
Nitric acid, fuming
Perchlorates
Permanganates
Peroxides
Other strong oxidizers

GROUP 6-B

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.

[46 FR 2872, Jan. 12, 1981]

APPENDIX VI—POLITICAL JURISDICTIONS[1] IN WHICH COMPLIANCE WITH § 264.18(a) MUST BE DEMONSTRATED

ALASKA

Aleutian Islands
Anchorage
Bethel
Bristol Bay
Cordova-Valdez
Fairbanks-Fort Yukon
Juneau
Kenai-Cook Inlet
Ketchikan-Prince of Wales
Kodiak
Lynn Canal-Icy Straits
Palmer-Wasilla-Talkeena
Seward
Sitka
Wade Hampton
Wrangell Petersburg
Yukon-Kuskokwim

ARIZONA

Cochise
Graham
Greenlee
Yuma

CALIFORNIA

All

COLORADO

Archuleta
Conejos
Hinsdale
Mineral
Rio Grande
Saguache

HAWAII

Hawaii

IDAHO

Bannock
Bear Lake
Bingham
Bonneville
Caribou
Cassia
Clark
Franklin
Fremont
Jefferson
Madison
Oneida
Power
Teton

MONTANA

Beaverhead
Broadwater
Cascade
Deer Lodge
Flathead
Gallatin
Granite
Jefferson
Lake
Lewis and Clark
Madison
Meagher
Missoula
Park
Powell
Sanders
Silver Bow
Stillwater
Sweet Grass
Teton
Wheatland

NEVADA

All

NEW MEXICO

Bernalillo
Catron
Grant
Hidalgo
Los Alamos
Rio Arriba
Sandoval
Sante Fe
Sierra
Socorro
Taos
Torrance
Valencia

UTAH

Beaver
Box Elder
Cache
Carbon
Davis
Duchesne
Emery
Garfield
Iron
Juab
Millard
Morgan
Piute
Rich
Salt Lake
Sanpete
Sevier
Summit
Tooele
Utah
Wasatch
Washington
Wayne
Weber

WASHINGTON

Chelan
Clallam
Clark
Cowlitz
Douglas
Ferry
Grant
Grays Harbor
Jefferson
King
Kitsap
Kittitas
Lewis
Mason
Okanogan
Pacific
Pierce
San Juan Islands
Skagit
Skamania
Snohomish
Thurston
Wahkiakum
Whatcom
Yakima

WYOMING

Fremont
Lincoln
Park
Sublette
Teton
Uinta
Yellowstone National Park

[46 FR 57285, Nov. 23, 1981; 47 FR 953, Jan. 8, 1982]

APPENDICES VII—APPENDIX VIII [RESERVED]

[1] These include counties, city-county consolidations, and independent cities. In the case of Alaska, the political jurisdictions are election districts, and, in the case of Hawaii, the political jurisdiction listed is the island of Hawaii.

APPENDIX IX—GROUND-WATER MONITORING LIST[1]

GROUND-WATER MONITORING LIST[1]

Common name[2]	CAS RN[3]	Chemical abstracts service index name[4]	Suggested methods[5]	PQL (μg/L)[6]
Acenaphthene	83-32-9	Acenaphthylene, 1,2-dihydro-	8100	200
			8270	10
Acenaphthylene	208-96-8	Acenaphthylene	8100	200
			8270	10
Acetone	67-64-1	2-Propanone	8240	100
Acetophenone	98-86-2	Ethanone, 1-phenyl-	8270	10
Acetonitrile; Methyl cyanide	75-05-8	Acetonitrile	8015	100
2-Acetylaminofluorene; 2-AAF	53-96-3	Acetamide, N-9H-fluoren-2-yl-	8270	10
Acrolein	107-02-8	2-Propenal	8030	5
			8240	5
Acrylonitrile	107-13-1	2-Propenenitrile	8030	5
			8240	5
Aldrin	309-00-2	1,4:5,8-Dimethanonaphthalene, 1,2,3,4,10,10-hexachloro- 1,4,4a,5,8,8a-hexahydro-(1α,4α,4aβ,5α,8α,8aβ)-	8080	0.05
			8270	10
Allyl chloride	107-05-1	1-Propene, 3-chloro-	8010	5
			8240	100
4-Aminobiphenyl	92-67-1	[1,1'-Biphenyl]-4-amine	8270	10
Aniline	62-53-3	Benzenamine	8270	10
Anthracene	120-12-7	Anthracene	8100	200
			8270	10
Antimony	(Total)	Antimony	6010	300
			7040	2,000
			7041	30
Aramite	140-57-8	Sulfurous acid, 2-chloroethyl 2-[4-(1,1-dimethylethyl)phenoxy]-1-methylethyl ester.	8270	10
Arsenic	(Total)	Arsenic	6010	500
			7060	10
			7061	20
Barium	(Total)	Barium	6010	20
			7080	1,000
Benzene	71-43-2	Benzene	8020	2
			8240	5
Benzo[a]anthracene; Benzanthracene.	56-55-3	Benz[a]anthracene	8100	200
			8270	10
Benzo[b]fluoranthene	205-99-2	Benz[e]acephenanthrylene	8100	200
			8270	10
Benzo[k]fluoranthene	207-08-9	Benzo[k]fluoranthene	8100	200
			8270	10
Benzo[ghi]perylene	191-24-2	Benzo[ghi]perylene	8100	200
			8270	10
Benzo[a]pyrene	50-32-8	Benzo[a]pyrene	8100	200
			8270	10
Benzyl alcohol	100-51-6	Benzenemethanol	8270	20
Beryllium	(Total)	Beryllium	6010	3
			7090	50
			7091	2
alpha-BHC	319-84-6	Cyclohexane, 1,2,3,4,5,6-hexachloro-,(1α,2α,3β,4α,5β,6β)-	8080	0.05
			8250	10
beta-BHC	319-85-7	Cyclohexane, 1,2,3,4,5,6-hexachloro-,(1α,2β,3α,4β,5α,6β)-	8080	0.05
			8250	40
delta-BHC	319-86-8	Cyclohexane, 1,2,3,4,5,6-hexachloro-,(1α,2α,3α,4β,5α,6β)-	8080	0.1
			8250	30
gamma-BHC; Lindane	58-89-9	Cyclohexane, 1,2,3,4,5,6-hexachloro-,(1α,2α,3β,4α,5α,6β)-	8080	0.05
			8250	10
Bis(2-chloroethoxy)methane	111-91-1	Ethane, 1,1'-[methylenebis (oxy)]bis[2-chloro-	8270	10
Bis(2-chloroethyl)ether	111-44-4	Ethane, 1,1'-oxybis[2-chloro-	8270	10
Bis(2-chloro-1-methylethyl) ether; 2,2'-Di- chlorodiisopropyl ether.	108-60-1	Propane, 2,2'-oxybis[1-chloro-	8010	100
			8270	10

GROUND-WATER MONITORING LIST [1]—Continued

Common name [2]	CAS RN [3]	Chemical abstracts service index name [4]	Suggested methods [5]	PQL (µg/L) [6]
Bis(2-ethylhexyl) phthalate	117-81-7	1,2-Benzenedicarboxylic acid, bis(2-ethylhexyl)ester.	8060	20
			8270	10
Bromodichloromethane	75-27-4	Methane, bromodichloro-	8010	1
			8240	5
Bromoform; Tribromomethane	75-25-2	Methane, tribromo-	8010	2
			8240	5
4-Bromophenyl phenyl ether	101-55-3	Benzene, 1-bromo-4-phenoxy-	8270	10
Butyl benzyl phthalate; Benzyl butyl phthalate	85-68-7	1,2-Benzenedicarboxylic acid, butyl phenylmethyl ester.	8060	5
			8270	10
Cadmium	(Total)	Cadmium	6010	40
			7130	50
			7131	1
Carbon disulfide	75-15-0	Carbon disulfide	8240	5
Carbon tetrachloride	56-23-5	Methane, tetrachloro-	8010	1
			8240	5
Chlordane	57-74-9	4,7-Methano-1H-indene, 1,2,4,5,6,7,8,8-octachloro-2,3,3a,4,7,7a-hexahydro-.	8080	0.1
			8250	10
p-Chloroaniline	106-47-8	Benzenamine, 4-chloro-	8270	20
Chlorobenzene	108-90-7	Benzene, chloro-	8010	2
			8020	2
			8240	5
Chlorobenzilate	510-15-6	Benzeneacetic acid, 4-chloro-α-(4-chlorophenyl)-α-hydroxy-, ethyl ester.	8270	10
p-Chloro-m-cresol	59-50-7	Phenol, 4-chloro-3-methyl-	8040	5
			8270	20
Chloroethane; Ethyl chloride	75-00-3	Ethane, chloro-	8010	5
			8240	10
Chloroform	67-66-3	Methane, trichloro-	8010	0.5
			8240	5
2-Chloronaphthalene	91-58-7	Naphthalene, 2-chloro-	8120	10
			8270	10
2-Chlorophenol	95-57-8	Phenol, 2-chloro-	8040	5
			8270	10
4-Chlorophenyl phenyl ether	7005-72-3	Benzene, 1-chloro-4-phenoxy-	8270	10
Chloroprene	126-99-8	1,3-Butadiene, 2-chloro-	8010	50
			8240	5
Chromium	(Total)	Chromium	6010	70
			7190	500
			7191	10
Chrysene	218-01-9	Chrysene	8100	200
			8270	10
Cobalt	(Total)	Cobalt	6010	70
			7200	500
			7201	10
Copper	(Total)	Copper	6010	60
			7210	200
m-Cresol	108-39-4	Phenol, 3-methyl-	8270	10
o-Cresol	95-48-7	Phenol, 2-methyl-	8270	10
p-Cresol	106-44-5	Phenol, 4-methyl-	8270	10
Cyanide	57-12-5	Cyanide	9010	40
2,4-D; 2,4-Dichlorophenoxyacetic acid.	94-75-7	Acetic acid, (2,4-dichlorophenoxy)-	8150	10
4,4'-DDD	72-54-8	Benzene 1,1'-(2,2-dichloroethylidene)bis[4-chloro-	8080	0.1
			8270	10
4,4'-DDE	72-55-9	Benzene, 1,1'-(dichloroethenylidene)bis[4-chloro-	8080	0.05
			8270	10
4,4'-DDT	50-29-3	Benzene, 1,1'-(2,2,2-trichloroethylidene)bis[4-chloro-	8080	0.1
			8270	10
Diallate	2303-16-4	Carbamothioic acid, bis(1-methylethyl)-, S-(2,3-dichloro-2-propenyl) ester.	8270	10
Dibenz[a,h]anthracene	53-70-3	Dibenz[a,h]anthracene	8100	200
			8270	10
Dibenzofuran	132-64-9	Dibenzofuran	8270	10
Dibromochloromethane; Chlorodibromomethane	124-48-1	Methane, dibromochloro-	8010	1
			8240	5
1,2-Dibromo-3-chloropropane; DBCP	96-12-8	Propane, 1,2-dibromo-3-chloro-	8010	100
			8240	5
			8270	10

GROUND-WATER MONITORING LIST [1]—Continued

Common name [2]	CAS RN [3]	Chemical abstracts service index name [4]	Suggested methods [5]	PQL (µg/L) [6]
1,2-Dibromoethane; Ethylene dibromide.	106-93-4	Ethane, 1,2-dibromo-	8010	10
			8240	5
Di-n-butyl phthalate	84-74-2	1,2-Benzenedicarboxylic acid, dibutyl ester	8060	5
			8270	10
o-Dichlorobenzene	95-50-1	Benzene, 1,2-dichloro-	8010	2
			8020	5
			8120	10
			8270	10
m-Dichlorobenzene	541-73-1	Benzene, 1,3-dichloro-	8010	5
			8020	5
			8120	10
			8270	10
p-Dichlorobenzene	106-46-7	Benzene, 1,4-dichloro-	8010	2
			8020	5
			8120	15
			8270	10
3,3'-Dichlorobenzidine	91-94-1	[1,1'-Biphenyl]-4,4'-diamine, 3,3'-dichloro-	8270	20
trans-1,4-Dichloro-2-butene	110-57-6	2-Butene, 1,4-dichloro-, (E)-	8240	5
Dichlorodifluoromethane	75-71-8	Methane, dichlorodifluoro-	8010	10
			8240	5
1,1-Dichloroethane	75-34-3	Ethane, 1,1-dichloro-	8010	1
			8240	5
1,2-Dichloroethane; Ethylene dichloride.	107-06-2	Ethane, 1,2-dichloro-	8010	0.5
			8240	5
1,1-Dichloroethylene; Vinylidene chloride.	75-35-4	Ethene, 1,1-dichloro-	8010	1
			8240	5
trans-1,2-Dichloroethylene	156-60-5	Ethene, 1,2-dichloro-, (E)-	8010	1
			8240	5
2,4-Dichlorophenol	120-83-2	Phenol, 2,4-dichloro-	8040	5
			8270	10
2,6-Dichlorophenol	87-65-0	Phenol, 2,6-dichloro-	8270	10
1,2-Dichloropropane	78-87-5	Propane, 1,2-dichloro-	8010	0.5
			8240	5
cis-1,3-Dichloropropene	10061-01-5	1-Propene, 1,3-dichloro-, (Z)-	8010	20
			8240	5
trans-1,3-Dichloropropene	10061-02-6	1-Propene, 1,3-dichloro-, (E)-	8010	5
			8240	5
Dieldrin	60-57-1	2,7:3,6-Dimethanonaphth[2,3-b]oxirene, 3,4,5,6,9,9-hexachloro-1a,2,2a,3,6,6a,7,7a-octahydro-, (1aα,2β,2aα,3β,6β,6aα,7β,7aα)-	8080	0.05
			8270	10
Diethyl phthalate	84-66-2	1,2-Benzenedicarboxylic acid, diethyl ester	8060	5
			8270	10
O,O-Diethyl O-2-pyrazinyl phosphorothioate; Thionazin	297-97-2	Phosphorothioic acid, O,O-diethyl O-pyrazinyl ester.	8270	10
Dimethoate	60-51-5	Phosphorodithioic acid, O,O-dimethyl S-[2-(methylamino)-2-oxoethyl] ester.	8270	10
p-(Dimethylamino)azobenzene	60-11-7	Benzenamine, N,N-dimethyl-4-(phenylazo)-	8270	10
7,12-Dimethylbenz[a]anthracene	57-97-6	Benz[a]anthracene, 7,12-dimethyl-	8270	10
3,3'-Dimethylbenzidine	119-93-7	[1,1'-Biphenyl]-4,4'-diamine, 3,3'-dimethyl-	8270	10
alpha, alpha-Dimethylphenethylamine.	122-09-8	Benzeneethanamine, α,α-dimethyl-	8270	10
2,4-Dimethylphenol	105-67-9	Phenol, 2,4-dimethyl-	8040	5
			8270	10
Dimethyl phthalate	131-11-3	1,2-Benzenedicarboxylic acid, dimethyl ester	8060	5
			8270	10
m-Dinitrobenzene	99-65-0	Benzene, 1,3-dinitro-	8270	10
4,6-Dinitro-o-cresol	534-52-1	Phenol, 2-methyl-4,6-dinitro-	8040	150
			8270	50
2,4-Dinitrophenol	51-28-5	Phenol, 2,4-dinitro-	8040	150
			8270	50
2,4-Dinitrotoluene	121-14-2	Benzene, 1-methyl-2,4-dinitro-	8090	0.2
			8270	10
2,6-Dinitrotoluene	606-20-2	Benzene, 2-methyl-1,3-dinitro-	8090	0.1
			8270	10
Dinoseb; DNBP; 2-sec-Butyl-4,6-dinitrophenol	88-85-7	Phenol, 2-(1-methylpropyl)-4,6-dinitro-	8150	1
			8270	10
Di-n-octyl phthalate	117-84-0	1,2-Benzenedicarboxylic acid, dioctyl ester	8060	30
			8270	10

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GROUND-WATER MONITORING LIST [1]—Continued

Common name [2]	CAS RN [3]	Chemical abstracts service index name [4]	Suggested methods [5]	PQL (μg/L) [6]
1,4-Dioxane	123-91-1	1,4-Dioxane	8015	150
Diphenylamine	122-39-4	Benzenamine, N-phenyl-	8270	10
Disulfoton	298-04-4	Phosphorodithioic acid, O,O-diethyl S-[2-(ethylthio)ethyl]ester	8140	2
			8270	10
Endosulfan I	959-98-8	6,9-Methano-2,4,3-benzodioxathiepin, 6,7,8,9,10,10-hexachloro-1,5,5a,6,9,9a-hexahydro-, 3-oxide, (3α,5aβ,6α,9α,9aβ)-.	8080	0.1
			8250	10
Endosulfan II	33213-65-9	6,9-Methano-2,4,3-benzodioxathiepin, 6,7,8,9,10,10-hexachloro- 1,5,5a,6,9,9a-hexahydro-, 3-oxide, (3α,5aα,6β,9β,9aα)-	8080	0.05
Endosulfan sulfate	1031-07-8	6,9-Methano-2,4,3-benzodioxathiepin, 6,7,8,9,10,10-hexachloro- 1,5,5a,6,9,9a-hexahydro-, 3,3-dioxide.	8080	0.5
			8270	10
Endrin	72-20-8	2,7:3,6-Dimethanonaphth[2,3-b]oxirene, 3,4,5,6,9,9-hexachloro-1a,2,2a,3,6,6a,7,7a-octahydro-, (1aα, 2β,2aβ,3α,6α, 6aβ,7β,7aα)-	8080	0.1
			8250	10
Endrin aldehyde	7421-93-4	1,2,4-Methenocyclopenta[cd]pentalene-5-carboxaldehyde, 2,2a,3,3,4,7-hexachlorodecahydro-, (1α,2β,2aβ,4β,4aβ,5β,6aβ,6bβ,7R*)-	8080	0.2
			8270	10
Ethylbenzene	100-41-4	Benzene, ethyl-	8020	2
			8240	5
Ethyl methacrylate	97-63-2	2-Propenoic acid, 2-methyl-, ethyl ester	8015	10
			8240	5
			8270	10
Ethyl methanesulfonate	62-50-0	Methanesulfonic acid, ethyl ester	8270	10
Famphur	52-85-7	Phosphorothioic acid, O-[4-[(dimethylamino)sulfonyl]phenyl]-O,O-dimethyl ester.	8270	10
Fluoranthene	206-44-0	Fluoranthene	8100	200
			8270	10
Fluorene	86-73-7	9H-Fluorene	8100	200
			8270	10
Heptachlor	76-44-8	4,7-Methano-1H-indene, 1,4,5,6,7,8,8-heptachloro-3a,4,7,7a-tetrahydro-	8080	0.05
			8270	10
Heptachlor epoxide	1024-57-3	2,5-Methano-2H-indeno[1,2-b]oxirene, 2,3,4,5,6,7,7-heptachloro-1a,1b,5,5a,6,6a,-hexahydro-, (1aα,1bβ,2α,5α,5aβ,6β,6aα)	8080	1
			8270	10
Hexachlorobenzene	118-74-1	Benzene, hexachloro-	8120	0.5
			8270	10
Hexachlorobutadiene	87-68-3	1,3-Butadiene, 1,1,2,3,4,4-hexachloro-	8120	5
			8270	10
Hexachlorocyclopentadiene	77-47-4	1,3-Cyclopentadiene, 1,2,3,4,5,5-hexachloro-	8120	5
			8270	10
Hexachloroethane	67-72-1	Ethane, hexachloro-	8120	0.5
			8270	10
Hexachlorophene	70-30-4	Phenol, 2,2'-methylenebis[3,4,6-trichloro-	8270	10
Hexachloropropene	1888-71-7	1-Propene, 1,1,2,3,3,3-hexachloro-	8270	10
2-Hexanone	591-78-6	2-Hexanone	8240	50
Indeno(1,2,3-cd)pyrene	193-39-5	Indeno[1,2,3-cd]pyrene	8100	200
			8270	10
Isobutyl alcohol	78-83-1	1-Propanol, 2-methyl-	8015	50
Isodrin	465-73-6	1,4,5,8-Dimethanonaphthalene,1,2,3,4,10,10-hexachloro-1,4,4a,5,8,8a hexahydro-(1α,4α,4aβ,5β,8β,8aβ)-.	8270	10
Isophorone	78-59-1	2-Cyclohexen-1-one, 3,5,5-trimethyl-	8090	60
			8270	10
Isosafrole	120-58-1	1,3-Benzodioxole, 5-(1-propenyl)-	8270	10
Kepone	143-50-0	1,3,4-Metheno-2H-cyclobuta- [cd]pentalen-2-one, 1,1a,3,3a,4,5,5,5a,5b,6-decachlorooctahydro-	8270	10
Lead	(Total)	Lead	6010	40
			7420	1,000
			7421	10
Mercury	(Total)	Mercury	7470	2
Methacrylonitrile	126-98-7	2-Propenenitrile, 2-methyl-	8015	5
			8240	5
Methapyrilene	91-80-5	1,2,Ethanediamine, N,N-dimethyl-N'-2-pyridinyl-N'-(2-thienylmethyl)-	8270	10

GROUND-WATER MONITORING LIST [1]—Continued

Common name [2]	CAS RN [3]	Chemical abstracts service index name [4]	Suggested methods [5]	PQL (μg/L) [6]
Methoxychlor	72-43-5	Benzene, 1,1'-(2,2,2,trichloroethylidene)bis[4-methoxy-.	8080	2
			8270	10
Methyl bromide; Bromomethane	74-83-9	Methane, bromo-	8010	20
			8240	10
Methyl chloride; Chloromethane	74-87-3	Methane, chloro-	8010	1
			8240	10
3-Methylcholanthrene	56-49-5	Benz[j]aceanthrylene, 1,2-dihydro-3-methyl-	8270	10
Methylene bromide; Dibromomethane.	74-95-3	Methane, dibromo-	8010	15
			8240	5
Methylene chloride; Dichloromethane.	75-09-2	Methane, dichloro-	8010	5
			8240	5
Methyl ethyl ketone; MEK	78-93-3	2-Butanone	8015	10
			8240	100
Methyl iodide; Iodomethane	74-88-4	Methane, iodo-	8010	40
			8240	5
Methyl methacrylate	80-62-6	2-Propenoic acid, 2-methyl-, methyl ester	8015	2
			8240	5
Methyl methanesulfonate	66-27-3	Methanesulfonic acid, methyl ester	8270	10
2-Methylnaphthalene	91-57-6	Naphthalene, 2-methyl-	8270	10
Methyl parathion; Parathion methyl	298-00-0	Phosphorothioic acid, O,O-dimethyl O-(4-nitrophenyl) ester.	8140	0.5
			8270	10
4-Methyl-2-pentanone; Methyl isobutyl ketone.	108-10-1	2-Pentanone, 4-methyl-	8015	5
			8240	50
Naphthalene	91-20-3	Naphthalene	8100	200
			8270	10
1,4-Naphthoquinone	130-15-4	1,4-Naphthalenedione	8270	10
1-Naphthylamine	134-32-7	1-Naphthalenamine	8270	10
2-Naphthylamine	91-59-8	2-Naphthalenamine	8270	10
Nickel	(Total)	Nickel	6010	50
			7520	400
o-Nitroaniline	88-74-4	Benzenamine, 2-nitro-	8270	50
m-Nitroaniline	99-09-2	Benzenamine, 3-nitro-	8270	50
p-Nitroaniline	100-01-6	Benzenamine, 4-nitro-	8270	50
Nitrobenzene	98-95-3	Benzene, nitro-	8090	40
			8270	10
o-Nitrophenol	88-75-5	Phenol, 2-nitro-	8040	5
			8270	10
p-Nitrophenol	100-02-7	Phenol, 4-nitro-	8040	10
			8270	50
4-Nitroquinoline 1-oxide	56-57-5	Quinoline, 4-nitro-, 1-oxide	8270	10
N-Nitrosodi-n-butylamine	924-16-3	1-Butanamine, N-butyl-N-nitroso-	8270	10
N-Nitrosodiethylamine	55-18-5	Ethanamine, N-ethyl-N-nitroso-	8270	10
N-Nitrosodimethylamine	62-75-9	Methanamine, N-methyl-N-nitroso-	8270	10
N-Nitrosodiphenylamine	86-30-6	Benzenamine, N-nitroso-N-phenyl-	8270	10
N-Nitrosodipropylamine; Di-n-propylnitrosamine.	621-64-7	1-Propanamine, N-nitroso-N-propyl-	8270	10
N-Nitrosomethylethylamine	10595-95-6	Ethanamine, N-methyl-N-nitroso-	8270	10
N-Nitrosomorpholine	59-89-2	Morpholine, 4-nitroso-	8270	10
N-Nitrosopiperidine	100-75-4	Piperidine, 1-nitroso-	8270	10
N-Nitrosopyrrolidine	930-55-2	Pyrrolidine, 1-nitroso-	8270	10
5-Nitro-o-toluidine	99-55-8	Benzenamine, 2-methyl-5-nitro-	8270	10
Parathion	56-38-2	Phosphorothioic acid, O,O-diethyl-O-(4-nitrophenyl) ester	8270	10
Polychlorinated biphenyls; PCBs	See Note 7	1,1'-Biphenyl, chloro derivatives	8080	50
			8250	100
Polychlorinated dibenzo-p-dioxins; PCDDs.	See Note 8	Dibenzo[b,e][1,4]dioxin, chloro derivatives	8280	0.01
Polychlorinated dibenzofurans; PCDFs.	See Note 9	Dibenzofuran, chloro derivatives	8280	0.01
Pentachlorobenzene	608-93-5	Benzene, pentachloro-	8270	10
Pentachloroethane	76-01-7	Ethane, pentachloro-	8240	5
			8270	10
Pentachloronitrobenzene	82-68-8	Benzene, pentachloronitro-	8270	10
Pentachlorophenol	87-86-5	Phenol, pentachloro-	8040	5
			8270	50
Phenacetin	62-44-2	Acetamide, N-(4-ethoxyphenyl)	8270	10
Phenanthrene	85-01-8	Phenanthrene	8100	200
			8270	10

GROUND-WATER MONITORING LIST [1]—Continued

Common name [2]	CAS RN [3]	Chemical abstracts service index name [4]	Suggested methods [5]	PQL (µg/L) [6]
Phenol	108-95-2	Phenol	8040	1
			8270	10
p-Phenylenediamine	106-50-3	1,4-Benzenediamine	8270	10
Phorate	298-02-2	Phosphorodithioic acid, O,O-diethyl S-[(ethylthio)methyl] ester	8140	2
			8270	10
2-Picoline	109-06-8	Pyridine, 2-methyl-	8240	5
			8270	10
Pronamide	23950-58-5	Benzamide, 3,5-dichloro-N-(1,1-dimethyl-2-propynyl)-.	8270	10
Propionitrile; Ethyl cyanide	107-12-0	Propanenitrile	8015	60
			8240	5
Pyrene	129-00-0	Pyrene	8100	200
			8270	10
Pyridine	110-86-1	Pyridine	8240	5
			8270	10
Safrole	94-59-7	1,3-Benzodioxole, 5-(2-propenyl)-	8270	10
Selenium	(Total)	Selenium	6010	750
			7740	20
			7741	20
Silver	(Total)	Silver	6010	70
			7760	100
Silvex; 2,4,5-TP	93-72-1	Propanoic acid, 2-(2,4,5-trichlorophenoxy)-	8150	2
Styrene	100-42-5	Benzene, ethenyl-	8020	1
			8240	5
Sulfide	18496-25-8	Sulfide	9030	10,000
2,4,5-T; 2,4,5-Trichlorophenoxyacetic acid.	93-76-5	Acetic acid, (2,4,5-trichlorophenoxy)-	8150	2
2,3,7,8-TCDD; 2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746-01-6	Dibenzo[b,e][1,4]dioxin, 2,3,7,8-tetrachloro-	8280	0.005
1,2,4,5-Tetrachlorobenzene	95-94-3	Benzene, 1,2,4,5-tetrachloro-	8270	10
1,1,1,2-Tetrachloroethane	630-20-6	Ethane, 1,1,1,2-tetrachloro-	8010	5
			8240	5
1,1,2,2-Tetrachloroethane	79-34-5	Ethane, 1,1,2,2-tetrachloro-	8010	0.5
			8240	5
Tetrachloroethylene; Perchloroethylene; Tetrachloroethene.	127-18-4	Ethene, tetrachloro-	8010	0.5
			8240	5
2,3,4,6-Tetrachlorophenol	58-90-2	Phenol, 2,3,4,6-tetrachloro-	8270	10
Tetraethyl dithiopyrophosphate; Sulfotepp.	3689-24-5	Thiodiphosphoric acid ($[(HO)_2P(S)]_2O$), tetraethyl ester	8270	10
Thallium	(Total)	Thallium	6010	400
			7840	1,000
			7841	10
Tin	(Total)	Tin	7870	8,000
Toluene	108-88-3	Benzene, methyl-	8020	2
			8240	5
o-Toluidine	95-53-4	Benzenamine, 2-methyl-	8270	10
Toxaphene	8001-35-2	Toxaphene	8080	2
			8250	10
1,2,4-Trichlorobenzene	120-82-1	Benzene, 1,2,4-trichloro-	8270	10
1,1,1-Trichloroethane; Methylchloroform.	71-55-6	Ethane, 1,1,1-trichloro-	8240	5
1,1,2-Trichloroethane	79-00-5	Ethane, 1,1,2-trichloro-	8010	0.2
			8240	5
Trichloroethylene; Trichloroethene	79-01-6	Ethene, trichloro-	8010	1
			8240	5
Trichlorofluoromethane	75-69-4	Methane, trichlorofluoro-	8010	10
			8240	5
2,4,5-Trichlorophenol	95-95-4	Phenol, 2,4,5-trichloro-	8270	10
2,4,6-Trichlorophenol	88-06-2	Phenol, 2,4,6-trichloro-	8040	5
			8270	10
1,2,3-Trichloropropane	96-18-4	Propane, 1,2,3-trichloro-	8010	10
			8240	5
O,O,O-Triethyl phosphorothioate	126-68-1	Phosphorothioic acid, O,O,O-triethyl ester	8270	10
sym-Trinitrobenzene	99-35-4	Benzene, 1,3,5-trinitro-	8270	10
Vanadium	(Total)	Vanadium	6010	80
			7910	2,000
			7911	40
Vinyl acetate	108-05-4	Acetic acid, ethenyl ester	8240	5

GROUND-WATER MONITORING LIST [1]—Continued

Common name [2]	CAS RN [3]	Chemical abstracts service index name [4]	Suggested methods [5]	PQL (µg/L) [6]
Vinyl chloride	75-01-4	Ethene, chloro-	8010	2
Xylene (total)	1330-20-7	Benzene, dimethyl-	8240	10
			8020	5
Zinc	(Total)	Zinc	8240	5
			6010	20
			7950	50

[1] The regulatory requirements pertain only to the list of substances; the right hand columns (Methods and PQL) are given for informational purposes only. See also footnotes 5 and 6.

[2] Common names are those widely used in government regulations, scientific publications, and commerce; synonyms exist for many chemicals.

[3] Chemical Abstracts Service registry number. Where "Total" is entered, all species in the ground water that contain this element are included.

[4] CAS index names are those used in the 9th Cumulative Index.

[5] Suggested Methods refer to analytical procedure numbers used in EPA Report SW-846 "Test Methods for Evaluating Solid Waste", third edition, November 1986. Analytical details can be found in SW-846 and in documentation on file at the agency. CAUTION: The methods listed are representative SW-846 procedures and may not always be the most suitable method(s) for monitoring an analyte under the regulations.

[6] Practical Quantitation Limits (PQLs) are the lowest concentrations of analytes in ground waters that can be reliably determined within specified limits of precision and accuracy by the indicated methods under routine laboratory operating conditions. The PQLs listed are generally stated to one significant figure. CAUTION: The PQL values in many cases are based only on a general estimate for the method and not on a determination for individual compounds; PQLs are not a part of the regulation.

[7] Polychlorinated biphenyls (CAS RN 1336-36-3); this category contains congener chemicals, including constituents of Aroclor-1016 (CAS RN 12674-11-2), Aroclor-1221 (CAS RN 11104-28-2), Aroclor-1232 (CAS RN 11141-16-5), Aroclor-1242 (CAS RN 53469-21-9), Aroclor-1248 (CAS RN 12672-29-6), Aroclor-1254 (CAS RN 11097-69-1), and Aroclor-1260 (CAS RN 11096-82-5). The PQL shown is an average value for PCB congeners.

[8] This category contains congener chemicals, including tetrachlorodibenzo-p-dioxins (see also 2,3,7,8-TCDD), pentachlorodibenzo-p-dioxins, and hexachlorodibenzo-p-dioxins. The PQL shown is an average value for PCDD congeners.

[9] This category contains congener chemicals, including tetrachlorodibenzofurans, pentachlorodibenzofurans, and hexachlorodibenzofurans. The PQL shown is an average value for PCDF congeners.

[52 FR 25947, July 9, 1987]

PART 265—INTERIM STATUS STANDARDS FOR OWNERS AND OPERATORS OF HAZARDOUS WASTE TREATMENT, STORAGE, AND DISPOSAL FACILITIES

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265.4 Imminent hazard action.

Subpart B—General Facility Standards

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265.13 General waste analysis.
265.14 Security.
265.15 General inspection requirements.
265.16 Personnel training.
265.17 General requirements for ignitable, reactive, or incompatible wastes.
265.18 Location standards.

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265.33 Testing and maintenance of equipment.
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Subpart F—Ground-Water Monitoring

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265.92 Sampling and analysis.
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Subpart G—Closure and Post-Closure

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265.112 Closure plan; amendment of plan.
265.113 Closure; time allowed for closure.
265.114 Disposal or decontamination of equipment, structures and soils.
265.115 Certification of closure.
265.116 Survey plat.
265.117 Post-closure care and use of property.
265.118 Post-closure plan; amendment of plan.
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Subpart H—Financial Requirements

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265.141 Definitions of terms as used in this subpart.
265.142 Cost estimate for closure.
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265.146 Use of a mechanism for financial assurance of both closure and post-closure care.
265.147 Liability requirements.
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APPENDIX III—EPA INTERIM PRIMARY DRINKING WATER STANDARDS
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APPENDIX V—EXAMPLES OF POTENTIALLY INCOMPATIBLE WASTE

AUTHORITY: 42 U.S.C. 6905, 6912(a), 6924, 6925, and 6935.

SOURCE: 45 FR 33232, May 19, 1980, unless otherwise noted.

EDITORIAL NOTE: The reporting or recordkeeping provisions included in the final rule published at 47 FR 32274, July 26, 1982, will be submitted for approval to the Office of Management and Budget and will not become effective until OMB approval has been obtained. EPA will publish a notice in the FEDERAL REGISTER after it obtains OMB approval.

Subpart A—General

§ 265.1 Purpose, scope, and applicability.

(a) The purpose of this part is to establish minimum national standards that define the acceptable management of hazardous waste during the period of interim status and until certification of final closure or, if the facility is subject to post-closure requirements, until post-closure responsibilities are fulfilled.

(b) The standards of this part apply to owners and operators of facilities that treat, store or dispose of hazardous waste who have fully complied with the requirements for interim status under section 3005(e) of RCRA and § 270.10 of this chapter until either a permit is issued under section 3005 of RCRA or until applicable Part 265 closure and post-closure responsibilities are fulfilled, and to those owners and operators of facilities in existence on November 19, 1980 who have failed to provide timely notification as required by section 3010(a) of RCRA and/or failed to file Part A of the permit application as required by 40 CFR 270.10 (e) and (g). These standards apply to all treatment, storage and disposal of hazardous waste at these facilities after the effective date

of these regulations, except as specifically provided otherwise in this part or Part 261 of this chapter.

[*Comment:* As stated in section 3005(a) of RCRA, after the effective date of regulations under that section (i.e., Parts 270 and 124 of this chapter), the treatment, storage and disposal of hazardous waste is prohibited except in accordance with a permit. Section 3005(e) of RCRA provides for the continued operation of an existing facility that meets certain conditions, until final administrative disposition of the owner's and operator's permit application is made.]

(c) The requirements of this part do not apply to:

(1) A person disposing of hazardous waste by means of ocean disposal subject to a permit issued under the Marine Protection, Research, and Sanctuaries Act;

[*Comment:* These Part 265 regulations do apply to the treatment or storage of hazardous waste before it is loaded onto an ocean vessel for incineration or disposal at sea, as provided in paragraph (b) of this section.]

(2) [Reserved]

(3) The owner or operator of a POTW which treats, stores, or disposes of hazardous waste;

[*Comment:* The owner or operator of a facility under paragraphs (c)(1) through (3) of this section is subject to the requirements of Part 264 of this chapter to the extent they are included in a permit by rule granted to such a person under Part 122 of this chapter, or are required by § 144.14 of this chapter.]

(4) A person who treats, stores, or disposes of hazardous waste in a State with a RCRA hazardous waste program authorized under Subpart A or B of Part 271 of this chapter, except that the requirements of this part will continue to apply:

(i) As stated in paragraph (c)(2) of this section, if the authorized State RCRA program does not cover disposal of hazardous waste by means of underground injection; or

(ii) To a person who treats, stores, or disposes of hazardous waste in a State authorized under Subpart A or B of Part 271 of this chapter if the State has not been authorized to carry out the requirements and prohibitions applicable to the treatment, storage, or disposal of hazardous waste at his facility which are imposed pursuant to the Hazardous and Solid Waste Act Amendments of 1984. The requirements and prohibitions that are applicable until a State receives authorization to carry them out include all Federal program requirements identified in § 271.1(j);

(5) The owner or operator of a facility permitted, licensed, or registered by a State to manage municipal or industrial solid waste, if the only hazardous waste the facility treats, stores, or disposes of is excluded from regulation under this part by § 261.5 of this chapter;

(6) The owner and operator of a facility managing recyclable materials described in § 261.6 (a) (2) and (3) of this chapter (except to the extent that requirements of this part are referred to in Subparts C, D, F, or G of Part 266 of this chapter).

(7) A generator accumulating waste on-site in compliance with § 262.34 of this chapter, except to the extent the requirements are included in § 262.34 of this chapter;

(8) A farmer disposing of waste pesticides from his own use in compliance with § 262.51 of this chapter; or

(9) The owner or operator of a totally enclosed treatment facility, as defined in § 260.10.

(10) The owner or operator of an elementary neutralization unit or a wastewater treatment unit as defined in § 260.10 of this chapter.

(11)(i) Except as provided in paragraph (c)(11)(ii) of this section, a person engaged in treatment or containment activities during immediate response to any of the following situations:

(A) A discharge of a hazardous waste;

(B) An imminent and substantial threat of a discharge of a hazardous waste;

(C) A discharge of a material which, when discharged, becomes a hazardous waste.

(ii) An owner or operator of a facility otherwise regulated by this part must comply with all applicable requirements of Subparts C and D.

(iii) Any person who is covered by paragraph (c)(11)(i) of this section and who continues or initiates hazardous waste treatment or containment activities after the immediate response is over is subject to all applicable requirements of this part and Parts 122 through 124 of this chapter for those activities.

(12) A transporter storing manifested shipments of hazardous waste in containers meeting the requirements of 40 CFR 262.30 at a transfer facility for a period of ten days or less.

(13) The addition of absorbent material to waste in a container (as defined in § 260.10 of this chapter) or the addition of waste to the absorbent material in a container provided that these actions occur at the time waste is first placed in the containers; and §§ 265.17(b), 265.171, and 265.172 are complied with.

(d) The following hazardous wastes must not be managed at facilities subject to regulation under this part.

(1) EPA Hazardous Waste Nos. FO20, FO21, FO22, FO23, FO26, or FO27 unless:

(i) The wastewater treatment sludge is generated in a surface impoundment as part of the plant's wastewater treatment system;

(ii) The waste is stored in tanks or containers;

(iii) The waste is stored or treated in waste piles that meet the requirements of § 264.250(c) as well as all other applicable requirements of Subpart L of this part;

(iv) The waste is burned in incinerators that are certified pursuant to the standards and procedures in § 265.352; or

(v) The waste is burned in facilities that thermally treat the waste in a device other than an incinerator and that are certified pursuant to the standards and procedures in § 265.383.

(e) The requirements of this part apply to owners or operators of all facilites which treat, store or dispose of hazardous waste referred to in Part 268.

[45 FR 33232, May 19, 1980, as amended at 45 FR 76075, Nov. 17, 1980; 45 FR 86968, Dec. 31, 1980; 46 FR 27480, May 20, 1981; 47 FR 8306, Feb. 25, 1982; 48 FR 2511, Jan. 19, 1983; 48 FR 14295, Apr. 1, 1983; 49 FR 46095, Nov. 21, 1984; 50 FR 666, Jan. 4, 1985; 50 FR 2005, Jan. 14, 1985; 50 FR 28749, July 15, 1985; 52 FR 21016, June 4, 1987; 52 FR 45798, Dec. 1, 1987]

§§ 265.2—265.3 [Reserved]

§ 265.4 Imminent hazard action.

Notwithstanding any other provisions of these regulations, enforcement actions may be brought pursuant to section 7003 of RCRA.

Subpart B—General Facility Standards

§ 265.10 Applicability

The regulations in this subpart apply to owners and operators of all hazardous waste facilities, except as § 265.1 provides otherwise.

§ 265.11 Identification number.

Every facility owner or operator must apply to EPA for an EPA identification number in accordance with the EPA notification procedures (45 FR 12746).

§ 265.12 Required notices.

(a) The owner or operator of a facility that has arranged to receive hazardous waste from a foreign source must notify the Regional Administrator in writing at least four weeks in advance of the date of the waste is expected to arrive at the facility. Notice of subsequent shipments of the same waste from the same foreign source is not required.

(b) Before transferring ownership or operation of a facility during its operating life, or of a disposal facility during the post-closure care period, the owner or operator must notify the new owner or operator in writing of the requirements of this part and Part 270 of this chapter. (Also see § 270.72 of this chapter.)

[*Comment:* An owner's or operator's failure to notify the new owner or operator of the requirements of this part in no way relieves the new owner or operator of his obligation to comply with all applicable requirements.]

(Approved by the Office of Management and Budget under control number 2050-0013)

[45 FR 33232, May 19, 1980, as amended at 48 FR 14295, Apr. 1, 1983; 50 FR 4514, Jan. 31, 1985]

§ 265.13 General waste analysis.

(a)(1) Before an owner or operator treats, stores, or disposes of any hazardous waste, he must obtain a detailed chemical and physical analysis of a representative sample of the waste. At a minimum, this analysis must contain all the information which must be known to treat, store, or dispose of the waste in accordance with the requirements of this part and Part 268 of this chapter.

(2) The analysis may include data developed under Part 261 of this chapter, and existing published or documented data on the hazardous waste or on waste generated from similar processes.

[*Comment:* For example, the facility's record of analyses performed on the waste before the effective date of these regulations, or studies conducted on hazardous waste generated from processes similar to that which generated the waste to be managed at the facility, may be included in the data base required to comply with paragraph (a)(1) of this section. The owner or operator of an off-site facility may arrange for the generator of the hazardous waste to supply part or all of the information required by paragraph (a)(1) of this section. If the generator does not supply the information, and the owner or operator chooses to accept a hazardous waste, the owner or operator is responsible for obtaining the information required to comply with this section.]

(3) The analysis must be repeated as necessary to ensure that it is accurate and up to date. At a minimum, the analysis must be repeated:

(i) When the owner or operator is notified, or has reason to believe, that the process or operation generating the hazardous waste has changed; and

(ii) For off-site facilities, when the results of the inspection required in paragraph (a)(4) of this section indicate that the hazardous waste received at the facility does not match the waste designated on the accompanying manifest or shipping paper.

(4) The owner or operator of an off-site facility must inspect and, if necessary, analyze each hazardous waste movement received at the facility to determine whether it matches the identity of the waste specified on the accompanying manifest or shipping paper.

(b) The owner or operator must develop and follow a written waste analysis plan which describes the procedures which he will carry out to comply with paragraph (a) of this section. He must keep this plan at the facility. At a minimum, the plan must specify:

(1) The parameters for which each hazardous waste will be analyzed and the rationale for the selection of these parameters (i.e., how analysis for these parameters will provide sufficient information on the waste's properties to comply with paragraph (a) of this section);

(2) The test methods which will be used to test for these parameters;

(3) The sampling method which will be used to obtain a representative sample of the waste to be analyzed. A representative sample may be obtained using either:

(i) One of the sampling methods described in Appendix I of Part 261 of this chapter; or

(ii) An equivalent sampling method.

[*Comment:* See § 260.20(c) of this chapter for related discussion.]

(4) The frequency with which the initial analysis of the waste will be reviewed or repeated to ensure that the analysis is accurate and up to date;

(5) For off-site facilities, the waste analyses that hazardous waste generators have agreed to supply; and

(6) Where applicable, the methods which will be used to meet the additional waste analysis requirements for specific waste management methods as specified in §§ 265.193, 265.225, 265.252, 265.273, 265.314, 265.341, 265.375, 265.402 and 268.7 of this chapter.

(7) For surface impoundments exempted from land disposal restrictions under § 268.4(a) of this chapter, the procedures and schedule for:

(i) The sampling of impoundment contents;

(ii) The analysis of test data; and,

(iii) The annual removal of residues which are not delisted under § 260.22 of this chapter and do not exhibit a characteristic of hazardous waste, and which do not meet the treatment standards of Part 268 Subpart D of this chapter or, where no treatment standards have been established, the annual removal of residues which do not meet the applicable prohibition levels in Part 268 Subpart C or RCRA section 3004(d).

(c) For off-site facilities, the waste analysis plan required in paragraph (b) of this section must also specify the procedures which will be used to inspect and, if necessary, analyze each movement of hazardous waste received at the facility to ensure that it matches the identity of the waste designated on the accompanying manifest or shipping paper. At a minimum, the plan must describe:

(1) The procedures which will be used to determine the identity of each movement of waste managed at the facility; and

(2) The sampling method which will be used to obtain a representative sample of the waste to be identified, if the identification method includes sampling.

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[45 FR 33232, May 19, 1980, as amended at 50 FR 4514, Jan. 31, 1985; 50 FR 18374, Apr. 30, 1985; 51 FR 40638, Nov. 7, 1986; 52 FR 25788, July 8, 1987]

§ 265.14 Security.

(a) The owner or operator must prevent the unknowing entry, and minimize the possibility for the unauthorized entry, of persons or livestock onto the active portion of his facility, *unless:*

(1) Physical contact with the waste, structures, or equipment with the active portion of the facility will not injure unknowing or unauthorized persons or livestock which may enter the active portion of a facility, and

(2) Disturbance of the waste or equipment, by the unknowing or unauthorized entry of persons or livestock onto the active portion of a facility, will not cause a violation of the requirements of this part.

(b) Unless exempt under paragraphs (a)(1) and (2) of this section, a facility must have:

(1) A 24-hour surveillance system (e.g., television monitoring or surveillance by guards of facility personnel) which continuously monitors and controls entry onto the active portion of the facility; or

(2)(i) An artificial or natural barrier (e.g., a fence in good repair or a fence combined with a cliff), which completely surrounds the active portion of the facility; and

(ii) A means to control entry, at all times, through the gates or other entrances to the active portion of the facility (e.g., an attendant, television monitors, locked entrance, or controlled roadway access to the facility).

[*Comment:* The requirements of paragraph (b) of this section are satisfied if the facility or plant within which the active portion is located itself has a surveillance system, or a barrier and a means to control entry, which complies with the requirements of paragraph (b)(1) or (2) of this section.]

(c) Unless exempt under paragraphs (a)(1) and (a)(2) of this section, a sign with the legend, "Danger—Unauthorized Personnel Keep Out," must be posted at each entrance to the active portion of a facility, and at other locations, in sufficient numbers to be seen from any approach to this active portion. The legend must be written in English and in any other language predominant in the area surrounding the facility (e.g., facilities in counties bordering the Canadian province of Quebec must post signs in French; facilities in counties bordering Mexico must post signs in Spanish), and must be legible from a distance of at least 25 feet. Existing signs with a legend other than "Danger—Unauthorized Personnel Keep Out" may be used if the legend on the sign indicates that only authorized personnel are allowed to enter the active portion, and that entry onto the active portion can be dangerous.

[*Comment:* See § 265.117(b) for discussion of security requirements at disposal facilities during the post-closure care period.]

§ 265.15 General inspection requirements.

(a) The owner or operator must inspect his facility for malfunctions and deterioration, operator errors, and discharges which may be causing—or may lead to: (1) Release of hazardous waste constituents to the environment or (2) a threat to human health. The owner or operator must conduct these inspections often enough to identify

problems in time to correct them before they harm human health or the environment.

(b)(1) The owner or operator must develop and follow a written schedule for inspecting all monitoring equipment, safety and emergency equipment, security devices, and operating and structural equipment (such as dikes and sump pumps) that are important to preventing, detecting, or responding to environmental or human health hazards.

(2) He must keep this schedule at the facility.

(3) The schedule must identify the types of problems (e.g., malfunctions or deterioration) which are to be looked for during the inspection (e.g., inoperative sump pump, leaking fitting, eroding dike, etc.).

(4) The frequency of inspection may vary for the items on the schedule. However, it should be based on the rate of possible deterioration of the equipment and the probability of an environmental or human health incident if the deterioration, or malfunction, or any operator error goes undetected between inspections. Areas subject to spills, such as loading and unloading areas, must be inspected daily when in use. At a minimum, the inspection schedule must include the items and frequencies called for in §§ 265.174, 265.193, 265.195, 265.226, 265.347, 265.377, and 265.403.

(c) The owner or operator must remedy any deterioration or malfunction of equipment or structures which the inspection reveals on a schedule which ensures that the problem does not lead to an environmental or human health hazard. Where a hazard is imminent or has already occurred, remedial action must be taken immediately.

(d) The owner or operator must record inspections in an inspection log or summary. He must keep these records for at least three years from the date of inspection. At a minimum, these records must include the date and time of the inspection, the name of the inspector, a notation of the observations made, and the date and nature of any repairs or other remedial actions.

(Approved by the Office of Management and Budget under control number 2050-0013)

[45 FR 33232, May 19, 1980, as amended at 50 FR 4514, Jan. 31, 1985; 51 FR 25478, July 14, 1986]

§ 265.16 Personnel training.

(a)(1) Facility personnel must successfully complete a program of classroom instruction or on-the-job training that teaches them to perform their duties in a way that ensures the facility's compliance with the requirements of this part. The owner or operator must ensure that this program includes all the elements described in the document required under paragraph (d)(3) of this section.

(2) This program must be directed by a person trained in hazardous waste management procedures, and must include instruction which teaches facility personnel hazardous waste management procedures (including contingency plan implementation) relevant to the positions in which they are employed.

(3) At a minimum, the training program must be designed to ensure that facility personnel are able to respond effectively to emergencies by familiarizing them with emergency procedures, emergency equipment, and emergency systems, including where applicable:

(i) Procedures for using, inspecting, repairing, and replacing facility emergency and monitoring equipment;

(ii) Key parameters for automatic waste feed cut-off systems;

(iii) Communications or alarm systems;

(iv) Response to fires or explosions;

(v) Response to ground-water contamination incidents; and

(vi) Shutdown of operations.

(b) Facility personnel must successfuly complete the program required in paragraph (a) of this section within six months after the effective date of these regulations or six months after the date of their employment or assignment to a facility, or to a new position at a facility, whichever is later. Employees hired after the effective date of these regulations must not work in unsupervised positions until they have completed the training requirements of paragraph (a) of this section.

(c) Facility personnel must take part in an annual review of the initial training required in paragraph (a) of this section.

(d) The owner or operator must maintain the following documents and records at the facility:

(1) The job title for each position at the facility related to hazardous waste management, and the name of the employee filling each job;

(2) A written job description for each position listed under paragraph (d)(1) of this Section. This description may be consistent in its degree of specificity with descriptions for other similar positions in the same company location or bargaining unit, but must include the requisite skill, education, or other qualifications, and duties of facility personnel assigned to each position;

(3) A written description of the type and amount of both introductory and continuing training that will be given to each person filling a position listed under paragraph (d)(1) of this section;

(4) Records that document that the training or job experience required under paragraphs (a), (b), and (c) of this section has been given to, and completed by, facility personnel.

(e) Training records on current personnel must be kept until closure of the facility. Training records on former employees must be kept for at least three years from the date the employee last worked at the facility. Personnel training racords may accompany personnel transferred within the same company.

(Approved by the Office of Management and Budget under control number 2050-0013)

[45 FR 33232, May 19, 1980, as amended at 50 FR 4514, Jan. 31, 1985]

§ 265.17 General requirements for ignitable, reactive, or incompatible wastes.

(a) The owner or operator must take precautions to prevent accidental ignition or reaction of ignitable or reactive waste. This waste must be separated and protected from sources of ignition or reaction including but not limited to: Open flames, smoking, cutting and welding, hot surfaces, frictional heat, sparks (static, electrical, or mechanical), spontaneous ignition (e.g., from heat-producing chemical reactions), and radiant heat. While ignitable or reactive waste is being handled, the owner or operator must confine smoking and open flame to specially designated locations. "No Smoking" signs must be conspicuously placed wherever there is a hazard from ignitable or reactive waste.

(b) Where specifically required by other sections of this part, the treatment, storage, or disposal of ignitable or reactive waste, and the mixture or commingling of incompatible wastes, or incompatible wastes and materials, must be conducted so that it does not:

(1) Generate extreme heat or pressure, fire or explosion, or violent reaction;

(2) Produce uncontrolled toxic mists, fumes, dusts, or gases in sufficient quantities to threaten human health;

(3) Produce uncontrolled flammable fumes or gases in sufficient quantities to pose a risk of fire or explosions;

(4) Damage the structural integrity of the device or facility containing the waste; or

(5) Through other like means threaten human health or the environment.

§ 265.18 Location standards.

The placement of any hazardous waste in a salt dome, salt bed formation, underground mine or cave is prohibited, except for the Department of Energy Waste Isolation Pilot Project in New Mexico.

[50 FR 28749, July 15, 1985]

Subpart C—Preparedness and Prevention

§ 265.30 Applicability.

The regulations in this subpart apply to owners and operators of all hazardous waste facilities, except as § 265.1 provides otherwise.

§ 265.31 Maintenance and operation of facility.

Facilities must be maintained and operated to minimize the possibility of a fire, explosion, or any unplanned

sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water which could threaten human health or the environment.

§ 265.32 Required equipment.

All facilities must be equipped with the following, *unless* none of the hazards posed by waste handled at the facility could require a particular kind of equipment specified below:

(a) An internal communications or alarm system capable of providing immediate emergency instruction (voice or signal) to facility personnel;

(b) A device, such as a telephone (immediately available at the scene of operations) or a hand-held two-way radio, capable of summoning emergency assistance from local police departments, fire departments, or State or local emergency response teams;

(c) Portable fire extinguishers, fire control equipment (including special extinguishing equipment, such as that using foam, inert gas, or dry chemicals), spill control equipment, and decontamination equipment; and

(d) Water at adequate volume and pressure to supply water hose streams, or foam producing equipment, or automatic sprinklers, or water spray systems.

§ 265.33 Testing and maintenance of equipment.

All facility communications or alarm systems, fire protection equipment, spill control equipment, and decontamination equipment, where required, must be tested and maintained as necessary to assure its proper operation in time of emergency.

§ 265.34 Access to communications or alarm system.

(a) Whenever hazardous waste is being poured, mixed, spread, or otherwise handled, all personnel involved in the operation must have immediate access to an internal alarm or emergency communication device, either directly or through visual or voice contact with another employee, *unless* such a device is not required under § 265.32.

(b) If there is ever just one employee on the premises while the facility is operating, he must have immediate access to a device, such as a telephone (immediately available at the scene of operation) or a hand-held two-way radio, capable of summoning external emergency assistance, *unless* such a device is not required under § 265.32.

§ 265.35 Required aisle space.

The owner or operator must maintain aisle space to allow the unobstructed movement of personnel, fire protection equipment, spill control equipment, and decontamination equipment to any area of facility operation in an emergency, *unless* aisle space is not needed for any of these purposes.

§ 265.36 [Reserved]

§ 265.37 Arrangements with local authorities.

(a) The owner or operator must attempt to make the following arrangements, as appropriate for the type of waste handled at his facility and the potential need for the services of these organizations:

(1) Arrangements to familiarize police, fire departments, and emergency response teams with the layout of the facility, properties of hazardous waste handled at the facility and associated hazards, places where facility personnel would normally be working, entrances to roads inside the facility, and possible evacuation routes;

(2) Where more than one police and fire department might respond to an emergency, agreements designating primary emergency authority to a specific police and a specific fire department, and agreements with any others to provide support to the primary emergency authority;

(3) Agreements with State emergency response teams, emergency response contractors, and equipment suppliers; and

(4) Arrangements to familiarize local hospitals with the properties of hazardous waste handled at the facility and the types of injuries or illnesses which could result from fires, explosions, or releases at the facility.

(b) Where State or local authorities decline to enter into such arrangements, the owner or operator must document the refusal in the operating record.

Subpart D—Contingency Plan and Emergency Procedures

§ 265.50 Applicability.

The regulations in this subpart apply to owners and operators of all hazardous waste facilities, except as § 265.1 provides otherwise.

§ 265.51 Purpose and implementation of contingency plan.

(a) Each owner or operator must have a contingency plan for his facility. The contingency plan must be designed to minimize hazards to human health or the environment from fires, explosions, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water.

(b) The provisions of the plan must be carried out immediately whenever there is a fire, explosion, or release of hazardous waste or hazardous waste constituents which could threaten human health or the environment.

(Approved by the Office of Management and Budget under control number 2050-0002)

[45 FR 33232, May 19, 1980, as amended at 50 FR 4514, Jan. 31, 1985]

§ 265.52 Content of contingency plan.

(a) The contingency plan must describe the actions facility personnel must take to comply with §§ 265.51 and 265.56 in response to fires, explosions, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water at the facility.

(b) If the owner or operator has already prepared a Spill Prevention, Control, and Countermeasures (SPCC) Plan in accordance with Part 112 of this chapter, or Part 1510 of Chapter V, or some other emergency or contingency plan, he need only amend that plan to incorporate hazardous waste management provisions that are sufficient to comply with the requirements of this part.

(c) The plan must describe arrangements agreed to by local police departments, fire departments, hospitals, contractors, and State and local emergency response teams to coordinate emergency services, pursuant to § 265.37.

(d) The plan must list names, addresses, and phone numbers (office and home) of all persons qualified to act as emergency coordinator (see § 265.55), and this list must be kept up to date. Where more than one person is listed, one must be named as primary emergency coordinator and others must be listed in the order in which they will assume responsibility as alternates.

(e) The plan must include a list of all emergency equipment at the facility (such as fire extinguishing systems, spill control equipment, communications and alarm systems (internal and external), and decontamination equipment), where this equipment is required. This list must be kept up to date. In addition, the plan must include the location and a physical description of each item on the list, and a brief outline of its capabilities.

(f) The plan must include an evacuation plan for facility personnel where there is a possibility that evacuation could be necessary. This plan must describe signal(s) to be used to begin evacuation, evacuation routes, and alternate evacuation routes (in cases where the primary routes could be blocked by releases of hazardous waste or fires).

(Approved by the Office of Management and Budget under control number 2050-0002)

[45 FR 33232, May 19, 1980, as amended at 46 FR 27480, May 20, 1981; 50 FR 4514, Jan. 31, 1985]

§ 265.53 Copies of contingency plan.

A copy of the contingency plan and all revisions to the plan must be:

(a) Maintained at the facility; and

(b) Submitted to all local police departments, fire departments, hospitals, and State and local emergency response teams that may be called upon to provide emergency services.

(Approved by the Office of Management and Budget under control number 2050-0002)

[45 FR 33232, May 19, 1980, as amended at 50 FR 4514, Jan. 31, 1985]

§ 265.54 Amendment of contingency plan.

The contingency plan must be reviewed, and immediately amended, if necessary, whenever:

(a) Applicable regulations are revised;

(b) The plan fails in an emergency;

(c) The facility changes—in its design, construction, operation, maintenance, or other circumstances—in a way that materially increases the potential for fires, explosions, or releases of hazardous waste or hazardous waste constituents, or changes the response necessary in an emergency;

(d) The list of emergency coordinators changes; or

(e) The list of emergency equipment changes.

(Approved by the Office of Management and Budget under control number 2050-0002)

[45 FR 33232, May 19, 1980, as amended at 50 FR 4514, Jan. 31, 1985]

§ 265.55 Emergency coordinator.

At all times, there must be at least one employee either on the facility premises or on call (i.e., available to respond to an emergency by reaching the facility within a short period of time) with the responsibility for coordinating all emergency response measures. This emergency coordinator must be thoroughly familiar with all aspects of the facility's contingency plan, all operations and activities at the facility, the location and characteristics of waste handled, the location of all records within the facility, and the facility layout. In addition, this person must have the authority to commit the resources needed to carry out the contingency plan.

[*Comment:* The emergency coordinator's responsibilities are more fully spelled out in § 265.56. Applicable responsibilities for the emergency coordinator vary, depending on factors such as type and variety of waste(s) handled by the facility, and type and complexity of the facility.]

§ 265.56 Emergency procedures.

(a) Whenever there is an imminent or actual emergency situation, the emergency coordinator (or his designee when the emergency coordinator is on call) must immediately:

(1) Activate internal facility alarms or communication systems, where applicable, to notify all facility personnel; and

(2) Notify appropriate State or local agencies with designated response roles if their help is needed.

(b) Whenever there is a release, fire, or explosion, the emergency coordinator must immediately identify the character, exact source, amount, and a real extent of any released materials. He may do this by observation or review of facility records or manifests and, if necessary, by chemical analysis.

(c) Concurrently, the emergency coordinator must assess possible hazards to human health or the environment that may result from the release, fire, or explosion. This assessment must consider both direct and indirect effects of the release, fire, or explosion (e.g., the effects of any toxic, irritating, or asphyxiating gases that are generated, or the effects of any hazardous surface water run-offs from water or chemical agents used to control fire and heat-induced explosions).

(d) If the emergency coordinator determines that the facility has had a release, fire, or explosion which could threaten human health, or the environment, outside the facility, he must report his findings as follows:

(1) If his assessment indicates that evacuation of local areas may be advisable, he must immediately notify appropriate local authorities. He must be available to help appropriate officials decide whether local areas should be evacuated; and

(2) He must immediately notify either the government official designated as the on-scene coordinator for that geographical area (in the applicable regional contingency plan under Part 1510 of this title), or the National Response Center (using their 24-hour toll free number 800/424-8802). The report must include:

(i) Name and telephone number of reporter;

(ii) Name and address of facility;

(iii) Time and type of incident (e.g., release, fire);

(iv) Name and quantity of material(s) involved, to the extent known;

(v) The extent of injuries, if any; and

(vi) The possible hazards to human health, or the environment, outside the facility.

(e) During an emergency, the emergency coordinator must take all reasonable measures necessary to ensure that fires, explosions, and releases do not occur, recur, or spread to other hazardous waste at the facility. These measures must include, where applicable, stopping processes and operations, collecting and containing released waste, and removing or isolating containers.

(f) If the facility stops operations in response to a fire, explosion or release, the emergency coordinator must monitor for leaks, pressure buildup, gas generation, or ruptures in valves, pipes, or other equipment, wherever this is appropriate.

(g) Immediately after an emergency, the emergency coordinator must provide for treating, storing, or disposing of recovered waste, contaminated soil or surface water, or any other material that results from a release, fire, or explosion at the facility.

[*Comment:* Unless the owner or operator can demonstrate, in accordance with § 261.3(c) or (d) of this chapter, that the recovered material is not a hazardous waste, the owner or operator becomes a generator of hazardous waste and must manage it in accordance with all applicable requirements of Parts 262, 263, and 265 of this chapter.]

(h) The emergency coordinator must ensure that, in the affected area(s) of the facility:

(1) No waste that may be incompatible with the released material is treated, stored, or disposed of until cleanup procedures are completed; and

(2) All emergency equipment listed in the contingency plan is cleaned and fit for its intended use before operations are resumed.

(i) The owner or operator must notify the Regional Administrator, and appropriate State and local authorities, that the facility is in compliance with paragraph (h) of this section before operations are resumed in the affected area(s) of the facility.

(j) The owner or operator must note in the operating record the time, date, and details of any incident that requires implementing the contingency plan. Within 15 days after the incident, he must submit a written report on the incident to the Regional Administrator. The report must include:

(1) Name, address, and telephone number of the owner or operator;

(2) Name, address, and telephone number of the facility;

(3) Date, time, and type of incident (e.g., fire, explosion);

(4) Name and quantity of material(s) involved;

(5) The extent of injuries, if any;

(6) An assessment of actual or potential hazards to human health or the environment, where this is applicable; and

(7) Estimated quantity and disposition of recovered material that resulted from the incident.

(Approved by the Office of Management and Budget under control number 2050-0002)

[45 FR 33232, May 19, 1980, as amended at 50 FR 4514, Jan. 31, 1985]

Subpart E—Manifest System, Recordkeeping, and Reporting

§ 265.70 Applicability.

The regulations in this subpart apply to owners and operators of both on-site and off-site facilities, except as § 265.1 provides otherwise. Sections 265.71, 265.72, and 265.76 do not apply to owners and operators of on-site facilities that do not receive any hazardous waste from off-site sources.

§ 265.71 Use of manifest system.

(a) If a facility receives hazardous waste accompanied by a manifest, the owner or operator, or his agent, must:

(1) Sign and date each copy of the manifest to certify that the hazardous waste covered by the manifest was received;

(2) Note any significant discrepancies in the manifest (as defined in § 265.72(a)) on each copy of the manifest;

[*Comment:* The Agency does not intend that the owner or operator of a facility whose procedures under § 265.13(c) include waste analysis must perform that analysis before signing the manifest and giving it to the transporter. Section 265.72(b), however,

requires reporting an unreconciled discrepancy discovered during later analysis.]

(3) Immediately give the transporter at least one copy of the signed manifest;

(4) Within 30 days after the delivery, send a copy of the manifest to the generator; and

(5) Retain at the facility a copy of each manifest for at least three years from the date of delivery.

(b) If a facility receives, from a rail or water (bulk shipment) transporter, hazardous waste which is accompanied by a shipping paper containing all the information required on the manifest (excluding the EPA identification numbers, generator's certification, and signatures), the owner or operator, or his agent, must:

(1) Sign and date each copy of the manifest or shipping paper (if the manifest has not been received) to certify that the hazardous waste covered by the manifest or shipping paper was received;

(2) Note any significant discrepancies (as defined in § 265.72(a)) in the manifest or shipping paper (if the manifest has not been received) on each copy of the manifest or shipping paper;

[*Comment:* The Agency does not intend that the owner or operator of a facility whose procedures under § 265.13(c) include waste analysis must perform that analysis before signing the shipping paper and giving it to the transporter. Section 265.72(b), however, requires reporting an unreconciled discrepancy discovered during later analysis.]

(3) Immediately give the rail or water (bulk shipment) transporter at least one copy of the manifest or shipping paper (if the manifest has not been received);

(4) Within 30 days after the delivery, send a copy of the signed and dated manifest to the generator; however, if the manifest has not been received within 30 days after delivery, the owner or operator, or his agent, must send a copy of the shipping paper signed and dated to the generator; and

[*Comment:* Section 262.23(c) of this chapter requires the generator to send three copies of the manifest to the facility when hazardous waste is sent by rail or water (bulk shipment).]

(5) Retain at the facility a copy of the manifest and shipping paper (if signed in lieu of the manifest at the time of delivery) for at least three years from the date of delivery.

(c) Whenever a shipment of hazardous waste is initiated from a facility, the owner or operator of that facility must comply with the requirements of Part 262 of this chapter.

[*Comment:* The provisions of § 262.34 are applicable to the on-site accumulation of hazardous wastes by generators. Therefore, the provisions of § 262.34 only apply to owners or operators who are shipping hazardous waste which they generated at that facility.]

(Approved by the Office of Management and Budget under control number 2050-0039)

[45 FR 33232, May 19, 1980, as amended at 45 FR 86970, 86974, Dec. 31, 1980; 50 FR 4514, Jan. 31, 1985]

§ 265.72 Manifest discrepancies.

(a) Manifest discrepancies are differences between the quantity or type of hazardous waste designated on the manifest or shipping paper, and the quantity or type of hazardous waste a facility actually receives. Significant discrepancies in quantity are: (1) For bulk waste, variations greater than 10 percent in weight, and (2) for batch waste, any variation in piece count, such as a discrepancy of one drum in a truckload. Significant discrepancies in type are obvious differences which can be discovered by inspection or waste analysis, such as waste solvent substituted for waste acid, or toxic constituents not reported on the manifest or shipping paper.

(b) Upon discovering a significant discrepancy, the owner or operator must attempt to reconcile the discrepancy with the waste generator or transporter (e.g., with telephone conversations). If the discrepancy is not resolved within 15 days after receiving the waste, the owner or operator must immediately submit to the Regional Administrator a letter describing the discrepancy and attempts to reconcile it, and a copy of the manifest or shipping paper at issue.

(Approved by the Office of Management and Budget under control number 2050-0039)

[45 FR 33232, May 19, 1980, as amended at 50 FR 4514, Jan. 31, 1985]

§ 265.73 Operating record.

(a) The owner or operator must keep a written operating record at his facility.

(b) The following information must be recorded, as it becomes available, and maintained in the operating record until closure of the facility:

(1) A description and the quantity of each hazardous waste received, and the method(s) and date(s) of its treatment, storage, or disposal at the facility as required by Appendix I;

(2) The location of each hazardous waste within the facility and the quantity at each location. For disposal facilities, the location and quantity of each hazardous waste must be recorded on a map or diagram of each cell or disposal area. For all facilities, this information must include cross-references to specific manifest document numbers, if the waste was accompanied by a manifest;

[*Comment:* See §§ 265.119, 265.279, and 265.309 for related requirements.]

(3) Records and results of waste analysis and trial tests performed as specified in §§ 265.13, 265.193, 265.225, 265.252, 265.273, 265.314, 265.341, 265.375, 265.402, 268.4(a) and 268.7 of this chapter.

(4) Summary reports and details of all incidents that require implementing the contingency plan as specified in § 265.56(j);

(5) Records and results of inspections as required by § 265.15(d) (except these data need be kept only three years);

(6) Monitoring, testing, or analytical data when required by §§ 265.90, 265.94, 265.191, 265.193, 265.195, 265.276, 265.278, 265.280(d)(1), 265.347, and 265.377; and

[*Comment:* As required by § 265.94, monitoring data at disposal facilities must be kept throughout the post-closure period.]

(7) All closure cost estimates under § 265.142 and, for disposal facilities, all post-closure cost estimates under § 265.144.

(8) Records of the quantities (and date of placement) for each shipment of hazardous waste placed in land disposal units under an extension to the effective date of any land disposal restriction granted pursuant to § 268.5, or a petition pursuant to § 268.6 and the notice required by a generator under § 268.7(a)(3).

(9) For an off-site treatment facility, the notice required by a generator under § 268.7(a)(1);

(10) For an on-site treatment facility the information contained in the notice required by a generator under § 268.7(a)(1), except for the manifest number.

(11) For an off-site land disposal facility, the notice and certification required by the owner or operator of a treatment facility under § 268.7(b) or the certification required by the generator under § 268.7(a)(2), whichever is applicable;

(12) For an on-site land disposal facility, the information contained in the notice required by a generator under § 268.7(a)(2), except for the manifest number, or the information contained in the notice required by the treatment facility under § 268.7(b)(2), except for the manifest number, whichever is applicable.

(Approved by Office of Management and Budget under control numbers 2050-0012, and 2050-0013)

[45 FR 33232, May 19, 1980, as amended at 46 FR 7680, Jan. 23, 1981; 50 FR 4514, Jan. 31, 1985; 50 FR 18374, Apr. 30, 1985; 51 FR 25479, July 14, 1986; 51 FR 40638, Nov. 7, 1986]

§ 265.74 Availability, retention, and disposition of records.

(a) All records, including plans, required under this part must be furnished upon request, and made available at all reasonable times for inspection, by any officer, employee, or representative of EPA who is duly designated by the Administrator.

(b) The retention period for all records required under this part is extended automatically during the course of any unresolved enforcement action regarding the facility or as requested by the Administrator.

(c) A copy of records of waste disposal locations and quantities under

§ 265.73(b)(2) must be submitted to the Regional Administrator and local land authority upon closure of the facility (see § 265.119).

(Approved by the Office of Management and Budget under control number 2050-0013)

[45 FR 33232, May 19, 1980, as amended at 50 FR 4514, Jan. 31, 1985]

§ 265.75 Biennial report.

The owner or operator must prepare and submit a single copy of a biennial report to the Regional Administrator by March 1 of each even numbered year. The biennial report must be submitted on EPA Form 8700-13B. The report must cover facility activities during the previous calendar year and must include the following information:

(a) The EPA identification number, name, and address of the facility;

(b) The calendar year covered by the report;

(c) For off-site facilities, the EPA identification number of each hazardous waste generator from which the facility received a hazardous waste during the year; for imported shipments, the report must give the name and address of the foreign generator;

(d) A description and the quantity of each hazardous waste the facility received during the year. For off-site facilities, this information must be listed by EPA identification number of each generator;

(e) The method of treatment, storage, or disposal for each hazardous waste;

(f) Monitoring data under § 265.94(a)(2)(ii) and (iii), and (b)(2), where required;

(g) The most recent closure cost estimate under § 265.142, and, for disposal facilities, the most recent post-closure cost estimate under § 265.144; and

(h) For generators who treat, store, or dispose of hazardous waste on-site, a description of the efforts undertaken during the year to reduce the volume and toxicity of waste generated.

(i) For generators who treat, store, or dispose of hazardous waste on-site, a description of the changes in volume and toxicity of waste actually achieved during the year in comparison to previous years to the extent such information is available for the years prior to 1984.

(j) The certification signed by the owner or operator of the facility or his authorized representative.

(Approved by the Office of Management and Budget under control number 2050-0024)

[45 FR 33232, May 19, 1980, as amended at 48 FR 3982, Jan. 28, 1983; 50 FR 4514, Jan. 31, 1985; 51 FR 28556, Aug. 8, 1986]

§ 265.76 Unmanifested waste report.

If a facility accepts for treatment, storage, or disposal any hazardous waste from an off-site source without an accompanying manifest, or without an accompanying shipping paper as described in § 263.20(e)(2) of this chapter, and if the waste is not excluded from the manifest requirement by § 261.5 of this chapter, then the owner or operator must prepare and submit a single copy of a report to the Regional Administrator within fifteen days after receiving the waste. The unmanifested waste report must be submitted on EPA form 8700-13B. Such report must be designated 'Unmanifested Waste Report' and include the following information:

(a) The EPA identification number, name, and address of the facility;

(b) The date the facility received the waste;

(c) The EPA identification number, name, and address of the generator and the transporter, if available;

(d) A description and the quantity of each unmanifested hazardous waste the facility received;

(e) The method of treatment, storage, or disposal for each hazardous waste;

(f) The certification signed by the owner or operator of the facility or his authorized representative; and

(g) A brief explanation of why the waste was unmanifested, if known.

[*Comment:* Small quantities of hazardous waste are excluded from regulation under this part and do not require a manifest. Where a facility receives unmanifested hazardous wastes, the Agency suggests that the owner or operator obtain from each generator a certification that the waste qualifies for exclusion. Otherwise, the Agency suggests that the owner or operator file an unmanifested waste report for the hazardous waste movement.]

(Approved by the Office of Management and Budget under control number 2050-0013)

[45 FR 33232, May 19, 1980, as amended at 48 FR 3982, Jan. 28, 1983; 50 FR 4514, Jan. 31, 1985]

§ 265.77 Additional reports.

In addition to submitting the biennial report and unmanifested waste reports described in §§ 265.75 and 265.76, the owner or operator must also report to the Regional Administrator:

(a) Releases, fires, and explosions as specified in § 265.56(j);

(b) Ground-water contamination and monitoring data as specified in §§ 265.93 and 265.94; and

(c) Facility closure as specified in § 265.115.

[45 FR 33232, May 19, 1980, as amended at 48 FR 3982, Jan. 28, 1983]

Subpart F—Ground-Water Monitoring

§ 265.90 Applicability.

(a) Within one year after the effective date of these regulations, the owner or operator of a surface impoundment, landfill, or land treatment facility which is used to manage hazardous waste must implement a ground-water monitoring program capable of determining the facility's impact on the quality of ground water in the uppermost aquifer underlying the facility, except as § 265.1 and paragraph (c) of this section provide otherwise.

(b) Except as paragraphs (c) and (d) of this section provide otherwise, the owner or operator must install, operate, and maintain a ground-water monitoring system which meets the requirements of § 265.91, and must comply with §§ 265.92 through 265.94. This ground-water monitoring program must be carried out during the active life of the facility, and for disposal facilities, during the post-closure care period as well.

(c) All or part of the ground-water monitoring requirements of this subpart may be waived if the owner or operator can demonstrate that there is a low potential for migration of hazardous waste or hazardous waste constituents from the facility via the uppermost aquifer to water supply wells (domestic, industrial, or agricultural) or to surface water. This demonstration must be in writing, and must be kept at the facility. This demonstration must be certified by a qualified geologist or geotechnical engineer and must establish the following:

(1) The potential for migration of hazardous waste or hazardous waste constituents from the facility to the uppermost aquifer, by an evaluation of:

(i) A water balance of precipitation, evapotranspiration, runoff, and infiltration; and

(ii) Unsaturated zone characteristics (i.e., geologic materials, physical properties, and depth to ground water); and

(2) The potential for hazardous waste or hazardous waste constituents which enter the uppermost aquifer to migrate to a water supply well or surface water, by an evaluation of:

(i) Saturated zone characteristics (i.e., geologic materials, physical properties, and rate of ground-water flow); and

(ii) The proximity of the facility to water supply wells or surface water.

(d) If an owner or operator assumes (or knows) that ground-water monitoring of indicator parameters in accordance with §§ 265.91 and 265.92 would show statistically significant increases (or decreases in the case of pH) when evaluated under § 265.93(b), he may, install, operate, and maintain an alternate ground-water monitoring system (other than the one described in §§ 265.91 and 265.92). If the owner or operator decides to use an alternate ground-water monitoring system he must:

(1) Within one year after the effective date of these regulations, submit to the Regional Administrator a specific plan, certified by a qualified geologist or geotechnical engineer, which satisfies the requirements of § 265.93(d)(3), for an alternate ground-water monitoring system;

(2) Not later than one year after the effective date of these regulations, initiate the determinations specified in § 265.93(d)(4);

(3) Prepare and submit a written report in accordance with § 265.93(d)(5);

(4) Continue to make the determinations specified in § 265.93(d)(4) on a quarterly basis until final closure of the facility; and

(5) Comply with the recordkeeping and reporting requirements in § 265.94(b).

(e) The ground-water monitoring requirements of this subpart may be waived with respect to any surface impoundment that (1) Is used to neutralize wastes which are hazardous solely because they exhibit the corrosivity characteristic under § 261.22 of this chapter or are listed as hazardous wastes in Subpart D of Part 261 of this chapter only for this reason, and (2) contains no other hazardous wastes, if the owner or operator can demonstrate that there is no potential for migration of hazardous wastes from the impoundment. The demonstration must establish, based upon consideration of the characteristics of the wastes and the impoundment, that the corrosive wastes will be neutralized to the extent that they no longer meet the corrosivity characteristic before they can migrate out of the impoundment. The demonstration must be in writing and must be certified by a qualified professional.

(Approved by the Office of Management and Budget under control number 2050-0033)

[45 FR 33232, May 19, 1980, as amended at 47 FR 1255, Jan. 11, 1982; 50 FR 4514, Jan. 31, 1985]

§ 265.91 Ground-water monitoring system.

(a) A ground-water monitoring system must be capable of yielding ground-water samples for analysis and must consist of:

(1) Monitoring wells (at least one) installed hydraulically upgradient (i.e., in the direction of increasing static head) from the limit of the waste management area. Their number, locations, and depths must be sufficient to yield ground-water samples that are:

(i) Representative of background ground-water quality in the uppermost aquifer near the facility; and

(ii) Not affected by the facility; and

(2) Monitoring wells (at least three) installed hydraulically downgradient (i.e., in the direction of decreasing static head) at the limit of the waste management area. Their number, locations, and depths must ensure that they immediately detect any statistically significant amounts of hazardous waste or hazardous waste constituents that migrate from the waste management area to the uppermost aquifer.

(b) Separate monitoring systems for each waste management component of a facility are not required provided that provisions for sampling upgradient and downgradient water quality will detect any discharge from the waste management area.

(1) In the case of a facility consisting of only one surface impoundment, landfill, or land treatment area, the waste management area is described by the waste boundary (perimeter).

(2) In the case of a facility consisting of more than one surface impoundment, landfill, or land treatment area, the waste management area is described by an imaginary boundary line which circumscribes the several waste management components.

(c) All monitoring wells must be cased in a manner that maintains the integrity of the monitoring well bore hole. This casing must be screened or perforated, and packed with gravel or sand where necessary, to enable sample collection at depths where appropriate aquifer flow zones exist. The annular space (i.e., the space between the bore hole and well casing) above the sampling depth must be sealed with a suitable material (e.g., cement grout or bentonite slurry) to prevent contamination of samples and the ground water.

(Approved by the Office of Management and Budget under control number 2050-0033)

[45 FR 33232, May 19, 1980, as amended at 50 FR 4514, Jan. 31, 1985]

§ 265.92 Sampling and analysis.

(a) The owner or operator must obtain and analyze samples from the installed ground-water monitoring system. The owner or operator must develop and follow a ground-water sampling and analysis plan. He must

keep this plan at the facility. The plan must include procedures and techniques for:

(1) Sample collection;

(2) Sample preservation and shipment;

(3) Analytical procedures; and

(4) Chain of custody control.

[*Comment:* See "Procedures Manual For Ground-water Monitoring At Solid Waste Disposal Facilities," EPA-530/SW-611, August 1977 and "Methods for Chemical Analysis of Water and Wastes," EPA-600/4-79-020, March 1979 for discussions of sampling and analysis procedures.]

(b) The owner or operator must determine the concentration or value of the following parameters in ground-water samples in accordance with paragraphs (c) and (d) of this section:

(1) Parameters characterizing the suitability of the ground water as a drinking water supply, as specified in Appendix III.

(2) Parameters establishing ground-water quality:

(i) Chloride
(ii) Iron
(iii) Manganese
(iv) Phenols
(v) Sodium
(vi) Sulfate

[*Comment:* These parameters are to be used as a basis for comparison in the event a ground-water quality assessment is required under § 265.93(d).]

(3) Parameters used as indicators of ground-water contamination:

(i) pH
(ii) Specific Conductance
(iii) Total Organic Carbon
(iv) Total Organic Halogen

(c)(1) For all monitoring wells, the owner or operator must establish initial background concentrations or values of all parameters specified in paragraph (b) of this section. He must do this quarterly for one year.

(2) For each of the indicator parameters specified in paragraph (b)(3) of this section, at least four replicate measurements must be obtained for each sample and the initial background arithmetic mean and variance must be determined by pooling the replicate measurements for the respective parameter concentrations or values in samples obtained from upgradient wells during the first year.

(d) After the first year, all monitoring wells must be sampled and the samples analyzed with the following frequencies:

(1) Samples collected to establish ground-water quality must be obtained and analyzed for the parameters specified in paragraph (b)(2) of this section at least annually.

(2) Samples collected to indicate ground-water contamination must be obtained and analyzed for the parameters specified in paragraph (b)(3) of this section at least semi-annually.

(e) Elevation of the ground-water surface at each monitoring well must be determined each time a sample is obtained.

(Approved by the Office of Management and Budget under control number 2050-0033)

[45 FR 33232, May 19, 1980, as amended at 50 FR 4514, Jan. 31, 1985]

§ 265.93 Preparation, evaluation, and response.

(a) Within one year after the effective date of these regulations, the owner or operator must prepare an *outline* of a ground-water quality assessment program. The outline must describe a more comprehensive ground-water monitoring program (than that described in §§ 265.91 and 265.92) capable of determining:

(1) Whether hazardous waste or hazardous waste constituents have entered the ground water;

(2) The rate and extent of migration of hazardous waste or hazardous waste constituents in the ground water; and

(3) The concentrations of hazardous waste or hazardous waste constituents in the ground water.

(b) For each indicator parameter specified in § 265.92(b)(3), the owner or operator must calculate the arithmetic mean and variance, based on at least four replicate measurements on each sample, for each well monitored in accordance with § 265.92(d)(2), and compare these results with its initial background arithmetic mean. The comparison must consider individually each of the wells in the monitoring system, and must use the Student's t-test at the 0.01 level of significance (see Appendix IV) to determine statis-

tically significant increases (and decreases, in the case of pH) over initial background.

(c)(1) If the comparisons for the *upgradient* wells made under paragraph (b) of this section show a significant increase (or pH decrease), the owner or operator must submit this information in accordance with § 265.94(a)(2)(ii).

(2) If the comparisons for *downgradient* wells made under paragraph (b) of this section show a significant increase (or pH decrease), the owner or operator must then immediately obtain additional ground-water samples from those downgradient wells where a significant difference was detected, split the samples in two, and obtain analyses of all additional samples to determine whether the significant difference was a result of laboratory error.

(d)(1) If the analyses performed under paragraph (c)(2) of this section confirm the significant increase (or pH decrease), the owner or operator must provide written notice to the Regional Administrator—within seven days of the date of such confirmation—that the facility may be affecting ground-water quality.

(2) Within 15 days after the notification under paragraph (d)(1) of this section, the owner or operator must develop and submit to the Regional Administrator a specific plan, based on the outline required under paragraph (a) of this section and certified by a qualified geologist or geotechnical engineer, for a ground-water quality assessment program at the facility.

(3) The plan to be submitted under § 265.90(d)(1) or paragraph (d)(2) of this section must specify:

(i) The number, location, and depth of wells;

(ii) Sampling and analytical methods for those hazardous wastes or hazardous waste constituents in the facility;

(iii) Evaluation procedures, including any use of previously-gathered ground-water quality information; and

(iv) A schedule of implementation.

(4) The owner or operator must implement the ground-water quality assessment plan which satisfies the requirements of paragraph (d)(3) of this section, and, at a minimum, determine:

(i) The rate and extent of migration of the hazardous waste or hazardous waste constituents in the ground water; and

(ii) The concentrations of the hazardous waste or hazardous waste constituents in the ground water.

(5) The owner or operator must make his first determination under paragraph (d)(4) of this section as soon as technically feasible, and, within 15 days after that determination, submit to the Regional Administrator a written report containing an assessment of the ground-water quality.

(6) If the owner or operator determines, based on the results of the first determination under paragraph (d)(4) of this section, that no hazardous waste or hazardous waste constituents from the facility have entered the ground water, then he may reinstate the indicator evaluation program described in § 265.92 and paragraph (b) of this section. If the owner or operator reinstates the indicator evaluation program, he must so notify the Regional Administrator in the report submitted under paragraph (d)(5) of this section.

(7) If the owner or operator determines, based on the first determination under paragraph (d)(4) of this section, that hazardous waste or hazardous waste constituents from the facility have entered the ground water, then he:

(i) Must continue to make the determinations required under paragraph (d)(4) of this section on a quarterly basis until final closure of the facility, if the ground-water quality assessment plan was implemented prior to final closure of the facility; or

(ii) May cease to make the determinations required under paragraph (d)(4) of this section, if the ground-water quality assessment plan was implemented during the post-closure care period.

(e) Notwithstanding any other provision of this subpart, any ground-water quality assessment to satisfy the requirements of § 265.93(d)(4) which is initiated prior to final closure of the facility must be completed and reported in accordance with § 265.93(d)(5).

(f) Unless the ground water is monitored to satisfy the requirements of § 265.93(d)(4), at least annually the owner or operator must evaluate the data on ground-water surface elevations obtained under § 265.92(e) to determine whether the requirements under § 265.91(a) for locating the monitoring wells continues to be satisfied. If the evaluation shows that § 265.91(a) is no longer satisfied, the owner or operator must immediately modify the number, location, or depth of the monitoring wells to bring the ground-water monitoring system into compliance with this requirement.

(Approved by the Office of Management and Budget under control number 2050-0033)

[45 FR 33232, May 19, 1980, as amended at 50 FR 4514, Jan. 31, 1985]

§ 265.94 Recordkeeping and reporting.

(a) Unless the ground water is monitored to satisfy the requirements of § 265.93(d)(4), the owner or operator must:

(1) Keep records of the analyses required in § 265.92(c) and (d), the associated ground-water surface elevations required in § 265.92(e), and the evaluations required in § 265.93(b) throughout the active life of the facility, and, for disposal facilities, throughout the post-closure care period as well; and

(2) Report the following ground-water monitoring information to the Regional Administrator:

(i) During the first year when initial background concentrations are being established for the facility: concentrations or values of the parameters listed in § 265.92(b)(1) for each ground-water monitoring well within 15 days after completing each quarterly analysis. The owner or operator must separately identify for each monitoring well any parameters whose concentration or value has been found to exceed the maximum contaminant levels listed in Appendix III.

(ii) Annually: Concentrations or values of the parameters listed in § 265.92(b)(3) for each ground-water monitoring well, along with the required evaluations for these parameters under § 265.93(b). The owner or operator must separately identify any significant differences from initial background found in the upgradient wells, in accordance with § 265.93(c)(1). During the active life of the facility, this information must be submitted no later than March 1 following each calendar year.

(iii) No later than March 1 following each calendar year: Results of the evaluations of ground-water surface elevations under § 265.93(f), and a description of the response to that evaluation, where applicable.

(b) If the ground water is monitored to satisfy the requirements of § 265.93(d)(4), the owner or operator must:

(1) Keep records of the analyses and evaluations specified in the plan, which satisfies the requirements of § 265.93(d)(3), throughout the active life of the facility, and, for disposal facilities, throughout the post-closure care period as well; and

(2) Annually, until final closure of the facility, submit to the Regional Administrator a report containing the results of his or her ground-water quality assessment program which includes, but is not limited to, the calculated (or measured) rate of migration of hazardous waste or hazardous waste constituents in the ground water during the reporting period. This information must be submitted no later than March 1 following each calendar year.

(Approved by the Office of Management and Budget under control number 2050-0033)

[45 FR 33232, May 19, 1980, as amended at 48 FR 3982, Jan. 28, 1983; 50 FR 4514, Jan. 31, 1985]

Subpart G—Closure and Post-Closure

SOURCE: 51 FR 16451, May 2, 1986, unless otherwise noted.

§ 265.110 Applicability.

Except as § 265.1 provides otherwise:

(a) Sections 265.111 through 265.115 (which concern closure) apply to the owners and operators of all hazardous waste management facilities; and

(b) Sections 265.116 through 265.120 (which concern post-closure care) apply to the owners and operators of:

(1) All hazardous waste disposal facilities; and

(2) Tank systems that are required under § 265.197 to meet requirements for landfills.

[51 FR 16451, May 2, 1986, as amended at 51 FR 25479, July 14, 1986]

§ 265.111 Closure performance standard.

The owner or operator must close the facility in a manner that:

(a) Minimizes the need for further maintenance, and

(b) Controls, minimizes or eliminates, to the extent necessary to protect human health and the environment, post-closure escape of hazardous waste, hazardous constituents, leachate, contaminated run-off, or hazardous waste decomposition products to the ground or surface waters or to the atmosphere, and

(c) Complies with the closure requirements of this subpart including, but not limited to, the requirements of §§ 265.197, 265.228, 265.258, 265.280, 265.310, 265.351, 265.381 and 265.404.

§ 265.112 Closure plan; amendment of plan.

(a) *Written plan.* By May 19, 1981, the owner or operator of a hazardous waste management facility must have a written closure plan. Until final closure is completed and certified in accordance with § 265.115, a copy of the most current plan must be furnished to the Regional Administrator upon request, including request by mail. In addition, for facilities without approved plans, it must also be provided during site inspections, on the day of inspection, to any officer, employee or representative of the Agency who is duly designated by the Administrator.

(b) *Content of plan.* The plan must identify steps necessary to perform partial and/or final closure of the facility at any point during its active life. The closure plan must include, at least:

(1) A description of how each hazardous waste management unit at the facility will be closed in accordance with § 265.111; and

(2) A description of how final closure of the facility will be conducted in accordance with § 265.111. The description must identify the maximum extent of the operation which will be unclosed during the active life of the facility; and

(3) An estimate of the maximum inventory of hazardous wastes ever on-site over the active life of the facility and a detailed description of the methods to be used during partial and final closure, including, but not limited to methods for removing, transporting, treating, storing or disposing of all hazardous waste, identification of and the type(s) of off-site hazardous waste management unit(s) to be used, if applicable; and

(4) A detailed description of the steps needed to remove or decontaminate all hazardous waste residues and contaminated containment system components, equipment, structures, and soils during partial and final closure including, but not limited to, procedures for cleaning equipment and removing contaminated soils, methods for sampling and testing surrounding soils, and criteria for determining the extent of decontamination necessary to satisfy the closure performance standard; and

(5) A detailed description of other activities necessary during the partial and final closure period to ensure that all partial closures and final closure satisfy the closure performance standards, including, but not limited to, ground-water monitoring, leachate collection, and run-on and run-off control; and

(6) A schedule for closure of each hazardous waste management unit and for final closure of the facility. The schedule must include, at a minimum, the total time required to close each hazardous waste management unit and the time required for intervening closure activities which will allow tracking of the progress of partial and final closure. (For example, in the case of a landfill unit, estimates of the time required to treat or dispose of all hazardous waste inventory and of the time required to place a final cover must be included.); and

(7) An estimate of the expected year of final closure for facilities that use trust funds to demonstrate financial assurance under § 265.143 or § 265.145 and whose remaining operating life is less than twenty years, and for facilities without approved closure plans.

(c) *Amendment of plan.* The owner or operator may amend the closure plan at any time prior to the notification of partial or final closure of the facility. An owner or operator with an approved closure plan must submit a written request to the Regional Administrator to authorize a change to the approved closure plan. The written request must include a copy of the amended closure plan for approval by the Regional Administrator.

(1) The owner or operator must amend the closure plan whenever:

(i) Changes in operating plans or facility design affect the closure plan, or

(ii) There is a change in the expected year of closure, if applicable, or

(iii) In conducting partial or final closure activities, unexpected events require a modification of the closure plan.

(2) The owner or operator must amend the closure plan at least 60 days prior to the proposed change in facility design or operation, or no later than 60 days after an unexpected event has occurred which has affected the closure plan. If an unexpected event occurs during the partial or final closure period, the owner or operator must amend the closure plan no later than 30 days after the unexpected event. These provisions also apply to owners or operators of surface impoundments and waste piles who intended to remove all hazardous wastes at closure, but are required to close as landfills in accordance with § 265.310.

(3) An owner or operator with an approved closure plan must submit the modified plan to the Regional Administrator at least 60 days prior to the proposed change in facility design or operation, or no more than 60 days after an unexpected event has occurred which has affected the closure plan. If an unexpected event has occurred during the partial or final closure period, the owner or operator must submit the modified plan no more than 30 days after the unexpected event. These provisions also apply to owners or operators of surface impoundments and waste piles who intended to remove all hazardous wastes at closure but are required to close as landfills in accordance with § 265.310. If the amendment to the plan is a major modification according to the criteria in § 270.41 and §270.42, the modification to the plan will be approved according to the procedures in § 265.112(d)(4).

(4) The Regional Administrator may request modifications to the plan under the conditions described in paragraph (c)(1) of this section. An owner or operator with an approved closure plan must submit the modified plan within 60 days of the request from the Regional Administrator, or within 30 days if the unexpected event occurs during partial or final closure. If the amendment is considered a major modification according to the criteria in §§ 270.41 and 270.42, the modification to the plan will be approved in accordance with the procedures in § 265.112(d)(4).

(d) *Notification of partial closure and final closure.* (1) The owner or operator must submit the closure plan to the Regional Administrator at least 180 days prior to the date on which he expects to begin closure of the first surface impoundment, waste pile, land treatment, or landfill unit, or final closure if it involves such a unit, whichever is earlier. The owner or operator must submit the closure plan to the Regional Administrator at least 45 days prior to the date on which he expects to begin final closure of a facility with only tanks, container storage, or incinerator units. Owners or operators with approved closure plans must notify the Regional Administrator in writing at least 60 days prior to the date on which he expects to begin closure of a surface impoundment, waste pile, landfill, or land treatment unit, or final closure of a facility involving such a unit. Owners and operators with approved closure plans must notify the Regional Administrator in writing at least 45 days prior to the date on which he expects to begin final closure of a facility with only tanks, container storage, or incinerator units.

(2) The date when he "expects to begin closure" must be either within 30 days after the date on which any hazardous waste management unit receives the known final volume of haz-

ardous wastes or, if there is a reasonable possibility that the hazardous waste management unit will receive additional hazardous wastes, no later than one year after the date on which the unit received the most recent volume of hazardous waste. If the owner or operator of a hazardous waste management unit can demonstrate to the Regional Administrator that the hazardous waste management unit or facility has the capacity to receive additional hazardous wastes and he has taken, and will continue to take, all steps to prevent threats to human health and the environment, including compliance with all interim status requirements, the Regional Administrator may approve an extension to this one-year limit.

(3) The owner or operator must submit his closure plan to the Regional Administrator no later than 15 days after:

(i) Termination of interim status except when a permit is issued simultaneously with termination of interim status; or

(ii) Issuance of a judicial decree or final order under section 3008 of RCRA to cease receiving hazardous wastes or close.

(4) The Regional Administrator will provide the owner or operator and the public, through a newspaper notice, the opportunity to submit written comments on the plan and request modifications to the plan no later than 30 days from the date of the notice. He will also, in response to a request or at his own discretion, hold a public hearing whenever such a hearing might clarify one or more issues concerning a closure plan. The Regional Administrator will give public notice of the hearing at least 30 days before it occurs. (Public notice of the hearing may be given at the same time as notice of the opportunity for the public to submit written comments, and the two notices may be combined.) The Regional Administrator will approve, modify, or disapprove the plan within 90 days of its receipt. If the Regional Administrator does not approve the plan he shall provide the owner or operator with a detailed written statement of reasons for the refusal and the owner or operator must modify the plan or submit a new plan for approval within 30 days after receiving such written statement. The Regional Administrator will approve or modify this plan in writing within 60 days. If the Regional Administrator modifies the plan, this modified plan becomes the approved closure plan. The Regional Administrator must assure that the approved plan is consistent with §§ 265.111 through 265.115 and the applicable requirements of §§ 265.90 *et seq.*, 265.197, 265.228, 265,258, 265.280, 265.310, 265.351, 265.381, and 265.404. A copy of the modified plan with a detailed statement of reasons for the modifications must be mailed to the owner or operator.

(e) *Removal of wastes and decontamination or dismantling of equipment.* Nothing in this section shall preclude the owner or operator from removing hazardous wastes and decontaminating or dismantling equipment in accordance with the approved partial or final closure plan at any time before or after notification of partial or final closure.

§ 265.113 Closure; time allowed for closure.

(a) Within 90 days after receiving the final volume of hazardous wastes at a hazardous waste management unit or facility, or within 90 days after approval of the closure plan, whichever is later, the owner or operator must treat, remove from the unit or facility, or dispose of on-site, all hazardous wastes in accordance with the approved closure plan. The Regional Administrator may approve a longer period if the owner or operator demonstrates that:

(1)(i) The activities required to comply with this paragraph will, of necessity, take longer than 90 days to complete; or

(ii)(A) The hazardous waste management unit or facility has the capacity to receive additional hazardous wastes; and

(B) There is a reasonable likelihood that he or another person will recommence operation of the hazardous waste management unit or the facility within one year; and

(C) Closure of the hazardous waste management unit or facility would be incompatible with continued operation of the site; and

(2) He has taken and will continue to take all steps to prevent threats to human health and the environment, including compliance with all applicable interim status requirements.

(b) The owner or operator must complete partial and final closure activities in accordance with the approved closure plan and within 180 days after receiving the final volume of hazardous wastes at the hazardous waste management unit or facility, or 180 days after approval of the closure plan, if that is later. The Regional Administrator may approve an extension to the closure period if the owner or operator demonstrates that:

(1) (i) The partial or final closure activities will, of necessity, take longer than 180 days to complete; or

(ii) (A) The hazardous waste management unit or facility has the capacity to receive additional hazardous wastes; and

(B) There is reasonable likelihood that he or another person will recommence operation of the hazardous waste management unit or the facility within one year; and

(C) Closure of the hazardous waste management unit or facility would be incompatible with continued operation of the site; and

(2) He has taken and will continue to take all steps to prevent threats to human health and the environment from the unclosed but not operating hazardous waste management unit or facility, including compliance with all applicable interim status requirements.

(c) The demonstrations referred to in § 265.113(a) and (b) must be made as follows: (1) The demonstrations in paragraph (a) must be made at least 30 days prior to the expiration of the 90-day period in paragraph (a); and (2) the demonstrations in paragraph (b) must be made at least 30 days prior to the expiration of the 180-day period in paragraph (b).

§ 265.114 Disposal or decontamination of equipment, structures and soils.

During the partial and final closure periods, all contaminated equipment, structures and soil must be properly disposed of, or decontaminated unless specified otherwise in §§ 265.228, 265.258, 265.280, or 265.310. By removing all hazardous wastes or hazardous constituents during partial and final closure, the owner or operator may become a generator of hazardous waste and must handle that hazardous waste in accordance with all applicable requirements of Part 262 of this chapter.

§ 265.115 Certification of closure.

Within 60 days of completion of closure of each hazardous waste surface impoundment, waste pile, land treatment, and landfill unit, and within 60 days of completion of final closure, the owner or operator must submit to the Regional Administrator, by registered mail, a certification that the hazardous waste management unit or facility, as applicable, has been closed in accordance with the specifications in the approved closure plan. The certification must be signed by the owner or operator and by an independent registered professional engineer. Documentation supporting the independent registered professional engineer's certification must be furnished to the Regional Administrator upon request until he releases the owner or operator from the financial assurance requirements for closure under § 265.143(h).

§ 265.116 Survey plat.

No later than the submission of the certification of closure of each hazardous waste disposal unit, an owner or operator must submit to the local zoning authority, or the authority with jurisdiction over local land use, and to the Regional Administrator, a survey plat indicating the location and dimensions of landfill cells or other hazardous waste disposal units with respect to permanently surveyed benchmarks. This plat must be prepared and certified by a professional land surveyor. The plat filed with the local zoning authority, or the authority with jurisdiction over local land

use must contain a note, prominently displayed, which states the owner's or operator's obligation to restrict disturbance of the hazardous waste disposal unit in accordance with the applicable Subpart G regulations.

§ 265.117 Post-closure care and use of property.

(a)(1) Post-closure care for each hazardous waste management unit subject to the requirements of §§ 265.117 through 265.120 must begin after completion of closure of the unit and continue for 30 years after that date. It must consist of at least the following:

(i) Monitoring and reporting in accordance with the requirements of Subparts F, K, L, M, and N of this part; and

(ii) Maintenance and monitoring of waste containment systems in accordance with the requirements of Subparts F, K, L, M, and N of this part.

(2) Any time preceding closure of a hazardous waste management unit subject to post-closure care requirements or final closure, or any time during the post-closure period for a particular hazardous waste disposal unit, the Regional Administrator may:

(i) Shorten the post-closure care period applicable to the hazardous waste management unit, or facility, if all disposal units have been closed, if he finds that the reduced period is sufficient to protect human health and the environment (e.g., leachate or ground-water monitoring results, characteristics of the hazardous waste, application of advanced technology, or alternative disposal, treatment, or reuse techniques indicate that the hazardous waste management unit or facility is secure); or

(ii) Extend the post-closure care period applicable to the hazardous waste management unit or facility, if he finds that the extended period is necessary to protect human health and the environment (e.g., leachate or ground-water monitoring results indicate a potential for migration of hazardous wastes at levels which may be harmful to human health and the environment).

(b) The Regional Administator may require, at partial and final closure, continuation of any of the security requirements of § 265.14 during part or all of the post-closure period when:

(1) Hazardous wastes may remain exposed after completion of partial or final closure; or

(2) Access by the public or domestic livestock may pose a hazard to human health.

(c) Post-closure use of property on or in which hazardous wastes remain after partial or final closure must never be allowed to disturb the integrity of the final cover, liner(s), or any other components of the containment system, or the function of the facility's monitoring systems, unless the Regional Administrator finds that the disturbance:

(1) Is necessary to the proposed use of the property, and will not increase the potential hazard to human health or the environment; or

(2) Is necessary to reduce a threat to human health or the environment.

(d) All post-closure care activities must be in accordance with the provisions of the approved post-closure plan as specified in § 265.118.

§ 265.118 Post-closure plan; amendment of plan.

(a) *Written plan.* By May 19, 1981, the owner or operator of a hazardous waste disposal unit must have a written post-closure plan. An owner or operator of a surface impoundment or waste pile that intends to remove all hazardous wastes at closure must prepare a post-closure plan and submit it to the Regional Administrator within 90 days of the date that the owner or operator or Regional Administrator determines that the hazardous waste management unit or facility must be closed as a landfill, subject to the requirements of §§ 265.117 through 265.120.

(b) Until final closure of the facility, a copy of the most current post-closure plan must be furnished to the Regional Administrator upon request, including request by mail. In addition, for facilities without approved post-closure plans, it must also be provided during site inspections, on the day of inspection, to any officer, employee or representative of the Agency who is duly designated by the Administrator.

After final closure has been certified, the person or office specified in § 265.118(c)(3) must keep the approved post-closure plan during the post-closure period.

(c) For each hazardous waste management unit subject to the requirements of this section, the post-closure plan must identify the activities that will be carried on after closure of each disposal unit and the frequency of these activities, and include at least:

(1) A description of the planned monitoring activities and frequencies at which they will be performed to comply with Subparts F, K, L, M, and N of this part during the post-closure care period; and

(2) A description of the planned maintenance activities, and frequencies at which they will be performed, to ensure:

(i) The integrity of the cap and final cover or other containment systems in accordance with the requirements of Subparts K, L, M, and N of this part; and

(ii) The function of the monitoring equipment in accordance with the requirements of Subparts F, K, L, M, and N of this part; and

(3) The name, address, and phone number of the person or office to contact about the hazardous waste disposal unit or facility during the post-closure care period.

(d) *Amendment of plan.* The owner or operator may amend the post-closure plan any time during the active life of the facility or during the post-closure care period. An owner or operator with an approved post-closure plan must submit a written request to the Regional Administrator to authorize a change to the approved plan. The written request must include a copy of the amended post-closure plan for approval by the Regional Administrator.

(1) The owner or operator must amend the post-closure plan whenever:

(i) Changes in operating plans or facility design affect the post-closure plan, or

(ii) Events which occur during the active life of the facility, including partial and final closures, affect the post-closure plan.

(2) The owner or operator must amend the post-closure plan at least 60 days prior to the proposed change in facility design or operation, or no later than 60 days after an unexpected event has occurred which has affected the post-closure plan.

(3) An owner or operator with an approved post-closure plan must submit the modified plan to the Regional Administrator at least 60 days prior to the proposed change in facility design or operation, or no more than 60 days after an unexpected event has occurred which has affected the post-closure plan. If an owner or operator of a surface impoundment or a waste pile who intended to remove all hazardous wastes at closure in accordance with § 265.228(b) or § 265.258(a) is required to close as a landfill in accordance with § 265.310, the owner or operator must submit a post-closure plan within 90 days of the determination by the owner or operator or Regional Administrator that the unit must be closed as a landfill. If the amendment to the post-closure plan is a major modification according to the criteria in §§ 270.41 and 270.42, the modification to the plan will be approved according to the procedures in § 265.118(f).

(4) The Regional Administrator may request modifications to the plan under the conditions described in paragraph (d)(1) of this section. An owner or operator with an approved post-closure plan must submit the modified plan no later than 60 days of the request from the Regional Administrator. If the amendment to the plan is considered a major modification according to the criteria in §§ 270.41 and 270.42, the modifications to the post-closure plan will be approved in accordance with the procedures in § 265.118(f). If the Regional Administrator determines that an owner or operator of a surface impoundment or waste pile who intended to remove all hazardous wastes at closure must close the facility as a landfill, the owner or operator must submit a post-closure plan for approval to the Regional Administrator within 90 days of the determination.

(e) The owner or operator of a facility with hazardous waste management units subject to these requirements

must submit his post-closure plan to the Regional Administrator at least 180 days before the date he expects to begin partial or final closure of the first hazardous waste disposal unit. The date he "expects to begin closure" of the first hazardous waste disposal unit must be either within 30 days after the date on which the hazardous waste management unit receives the known final volume of hazardous waste or, if there is a reasonable possibility that the hazardous waste management unit will receive additional hazardous wastes, no later than one year after the date on which the unit received the most recent volume of hazardous wastes. The owner or operator must submit the post-closure plan to the Regional Administrator no later than 15 days after:

(1) Termination of interim status (except when a permit is issued to the facility simultaneously with termination of interim status); or

(2) Issuance of a judicial decree or final orders under section 3008 of RCRA to cease receiving wastes or close.

(f) The Regional Administrator will provide the owner or operator and the public, through a newspaper notice, the opportunity to submit written comments on the post-closure plan and request modifications to the plan no later than 30 days from the date of the notice. He will also, in response to a request or at his own discretion, hold a public hearing whenever such a hearing might clarify one or more issues concerning a post-closure plan. The Regional Administrator will give public notice of the hearing at least 30 days before it occurs. (Public notice of the hearing may be given at the same time as notice of the opportunity for the public to submit written comments, and the two notices may be combined.) The Regional Administrator will approve, modify, or disapprove the plan within 90 days of its receipt. If the Regional Administrator does not approve the plan he shall provide the owner or operator with a detailed written statement of reasons for the refusal and the owner or operator must modify the plan or submit a new plan for approval within 30 days after receiving such written statement. The Regional Administrator will approve or modify this plan in writing within 60 days. If the Regional Administrator modifies the plan, this modified plan becomes the approved post-closure plan. The Regional Administrator must ensure that the approved post-closure plan is consistent with §§ 265.117 through 265.120. A copy of the modified plan with a detailed statement of reasons for the modifications must be mailed to the owner or operator.

(g) The post-closure plan and length of the post-closure care period may be modified any time prior to the end of the post-closure care period in either of the following two ways:

(1) The owner or operator or any member of the public may petition the Regional Administrator to extend or reduce the post-closure care period applicable to a hazardous waste management unit or facility based on cause, or alter the requirements of the post-closure care period based on cause.

(i) The petition must include evidence demonstrating that:

(A) The secure nature of the hazardous waste management unit or facility makes the post-closure care requirement(s) unnecessary or supports reduction of the post-closure care period specified in the current post-closure plan (e.g., leachate or ground-water monitoring results, characteristics of the wastes, application of advanced technology, or alternative disposal, treatment, or re-use techniques indicate that the facility is secure), or

(B) The requested extension in the post-closure care period or alteration of post-closure care requirements is necessary to prevent threats to human health and the environment (e.g., leachate or ground-water monitoring results indicate a potential for migration of hazardous wastes at levels which may be harmful to human health and the environment).

(ii) These petitions will be considered by the Regional Administrator only when they present new and relevant information not previously considered by the Regional Administrator. Whenever the Regional Administrator is considering a petition, he will provide the owner or operator and the public, through a newspaper notice, the opportunity to submit written comments within 30 days of the date of the notice. He will also, in response to a request or at his own discretion, hold a public hearing whenever a hearing might clarify one or more issues concerning the post-closure plan. The Regional Administrator will give the public notice of the hearing at least 30 days before it occurs. (Public notice of the hearing may be given at the same time as notice of the opportunity for written public comments, and the two notices may be combined.) After considering the comments, he will issue a final determination, based upon the criteria set forth in paragraph (g)(1) of this section.

(iii) If the Regional Administrator denies the petition, he will send the petitioner a brief written response giving a reason for the denial.

(2) The Regional Administrator may tentatively decide to modify the post-closure plan if he deems it necessary to prevent threats to human health and the environment. He may propose to extend or reduce the post-closure care period applicable to a hazardous waste management unit or facility based on cause or alter the requirements of the post-closure care period based on cause.

(i) The Regional Administrator will provide the owner or operator and the affected public, through a newspaper notice, the opportunity to submit written comments within 30 days of the date of the notice and the opportunity for a public hearing as in paragraph (g)(1)(ii) of this section. After considering the comments, he will issue a final determination.

(ii) The Regional Administrator will base his final determination upon the same criteria as required for petitions under paragraph (g)(1)(i) of this section. A modification of the post-closure plan may include, where appropriate, the temporary suspension rather than permanent deletion of one or more post-closure care requirements. At the end of the specified period of suspension, the Regional Administrator would then determine whether the requirement(s) should be permanently discontinued or reinstated to prevent threats to human health and the environment.

§ 265.119 Post-closure notices.

(a) No later than 60 days after certification of closure of each hazardous waste disposal unit, the owner or operator must submit to the local zoning authority, or the authority with jurisdiction over local land use, and to the Regional Administrator, a record of the type, location, and quantity of hazardous wastes disposed of within each cell or other disposal unit of the facility. For hazardous wastes disposed of before January 12, 1981, the owner or operator must identify the type, location and quantity of the hazardous wastes to the best of his knowledge and in accordance with any records he has kept.

(b) Within 60 days of certification of closure of the first hazardous waste disposal unit and within 60 days of certification of closure of the last hazardous waste disposal unit, the owner or operator must:

(1) Record, in accordance with State law, a notation on the deed to the facility property—or on some other instrument which is normally examined during title search—that will in perpetuity notify any potential purchaser of the property that:

(i) The land has been used to manage hazardous wastes; and

(ii) Its use is restricted under 40 CFR Subpart G regulations; and

(iii) The survey plat and record of the type, location, and quantity of hazardous wastes disposed of within each cell or other hazardous waste disposal unit of the facility required by §§ 265.116 and 265.119(a) have been filed with the local zoning authority or the authority with jurisdiction over local land use and with the Regional Administrator; and

(2) Submit a certification signed by the owner or operator that he has recorded the notation specified in paragraph (b)(1) of this section and a copy of the document in which the notation has been placed, to the Regional Administrator.

(c) If the owner or operator or any subsequent owner of the land upon which a hazardous waste disposal unit

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was located wishes to remove hazardous wastes and hazardous waste residues, the liner, if any, and all contaminated structures, equipment, and soils, he must request a modification to the approved post-closure plan in accordance with the requirements of § 265.118(g). The owner or operator must demonstrate that the removal of hazardous wastes will satisfy the criteria of § 265.117(c). By removing hazardous waste, the owner or operator may become a generator of hazardous waste and must manage it in accordance with all applicable requirements of this chapter. If the owner or operator is granted approval to conduct the removal activities, the owner or operator may request that the Regional Administrator approve either:

(1) The removal of the notation on the deed to the facility property or other instrument normally examined during title search, or

(2) The addition of a notation to the deed or instrument indicating the removal of the hazardous waste.

§ 265.120 Certification of completion of post-closure care.

No later than 60 days after the completion of the established post-closure care period for each hazardous waste disposal unit, the owner or operator must submit to the Regional Administrator, by registered mail, a certification that the post-closure care period for the hazardous waste disposal unit was performed in accordance with the specifications in the approved post-closure plan. The certification must be signed by the owner or operator and an independent registered professional engineer. Documentation supporting the independent registered professional engineer's certification must be furnished to the Regional Administrator upon request until he releases the owner or operator from the financial assurance requirements for post-closure care under § 265.145(h).

Subpart H—Financial Requirements

SOURCE: 47 FR 15064, Apr. 7, 1982, unless otherwise noted.

§ 265.140 Applicability.

(a) The requirements of §§ 265.142, 265.143 and 265.147 through 265.150 apply to owners or operators of all hazardous waste facilities, except as provided otherwise in this section or in § 265.1.

(b) The requirements of §§ 265.144 and 265.146 apply only to owners and operators of disposal facilities and tank systems that are required under § 265.197 to meet the requirements for landfills

(c) States and the Federal government are exempt from the requirements of this subpart.

[47 FR 15064, Apr. 7, 1982, as amended at 51 FR 16455, May 2, 1986; 51 FR 25479, July 14, 1986]

§ 265.141 Definitions of terms as used in this subpart.

(a) "Closure plan" means the plan for closure prepared in accordance with the requirements of § 265.112.

(b) "Current closure cost estimate" means the most recent of the estimates prepared in accordance with § 265.142 (a), (b), and (c).

(c) "Current post-closure cost estimate" means the most recent of the estimates prepared in accordance with § 265.144 (a), (b), and (c).

(d) "Parent corporation" means a corporation which directly owns at least 50 percent of the voting stock of the corporation which is the facility owner or operator; the latter corporation is deemed a "subsidiary" of the parent corporation.

(e) "Post-closure plan" means the plan for post-closure care prepared in accordance with the requirements of §§ 265.117 through 265.120.

(f) The following terms are used in the specifications for the financial tests for closure, post-closure care, and liability coverage. The definitions are intended to assist in the understanding of these regulations and are not intended to limit the meanings of terms in a way that conflicts with generally accepted accounting practices.

"Assets" means all existing and all probable future economic benefits obtained or controlled by a particular entity.

"Current assets" means cash or other assets or resources commonly identified as those which are reasonably expected to be realized in cash or sold or consumed during the normal operating cycle of the business.

"Current liabilities" means obligations whose liquidation is reasonably expected to require the use of existing resources properly classifiable as current assets or the creation of other current liabilities.

"Current plugging and abandonment cost estimate" means the most recent of the estimates prepared in accordance with § 144.62(a), (b), and (c) of this title.

"Independently audited' refers to an audit performed by an independent certified public accountant in accordance with generally accepted auditing standards.

"Liabilities" means probable future sacrifices of economic benefits arising from present obligations to transfer assets or provide services to other entities in the future as a result of past transactions or events.

"Net working capital" means current assets minus current liabilities.

"Net worth" means total assets minus total liabilities and is equivalent to owner's equity.

"Tangible net worth" means the tangible assets that remain after deducting liabilities; such assets would not include intangibles such as goodwill and rights to patents or royalties.

(g) In the liability insurance requirements the terms "bodily injury" and "property damage" shall have the meanings given these terms by applicable State law. However, these terms do not include those liabilities which, consistent with standard industry practice, are excluded from coverage in liability policies for bodily injury and property damage. The Agency intends the meanings of other terms used in the liability insurance requirements to be consistent with their common meanings within the insurance industry. The definitions given below of several of the terms are intended to assist in the understanding of these regulations and are not intended to limit their meanings in a way that conflicts with general insurance industry usage.

"Accidental occurrence" means an accident, including continuous or repeated exposure to conditions, which results in bodily injury or property damage neither expected nor intended from the standpoint of the insured.

"Legal defense costs" means any expenses that an insurer incurs in defending against claims of third parties brought under the terms and conditions of an insurance policy.

"Nonsudden accidental occurrence" means an occurrence which takes place over time and involves continuous or repeated exposure.

"Sudden accidental occurrence" means an occurrence which is not continuous or repeated in nature.

[47 FR 16558, Apr. 16, 1982, as amended at 51 FR 16456, May 2, 1986]

§ 265.142 Cost estimate for closure.

(a) The owner or operator must have a detailed written estimate, in current dollars, of the cost of closing the facility in accordance with the requirements in §§ 265.111 through 265.115 and applicable closure requirements of §§ 265.178, 265.197, 265.228, 265.258, 265.280, 265.310, 265.351, 265.381 and 265.404.

(1) The estimate must equal the cost of final closure at the point in the facility's active life when the extent and manner of its operation would make closure the most expensive, as indicated by its closure plan (see § 265.112(b)); and

(2) The closure cost estimate must be based on the costs to the owner or operator of hiring a third party to close the facility. A third party is a party who is neither a parent nor a subsidiary of the owner or operator. (See definition of parent corporation in § 265.141(d).) The owner or operator may use costs for on-site disposal if he can demonstrate that on-site disposal capacity will exist at all times over the life of the facility.

(3) The closure cost estimate may not incorporate any salvage value that may be realized by the sale of hazardous wastes, facility structures or equipment, land or other facility assets at the time of partial or final closures.

(4) The owner or operator may not incorporate a zero cost for hazardous waste that might have economic value.

(b) During the active life of the facility, the owner or operator must adjust the closure cost estimate for inflation within 60 days prior to the anniversary date of the establishment of the financial instrument(s) used to comply with § 265.143. For owners and operators using the financial test or corporate guarantee, the closure cost estimate must be updated for inflation within 30 days after the close of the firm's fiscal year and before submission of updated information to the Regional Administrator as specified in § 265.143(e)(3). The adjustment may be made by recalculating the closure cost estimate in current dollars, or by using an inflation factor derived from the most recent Implicit Price Deflator for Gross National Product published by the U.S. Department of Commerce in its *Survey of Current Business*, as specified in paragraphs (b)(1) and (2) of this section. The inflation factor is the result of dividing the latest published annual Deflator by the Deflator for the previous year.

(1) The first adjustment is made by multiplying the closure cost estimate by the inflation factor. The result is the adjusted closure cost estimate.

(2) Subsequent adjustments are made by multiplying the latest adjusted closure cost estimate by the latest inflation factor.

(c) During the active life of the facility, the owner or operator must revise the closure cost estimate no later than 30 days after a revision has been made to the closure plan which increases the cost of closure. If the owner or operator has an approved closure plan, the closure cost estimate must be revised no later than 30 days after the Regional Administrator has approved the request to modify the closure plan, if the change in the closure plan increases the cost of closure. The revised closure cost estimate must be adjusted for inflation as specified in § 265.142(b).

(d) The owner or operator must keep the following at the facility during the operating life of the facility: The latest closure cost estimate prepared in accordance with §§ 265.142 (a) and (c) and, when this estimate has been adjusted in accordance with § 265.142(b), the latest adjusted closure cost estimate.

(Approved by the Office of Management and Budget under control number 2050-0036)

[47 FR 15064, Apr. 7, 1982, as amended at 50 FR 4514, Jan. 31, 1985; 51 FR 16456, May 2, 1986]

§ 265.143 Financial assurance for closure.

By the effective date of these regulations, an owner or operator of each facility must establish financial assurance for closure of the facility. He must choose from the options as specified in paragraphs (a) through (e) of this section.

(a) *Closure trust fund.* (1) An owner or operator may satisfy the requirements of this section by establishing a closure trust fund which conforms to the requirements of this paragraph and submitting an originally signed duplicate of the trust agreement to the Regional Administrator. The trustee must be an entity which has the authority to act as a trustee and whose trust operations are regulated and examined by a Federal or State agency.

(2) The wording of the trust agreement must be identical to the wording specified in § 264.151(a)(1), and the trust agreement must be accompanied by a formal certification of acknowledgment (for example, see § 264.151(a)(2)). Schedule A of the trust agreement must be updated within 60 days after a change in the amount of the current closure cost estimate covered by the agreement.

(3) Payments into the trust fund must be made annually by the owner or operator over the 20 years beginning with the effective date of these regulations or over the remaining operating life of the facility as estimated in the closure plan, whichever period is shorter; this period is hereafter referred to as the "pay-in period." The payments into the closure trust fund must be made as follows:

(i) The first payment must be made by the effective date of these regulations, except as provided in paragraph (a)(5) of this section. The first payment must be at least equal to the current closure cost estimate, except as provided in § 265.143(f), divided by the number of years in the pay-in period.

(ii) Subsequent payments must be made no later than 30 days after each anniversary date of the first payment. The amount of each subsequent payment must be determined by this formula:

$$\text{Next payment} = \frac{CE - CV}{Y}$$

where CE is the current closure cost estimate, CV is the current value of the trust fund, and Y is the number of years remaining in the pay-in period.

(4) The owner or operator may accelerate payments into the trust fund or he may deposit the full amount of the current closure cost estimate at the time the fund is established. However, he must maintain the value of the fund at no less than the value that the fund would have if annual payments were made as specified in paragraph (a)(3) of this section.

(5) If the owner or operator establishes a closure trust fund after having used one or more alternate mechanisms specified in this section, his first payment must be in at least the amount that the fund would contain if the trust fund were established initially and annual payments made as specified in paragraph (a)(3) of this section.

(6) After the pay-in period is completed, whenever the current closure cost estimate changes, the owner or operator must compare the new estimate with the trustee's most recent annual valuation of the trust fund. If the value of the fund is less than the amount of the new estimate, the owner or operator, within 60 days after the change in the cost estimate, must either deposit an amount into the fund so that its value after this deposit at least equals the amount of the current closure cost estimate, or obtain other financial assurance as specified in this section to cover the difference.

(7) If the value of the trust fund is greater than the total amount of the current closure cost estimate, the owner or operator may submit a written request to the Regional Administrator for release of the amount in excess of the current closure cost estimate.

(8) If an owner or operator substitutes other financial assurance as specified in this section for all or part of the trust fund, he may submit a written request to the Regional Administrator for release of the amount in excess of the current closure cost estimate covered by the trust fund.

(9) Within 60 days after receiving a request from the owner or operator for release of funds as specified in paragraph (a) (7) or (8) of this section, the Regional Administrator will instruct the trustee to release to the owner or operator such funds as the Regional Administrator specifies in writing.

(10) After beginning partial or final closure, an owner or operator or another person authorized to conduct partial or final closure may request reimbursements for partial or final closure expenditures by submitting itemized bills to the Regional Administrator. The owner or operator may request reimbursements for partial closure only if sufficient funds are remaining in the trust fund to cover the maximum costs of closing the facility over its remaining operating life. No later than 60 days after receiving bills for partial or final closure activities, the Regional Administrator will instruct the trustee to make reimbursements in those amounts as the Regional Administrator specifies in writing, if the Regional Administrator determines that the partial or final closure expenditures are in accordance with the approved closure plan, or otherwise justified. If the Regional Administrator has reason to believe that the maximum cost of closure over the remaining life of the facility will be significantly greater than the value of the trust fund, he may withhold reimbursements of such amounts as he deems prudent until he determines, in accordance with § 265.143(h) that the owner or operator is no longer required to maintain financial assurance for final closure of the facility. If the Regional Administrator does not instruct the trustee to make such reimbursements, he will provide to the

owner or operator a detailed written statement of reasons.

(11) The Regional Administrator will agree to termination of the trust when:

(i) An owner or operator substitutes alternate financial assurance as specified in this section; or

(ii) The Regional Administrator releases the owner or operator from the requirements of this section in accordance with § 265.143(h).

(b) *Surety bond guaranteeing payment into a closure trust fund.* (1) An owner or operator may satisfy the requirements of this section by obtaining a surety bond which conforms to the requirements of this paragraph and submitting the bond to the Regional Administrator. The surety company issuing the bond must, at a minimum, be among those listed as acceptable sureties on Federal bonds in Circular 570 of the U.S. Department of the Treasury.

(2) The wording of the surety bond must be identical to the wording specified in § 264.151(b).

(3) The owner or operator who uses a surety bond to satisfy the requirements of this section must also establish a standby trust fund. Under the terms of the bond, all payments made thereunder will be deposited by the surety directly into the standby trust fund in accordance with instructions from the Regional Administrator. This standby trust fund must meet the requirements specified in § 265.143(a), except that

(i) An originally signed duplicate of the trust agreement must be submitted to the Regional Administrator with the surety bond; and

(ii) Until the standby trust fund is funded pursuant to the requirements of this section, the following are not required by these regulations:

(A) Payments into the trust fund as specified in § 265.143(a);

(B) Updating of Schedule A of the trust agreement (see § 264.151(a)) to show current closure cost estimates;

(C) Annual valuations as required by the trust agreement; and

(D) Notices of nonpayment as required by the trust agreement.

(4) The bond must guarantee that the owner or operator will:

(i) Fund the standby trust fund in an amount equal to the penal sum of the bond before the beginning of final closure of the facility; or

(ii) Fund the standby trust fund in an amount equal to the penal sum within 15 days after an administrative order to begin final closure issued by the Regional Administrator becomes final, or within 15 days after an order to begin final closure is issued by a U.S. district court or other court of competent jurisdiction; or

(iii) Provide alternate financial assurance as specified in this section, and obtain the Regional Administrator's written approval of the assurance provided, within 90 days after receipt by both the owner or operator and the Regional Administrator of a notice of cancellation of the bond from the surety.

(5) Under the terms of the bond, the surety will become liable on the bond obligation when the owner or operator fails to perform as guaranteed by the bond.

(6) The penal sum of the bond must be in an amount at least equal to the current closure cost estimate, except as provided in § 265.143(f).

(7) Whenever the current closure cost estimate increases to an amount greater than the penal sum, the owner or operator, within 60 days after the increase, must either cause the penal sum to be increased to an amount at least equal to the current closure cost estimate and submit evidence of such increase to the Regional Administrator, or obtain other financial assurance as specified in this section to cover the increase. Whenever the current closure cost estimate decreases, the penal sum may be reduced to the amount of the current closure cost estimate following written approval by the Regional Administrator.

(8) Under the terms of the bond, the surety may cancel the bond by sending notice of cancellation by certified mail to the owner or operator and to the Regional Administrator. Cancellation may not occur, however, during the 120 days beginning on the date of receipt of the notice of cancellation by both the owner or operator and the Regional Administrator, as evidenced by the return receipts.

(9) The owner or operator may cancel the bond if the Regional Administrator has given prior written consent based on his receipt of evidence of alternate financial assurance as specified in this section.

(c) *Closure letter of credit.* (1) An owner or operator may satisfy the requirements of this section by obtaining an irrevocable standby letter of credit which conforms to the requirements of this paragraph and submitting the letter to the Regional Administrator. The issuing institution must be an entity which has the authority to issue letters of credit and whose letter-of-credit operations are regulated and examined by a Federal or State agency.

(2) The wording of the letter of credit must be identical to the wording specified in § 264.151(d).

(3) An owner or operator who uses a letter of credit to satisfy the requirements of this section must also establish a standby trust fund. Under the terms of the letter of credit, all amounts paid pursuant to a draft by the Regional Administrator will be deposited by the issuing institution directly into the standby trust fund in accordance with instructions from the Regional Administrator. This standby trust fund must meet the requirements of the trust fund specified in § 265.143(a), except that:

(i) An originally signed duplicate of the trust agreement must be submitted to the Regional Administrator with the letter of credit; and

(ii) Unless the standby trust fund is funded pursuant to the requirements of this section, the following are not required by these regulations:

(A) Payments into the trust fund as specified in § 265.143(a);

(B) Updating of Schedule A of the trust agreement (see § 264.151(a)) to show current closure cost estimates;

(C) Annual valuations as required by the trust agreement; and

(D) Notices of nonpayment as required by the trust agreement.

(4) The letter of credit must be accompanied by a letter from the owner or operator referring to the letter of credit by number, issuing institution, and date, and providing the following information: The EPA Identification Number, name, and address of the facility, and the amount of funds assured for closure of the facility by the letter of credit.

(5) The letter of credit must be irrevocable and issued for a period of at least 1 year. The letter of credit must provide that the expiration date will be automatically extended for a period of at least 1 year unless, at least 120 days before the current expiration date, the issuing institution notifies both the owner or operator and the Regional Administrator by certified mail of a decision not to extend the expiration date. Under the terms of the letter of credit, the 120 days will begin on the date when both the owner or operator and the Regional Administrator have received the notice, as evidenced by the return receipts.

(6) The letter of credit must be issued in an amount at least equal to the current closure cost estimate, except as provided in § 265.143(f).

(7) Whenever the current closure cost estimate increases to an amount greater than the amount of the credit, the owner or operator, within 60 days after the increase, must either cause the amount of the credit to be increased so that it at least equals the current closure cost estimate and submit evidence of such increase to the Regional Administrator, or obtain other financial assurance as specified in this section to cover the increase. Whenever the current closure cost estimate decreases, the amount of the credit may be reduced to the amount of the current closure cost estimate following written approval by the Regional Administrator.

(8) Following a final administrative determination pursuant to section 3008 of RCRA that the owner or operator has failed to perform final closure in accordance with the approved closure plan when required to do so, the Regional Administrator may draw on the letter of credit.

(9) If the owner or operator does not establish alternate financial assurance as specified in this section and obtain written approval of such alternate assurance from the Regional Administrator within 90 days after receipt by both the owner or operator and the

Regional Administrator of a notice from the issuing institution that it has decided not to extend the letter of credit beyond the current expiration date, the Regional Administrator will draw on the letter of credit. The Regional Administrator may delay the drawing if the issuing institution grants an extension of the term of the credit. During the last 30 days of any such extension the Regional Administrator will draw on the letter of credit if the owner or operator has failed to provide alternate financial assurance as specified in this section and obtain written approval of such assurance from the Regional Administrator.

(10) The Regional Administrator will return the letter of credit to the issuing institution for termination when:

(i) An owner or operator substitutes alternate financial assurance as specified in this section; or

(ii) The Regional Administrator releases the owner or operator from the requirements of this section in accordance with § 265.143(h).

(d) *Closure insurance.* (1) An owner or operator may satisfy the requirements of this section by obtaining closure insurance which conforms to the requirements of this paragraph and submitting a certificate of such insurance to the Regional Administrator. By the effective date of these regulations the owner or operator must submit to the Regional Administrator a letter from an insurer stating that the insurer is considering issuance of closure insurance conforming to the requirements of this paragraph to the owner or operator. Within 90 days after the effective date of these regulations, the owner or operator must submit the certificate of insurance to the Regional Administrator or establish other financial assurance as specified in this section. At a minimum, the insurer must be licensed to transact the business of insurance, or eligible to provide insurance as an excess or surplus lines insurer, in one or more States.

(2) The wording of the certificate of insurance must be identical to the wording specified in § 264.151(e).

(3) The closure insurance policy must be issued for a face amount at least equal to the current closure cost estimate, except as provided in § 265.143(f). The term "face amount" means the total amount the insurer is obligated to pay under the policy. Actual payments by the insurer will not change the face amount, although the insurer's future liability will be lowered by the amount of the payments.

(4) The closure insurance policy must guarantee that funds will be available to close the facility whenever final closure occurs. The policy must also guarantee that once final closure begins, the insurer will be responsible for paying out funds, up to an amount equal to the face amount of the policy, upon the direction of the Regional Administrator, to such party or parties as the Regional Administrator specifies.

(5) After beginning partial or final closure, an owner or operator or any other person authorized to conduct closure may request reimbursements for closure expenditures by submitting itemized bills to the Regional Administrator. The owner or operator may request reimbursements for partial closure only if the remaining value of the policy is sufficient to cover the maximum costs of closing the facility over its remaining operating life. Within 60 days after receiving bills for closure activities, the Regional Administrator will instruct the insurer to make reimbursements in such amounts as the Regional Administrator specifies in writing if the Regional Administrator determines that the partial or final closure expenditures are in accordance with the approved closure plan or otherwise justified. If the Regional Administrator has reason to believe that the maximum cost of closure over the remaining life of the facility will be significantly greater than the face amount of the policy, he may withhold reimbursement of such amounts as he deems prudent until he determines, in accordance with § 265.143(h), that the owner or operator is no longer required to maintain financial assurance for final closure of the particular facility. If the Regional Administrator does not instruct the insurer to make such reimbursements, he will provide to the owner or operator a detailed written statement of reasons.

(6) The owner or operator must maintain the policy in full force and effect until the Regional Administrator consents to termination of the policy by the owner or operator as specified in paragraph (d)(10) of this section. Failure to pay the premium, without substitution of alternate financial assurance as specified in this section, will constitute a significant violation of these regulations, warranting such remedy as the Regional Administrator deems necessary. Such violation will be deemed to begin upon receipt by the Regional Administrator of a notice of future cancellation, termination, or failure to renew due to nonpayment of the premium, rather than upon the date of expiration.

(7) Each policy must contain a provision allowing assignment of the policy to a successor owner or operator. Such assignment may be conditional upon consent of the insurer, provided such consent is not unreasonably refused.

(8) The policy must provide that the insurer may not cancel, terminate, or fail to renew the policy except for failure to pay the premium. The automatic renewal of the policy must, at a minimum, provide the insured with the option of renewal at the face amount of the expiring policy. If there is a failure to pay the premium, the insurer may elect to cancel, terminate, or fail to renew the policy by sending notice by certified mail to the owner or operator and the Regional Administrator. Cancellation, termination, or failure to renew may not occur, however, during the 120 days beginning with the date of receipt of the notice by both the Regional Administrator and the owner or operator, as evidenced by the return receipts. Cancellation, termination, or failure to renew may not occur and the policy will remain in full force and effect in the event that on or before the date of expiration:

(i) The Regional Administrator deems the facility abandoned; or

(ii) Interim status is terminated or revoked; or

(iii) Closure is ordered by the Regional Administrator or a U.S. district court or other court of competent jurisdiction; or

(iv) The owner or operator is named as debtor in a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code; or

(v) The premium due is paid.

(9) Whenever the current closure cost estimate increases to an amount greater than the face amount of the policy, the owner or operator, within 60 days after the increase, must either cause the face amount to be increased to an amount at least equal to the current closure cost estimate and submit evidence of such increase to the Regional Administrator, or obtain other financial assurance as specified in this section to cover the increase. Whenever the current closure cost estimate decreases, the face amount may be reduced to the amount of the current closure cost estimate following written approval by the Regional Administrator.

(10) The Regional Administrator will give written consent to the owner or operator that he may terminate the insurance policy when:

(i) An owner or operator substitutes alternate financial assurance as specified in this section; or

(ii) The Regional Administrator releases the owner or operator from the requirements of this section in accordance with § 265.143(h).

(e) *Financial test and corporate guarantee for closure.* (1) An owner or operator may satisfy the requirements of this section by demonstrating that he passes a financial test as specified in this paragraph. To pass this test the owner or operator must meet the criteria of either paragraph (e)(1)(i) or (ii) of this section:

(i) The owner or operator must have:

(A) Two of the following three ratios: A ratio of total liabilities to net worth less than 2.0; a ratio of the sum of net income plus depreciation, depletion, and amortization to total liabilities greater than 0.1; and a ratio of current assets to current liabilities greater than 1.5; and

(B) Net working capital and tangible net worth each at least six times the sum of the current closure and post-closure cost estimates and the current plugging and abandonment cost estimates; and

(C) Tangible net worth of at least $10 million; and

(D) Assets located in the United States amounting to at least 90 percent of total assets or at least six times the sum of the current closure and post-closure cost estimates and the current plugging and abandonment cost estimates.

(ii) The owner or operator must have:

(A) A current rating for his most recent bond issuance of AAA, AA, A, or BBB as issued by Standard and Poor's or Aaa, Aa, A, or Baa as issued by Moody's; and

(B) Tangible net worth at least six times the sum of the current closure and post-closure cost estimates and the current plugging and abandonment cost estimates; and

(C) Tangible net worth of at least $10 million; and

(D) Assets located in the United States amounting to at least 90 percent of total assets or at least six times the sum of the current closure and post-closure cost estimates and the current plugging and abandonment cost estimates.

(2) The phrase "current closure and post-closure cost estimates" as used in paragraph (e)(1) of this section refers to the cost estimates required to be shown in paragraphs 1-4 of the letter from the owner's or operator's chief financial officer (§ 264.151(f)). The phrase "current plugging and abandonment cost estimates" as used in paragraph (e)(1) of this section refers to the cost estimates required to be shown in paragraphs 1-4 of the letter from the owner's or operator's chief financial officer (§ 144.70(f) of this title).

(3) To demonstrate that he meets this test, the owner or operator must submit the following items to the Regional Administrator:

(i) A letter signed by the owner's or operator's chief financial officer and worded as specified in § 264.151(f); and

(ii) A copy of the independent certified public accountant's report on examination of the owner's or operator's financial statements for the latest completed fiscal year; and

(iii) A special report from the owner's or operator's independent certified public accountant to the owner or operator stating that:

(A) He has compared the data which the letter from the chief financial officer specifies as having been derived from the independently audited, year-end financial statements for the latest fiscal year with the amounts in such financial statements; and

(B) In connection with that procedure, no matters came to his attention which caused him to believe that the specified data should be adjusted.

(4) The owner or operator may obtain an extension of the time allowed for submission of the documents specified in paragraph (e)(3) of this section if the fiscal year of the owner or operator ends during the 90 days prior to the effective date of these regulations and if the year-end financial statements for that fiscal year will be audited by an independent certified public accountant. The extension will end no later than 90 days after the end of the owner's or operator's fiscal year. To obtain the extension, the owner's or operator's chief financial officer must send, by the effective date of these regulations, a letter to the Regional Administrator of each Region in which the owner's or operator's facilities to be covered by the financial test are located. This letter from the chief financial officer must:

(i) Request the extension;

(ii) Certify that he has grounds to believe that the owner or operator meets the criteria of the financial test;

(iii) Specify for each facility to be covered by the test the EPA Identification Number, name, address, and current closure and post-closure cost estimates to be covered by the test;

(iv) Specify the date ending the owner's or operator's last complete fiscal year before the effective date of these regulations;

(v) Specify the date, no later than 90 days after the end of such fiscal year, when he will submit the documents specified in paragraph (e)(3) of this section; and

(vi) Certify that the year-end financial statements of the owner or operator for such fiscal year will be audited by an independent certified public accountant.

(5) After the initial submission of items specified in paragraph (e)(3) of this section, the owner or operator

must send updated information to the Regional Administrator within 90 days after the close of each succeeding fiscal year. This information must consist of all three items specified in paragraph (e)(3) of this section.

(6) If the owner or operator no longer meets the requirements of paragraph (e)(1) of this section, he must send notice to the Regional Administrator of intent to establish alternate financial assurance as specified in this section. The notice must be sent by certified mail within 90 days after the end of the fiscal year for which the year-end financial data show that the owner or operator no longer meets the requirements. The owner or operator must provide the alternate financial assurance within 120 days after the end of such fiscal year.

(7) The Regional Administrator may, based on a reasonable belief that the owner or operator may no longer meet the requirements of paragraph (e)(1) of this section, require reports of financial condition at any time from the owner or operator in addition to those specified in paragraph (e)(3) of this section. If the Regional Administrator finds, on the basis of such reports or other information, that the owner or operator no longer meets the requirements of paragraph (e)(1) of this section, the owner or operator must provide alternate financial assurance as specified in this section within 30 days after notification of such a finding.

(8) The Regional Administrator may disallow use of this test on the basis of qualifications in the opinion expressed by the independent certified public accountant in his report on examination of the owner's or operator's financial statements (see paragraph (e)(3)(ii) of this section). An adverse opinion or a disclaimer of opinion will be cause for disallowance. The Regional Administrator will evaluate other qualifications on an individual basis. The owner or operator must provide alternate financial assurance as specified in this section within 30 days after notification of the disallowance.

(9) The owner or operator is no longer required to submit the items specified in paragraph (e)(3) of this section when:

(i) An owner or operator substitutes alternate financial assurance as specified in this section; or

(ii) The Regional Administrator releases the owner or operator from the requirements of this section in accordance with § 265.143(h).

(10) An owner or operator may meet the requirements of this section by obtaining a written guarantee, hereafter referred to as "corporate guarantee." The guarantor must be the parent corporation of the owner or operator. The guarantor must meet the requirements for owners or operators in paragraphs (e)(1) through (8) of this section and must comply with the terms of the corporate guarantee. The wording of the corporate guarantee must be identical to the wording specified in § 264.151(h). The corporate guarantee must accompany the items sent to the Regional Administrator as specified in paragraph (e)(3) of this section. The terms of the corporate guarantee must provide that:

(i) If the owner or operator fails to perform final closure of a facility covered by the corporate guarantee in accordance with the closure plan and other interim status requirements whenever required to do so, the guarantor will do so or establish a trust fund as specified in § 265.143(a) in the name of the owner or operator.

(ii) The corporate guarantee will remain in force unless the guarantor sends notice of cancellation by certified mail to the owner or operator and to the Regional Administrator. Cancellation may not occur, however, during the 120 days beginning on the date of receipt of the notice of cancellation by both the owner or operator and the Regional Administrator, as evidenced by the return receipts.

(iii) If the owner or operator fails to provide alternate financial assurance as specified in this section and obtain the written approval of such alternate assurance from the Regional Administrator within 90 days after receipt by both the owner or operator and the Regional Administrator of a notice of cancellation of the corporate guarantee from the guarantor, the guarantor will provide such alternate financial assurance in the name of the owner or operator.

(f) *Use of multiple financial mechanisms.* An owner or operator may satisfy the requirements of this section by establishing more than one financial mechanism per facility. These mechanisms are limited to trust funds, surety bonds, letters of credit, and insurance. The mechanisms must be as specified in paragraphs (a) through (d), respectively, of this section, except that it is the combination of mechanisms, rather than the single mechanism, which must provide financial assurance for an amount at least equal to the current closure cost estimate. If an owner or operator uses a trust fund in combination with a surety bond or a letter of credit, he may use the trust fund as the standby trust fund for the other mechanisms. A single standby trust fund may be established for two or more mechanisms. The Regional Administrator may use any or all of the mechanisms to provide for closure of the facility.

(g) *Use of a financial mechanism for multiple facilities.* An owner or operator may use a financial assurance mechanism specified in this section to meet the requirements of this section for more than one facility. Evidence of financial assurance submitted to the Regional Administrator must include a list showing, for each facility, the EPA Identification Number, name, address, and the amount of funds for closure assured by the mechanism. If the facilities covered by the mechanism are in more than one Region, identical evidence of financial assurance must be submitted to and maintained with the Regional Administrators of all such Regions. The amount of funds available through the mechanism must be no less than the sum of funds that would be available if a separate mechanism had been established and maintained for each facility. In directing funds available through the mechanism for closure of any of the facilities covered by the mechanism, the Regional Administrator may direct only the amount of funds designated for that facility, unless the owner or operator agrees to the use of additional funds available under the mechanism.

(h) *Release of the owner or operator from the requirements of this section.* Within 60 days after receiving certifications from the owner or operator and an independent registered professional engineer that final closure has been completed in accordance with the approved closure plan, the Regional Administrator will notify the owner or operator in writing that he is no longer required by this section to maintain financial assurance for final closure of the facility, unless the Regional Administrator has reason to believe that final closure has not been in accordance with the approved closure plan. The Regional Administrator shall provide the owner or operator a detailed written statement of any such reason to believe that closure has not been in accordance with the approved closure plan.

[47 FR 15064, Apr. 7, 1982, as amended at 51 FR 16456, May 2, 1986]

§ 265.144 Cost estimate for post-closure care.

(a) The owner or operator of a hazardous waste disposal unit must have a detailed written estimate, in current dollars, of the annual cost of post-closure monitoring and maintenance of the facility in accordance with the applicable post-closure regulations in §§ 265.117 through 265.120, 265.228, 265.258, 265.280, and 265.310.

(1) The post-closure cost estimate must be based on the costs to the owner or operator of hiring a third party to conduct post-closure care activities. A third party is a party who is neither a parent nor subsidiary of the owner or operator. (See definition of parent corporation in § 265.141(d).)

(2) The post-closure cost estimate is calculated by multiplying the annual post-closure cost estimate by the number of years of post-closure care required under § 265.117.

(b) During the active life of the facility, the owner or operator must adjust the post-closure cost estimate for inflation within 60 days prior to the anniversary date of the establishment of the financial instrument(s) used to comply with § 265.145. For owners or operators using the financial test or corporate guarantee, the post-closure care cost estimate must be updated for inflation no later than 30 days after the close of the firm's fiscal year and before submission of updated information to the Regional Administrator as specified in § 265.145(d)(5). The adjustment may be made by recalculating the post-closure cost estimate in current dollars or by using an inflation factor derived from the most recent Implicit Price Deflator for Gross National Product published by the U.S. Department of Commerce in its *Survey of Current Business* as specified in § 265.145 (b)(1) and (2). The inflation factor is the result of dividing the latest published annual Deflator by the Deflator for the previous year.

(1) The first adjustment is made by multiplying the post-closure cost estimate by the inflation factor. The result is the adjusted post-closure cost estimate.

(2) Subsequent adjustments are made by multiplying the latest adjusted post-closure cost estimate by the latest inflation factor.

(c) During the active life of the facility, the owner or operator must revise the post-closure cost estimate no later than 30 days after a revision to the post-closure plan which increases the cost of post-closure care. If the owner or operator has an approved post-closure plan, the post-closure cost estimate must be revised no later than 30 days after the Regional Administrator has approved the request to modify the plan, if the change in the post-closure plan increases the cost of post-closure care. The revised post-closure cost estimate must be adjusted for inflation as specified in § 265.144(b).

(d) The owner or operator must keep the following at the facility during the operating life of the facility: the latest post-closure cost estimate prepared in accordance with § 265.144 (a) and (c) and, when this estimate has been adjusted in accordance with § 265.144(b), the latest adjusted post-closure cost estimate.

(Approved by the Office of Management and Budget under control number 2050-0036)

[47 FR 15064, Apr. 7, 1982, as amended at 50 FR 4514, Jan. 31, 1985; 51 FR 16457, May 2, 1986]

§ 265.145 Financial assurance for post-closure care.

By the effective date of these regulations, an owner or operator of a facility with a hazardous waste disposal unit must establish financial assurance for post-closure care of the disposal unit(s).

(a) *Post-closure trust fund.* (1) An owner or operator may satisfy the requirements of this section by establishing a post-closure trust fund which conforms to the requirements of this paragraph and submitting an originally signed duplicate of the trust agreement to the Regional Administrator. The trustee must be an entity which has the authority to act as a trustee and whose trust operations are regulated and examined by a Federal or State agency.

(2) The wording of the trust agreement must be identical to the wording specified in § 264.151(a)(1), and the trust agreement must be accompanied by a formal certification of acknowledgment (for example, see § 264.151(a)(2)). Schedule A of the trust agreement must be updated within 60 days after a change in the amount of the current post-closure cost estimate covered by the agreement.

(3) Payments into the trust fund must be made annually by the owner or operator over the 20 years beginning with the effective date of these regulations or over the remaining operating life of the facility as estimated in the closure plan, whichever period is shorter; this period is hereafter referred to as the "pay-in period." The payments into the post-closure trust fund must be made as follows:

(i) The first payment must be made by the effective date of these regulations, except as provided in paragraph (a)(5) of this section. The first payment must be at least equal to the current post-closure cost estimate, except as provided in § 265.145(f), divided by the number of years in the pay-in period.

(ii) Subsequent payments must be made no later than 30 days after each anniversary date of the first payment. The amount of each subsequent pay-

ment must be determined by this formula:

$$\text{Next payment} = \frac{CE - CV}{Y}$$

where CE is the current post-closure cost estimate, CV is the current value of the trust fund, and Y is the number of years remaining in the pay-in period.

(4) The owner or operator may accelerate payments into the trust fund or he may deposit the full amount of the current post-closure cost estimate at the time the fund is established. However, he must maintain the value of the fund at no less than the value that the fund would have if annual payments were made as specified in paragraph (a)(3) of this section.

(5) If the owner or operator establishes a post-closure trust fund after having used one or more alternate mechanisms specified in this section, his first payment must be in at least the amount that the fund would contain if the trust fund were established initially and annual payments made as specified in paragraph (a)(3) of this section.

(6) After the pay-in period is completed, whenever the current post-closure cost estimate changes during the operating life of the facility, the owner or operator must compare the new estimate with the trustee's most recent annual valuation of the trust fund. If the value of the fund is less than the amount of the new estimate, the owner or operator, within 60 days after the change in the cost estimate, must either deposit an amount into the fund so that its value after this deposit at least equals the amount of the current post-closure cost estimate, or obtain other financial assurance as specified in this section to cover the difference.

(7) During the operating life of the facility, if the value of the trust fund is greater than the total amount of the current post-closure cost estimate, the owner or operator may submit a written request to the Regional Administrator for release of the amount in excess of the current post-closure cost estimate.

(8) If an owner or operator substitutes other financial assurance as specified in this section for all or part of the trust fund, he may submit a written request to the Regional Administrator for release of the amount in excess of the current post-closure cost estimate covered by the trust fund.

(9) Within 60 days after receiving a request from the owner or operator for release of funds as specified in paragraph (a) (7) or (8) of this section, the Regional Administrator will instruct the trustee to release to the owner or operator such funds as the Regional Administrator specifies in writing.

(10) During the period of post-closure care, the Regional Administrator may approve a release of funds if the owner or operator demonstrates to the Regional Administrator that the value of the trust fund exceeds the remaining cost of post-closure care.

(11) An owner or operator or any other person authorized to conduct post-closure care may request reimbursements for post-closure expenditures by submitting itemized bills to the Regional Administrator. Within 60 days after receiving bills for post-closure care activities, the Regional Administrator will instruct the trustee to make reimbursements in those amounts as the Regional Administrator specifies in writing, if the Regional Administrator determines that the post-closure expenditures are in accordance with the approved post-closure plan or otherwise justified. If the Regional Administrator does not instruct the trustee to make such reimbursements, he will provide the owner or operator with a detailed written statement of reasons.

(12) The Regional Administrator will agree to termination of the trust when:

(i) An owner or operator substitutes alternate financial assurance as specified in this section; or

(ii) The Regional Administrator releases the owner or operator from the requirements of this section in accordance with § 265.145(h).

(b) *Surety bond guaranteeing payment into a post-closure trust fund.* (1) An owner or operator may satisfy the requirements of this section by obtaining a surety bond which conforms to the requirements of this paragraph and submitting the bond to the Regional Administrator. The surety company issuing the bond must, at a minimum, be among those listed as acceptable sureties on Federal bonds in Circular 570 of the U.S. Department of the Treasury.

(2) The wording of the surety bond must be identical to the wording specified in § 264.151(b).

(3) The owner or operator who uses a surety bond to satisfy the requirements of this section must also establish a standby trust fund. Under the terms of the bond, all payments made thereunder will be deposited by the surety directly into the standby trust fund in accordance with instructions from the Regional Administrator. This standby trust fund must meet the requirements specified in § 265.145(a), except that:

(i) An originally signed duplicate of the trust agreement must be submitted to the Regional Administrator with the surety bond; and

(ii) Until the standby trust fund is funded pursuant to the requirements of this section, the following are not required by these regulations:

(A) Payments into the trust fund as specified in § 265.145(a);

(B) Updating of Schedule A of the trust agreement (see § 264.151(a)) to show current post-closure cost estimates;

(C) Annual valuations as required by the trust agreement; and

(D) Notices of nonpayment as required by the trust agreement.

(4) The bond must guarantee that the owner or operator will:

(i) Fund the standby trust fund in an amount equal to the penal sum of the bond before the beginning of final closure of the facility; or

(ii) Fund the standby trust fund in an amount equal to the penal sum within 15 days after an administrative order to begin final closure issued by the Regional Administrator becomes final, or within 15 days after an order to begin final closure is issued by a U.S. district court or other court of competent jurisdiction; or

(iii) Provide alternate financial assurance as specified in this section, and obtain the Regional Administrator's written approval of the assurance provided, within 90 days after receipt by both the owner or operator and the Regional Administrator of a notice of cancellation of the bond from the surety.

(5) Under the terms of the bond, the surety will become liable on the bond obligation when the owner or operator fails to perform as guaranteed by the bond.

(6) The penal sum of the bond must be in an amount at least equal to the current post-closure cost estimate, except as provided in § 265.145(f).

(7) Whenever the current post-closure cost estimate increases to an amount greater than the penal sum, the owner or operator, within 60 days after the increase, must either cause the penal sum to be increased to an amount at least equal to the current post-closure cost estimate and submit evidence of such increase to the Regional Administrator, or obtain other financial assurance as specified in this section to cover the increase. Whenever the current post-closure cost estimate decreases, the penal sum may be reduced to the amount of the current post-closure cost estimate following written approval by the Regional Administrator.

(8) Under the terms of the bond, the surety may cancel the bond by sending notice of cancellation by certified mail to the owner or operator and to the Regional Administrator. Cancellation may not occur, however, during the 120 days beginning on the date of receipt of the notice of cancellation by both the owner or operator and the Regional Administrator, as evidenced by the return receipts.

(9) The owner or operator may cancel the bond if the Regional Administrator has given prior written consent based on his receipt of evidence of alternate financial assurance as specified in this section.

(c) *Post-closure letter of credit.* (1) An owner or operator may satisfy the requirements of this section by obtaining an irrevocable standby letter of credit which conforms to the requirements of this paragraph and submit-

ting the letter to the Regional Administrator. The issuing institution must be an entity which has the authority to issue letters of credit and whose letter-of-credit operations are regulated and examined by a Federal or State agency.

(2) The wording of the letter of credit must be identical to the wording specified in § 264.151(d).

(3) An owner or operator who uses a letter of credit to satisfy the requirements of this section must also establish a standby trust fund. Under the terms of the letter of credit, all amounts paid pursuant to a draft by the Regional Administrator will be deposited by the issuing institution directly into the standby trust fund in accordance with instructions from the Regional Administrator. This standby trust fund must meet the requirements of the trust fund specified in § 265.145(a), except that:

(i) An originally signed duplicate of the trust agreement must be submitted to the Regional Administrator with the letter of credit; and

(ii) Unless the standby trust fund is funded pursuant to the requirements of this section, the following are not required by these regulations:

(A) Payments into the trust fund as specified in § 265.145(a);

(B) Updating of Schedule A of the trust agreement (see § 264.151(a)) to show current post-closure cost estimates;

(C) Annual valuations as required by the trust agreement; and

(D) Notices of nonpayment as required by the trust agreement.

(4) The letter of credit must be accompanied by a letter from the owner or operator referring to the letter of credit by number, issuing institution, and date, and providing the following information: The EPA Identification Number, name, and address of the facility, and the amount of funds assured for post-closure care of the facility by the letter of credit.

(5) The letter of credit must be irrevocable and issued for a period of at least 1 year. The letter of credit must provide that the expiration date will be automatically extended for a period of at least 1 year unless, at least 120 days before the current expiration date, the issuing institution notifies both the owner or operator and the Regional Administrator by certified mail of a decision not to extend the expiration date. Under the terms of the letter of credit, the 120 days will begin on the date when both the owner or operator and the Regional Administrator have received the notice, as evidenced by the return receipts.

(6) The letter of credit must be issued in an amount at least equal to the current post-closure cost estimate, except as provided in § 265.145(f).

(7) Whenever the current post-closure cost estimate increases to an amount greater than the amount of the credit during the operating life of the facility, the owner or operator, within 60 days after the increase, must either cause the amount of the credit to be increased so that it at least equals the current post-closure cost estimate and submit evidence of such increase to the Regional Administrator, or obtain other financial assurance as specified in this section to cover the increase. Whenever the current post-closure cost estimate decreases during the operating life of the facility, the amount of the credit may be reduced to the amount of the current post-closure cost estimate following written approval by the Regional Administrator.

(8) During the period of post-closure care, the Regional Administrator may approve a decrease in the amount of the letter of credit if the owner or operator demonstrates to the Regional Administrator that the amount exceeds the remaining cost of post-closure care.

(9) Following a final administrative determination pursuant to section 3008 of RCRA that the owner or operator has failed to perform post-closure care in accordance with the approved post-closure plan and other permit requirements, the Regional Administrator may draw on the letter of credit.

(10) If the owner or operator does not establish alternate financial assurance as specified in this section and obtain written approval of such alternate assurance from the Regional Administrator within 90 days after receipt by both the owner or operator and the Regional Administrator of a notice from the issuing institution that it has decided not to extend the letter of credit beyond the current expiration date, the Regional Administrator will draw on the letter of credit. The Regional Administrator may delay the drawing if the issuing institution grants an extension of the term of the credit. During the last 30 days of any such extension the Regional Administrator will draw on the letter of credit if the owner or operator has failed to provide alternate financial assurance as specified in this section and obtain written approval of such assurance from the Regional Administrator.

(11) The Regional Administrator will return the letter of credit to the issuing institution for termination when:

(i) An owner or operator substitutes alternate financial assurance as specified in this section; or

(ii) The Regional Administrator releases the owner or operator from the requirements of this section in accordance with § 265.145(h).

(d) *Post-closure insurance.* (1) An owner or operator may satisfy the requirements of this section by obtaining post-closure insurance which conforms to the requirements of this paragraph and submitting a certificate of such insurance to the Regional Administrator. By the effective date of these regulations the owner or operator must submit to the Regional Administrator a letter from an insurer stating that the insurer is considering issuance of post-closure insurance conforming to the requirements of this paragraph to the owner or operator. Within 90 days after the effective date of these regulations, the owner or operator must submit the certificate of insurance to the Regional Administrator or establish other financial assurance as specified in this section. At a minimum, the insurer must be licensed to transact the business of insurance, or eligible to provide insurance as an excess or surplus lines insurer, in one or more States.

(2) The wording of the certificate of insurance must be identical to the wording specified in § 264.151(e).

(3) The post-closure insurance policy must be issued for a face amount at least equal to the current post-closure cost estimate, except as provided in § 265.145(f). The term "face amount" means the total amount the insurer is obligated to pay under the policy. Actual payments by the insurer will not change the face amount, although the insurer's future liability will be lowered by the amount of the payments.

(4) The post-closure insurance policy must guarantee that funds will be available to provide post-closure care of the facility whenever the post-closure period begins. The policy must also guarantee that once post-closure care begins the insurer will be responsible for paying out funds, up to an amount equal to the face amount of the policy, upon the direction of the Regional Administrator, to such party or parties as the Regional Administrator specifies.

(5) An owner or operator or any other person authorized to perform post-closure care may request reimbursement for post-closure care expenditures by submitting itemized bills to the Regional Administrator. Within 60 days after receiving bills for post-closure care activities, the Regional Administrator will instruct the insurer to make reimbursements in those amounts as the Regional Administrator specifies in writing, if the Regional Administrator determines that the post-closure expenditures are in accordance with the approved post-closure plan or otherwise justified. If the Regional Administrator does not instruct the insurer to make such reimbursements, he will provide a detailed written statement of reasons.

(6) The owner or operator must maintain the policy in full force and effect until the Regional Administrator consents to termination of the policy by the owner or operator as specified in paragraph (d)(11) of this section. Failure to pay the premium, without substitution of alternate financial assurance as specified in the section, will constitute a significant violation of these regulations, warranting such remedy as the Regional Administrator deems necessary. Such violation will be deemed to begin upon receipt by the Regional Administrator of a notice of future cancellation, termination, or failure to renew due to

nonpayment of the premium, rather than upon the date of expiration.

(7) Each policy most contain a provision allowing assignment of the policy to a successor owner or operator. Such assignment may be conditional upon consent of the insurer, provided such consent is not unreasonably refused.

(8) The policy must provide that the insurer may not cancel, terminate, or fail to renew the policy except for failure to pay the premium. The automatic renewal of the policy must, at a minimum, provide the insured with the option of renewal at the face amount of the expiring policy. If there is a failure to pay the premium, the insurer may elect to cancel, terminate, or fail to renew the policy by sending notice by certified mail to the owner or operator and the Regional Administrator. Cancellation, termination, or failure to renew may not occur, however, during the 120 days beginning with the date of receipt of the notice by both the Regional Administrator and the owner or operator, as evidenced by the return receipts. Cancellation, termination, or failure to renew may not occur and the policy will remain in full force and effect in the event that on or before the date of expiration:

(i) The Regional Administrator deems the facility abandoned; or

(ii) Interim status is terminated or revoked; or

(iii) Closure is ordered by the Regional Administrator or a U.S. district court or other court of competent jurisdiction; or

(iv) The owner or operator is named as debtor in a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code; or

(v) The premium due is paid.

(9) Whenever the current post-closure cost estimate increases to an amount greater than the face amount of the policy during the operating life of the facility, the owner or operator, within 60 days after the increase, must either cause the face amount to be increased to an amount at least equal to the current post-closure cost estimate and submit evidence of such increase to the Regional Administrator, or obtain other financial assurance as specified in this section to cover the increase. Whenever the current post-closure cost estimate decreases during the operating life of the facility, the face amount may be reduced to the amount of the current post-closure cost estimate following written approval by the Regional Administrator.

(10) Commencing on the date that liability to make payments pursuant to the policy accrues, the insurer will thereafter annually increase the face amount of the policy. Such increase must be equivalent to the face amounts of the policy, less any payments made, multiplied by an amount equivalent to 85 percent of the most recent investment rate or of the equivalent coupon-issue yield announced by the U.S. Treasury for 26-week Treasury securities.

(11) The Regional Administrator will give written consent to the owner or operator that he may terminate the insurance policy when:

(i) An owner or operator substitutes alternate financial assurance as specified in this section; or

(ii) The Regional Administrator releases the owner or operator from the requirements of this section in accordance with § 265.145(h).

(e) *Financial test and corporate guarantee for post-closure care.* (1) An owner or operator may satisfy the requirements of this section by demonstrating that he passes a financial test as specified in this paragraph. To pass this test the owner or operator must meet the criteria either of paragraph (e)(1)(i) or (ii) of this section:

(i) The owner or operator must have:

(A) Two of the following three ratios: a ratio of total liabilities to net worth less than 2.0; a ratio of the sum of net income plus depreciation, depletion, and amortization to total liabilities greater than 0.1; and a ratio of current assets to current liabilities greater than 1.5; and

(B) Net working capital and tangible net worth each at least six times the sum of the current closure and post-closure cost estimates and the current plugging and abandonment cost estimates; and

(C) Tangible net worth of at least $10 million; and

(D) Assets in the United States amounting to at least 90 percent of his total assets or at least six times the sum of the current closure and post-closure cost estimates and the current plugging and abandonment cost estimates.

(ii) The owner or operator must have:

(A) A current rating for his most recent bond issuance of AAA, AA, A, or BBB as issued by Standard and Poor's or Aaa, Aa, A, or Baa as issued by Moody's; and

(B) Tangible net worth at least six times the sum of the current closure and post-closure cost estimates and the current plugging and abandonment cost estimates; and

(C) Tangible net worth of at least $10 million; and

(D) Assets located in the United States amounting to at least 90 percent of his total assets or at least six times the sum of the current closure and post-closure cost estimates and the current plugging and abandonment cost estimates.

(2) The phrase "current closure and post-closure cost estimates" as used in paragraph (e)(1) of this section refers to the cost estimates required to be shown in paragraphs 1-4 of the letter from the owner's or operator's chief financial officer (§ 264.151(f)). The phrase "current plugging and abandonment cost estimates" as used in paragraph (e)(1) of this section refers to the cost estimates required to be shown in paragraphs 1-4 of the letter from the owner's or operator's chief financial officer (§ 144.70(f) of this title).

(3) To demonstrate that he meets this test, the owner or operator must submit the following items to the Regional Administrator:

(i) A letter signed by the owner's or operator's chief financial officer and worded as specified in § 264.151(f); and

(ii) A copy of the independent certified public accountant's report on examination of the owner's or operator's financial statements for the latest completed fiscal year; and

(iii) A special report from the owner's or operator's independent certified public accountant to the owner or operator stating that:

(A) He has compared the data which the letter from the chief financial officer specifies as having been derived from the independently audited, year-end financial statements for the latest fiscal year with the amounts in such financial statements; and

(B) In connection with that procedure, no matters came to his attention which caused him to believe that the specified data should be adjusted.

(4) The owner or operator may obtain an extension of the time allowed for submission of the documents specified in paragraph (e)(3) of this section if the fiscal year of the owner or operator ends during the 90 days prior to the effective date of these regulations and if the year-end financial statements for that fiscal year will be audited by an independent certified public accountant. The extension will end no later than 90 days after the end of the owner's or operator's fiscal year. To obtain the extension, the owner's or operator's chief financial officer must send, by the effective date of these regulations, a letter to the Regional Administrator of each Region in which the owner's or operator's facilities to be covered by the financial test are located. This letter from the chief financial officer must:

(i) Request the extension;

(ii) Certify that he has grounds to believe that the owner or operator meets the criteria of the financial test;

(iii) Specify for each facility to be covered by the test the EPA Identification Number, name, address, and the current closure and post-closure cost estimates to be covered by the test;

(iv) Specify the date ending the owner's or operator's latest complete fiscal year before the effective date of these regulations;

(v) Specify the date, no later than 90 days after the end of such fiscal year, when he will submit the documents specified in paragraph (e)(3) of this section; and

(vi) Certify that the year-end financial statements of the owner or operator for such fiscal year will be audited by an independent certified public accountant.

(5) After the initial submission of items specified in paragraph (e)(3) of this section, the owner or operator must send updated information to the Regional Administrator within 90 days after the close of each succeeding

fiscal year. This information must consist of all three items specified in paragraph (e)(3) of this section.

(6) If the owner or operator no longer meets the requirements of paragraph (e)(1) of this section, he must send notice to the Regional Administrator of intent to establish alternate financial assurance as specified in this section. The notice must be sent by certified mail within 90 days after the end of the fiscal year for which the year-end financial data show that the owner or operator no longer meets the requirements. The owner or operator must provide the alternate financial assurance within 120 days after the end of such fiscal year.

(7) The Regional Administrator may, based on a reasonable belief that the owner or operator may no longer meet the requirements of paragraph (e)(1) of this section, require reports of financial condition at any time from the owner or operator in addition to those specified in paragraph (e)(3) of this section. If the Regional Administrator finds, on the basis of such reports or other information, that the owner or operator no longer meets the requirements of paragraph (e)(1) of this section, the owner or operator must provide alternate financial assurance as specified in this section within 30 days after notification of such a finding.

(8) The Regional Administrator may disallow use of this test on the basis of qualifications in the opinion expressed by the independent certified public accountant in his report on examination of the owner's or operator's financial statements (see paragraph (e)(3)(ii) of this section). An adverse opinion or a disclaimer of opinion will be cause for disallowance. The Regional Administrator will evaluate other qualifications on an individual basis. The owner or operator must provide alternate financial assurance as specified in this section within 30 days after notification of the disallowance.

(9) During the period of post-closure care, the Regional Administrator may approve a decrease in the current post-closure cost estimate for which this test demonstrates financial assurance if the owner or operator demonstrates to the Regional Administrator that the amount of the cost estimate exceeds the remaining cost of post-closure care.

(10) The owner or operator is no longer required to submit the items specified in paragraph (e)(3) of this section when:

(i) An owner or operator substitutes alternate financial assurance as specified in this section; or

(ii) The Regional Administrator releases the owner or operator from the requirements of this section in accordance with § 265.145(h).

(11) An owner or operator may meet the requirements of this section by obtaining a written guarantee, hereafter referred to as "corporate guarantee." The guarantor must be the parent corporation of the owner or operator. The guarantor must meet the requirements for owners or operators in paragraphs (e)(1) through (9) of this section and must comply with the terms of the corporate guarantee. The wording of the corporate guarantee must be identical to the wording specified in § 264.151(h). The corporate guarantee must accompany the items sent to the Regional Administrator as specified in paragraph (e)(3) of this section. The terms of the corporate guarantee must provide that:

(i) If the owner or operator fails to perform post-closure care of a facility covered by the corporate guarantee in accordance with the post-closure plan and other interim status requirements whenever required to do so, the guarantor will do so or establish a trust fund as specified in § 265.145(a) in the name of the owner or operator.

(ii) The corporate guarantee will remain in force unless the guarantor sends notice of cancellation by certified mail to the owner or operator and to the Regional Administrator. Cancellation may not occur, however, during the 120 days beginning on the date of receipt of the notice of cancellation by both the owner or operator and the Regional Administrator, as evidenced by the return receipts.

(iii) If the owner or operator fails to provide alternate financial assurance as specified in this section and obtain the written approval of such alternate assurance from the Regional Administrator within 90 days after receipt by

both the owner or operator and the Regional Administrator of a notice of cancellation of the corporate guarantee from the guarantor, the guarantor will provide such alternate financial assurance in the name of the owner or operator.

(f) *Use of multiple financial mechanisms.* An owner or operator may satisfy the requirements of this section by establishing more than one financial mechanism per facility. These mechanisms are limited to trust funds, surety bonds, letters of credit, and insurance. The mechanisms must be as specified in paragraphs (a) through (d), respectively, of this section, except that it is the combination of mechanisms, rather than the single mechanism, which must provide financial assurance for an amount at least equal to the current post-closure cost estimate. If an owner or operator uses a trust fund in combination with a surety bond or a letter of credit, he may use the trust fund as the standby trust fund for the other mechanisms. A single standby trust fund may be established for two or more mechanisms. The Regional Administrator may use any or all of the mechanisms to provide for post-closure care of the facility.

(g) *Use of a financial mechanism for multiple facilities.* An owner or operator may use a financial assurance mechanism specified in this section to meet the requirements of this section for more than one facility. Evidence of financial assurance submitted to the Regional Administrator must include a list showing, for each facility, the EPA Identification Number, name, address, and the amount of funds for post-closure care assured by the mechanism. If the facilities covered by the mechanism are in more than one Region, identical evidence of financial assurance must be submitted to and maintained with the Regional Administrators of all such Regions. The amount of funds available through the mechanism must be no less than the sum of funds that would be available if a separate mechanism had been established and maintained for each facility. In directing funds available through the mechanism for post-closure care of any of the facilities covered by the mechanism, the Regional Administrator may direct only the amount of funds designated for that facility, unless the owner or operator agrees to the use of additional funds available under the mechanism.

(h) *Release of the owner or operator from the requirements of this section.* Within 60 days after receiving certifications from the owner or operator and an independent registered professional engineer that the post-closure care period has been completed in accordance with the approved post-closure plan, the Regional Administrator will notify the owner or operator in writing that he is no longer required by this section to maintain financial assurance for post-closure care of that unit, unless the Regional Administrator has reason to believe that post-closure care has not been in accordance with the approved post-closure plan. The Regional Administrator will provide the owner or operator a detailed written statement of any such reason to believe that post-closure care has not been in accordance with the approved post-closure plan.

[47 FR 15064, Apr. 7, 1982, as amended at 51 FR 16457, May 2, 1986]

§ 265.146 Use of a mechanism for financial assurance of both closure and post-closure care.

An owner or operator may satisfy the requirements for financial assurance for both closure and post-closure care for one or more facilities by using a trust fund, surety bond, letter of credit, insurance, financial test, or corporate guarantee that meets the specifications for the mechanism in both §§ 265.143 and 265.145. The amount of funds available through the mechanism must be no less than the sum of funds that would be available if a separate mechanism had been established and maintained for financial assurance of closure and of post-closure care.

§ 265.147 Liability requirements.

(a) *Coverage for sudden accidental occurrences.* By the effective date of these regulations, an owner or operator of a hazardous waste treatment, storage, or disposal facility, or a group

of such facilities, must demonstrate financial responsibility for bodily injury and property damage to third parties caused by sudden accidental occurrences arising from operations of the facility or group of facilities. The owner or operator must have and maintain liability coverage for sudden accidental occurrences in the amount of at least $1 million per occurrence with an annual aggregate of at least $2 million, exclusive of legal defense costs. This liability coverage may be demonstrated in one of three ways, as specified in paragraphs (a)(1), (2), and (3) of this section:

(1) An owner or operator may demonstrate the required liability coverage by having liability insurance as specified in this paragraph.

(i) Each insurance policy must be amended by attachment of the Hazardous Waste Facility Liability Endorsement or evidenced by a Certificate of Liability Insurance. The wording of the endorsement must be identical to the wording specified in § 264.151(i). The wording of the certificate of insurance must be identical to the wording specified in § 264.151(j). The owner or operator must submit a signed duplicate original of the endorsement or the certificate of insurance to the Regional Administrator, or Regional Administrator if the facilities are located in more than one Region. If requested by a Regional Administrator, the owner or operator must provide a signed duplicate original of the insurance policy.

(ii) Each insurance policy must be issued by an insurer which, at a minimum, is licensed to transact the business of insurance, or eligible to provide insurance as an excess or surplus lines insurer, in one or more States.

(2) An owner or operator may meet the requirements of this section by passing a financial test or using the corporate guarantee for liability coverage as specified in paragraph (g) of this section.

(3) An owner or operator may demonstrate the required liability coverage through use of the financial test, insurance, the corporate guarantee, a combination of the financial test and insurance, or a combination of the corporate guarantee and insurance. The amounts of coverage demonstrated must total at least the minimum amounts required by this paragraph.

(b) *Coverage for nonsudden accidental occurrences.* An owner or operator of a surface impoundment, landfill, or land treatment facility which is used to manage hazardous waste, or a group of such facilities, must demonstrate financial responsibility for bodily damage and property damage to third parties caused by nonsudden accidental occurrences arising from operations of the facility or group of facilities. The owner or operator must have and maintain liability coverage for nonsudden accidental occurrences in the amount of at least $3 million per occurrence with an annual aggregate of at least $6 million, exclusive of legal defense costs. This liability coverage may be demonstrated in one of three ways, as specified in paragraphs (b)(1), (2), and (3) of this section:

(1) An owner or operator may demonstrate the required liability coverage by having liability insurance as specified in this paragraph.

(i) Each insurance policy must be amended by attachment of the Hazardous Waste Facility Liability Endorsement or evidenced by a Certificate of Liability Insurance. The wording of the endorsement must be identical to the wording specified in § 264.151(i). The wording of the certificate of insurance must be identical to the wording specified in § 264.151(j). The owner or operator must submit a signed duplicate original of the endorsement or the certificate of insurance to the Regional Administrator, or Regional Administrators if the facilities are located in more than one Region. If requested by a Regional Administrator, the owner or operator must provide a signed duplicate original of the insurance policy.

(ii) Each insurance policy must be issued by an insurer which, at a minimum, is licensed to transact the business of insurance, or eligible to provide insurance as an excess or surplus lines insurer, in one or more States.

(2) An owner or operator may meet the requirements of this section by passing a financial test or using the corporate guarantee for liability coverage as specified in paragraphs (f) and (g) of this section.

(3) An owner or operator may demonstrate the required liability coverage through use of the financial test, insurance, the corporate guarantee, a combination of the financial test and insurance, or a combination of the corporate guarantee and insurance. The amounts of coverage demonstrated must total at least the minimum amounts required by this paragraph.

(4) The required liability coverage for nonsudden accidental occurrences must be demonstrated by the dates listed below. The total sales or revenues of the owner or operator in all lines of business, in the fiscal year preceding the effective date of these regulations, will determine which of the dates applies. If the owner and operator of a facility are two different parties, or if there is more than one owner or operator, the sales or revenues of the owner or operator with the largest sales or revenues will determine the date by which the coverage must be demonstrated. The dates are as follows:

(i) For an owner or operator with sales or revenues totalling $10 million or more, 6 months after the effective date of these regulations.

(ii) For an owner or operator with sales or revenues greater than $5 million but less than $10 million, 18 months after the effective date of these regulations.

(iii) All other owners or operators, 30 months after the effective date of these regulations.

(5) By the date 6 months after the effective date of these regulations an owner or operator who is within either of the last two categories (paragraph (b)(4)(ii) or (iii) of this section) must, unless he has demonstrated liability coverage for nonsudden accidental occurrences, send a letter to the Regional Administrator stating the date by which he plans to establish such coverage.

(c) *Request for variance.* If an owner or operator can demonstrate to the satisfaction of the Regional Administrator that the levels of financial responsibility required by paragraph (a) or (b) of this section are not consistent with the degree and duration of risk associated with treatment, storage, or disposal at the facility or group of facilities, the owner or operator may obtain a variance from the Regional Administrator. The request for a variance must be submitted in writing to the Regional Administrator. If granted, the variance will take the form of an adjusted level of required liability coverage, such level to be based on the Regional Administrator's assessment of the degree and duration of risk associated with the ownership or operation of the facility or group of facilities. The Regional Administrator may require an owner or operator who requests a variance to provide such technical and engineering information as is deemed necessary by the Regional Administrator to determine a level of financial responsibility other than that required by paragraph (a) or (b) of this section. The Regional Administrator will process a variance request as if it were a permit modification request under § 270.41(a)(5) of this chapter and subject to the procedures of § 124.5 of this chapter. Notwithstanding any other provision, the Regional Administrator may hold a public hearing at his discretion or whenever he finds, on the basis of requests for a public hearing, a significant degree of pubic interest in a tentative decision to grant a variance.

(d) *Adjustments by the Regional Administrator.* If the Regional Administrator determines that the levels of financial responsibility required by paragraph (a) or (b) of this section are not consistent with the degree and duration of risk associated with treatment, storage, or disposal at the facility or group of facilities, the Regional Administrator may adjust the level of financial responsibility required under paragraph (a) or (b) of this section as may be necessary to protect human health and the environment. This adjusted level will be based on the Regional Administrator's assessment of the degree and duration of risk associated with the ownership or operation of the facility or group of facilities. In addition, if the Regional Administrator determines that there is a significant risk to human health and the environment from nonsudden accidental occurrences resulting from the oper-

ations of a facility that is not a surface impoundment, landfill, or land treatment facility, he may require that an owner or operator of the facility comply with paragraph (b) of this section. An owner or operator must furnish to the Regional Administrator, within a reasonable time, any information which the Regional Administrator requests to determine whether cause exists for such adjustments of level or type of coverage. The Regional Administrator will process an adjustment of the level of required coverage as if it were a permit modification under § 270.41(a)(5) of this chapter and subject to the procedures of § 124.5 of this chapter. Notwithstanding any other provision, the Regional Administrator may hold a public hearing at his discretion or whenever he finds, on the basis of requests for a public hearing, a significant degree of public interest in a tentative decision to adjust the level or type of required coverage.

(e) *Period of coverage.* Within 60 days after receiving certifications from the owner or operator and an independent registered professional engineer that final closure has been completed in accordance with the approved closure plan, the Regional Administrator will notify the owner or operator in writing that he is no longer required by this section to maintain liability coverage for that facility, unless the Regional Administrator has reason to believe that closure has not been in accordance with the approved closure plan.

(f) *Financial test for liability coverage.* (1) An owner or operator may satisfy the requirements of this section by demonstrating that he passes a financial test as specified in this paragraph. To pass this test the owner or operator must meet the criteria of paragraph (f)(1)(i) or (ii) of this section:

(i) The owner or operator must have:

(A) Net working capital and tangible net worth each at least six times the amount of liability coverage to be demonstrated by this test; and

(B) Tangible net worth of at least $10 million; and

(C) Assets in the United States amounting to either: (*1*) At least 90 percent of his total assets; or (*2*) at least six times the amount of liability coverage to be demonstrated by this test.

(ii) The owner or operator must have:

(A) A current rating for his most recent bond issuance of AAA, AA, A, or BBB as issued by Standard and Poor's, or Aaa, Aa, A, or Baa as issued by Moody's; and

(B) Tangible net worth of at least $10 million; and

(C) Tangible net worth at least six times the amount of liability coverage to be demonstrated by this test; and

(D) Assets in the United States amounting to either: (*1*) At least 90 percent of his total assets; or (*2*) at least six times the amount of liability coverage to be demonstrated by this test.

(2) The phrase "amount of liability coverage" as used in paragraph (f)(1) of this section refers to the annual aggregate amounts for which coverage is required under paragraphs (a) and (b) of this section.

(3) To demonstrate that he meets this test, the owner or operator must submit the following three items to the Regional Administrator:

(i) A letter signed by the owner's or operator's chief financial officer and worded as specified in § 264.151(g). If an owner or operator is using the financial test to demonstrate both assurance for closure or post-closure care, as specified by §§ 264.143(f), 264.145(f), 265.143(e), and 265.145(e), *and* liability coverage, he must submit the letter specified in § 264.151(g) to cover both forms of financial responsibility; a separate letter as specified in § 264.151(f) is not required.

(ii) A copy of the independent certified public accountant's report on examination of the owner's or operator's financial statements for the latest completed fiscal year.

(iii) A special report from the owner's or operator's independent certified public accountant to the owner or operator stating that:

(A) He has compared the data which the letter from the chief financial officer specifies as having been derived from the independently audited, year-end financial statements for the latest fiscal year with the amounts in such financial statements; and

(B) In connection with that procedure, no matters came to his attention which caused him to believe that the specified data should be adjusted.

(4) The owner or operator may obtain a one-time extension of the time allowed for submission of the documents specified in paragraph (f)(3) of this section if the fiscal year of the owner or operator ends during the 90 days prior to the effective date of these regulations and if the year-end financial statements for that fiscal year will be audited by an independent certified public accountant. The extension will end no later than 90 days after the end of the owner's or operator's fiscal year. To obtain the extension, the owner's or operator's chief financial officer must send, by the effective date of these regulations, a letter to the Regional Administrator of each Region in which the owner's or operator's facilities to be covered by the financial test are located. This letter from the chief financial officer must:

(i) Request the extension;

(ii) Certify that he has grounds to believe that the owner or operator meets the criteria of the financial test;

(iii) Specify for each facility to be covered by the test the EPA Identification Number, name, address, the amount of liability coverage and, when applicable, current closure and post-closure cost estimates to be covered by the test;

(iv) Specify the date ending the owner's or operator's last complete fiscal year before the effective date of these regulations;

(v) Specify the date, no later than 90 days after the end of such fiscal year, when he will submit the documents specified in paragraph (f)(3) of this section; and

(vi) Certify that the year-end financial statements of the owner or operator for such fiscal year will be audited by an independent certified public accountant.

(5) After the initial submission of items specified in paragraph (f)(3) of this section, the owner or operator must send updated information to the Regional Administrator within 90 days after the close of each succeeding fiscal year. This information must consist of all three items specified in paragraph (f)(3) of this section.

(6) If the owner or operator no longer meets the requirements of paragraph (f)(1) of this section, he must obtain insurance for the entire amount of required liability coverage as specified in this section. Evidence of insurance must be submitted to the Regional Administrator within 90 days after the end of the fiscal year for which the year-end financial data show that the owner or operator no longer meets the test requirements.

(7) The Regional Administrator may disallow use of this test on the basis of qualifications in the opinion expressed by the independent certified public accountant in his report on examination of the owner's or operator's financial statements (see paragraph (f)(3)(ii) of this section). An adverse opinion or a disclaimer of opinion will be cause for disallowance. The Regional Administrator will evaluate other qualifications on an individual basis. The owner or operator must provide evidence of insurance for the entire amount of required liability coverage as specified in this section within 30 days after notification of disallowance.

(g) Corporate guarantee for liability coverage. (1) Subject to paragraph (g)(2) of this section, an owner or operator may meet the requirements of this section by obtaining a written guarantee, hereinafter referred to as "corporate guarantee." The guarantor must be the parent corporation of the owner or operator. The guarantor must meet the requirements for owners or operators in paragraphs (f)(1) through (7) of this section. The wording of the corporate guarantee must be identical to the wording specified in § 264.151(h)(2). A certified copy of the corporate guarantee must accompany the items sent to the Regional Administrator as specified in paragraph (f)(3) of this section. The terms of the corporate guarantee must provide that:

(i) If the owner or operator fails to satisfy a judgment based on a determination of liability for bodily injury or property damage to third parties caused by sudden or nonsudden acci-

dental occurrences (or both as the case may be), arising from the operation of facilities covered by this corporate guarantee, or fails to pay an amount agreed to in settlement of claims arising from or alleged to arise from such injury or damage, the guarantor will do so up to the limits of coverage.

(ii) The corporate guarantee will remain in force unless the guarantor sends notice of cancellation by certified mail to the owner or operator and to the Regional Administrator(s). This guarantee may not be terminated unless and until the EPA Regional Administrator(s) approve(s) alternate liability coverage complying with § 264.147 and/or § 265.147.

(2)(i) In the case of corporations incorporated in the United States, a corporate guarantee may be used to satisfy the requirements of this section only if the Attorneys General or Insurance Commissioners of (A) the State in which the guarantor is incorporated, and (B) each State in which a facility covered by the guarantee is located have submitted a written statement to EPA that a corporate guarantee executed as described in this section and § 264.151(h)(2) is a legally valid and enforceable obligation in that State.

(ii) In the case of corporations incorporated outside the United States, a corporate guarantee may be used to satisfy the requirements of this section only if (A) the non-U.S. corporation has identified a registered agent for service of process in each State in which a facility covered by the guarantee is located and in the State in which it has its principal place of business, and if (B) the Attorney General or Insurance Commissioner of each State in which a facility covered by the guarantee is located and the State in which the guarantor corporation has its principal place of business, has submitted a written statement to EPA that a corporate guarantee executed as described in this section and § 264.151(h)(2) is a legally valid and enforceable obligation in that State.

(h) Notwithstanding any other provision of this part, an owner or operator using liability insurance to satisfy the requirements of this section may use, until October 16, 1982, a Hazardous Waste Facility Liability Endorsement or Certificate of Liability Insurance that does not certify that the insurer is licensed to transact the business of insurance, or eligible as an excess or surplus lines insurer, in one or more States.

(Approved by the Office of Management and Budget under control number 2000-0445, for paragraphs (a)(1)(i), (b)(1)(i), (b)(5), (c), (d), and (f) (3) through (6))

[47 FR 16558, Apr. 16, 1982, as amended at 47 FR 28627, July 1, 1982; 47 FR 30447, July 13, 1982; 48 FR 30115, June 30, 1983; 51 FR 16458, May 2, 1986; 51 FR 25355, July 11, 1986; 52 FR 44321, Nov. 18, 1987]

§ 265.148 Incapacity of owners or operators, guarantors, or financial institutions.

(a) An owner or operator must notify the Regional Administrator by certified mail of the commencement of a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code, naming the owner or operator as debtor, within 10 days after commencement of the proceeding. A guarantor of a corporate guarantee as specified in §§ 265.143(e) and 265.145(e) must make such a notification if he is named as debtor, as required under the terms of the corporate guarantee (§ 264.151(h)).

(b) An owner or operator who fulfills the requirements of § 265.143, § 265.145, or § 265.147 by obtaining a trust fund, surety bond, letter of credit, or insurance policy will be deemed to be without the required financial assurance or liability coverage in the event of bankruptcy of the trustee or issuing institution, or a suspension or revocation of the authority of the trustee institution to act as trustee or of the institution issuing the surety bond, letter of credit, or insurance policy to issue such instruments. The owner or operator must establish other financial assurance or liability coverage within 60 days after such an event.

§ 265.149 Use of State-required mechanisms.

(a) For a facility located in a State where EPA is administering the requirements of this subpart but where the State has hazardous waste regulations that include requirements for financial assurance of closure or post-closure care or liability coverage, an owner or operator may use State-required financial mechanisms to meet the requirements of § 265.143, § 265.145, or § 265.147 if the Regional Administrator determines that the State mechanisms are at least equivalent to the financial mechanisms specified in this subpart. The Regional Administrator will evaluate the equivalency of the mechanisms principally in terms of (1) certainty of the availability of funds for the required closure or post-closure care activities or liability coverage and (2) the amount of funds that will be made available. The Regional Administrator may also consider other factors as he deems appropriate. The owner or operator must submit to the Regional Administrator evidence of the establishment of the mechanism together with a letter requesting that the State-required mechanism be considered acceptable for meeting the requirements of this subpart. The submission must include the following information: The facility's EPA Identification Number, name, and address, and the amount of funds for closure or post-closure care or liability coverage assured by the mechanism. The Regional Administrator will notify the owner or operator of his determination regarding the mechanism's acceptability in lieu of financial mechanisms specified in this subpart. The Regional Administrator may require the owner or operator to submit additional information as is deemed necessary to make this determination. Pending this determination, the owner or operator will be deemed to be in compliance with the requirements of § 265.143, § 265.145, or § 265.147, as applicable.

(b) If a State-required mechanism is found acceptable as specified in paragraph (a) of this section except for the amount of funds available, the owner or operator may satisfy the requirements of this subpart by increasing the funds available through the State-required mechanism or using additional financial mechanisms as specified in this subpart. The amount of funds available through the State and Federal mechanisms must at least equal the amount required by this subpart.

§ 265.150 State assumption of responsibility.

(a) If a State either assumes legal responsibility for an owner's or operator's compliance with the closure, post-closure care, or liability requirements of this part or assures that funds will be available from State sources to cover those requirements, the owner or operator will be in compliance with the requirements of § 265.143, § 265.145, or § 265.147 if the Regional Administrator determines that the State's assumption of responsibility is at least equivalent to the financial mechanisms specified in this subpart. The Regional Administrator will evaluate the equivalency of State guarantees principally in terms of (1) certainty of the availability of funds for the required closure or post-closure care activities or liability coverage and (2) the amount of funds that will be made available. The Regional Administrator may also consider other factors as he deems appropriate. The owner or operator must submit to the Regional Administrator a letter from the State describing the nature of the State's assumption of responsibility together with a letter from the owner or operator requesting that the State's assumption of responsibility be considered acceptable for meeting the requirements of this subpart. The letter from the State must include, or have attached to it, the following information: The facility's EPA Identification Number, name, and address, and the amount of funds for closure or post-closure care or liability coverage that are guaranteed by the State. The Regional Administrator will notify the owner or operator of his determination regarding the acceptability of the State's guarantee in lieu of financial mechanisms specified in this subpart. The Regional Administrator may require the owner or operator to submit additional information as is deemed necessary to make this determination. Pending this determination, the owner or operator will be deemed to be in compliance with the requirements of

§§ 265.143, § 265.145, or § 265.147, as applicable.

(b) If a State's assumption of responsibility is found acceptable as specified in paragraph (a) of this section except for the amount of funds available, the owner or operator may satisfy the requirements of this subpart by use of both the State's assurance *and* additional financial mechanisms as specified in this subpart. The amount of funds available through the State and Federal mechanisms must at least equal the amount required by this subpart.

Subpart I—Use and Management of Containers

§ 265.170 Applicability.

The regulations in this subpart apply to owners and operators of all hazardous waste facilities that store containers of hazardous waste, except as § 265.1 provides otherwise.

§ 265.171 Condition of containers.

If a container holding hazardous waste is not in good condition, or if it begins to leak, the owner or operator must transfer the hazardous waste from this container to a container that is in good condition, or manage the waste in some other way that complies with the requirements of this part.

§ 265.172 Compatibility of waste with container.

The owner or operator must use a container made of or lined with materials which will not react with, and are otherwise compatible with, the hazardous waste to be stored, so that the ability of the container to contain the waste is not impaired.

§ 265.173 Management of containers.

(a) A container holding hazardous waste must always be closed during storage, except when it is necessary to add or remove waste.

(b) A container holding hazardous waste must not be opened, handled, or stored in a manner which may rupture the container or cause it to leak.

[*Comment:* Re-use of containers in transportation is governed by U.S. Department of Transportation regulations, including those set forth in 49 CFR 173.28.]

[45 FR 33232, May 19, 1980, as amended at 45 FR 78529, Nov. 25, 1980]

§ 265.174 Inspections.

The owner or operator must inspect areas where containers are stored, at least weekly, looking for leaks and for deterioration caused by corrosion or other factors.

[*Comment:* See § 265.171 for remedial action required if deterioration or leaks are detected.]

§ 265.175 [Reserved]

§ 265.176 Special requirements for ignitable or reactive waste.

Containers holding ignitable or reactive waste must be located at least 15 meters (50 feet) from the facility's property line.

[*Comment:* See § 265.17(a) for additional requirements.]

§ 265.177 Special requirements for incompatible wastes.

(a) Incompatible wastes, or incompatible wastes and materials, (see Appendix V for examples) must not be placed in the same container, unless § 265.17(b) is complied with.

(b) Hazardous waste must not be placed in an unwashed container that previously held an incompatible waste or material (see Appendix V for examples), unless § 265.17(b) is complied with.

(c) A storage container holding a hazardous waste that is incompatible with any waste or other materials stored nearby in other containers, piles, open tanks, or surface impoundments must be separated from the other materials or protected from them by means of a dike, berm, wall, or other device.

[*Comment:* The purpose of this is to prevent fires, explosions, gaseous emissions, leaching, or other discharge of hazardous waste or hazardous waste constituents which could result from the mixing of incompatible wastes or materials if containers break or leak.]

Subpart J—Tank Systems

SOURCE: 51 FR 25479, July 14, 1986, unless otherwise noted.

§ 265.190 Applicability.

The regulations of this subpart apply to owners or operators of facilities that use tank systems for storing or treating hazardous waste, except as otherwise provided in paragraphs (a) and (b) of this section or in § 265.1 of this part.

(a) Tanks that are used to store or treat hazardous waste containing no free liquids and that are situated inside a building with an impermeable floor are exempted from the requirements of § 265.193 of this subpart. To demonstrate the absence or presence of free liquids in the stored/treated waste, EPA Method 9095 (Paint Filter Liquids Test) as described in "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods" (EPA Publication No. SW-846) must be used.

(b) Tanks, including sumps, as defined in § 260.10, that serve as part of a secondary containment system to collect or contain releases of hazardous wastes are exempted from the requirements in § 265.193.

(Information collection requirement contained in paragraph (a) was approved by the Office of Management and Budget under control number 2050-0050)

§ 265.191 Assessment of existing tank system's integrity.

(a) For each existing tank system that does not have secondary containment meeting the requirements of § 265.193, the owner or operator must determine that the tank system is not leaking or is unfit for use. Except as provided in paragraph (c) of this section, the owner or operator must obtain and keep on file at the facility a written assessment reviewed and certified by an independent, qualified, registered professional engineer in accordance with § 270.11(d), that attests to the tank system's integrity by January 12, 1988.

(b) This assessment must determine that the tank system is adequately designed and has sufficient structural strength and compatibility with the waste(s) to be stored or treated to ensure that it will not collapse, rupture, or fail. At a minimum, this assessment must consider the following:

(1) Design standard(s), if available, according to which the tank and ancillary equipment were constructed;

(2) Hazardous characteristics of the waste(s) that have been or will be handled;

(3) Existing corrosion protection measures;

(4) Documented age of the tank system, if available, (otherwise, an estimate of the age); and

(5) Results of a leak test, internal inspection, or other tank integrity examination such that:

(i) For non-enterable underground tanks, this assessment must consist of a leak test that is capable of taking into account the effects of temperature variations, tank end deflection, vapor pockets, and high water table effects,

(ii) For other than non-enterable underground tanks and for ancillary equipment, this assessment must be either a leak test, as described above, or an internal inspection and/or other tank integrity examination certified by an independent, qualified, registered professional engineer in accordance with § 270.11(d) that addresses cracks, leaks, corrosion, and erosion.

[NOTE: The practices described in the American Petroleum Institute (API) Publication, Guide for Inspection of Refinery Equipment, Chapter XIII, "Atmospheric and Low-Pressure Storage Tanks," 4th edition, 1981, may be used, where applicable, as guidelines in conducting the integrity examination of an other than non-enterable underground tank system.]

(c) Tank systems that store or treat materials that become hazardous wastes subsequent to July 14, 1986 must conduct this assessment within 12 months after the date that the waste becomes a hazardous waste.

(d) If, as a result of the assessment conducted in accordance with paragraph (a) of this section, a tank system is found to be leaking or unfit for use, the owner or operator must comply with the requirements of § 265.196.

(Information collection requirements contained in paragraphs (a)-(d) were approved

by the Office of Management and Budget under control number 2050-0050)

§ 265.192 Design and installation of new tank systems or components.

(a) Owners or operators of new tank systems or components must ensure that the foundation, structural support, seams, connections, and pressure controls (if applicable) are adequately designed and that the tank system has sufficient structural strength, compatibility with the waste(s) to be stored or treated, and corrosion protection so that it will not collapse, rupture, or fail. The owner or operator must obtain a written assessment reviewed and certified by an independent, qualified, registered professional engineer in accordance with § 270.11(d) attesting that the system has sufficient structural integrity and is acceptable for the storing and treating of hazardous waste. This assessment must include, at a minimum, the following information:

(1) Design standard(s) according to which the tank(s) and ancillary equipment is or will be constructed.

(2) Hazardous characteristics of the waste(s) to be handled.

(3) For new tank systems or components in which the external shell of a metal tank or any external metal component of the tank system is or will be in contact with the soil or with water, a determination by a corrosion expert of:

(i) Factors affecting the potential for corrosion, including but not limited to:

(A) Soil moisture content;

(B) Soil pH;

(C) Soil sulfides level;

(D) Soil resistivity;

(E) Structure to soil potential;

(F) Influence of nearby underground metal structures (e.g., piping);

(G) Stray electric current; and,

(H) Existing corrosion-protection measures (e.g., coating, cathodic protection), and

(ii) The type and degree of external corrosion protection that are needed to ensure the integrity of the tank system during the use of the tank system or component, consisting of one or more of the following:

(A) Corrosion-resistant materials of construction such as special alloys or fiberglass-reinforced plastic;

(B) Corrosion-resistant coating (such as epoxy or fiberglass) with cathodic protection (e.g., impressed current or sacrificial anodes); and

(C) Electrical isolation devices such as insulating joints and flanges.

NOTE: The practices described in the National Association of Corrosion Engineers (NACE) standard, "Recommended Practice (RP-02-85)—Control of External Corrosion on Metallic Buried, Partially Buried, or Submerged Liquid Storage Systems," and the American Petroleum Institute (API) Publication 1632, "Cathodic Protection of Underground Petroleum Storage Tanks and Piping Systems," may be used, where applicable, as guidelines in providing corrosion protection for tank systems.

(4) For underground tank system components that are likely to be affected by vehicular traffic, a determination of design or operational measures that will protect the tank system against potential damage; and

(5) Design considerations to ensure that:

(i) Tank foundations will maintain the load of a full tank;

(ii) Tank systems will be anchored to prevent flotation or dislodgement where the tank system is placed in a saturated zone, or is located within a seismic fault zone; and

(iii) Tank systems will withstand the effects of frost heave.

(b) The owner or operator of a new tank system must ensure that proper handling procedures are adhered to in order to prevent damage to the system during installation. Prior to covering, enclosing, or placing a new tank system or component in use, an independent, qualified installation inspector or an independent, qualified, registered professional engineer, either of whom is trained and experienced in the proper installation of tank systems, must inspect the system or component for the presence of any of the following items:

(1) Weld breaks;

(2) Punctures;

(3) Scrapes of protective coatings;

(4) Cracks;

(5) Corrosion;

(6) Other structural damage or inadequate construction or installation.

All discrepancies must be remedied before the tank system is covered, enclosed, or placed in use.

(c) New tank systems or components and piping that are placed underground and that are backfilled must be provided with a backfill material that is a noncorrosive, porous, homogeneous substance and that is carefully installed so that the backfill is placed completely around the tank and compacted to ensure that the tank and piping are fully and uniformly supported.

(d) All new tanks and ancillary equipment must be tested for tightness prior to being covered, enclosed or placed in use. If a tank system is found not to be tight, all repairs necessary to remedy the leak(s) in the system must be performed prior to the tank system being covered, enclosed, or placed in use.

(e) Ancillary equipment must be supported and protected against physical damage and excessive stress due to settlement, vibration, expansion or contraction.

NOTE: The piping system installation procedures described in American Petroleum Institute (API) Publication 1615 (November 1979), "Installation of Underground Petroleum Storage Systems," or ANSI Standard B31.3, "Petroleum Refinery System," may be used, where applicable, as guidelines for proper installation of piping systems.

(f) The owner or operator must provide the type and degree of corrosion protection necessary, based on the information provided under paragraph (a)(3) of this section, to ensure the integrity of the tank system during use of the tank system. The installation of a corrosion protection system that is field fabricated must be supervised by an independent corrosion expert to ensure proper installation.

(g) The owner or operator must obtain and keep on file at the facility written statements by those persons required to certify the design of the tank system and supervise the installation of the tank system in accordance with the requirements of paragraphs (b) through (f) of this section to attest that the tank system was properly designed and installed and that repairs, pursuant to paragraphs (b) and (d) of this section were performed. These written statements must also include the certification statement as required in § 270.11(d) of this chapter.

(Information collection requirements contained in paragraphs (a) and (g) were approved by the Office of Management and Budget under control number 2050-0050)

[51 FR 25479, July 14, 1986; 51 FR 29430, Aug. 15, 1986]

§ 265.193 Containment and detection of releases.

(a) In order to prevent the release of hazardous waste or hazardous constituents to the environment, secondary containment that meets the requirements of this section must be provided (except as provided in paragraphs (f) and (g) of this section):

(1) For all new tank systems or components, prior to their being put into service;

(2) For all existing tanks used to store or treat EPA Hazardous Waste Nos. F020, F021, F022, F023, F026, and F027, within two years after January 12, 1987;

(3) For those existing tank systems of known and documentable age, within two years after January 12, 1987, or when the tank systems have reached 15 years of age, whichever comes later;

(4) For those existing tank system for which the age cannot be documented, within eight years of January 12, 1987; but if the age of the facility is greater than seven years, secondary containment must be provided by the time the facility reaches 15 years of age, or within two years of January 12, 1987, whichever comes later; and

(5) For tank systems that store or treat materials that become hazardous wastes subsequent to January 12, 1987, within the time intervals required in paragraphs (a)(1) through (a)(4) of this section, except that the date that a material becomes a hazardous waste must be used in place of January 12, 1987.

(b) Secondary containment systems must be:

(1) Designed, installed, and operated to prevent any migration of wastes or accumulated liquid out of the system

to the soil, ground water, or surface water at any time during the use of the tank system; and

(2) Capable of detecting and collecting releases and accumulated liquids until the collected material is removed.

(c) To meet the requirements of paragraph (b) of this section, secondary containment systems must be at a minimum:

(1) Constructed of or lined with materials that are compatible with the waste(s) to be placed in the tank system and must have sufficient strength and thickness to prevent failure due to pressure gradients (including static head and external hydrological forces), physical contact with the waste to which they are exposed, climatic conditions, the stress of installation, and the stress of daily operation (including stresses from nearby vehicular traffic);

(2) Placed on a foundation or base capable of providing support to the secondary containment system and resistance to pressure gradients above and below the system and capable of preventing failure due to settlement, compression, or uplift;

(3) Provided with a leak detection system that is designed and operated so that it will detect the failure of either the primary and secondary containment structure or any release of hazardous waste or accumulated liquid in the secondary containment system within 24 hours, or at the earliest practicable time if the existing detection technology or site conditions will not allow detection of a release within 24 hours;

(4) Sloped or otherwise designed or operated to drain and remove liquids resulting from leaks, spills, or precipitation. Spilled or leaked waste and accumulated precipitation must be removed from the secondary containment system within 24 hours, or in as timely a manner as is possible to prevent harm to human health or the environment, if removal of the released waste or accumulated precipitation cannot be accomplished within 24 hours.

NOTE: If the collected material is a hazardous waste under Part 261 of this chapter, it is subject to management as a hazardous waste in accordance with all applicable requirements of Parts 262 through 265 of this chapter. If the collected material is discharged through a point source to waters of the United States, it is subject to the requirements of sections 301, 304, and 402 of the Clean Water Act, as amended. If discharged to Publicly Owned Treatment Works (POTWs), it is subject to the requirements of section 307 of the Clear Water Act, as amended. If the collected material is released to the environment, it may be subject to the reporting requirements of 40 CFR Part 302.

(d) Secondary containment for tanks must include one or more of the following devices:

(1) A liner (external to the tank);

(2) A vault;

(3) A double-walled tank; or

(4) An equivalent device as approved by the Regional Administrator.

(e) In addition to the requirements of paragraphs (b), (c), and (d) of this section, secondary containment systems must satisfy the following requirements:

(1) External liner systems must be:

(i) Designed or operated to contain 100 percent of the capacity of the largest tank within its boundary;

(ii) Designed or operated to prevent run-on or infiltration of precipitation into the secondary containment system unless the collection system has sufficient excess capacity to contain run-on or infiltration. Such additional capacity must be sufficient to contain precipitation from a 25-year, 24-hour rainfall event;

(iii) Free of cracks or gaps; and

(iv) Designed and installed to completely surround the tank and to cover all surrounding earth likely to come into contact with the waste if released from the tank(s) (i.e., capable of preventing lateral as well as vertical migration of the waste).

(2) Vault systems must be:

(i) Designed or operated to contain 100 percent of the capacity of the largest tank within its boundary;

(ii) Designed or operated to prevent run-on or infiltration of precipitation into the secondary containment system unless the collection system has sufficient excess capacity to contain run-on or infiltration. Such additional capacity must be sufficient to

contain precipitation from a 25-year, 24-hour rainfall event;

(iii) Constructed with chemical-resistant water stops in place at all joints (if any);

(iv) Provided with an impermeable interior coating or lining that is compatible with the stored waste and that will prevent migration of waste into the concrete;

(v) Provided with a means to protect against the formation of and ignition of vapors within the vault, if the waste being stored or treated:

(A) Meets the definition of ignitable waste under § 262.21 of this chapter, or

(B) Meets the definition of reactive waste under § 262.21 of this chapter and may form an ignitable or explosive vapor; and

(vi) Provided with an exterior moisture barrier or be otherwise designed or operated to prevent migration of moisture into the vault if the vault is subject to hydraulic pressure.

(3) Double-walled tanks must be:

(i) Designed as an integral structure (i.e., an inner tank within an outer shell) so that any release from the inner tank is contained by the outer shell;

(ii) Protected, if constructed of metal, from both corrosion of the primary tank interior and the external surface of the outer shell; and

(iii) Provided with a built-in, continuous leak detection system capable of detecting a release within 24 hours or at the earliest practicable time, if the owner or operator can demonstrate to the Regional Administrator, and the Regional Administrator concurs, that the existing leak detection technology or site conditions will not allow detection of a release within 24 hours.

NOTE: The provisions outlined in the Steel Tank Institute's (STI) "Standard for Dual Wall Underground Steel Storage Tank" may be used as guidelines for aspects of the design of underground steel double-walled tanks.

(f) Ancillary equipment must be provided with full secondary containment (e.g., trench, jacketing, double-walled piping) that meets the requirements of paragraphs (b) and (c) of this section except for:

(1) Aboveground piping (exclusive of flanges, joints, valves, and connections) that are visually inspected for leaks on a daily basis;

(2) Welded flanges, welded joints, and welded connections that are visually inspected for leaks on a daily basis;

(3) Sealless or magnetic coupling pumps that are visually inspected for leaks on a daily basis; and

(4) Pressurized aboveground piping systems with automatic shut-off devices (e.g., excess flow check valves, flow metering shutdown devices, loss of pressure actuated shut-off devices) that are visually inspected for leaks on a daily basis.

(g) The owner or operator may obtain a variance from the requirements of this Section if the Regional Administrator finds, as a result of a demonstration by the owner or operator, either: that alternative design and operating practices, together with location characteristics, will prevent the migration of hazardous waste or hazardous constituents into the ground water *or* surface water at least as effectively as secondary containment during the active life of the tank system *or* that in the event of a release that does migrate to ground water or surface water, no substantial present or potential hazard will be posed to human health or the environment. New underground tank systems may not, per a demonstration in accordance with paragraph (g)(2) of this section, be exempted from the secondary containment requirements of this section. Application for a variance as allowed in paragraph (g) of this section does not waive compliance with the requirements of this subpart for new tank systems. (1) In deciding whether to grant a variance based on a demonstration of equivalent protection of ground water and surface water, the Regional Administrator will consider:

(i) The nature and quantity of the waste;

(ii) The proposed alternate design and operation;

(iii) The hydrogeologic setting of the facility, including the thickness of soils between the tank system and ground water; and

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(iv) All other factors that would influence the quality and mobility of the hazardous constituents and the potential for them to migrate to ground water or surface water.

(2) In deciding whether to grant a variance, based on a demonstration of no substantial present or potential hazard, the Regional Administrator will consider:

(i) The potential adverse effects on ground water, surface water, and land quality taking into account:

(A) The physical and chemical characteristics of the waste in the tank system, including its potential for migration,

(B) The hydrogeological characteristics of the facility and surrounding land,

(C) The potential for health risks caused by human exposure to waste constituents,

(D) The potential for damage to wildlife, crops, vegetation, and physical structures caused by exposure to waste constituents, and

(E) The persistence and permanence of the potential adverse effects;

(ii) The potential adverse effects of a release on ground-water quality, taking into account:

(A) The quantity and quality of ground water and the direction of ground-water flow,

(B) The proximity and withdrawal rates of water in the area,

(C) The current and future uses of ground water in the area, and

(D) The existing quality of ground water, including other sources of contamination and their cumulative impact on the ground-water quality;

(iii) The potential adverse effects of a release on surface water quality, taking into account:

(A) The quantity and quality of ground water and the direction of ground-water flow,

(B) The patterns of rainfall in the region,

(C) The proximity of the tank system to surface waters,

(D) The current and future uses of surface waters in the area and any water quality standards established for those surface waters, and

(E) The existing quality of surface water, including other sources of contamination and the cumulative impact on surface-water quality; and

(iv) The potential adverse effects of a release on the land surrounding the tank system, taking into account:

(A) The patterns of rainfall in the region, and

(B) The current and future uses of the surrounding land.

(3) The owner or operator of a tank system, for which a variance from secondary containment had been granted in accordance with the requirements of paragraph (g)(1) of this section, at which a release of hazardous waste has occurred from the primary tank system but has not migrated beyond the zone of engineering control (as established in the variance), must:

(i) Comply with the requirements of § 265.196, except paragraph (d); and

(ii) Decontaminate or remove contaminated soil to the extent necessary to:

(A) Enable the tank system, for which the variance was granted, to resume operation with the capability for the detection of and response to releases at least equivalent to the capability it had prior to the release, and

(B) Prevent the migration of hazardous waste or hazardous constituents to ground water or surface water; and

(iii) If contaminated soil cannot be removed or decontaminated in accordance with paragraph (g)(3)(ii) of this section, comply with the requirements of § 264.197(b);

(4) The owner or operator of a tank system, for which a variance from secondary containment had been granted in accordance with the requirements of paragraph (g)(1) of this section, at which a release of hazardous waste has occurred from the primary tank system and has migrated beyond the zone of engineering control (as established in the variance), must:

(i) Comply with the requirements of § 265.196(a), (b), (c), and (d); and

(ii) Prevent the migration of hazardous waste or hazardous constituents to ground water or surface water, if possible, and decontaminate or remove contaminated soil. If contaminated soil cannot be decontaminated or removed, or if ground water has been contaminated, the owner or operator must comply with the requirements of § 265.197(b);

(iii) If repairing, replacing, or reinstalling the tank system, provide secondary containment in accordance with the requirements of paragraphs (a) through (f) of this section or reapply for a variance from secondary containment and meet the requirements for new tank systems in § 265.192 if the tank system is replaced. The owner or operator must comply with these requirements even if contaminated soil can be decontaminated or removed, and ground water or surface water has not been contaminated.

(h) The following procedures must be followed in order to request a variance from secondary containment:

(1) The Regional Administrator must be notified in writing by the owner or operator that he intends to conduct and submit a demonstration for a variance from secondary containment as allowed in paragraph (g) of this section according to the following schedule:

(i) For existing tank systems, at least 24 months prior to the date that secondary containment must be provided in accordance with paragraph (a) of this section; and

(ii) For new tank systems, at least 30 days prior to entering into a contract for installation of the tank system.

(2) As part of the notification, the owner or operator must also submit to the Regional Administrator a description of the steps necessary to conduct the demonstration and a timetable for completing each of the steps. The demonstration must address each of the factors listed in paragraph (g)(1) or paragraph (g)(2) of this section.

(3) The demonstration for a variance must be completed and submitted to the Regional Administrator within 180 days after notifying the Regional Administrator of intent to conduct the demonstration.

(4) The Regional Administrator will inform the public, through a newspaper notice, of the availability of the demonstration for a variance. The notice shall be placed in a daily or weekly major local newspaper of general circulation and shall provide at least 30 days from the date of the notice for the public to review and comment on the demonstration for a variance. The Regional Administrator also will hold a public hearing, in response to a request or at his own discretion, whenever such a hearing might clarify one or more issues concerning the demonstration for a variance. Public notice of the hearing will be given at least 30 days prior to the date of the hearing and may be given at the same time as notice of the opportunity for the public to review and comment on the demonstration. These two notices may be combined.

(5) The Regional Administrator will approve or disapprove the request for a variance within 90 days of receipt of the demonstration from the owner or operator and will notify in writing the owner or operator and each person who submitted written comments or requested notice of the variance decision. If the demonstration for a variance is incomplete or does not include sufficient information, the 90-day time period will begin when the Regional Administrator receives a complete demonstration, including all information necessary to make a final determination. If the public comment period in paragraph (h)(4) of this section is extended, the 90-day time period will be similarly extended.

(i) All tank systems, until such time as secondary containment meeting the requirements of this section is provided, must comply with the following:

(1) For non-enterable underground tanks, a leak test that meets the requirements of § 265.191(b)(5) must be conducted at least annually;

(2) For other than non-enterable underground tanks and for all ancillary equipment, an annual leak test, as described in paragraph (i)(1) of this section, or an internal inspection or other tank integrity examination by an independent, qualified, registered professional engineer that addresses cracks, leaks, corrosion, and erosion must be conducted at least annually. The owner or operator must remove the stored waste from the tank, if necessary, to allow the condition of all internal tank surfaces to be assessed.

NOTE: The practices described in the American Petroleum Institute (API) Publication Guide for Inspection of Refining

Equipment, Chapter XIII, "Atmospheric and Low Pressure Storage Tanks," 4th edition, 1981, may be used, when applicable, as guidelines for assessing the overall condition of the tank system.

(3) The owner or operator must maintain on file at the facility a record of the results of the assessments conducted in accordance with paragraphs (i)(1) through (i)(3) of this section.

(4) If a tank system or component is found to be leaking or unfit-for-use as a result of the leak test or assessment in paragraphs (i)(1) through (i)(3) of this section, the owner or operator must comply with the requirements of § 265.196.

(Information collection requirements contained in paragraphs (c)–(e) and (g)–(i) were approved by the Office of Management and Budget under control number 2050–0050)

[51 FR 25479, July 14, 1986; 51 FR 29430, Aug. 15. 1986]

§ 265.194 General operating requirements.

(a) Hazardous wastes or treatment reagents must not be placed in a tank system if they could cause the tank, its ancillary equipment, or the secondary containment system to rupture, leak, corrode, or otherwise fail.

(b) The owner or operator must use appropriate controls and practices to prevent spills and overflows from tank or secondary containment systems. These include at a minimum:

(1) Spill prevention controls (e.g , check valves, dry discount couplings);

(2) Overfill prevention controls (e.g , level sensing devices, high level alarms, automatic feed cutoff, or bypass to a standby tank); and

(3) Maintenance of sufficient freeboard in uncovered tanks to prevent overtopping by wave or wind action or by precipitation.

(c) The owner or operator must comply with the requirements of § 265.196 if a leak or spill occurs in the tank system.

(Information collection requirements contained in paragraphs (c) were approved by the Office of Management and Budget under control number 2050–0050)

§ 265.195 Inspections.

(a) The owner or operator must inspect, where present, at least once each operating day:

(1) Overfill/spill control equipment (e.g., waste-feed cutoff systems, bypass systems, and drainage systems) to ensure that it is in good working order;

(2) The aboveground portions of the tank system, if any, to detect corrosion or releases of waste;

(3) Data gathered from monitoring equipment and leak-detection equipment, (e.g., pressure and temperature gauges, monitoring wells) to ensure that the tank system is being operated according to its design; and

(4) The construction materials and the area immediately surrounding the externally accessible portion of the tank system including secondary containment structures (e.g., dikes) to detect erosion or signs of releases of hazardous waste (e.g., wet spots, dead vegetation);

NOTE: Section 265.15(c) requires the owner or operator to remedy any deterioration or malfunction he finds. Section 265.196 requires the owner or operator to notify the Regional Administrator within 24 hours of confirming a release. Also, 40 CFR Part 302 may require the owner or operator to notify the National Response Center of a release.

(b) The owner or operator must inspect cathodic protection systems, if present, according to, at a minimum, the following schedule to ensure that they are functioning properly:

(1) The proper operation of the cathodic protection system must be confirmed within six months after initial installation, and annually thereafter; and

(2) All sources of impressed current must be inspected and/or tested, as appropriate, at least bimonthly (i.e., every other month).

NOTE: The practices described in the National Association of Corrosion Engineers (NACE) standard, "Recommended Practice (RP-02-85)—Control of External Corrosion on Metallic Buried, Partially Buried, or Submerged Liquid Storage Systems," and the American Petroleum Institute (API) Publication 1632, "Cathodic Protection of Underground Petroleum Storage Tanks and Piping Systems," may be used, where applicable, as guidelines in maintaining and inspecting cathodic protection systems.

(c) The owner or operator must document in the operating record of the facility an inspection of those items in paragraphs (a) and (b) of this section.

(Information collection requirements contained in paragraphs (a)–(c) were approved by the Office of Management and Budget under control number 2050–0050)

§ 265.196 Response to leaks or spills and disposition of leaking or unfit-for-use tank systems.

A tank system or secondary containment system from which there has been a leak or spill, or which is unfit for use, must be removed from service immediately, and the owner or operator must satisfy the following requirements:

(a) *Cessation of use; prevent flow or addition of wastes.* The owner or operator must immediately stop the flow of hazardous waste into the tank system or secondary containment system and inspect the system to determine the cause of the release.

(b) *Removal of waste from tank system or secondary containment system.* (1) If the release was from the tank system, the owner or operator must, within 24 hours after detection of the leak or, if the owner or operator demonstrates that that is not possible, at the earliest practicable time remove as much of the waste as is necessary to prevent further release of hazardous waste to the environment and to allow inspection and repair of the tank system to be performed.

(2) If the release was to a secondary containment system, all released materials must be removed within 24 hours or in as timely a manner as is possible to prevent harm to human health and the environment.

(c) *Containment of visible releases to the environment.* The owner or operator must immediately conduct a visual inspection of the release and, based upon that inspection:

(1) Prevent further migration of the leak or spill to soils or surface water; and

(2) Remove, and properly dispose of, any visible contamination of the soil or surface water.

(d) *Notifications, reports.* (1) Any release to the environment, except as provided in paragraph (d)(2) of this section, must be reported to the Regional Administrator within 24 hours of detection. If the release has been reported pursuant to 40 CFR Part 302, that report will satisfy this requirement.

(2) A leak or spill of hazardous waste that is:

(i) Less than or equal to a quantity of one (1) pound, and

(ii) Immediately contained and cleaned-up is exempted from the requirements of this paragraph.

(3) Within 30 days of detection of a release to the environment, a report containing the following information must be submitted to the Regional Administrator:

(i) Likely route of migration of the release;

(ii) Characteristics of the surrounding soil (soil composition, geology, hydrogeology, climate);

(iii) Results of any monitoring or sampling conducted in connection with the release, (if available). If sampling or monitoring data relating to the release are not available within 30 days, these data must be submitted to the Regional Administrator as soon as they become available.;

(iv) Proximity to downgradient drinking water, surface water, and population areas; and

(v) Description of response actions taken or planned.

(e) *Provision of secondary containment, repair, or closure.* (1) Unless the owner or operator satisfies the requirements of paragraphs (e) (2) through (4) of this section, the tank system must be closed in accordance with § 265.197.

(2) If the cause of the release was a spill that has not damaged the integrity of the system, the owner/operator may return the system to service as soon as the released waste is removed and repairs, if necessary, are made.

(3) If the cause of the release was a leak from the primary tank system into the secondary containment system, the system must be repaired prior to returning the tank system to service.

(4) If the source of the release was a leak to the environment from a component of a tank system without secondary containment, the owner/opera-

tor must provide the component of the system from which the leak occurred with secondary containment that satisfies the requirements of § 265.193 before it can be returned to service, unless the source of the leak is an aboveground portion of a tank system. If the source is an aboveground component that can be inspected visually, the component must be repaired and may be returned to service without secondary containment as long as the requirements of paragraph (f) of this section are satisfied. If a component is replaced to comply with the requirements of this subparagraph, that component must satisfy the requirements for new tank systems or components in §§ 265.192 and 265.193. Additionally, if a leak has occurred in any portion of a tank system component that is not readily accessible for visual inspection (e.g., the bottom of an inground or onground tank), the entire component must be provided with secondary containment in accordance with § 265.193 prior to being returned to use.

(f) *Certification of major repairs.* If the owner or operator has repaired a tank system in accordance with paragraph (e) of this section, and the repair has been extensive (e.g., installation of an internal liner; repair of a ruptured primary containment or secondary containment vessel), the tank system must not be returned to service unless the owner/operator has obtained a certification by an independent, qualified, registered professional engineer in accordance with § 270.11(d) that the repaired system is capable of handling hazardous wastes without release for the intended life of the system. This certification must be submitted to the Regional Administrator within seven days after returning the tank system to use.

NOTE: The Regional Administrator may, on the basis of any information received that there is or has been a release of hazardous waste or hazardous constituents into the environment, issue an order under RCRA sections 3004(w), 3008(h), or 7003(a) requiring corrective action or such other response as deemed necessary to protect human health or the environment.

NOTE: See § 265.15(c) for the requirements necessary to remedy a failure. Also, 40 CFR Part 302 requires the owner or operator to notify the National Response Center of a release of any "reportable quantity."

(Information collection requirements contained in paragraphs (d)-(f) were approved by the Office of Management and Budget under control number 2050-0050)

§ 265.197 Closure and post-closure care.

(a) At closure of a tank system, the owner or operator must remove or decontaminate all waste residues, contaminated containment system components (liners, etc.), contaminated soils, and structures and equipment contaminated with waste, and manage them as hazardous waste, unless § 261.3(d) of this Chapter applies. The closure plan, closure activities, cost estimates for closure, and financial responsibility for tank systems must meet all of the requirements specified in Subparts G and H of this Part.

(b) If the owner or operator demonstrates that not all contaminated soils can be practicably removed or decontaminated as required in paragraph (a) of this section, then the owner or operator must close the tank system and perform post-closure care in accordance with the closure and post-closure care requirements that apply to landfills (§ 265.310) In addition, for the purposes of closure, post-closure, and financial responsibility, such a tank system is then considered to be a landfill, and the owner or operator must meet all of the requirements for landfills specified in Subparts G and H of this Part.

(c) If an owner or operator has a tank system which does not have secondary containment that meets the requirements of § 265.193(b) through (f) and which is not exempt from the secondary containment requirements in accordance with § 265.193(g), then,

(1) The closure plan for the tank system must include both a plan for complying with paragraph (a) of this section and a contingent plan for complying with paragraph (b) of this section.

(2) A contingent post-closure plan for complying with paragraph (b) of this section must be prepared and submitted as part of the permit application.

(3) The cost estimates calculated for closure and post-closure care must reflect the costs of complying with the contingent closure plan and the contingent post-closure plan, if these costs are greater than the costs of complying with the closure plan prepared for the expected closure under paragraph (a) of this section.

(4) Financial assurance must be based on the cost estimates in paragraph (c)(3) of this section.

(5) For the purposes of the contingent closure and post-closure plans, such a tank system is considered to be a landfill, and the contingent plans must meet all of the closure, post-closure, and financial responsibility requirements for landfills under Subparts G and H of this Part.

(Information collection requirements contained in paragraphs (a)-(c) were approved by the Office of Management and Budget under control number 2050-0050)

§ 265.198 Special requirements for ignitable or reactive wastes.

(a) Ignitable or reactive waste must not be placed in a tank system, unless:

(1) The waste is treated, rendered, or mixed before or immediately after placement in the tank system so that:

(i) The resulting waste, mixture, or dissolved material no longer meets the definition of ignitable or reactive waste under §§ 261.21 or 261.23 of this chapter; and

(ii) Section 265.17(b) is complied with; or

(2) The waste is stored or treated in such a way that it is protected from any material or conditions that may cause the waste to ignite or react; or

(3) The tank system is used solely for emergencies.

(b) The owner or operator of a facility where ignitable or reactive waste is stored or treated in tanks must comply with the requirements for the maintenance of protective distances between the waste management area 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," (1977 or 1981), (incorporated by reference, see § 260.11).

§ 265.199 Special requirements for incompatible wastes.

(a) Incompatible wastes, or incompatible waste and materials, must not be placed in the same tank system, unless § 265.17(b) is complied with.

(b) Hazardous waste must not be placed in a tank system that has not been decontaminated and that previously held an incompatible waste or material, unless § 265.17(b) is complied with.

§ 265.200 Waste analysis and trial tests.

In addition to performing the waste analysis required by § 265.13, the owner or operator must, whenever a tank system is to be used to treat chemically or to store a hazardous waste that is substantially different from waste previously treated or stored in that tank system; or treat chemically a hazardous waste with a substantially different process than any previously used in that tank system:

(a) Conduct waste analyses and trial treatment or storage tests (e.g., bench-scale or pilot-plant scale tests); or

(b) Obtain written, documented information on similar waste under similar operating conditions to show that the proposed treatment or storage will meet the requirements of § 265.194(a).

NOTE: Section 265.13 requires the waste analysis plan to include analyses needed to comply with §§ 265.198 and 265.199. Section 265.73 requires the owner or operator to place the results from each waste analysis and trial test, or the documented information, in the operating record of the facility.

§ 265.201 Special requirements for generators of between 100 and 1,000 kg/mo that accumulate hazardous waste in tanks.

(a) The requirements of this section apply to small quantity generators of more than 100 kg but less than 1,000 kg of hazardous waste in a calendar month, that accumulate hazardous waste in tanks for less than 180 days (or 270 days if the generator must ship the waste greater than 200 miles), and do not accumulate over 6,000 kg on-site at any time.

(b) Generators of between 100 and 1,000 kg/mo hazardous waste must

comply with the following general operating requirements:

(1) Treatment or storage of hazardous waste in tanks must comply with § 265.17(b).

(2) Hazardous wastes or treatment reagents must not be placed in a tank if they could cause the tank or its inner liner to rupture, leak, corrode, or otherwise fail before the end of its intended life.

(3) Uncovered tanks must be operated to ensure at least 60 centimeters (2 feet) of freeboard, unless the tank is equipped with a containment structure (e.g., dike or trench), a drainage control system, or a diversion structure (e.g., standby tank) with a capacity that equals or exceeds the volume of the top 60 centimeters (2 feet) of the tank.

(4) Where hazardous waste is continuously fed into a tank, the tank must be equipped with a means to stop this inflow (e.g., waste feed cutoff system or by-pass system to a stand-by tank).

NOTE: These systems are intended to be used in the event of a leak or overflow from the tank due to a system failure (e.g., a malfunction in the treatment process, a crack in the tank, etc.).

(c) Generators of between 100 and 1,000 kg/mo accumulating hazardous waste in tanks must inspect, where present

(1) Discharge control equipment (e.g., waste feed cutoff systems, bypass systems, and drainage systems) at least once each operating day, to ensure that it is in good working order;

(2) Data gathered from monitoring equipment (e.g., pressure and temperature gauges) at least once each operating day to ensure that the tank is being operated according to its design;

(3) The level of waste in the tank at least once each operating day to ensure compliance with § 265.192(c);

(4) The construction materials of the tank at least weekly to detect corrosion or leaking of fixtures or seams; and

(5) The construction materials of, and the area immediately surrounding, discharge confinement structures (e.g., dikes) at least weekly to detect erosion or obvious signs of leakage (e.g., wet spots or dead vegetation).

NOTE: As required by § 265.15(c), the owner or operator must remedy any deterioration or malfunction he finds.

(d) Generators of between 100 and 1,000 kg/mo accumulating hazardous waste in tanks must, upon closure of the facility, remove all hazardous waste from tanks, discharge control equipment, and discharge confinement structures.

NOTE: At closure, as throughout the operating period, unless the owner or operator can demonstrate, in accordance with § 261.3(c) or (d) of this chapter, that any solid waste removed from his tank is not a hazardous waste, the owner or operator becomes a generator of hazardous waste and must manage it in accordance with all applicable requirements of Parts 262, 263, and 265 of this chapter.

(e) Generators of between 100 and 1,000 kg/mo must comply with the following special requirements for ignitable or reactive waste:

(1) Ignitable or reactive waste must not be placed in a tank, unless:

(i) The waste is treated, rendered, or mixed before or immediately after placement in a tank so that (A) the resulting waste, mixture, or dissolution of material no longer meets the definition of ignitable or reactive waste under § 261.21 or § 261.23 of this chapter, and (B) § 265.17(b) is complied with; or

(ii) The waste is stored or treated in such a way that it is protected from any material or conditions that may cause the waste to ignite or react; or

(iii) The tank is used solely for emergencies.

(2) The owner or operator of a facility which treats or stores ignitable or reactive waste in covered tanks must comply with the buffer zone requirements for tanks contained in Tables 2-1 through 2-6 of the National Fire Protection Association's "Flammable and Combustible Liquids Code," (1977 or 1981) (incorporated by reference, see § 260.11).

(f) Generators of between 100 and 1,000 kg/mo must comply with the following special requirements for incompatible wastes:

(1) Incompatible wastes, or incompatible wastes and materials, (see Appendix V for examples) must not be placed in the same tank, unless § 265.17(b) is complied with.

(2) Hazardous waste must not be placed in an unwashed tank which previously held an incompatible waste or material, unless § 265.17(b) is complied with.

Subpart K—Surface Impoundments

§ 265.220 Applicability.

The regulations in this subpart apply to owners and operators of facilities that use surface impoundments to treat, store, or dispose of hazardous waste, except as § 265.1 provides otherwise.

§ 265.221 Design requirements.

(a) The owner or operator of a surface impoundment must install two or more liners and leachate collection system in accordance with § 264.221(c) of this chapter, with respect to each new unit, replacement of an existing unit, or lateral expansion of an existing unit that is within the area identified in the Part A permit application, and with respect to waste received beginning May 8, 1985.

(b) The owner or operator of each unit referred to in paragraph (a) of this section must notify the Regional Administrator at least sixty days prior to receiving waste. The owner or operator of each facility submitting notice must file a Part B application within six months of the receipt of such notice.

(c) Paragraph (a) of this section will not apply if the owner or operator demonstrates to the Regional Administrator, and the Regional Administrator finds for such surface impoundment, that alternative design and operating practices, together with location characteristics, will prevent the migration of any hazardous constituent into the ground water or surface water at least as effectively as such liners and leachate collection systems.

(d) The double liner requirement set forth in paragraph (a) of this section may be waived by the Regional Administrator for any monofill, if:

(1) The monofill contains only hazardous wastes from foundry furnace emission controls or metal casting molding sand, and such wastes do not contain constituents which would render the wastes hazardous for reasons other than the EP toxicity characteristics in § 261.24 of this chapter; and

(2)(i)(A) The monofill has at least one liner for which there is no evidence that such liner in leaking. For the purposes of this paragraph the term "liner" means a liner designed, constructed, installed, and operated to prevent hazardous waste from passing into the liner at any time during the active life of the facility, or a liner designed, constructed, installed, and operated to prevent hazardous waste from migrating beyond the liner to adjacent subsurface soil, ground water, or surface water at any time during the active life of the facility. In the case of any surface impoundment which has been exempted from the requirements of paragraph (a) of this section on the basis of a liner designed, constructed, installed, and operated to prevent hazardous waste from passing beyond the liner, at the closure of such impoundment the owner or operator must remove or decontaminate all waste residues, all contaminated liner material, and contaminated soil to the extent practicable. If all contaminated soil it is not removed or decontaminated, the owner of operator of such impoundment must comply with appropriate post-closure requirements, including but not limited to ground-water monitoring and corrective action;

(B) The monofill is located more than one-quarter mile from an underground source of drinking water (as that term is defined in § 144.3 of this chapter); and

(C) The monofill is in compliance with generally applicable groundwater monitoring requirements for facilities with permits under RCRA section 3005(c); or

(ii) The owner or operator demonstrates that the monofill is located, designed and operated so as to assure that there will be no migration of any hazardous constituent into ground water or surface water at any future time.

(e) In the case of any unit in which the liner and leachate collection system has been installed pursuant to

§ 265.252 Waste analysis.

In addition to the waste analyses required by § 265.13, the owner or operator must analyze a representative sample of waste from each incoming movement before adding the waste to any existing pile, *unless* (1) The only wastes the facility receives which are amenable to piling are compatible with each other, or (2) the waste received is compatible with the waste in the pile to which it is to be added. The analysis conducted must be capable of differentiating between the types of hazardous waste the owner or operator places in piles, so that mixing of incompatible waste does not inadvertently occur. The analysis must include a visual comparison of color and texture.

[*Comment:* As required by § 265.13, the waste analysis plan must include analyses needed to comply with §§ 265.256 and 265.257. As required by § 265.73, the owner or operator must place the results of this analysis in the operating record of the facility.]

§ 265.253 Containment.

If leachate or run-off from a pile is a hazardous waste, then either:

(a)(1) The pile must be placed on an impermeable base that is compatible with the waste under the conditions of treatment or storage;

(2) The owner or operator must design, construct, operate, and maintain a run-on control system capable of preventing flow onto the active portion of the pile during peak discharge from at least a 25-year storm;

(3) The owner or operator must design, construct, operate, and maintain a run-off management system to collect and control at least the water volume resulting from a 24-hour, 25-year storm; and

(4) Collection and holding facilities (e.g., tanks or basins) associated with run-on and run-off control systems must be emptied or otherwise managed expeditiously to maintain design capacity of the system; or

(b)(1) The pile must be protected from precipitation and run-on by some other means; and

(2) No liquids or wastes containing free liquids may be placed in the pile.

[*Comment:* If collected leachate or run-off is discharged through a point source to waters of the United States, it is subject to the requirements of section 402 of the Clean Water Act, as amended.]

[45 FR 33232, May 19, 1980, as amended at 47 FR 32367, July 26, 1982]

§ 265.254 Design requirements.

The owner or operator of a waste pile is subject to the requirements for liners and leachate collection systems or equivalent protection provided in § 264.251 of this chapter, with respect to each new unit, replacement of an existing unit, or lateral expansion of an existing unit that is within the area indentified in the Part A permit application, and with respect to waste received beginning May 8, 1985.

[50 FR 28750, July 15, 1985]

§ 265.255 [Reserved]

§ 265.256 Special requirements for ignitable or reactive waste.

(a) Ignitable or reactive wastes must not be placed in a pile, *unless:*

(1) Addition of the waste to an existing pile (i) results in the waste or mixture no longer meeting the definition of ignitable or reactive waste under § 261.21 or § 261.23 of this chapter, and (ii) complies with § 265.17(b); or

(2) The waste is managed in such a way that it is protected from any material or conditions which may cause it to ignite or react.

§ 265.257 Special requirements for incompatible wastes.

(a) Incompatible wastes, or incompatible wastes and materials, (see Appendix V for examples) must not be placed in the same pile, unless § 265.17(b) is complied with.

(b) A pile of hazardous waste that is incompatible with any waste or other material stored nearby in other containers, piles, open tanks, or surface impoundments must be separated from the other materials, or protected from them by means of a dike, berm, wall, or other device.

[*Comment:* The purpose of this is to prevent fires, explosions, gaseous emissions, leaching, or other discharge of hazardous waste or hazardous waste constituents which could result from the contact or mixing of incompatible wastes or materials.]

(c) Hazardous waste must not be piled on the same area where incompatible wastes or materials were previously piled, unless that area has been decontaminated sufficiently to ensure compliance with § 265.17(b).

§ 265.258 Closure and post-closure care.

(a) At closure, the owner or operator must remove or decontaminate all waste residues, contaminated containment system components (liners, etc.), contaminated subsoils, and structures and equipment contaminated with waste and leachate, and manage them as hazardous waste unless § 261.3(d) of this chapter applies; or

(b) If, after removing or decontaminating all residues and making all reasonable efforts to effect removal or decontamination of contaminated components, subsoils, structures, and equipment as required in paragraph (a) of this section, the owner or operator finds that not all contaminated subsoils can be practicably removed or decontaminated, he must close the facility and perform post-closure care in accordance with the closure and post-closure requirements that apply to landfills (§ 265.310).

[47 FR 32368, July 26, 1982]

Subpart M—Land Treatment

§ 265.270 Applicability.

The regulations in this subpart apply to owners and operators of hazardous waste land treatment facilities, except as § 265.1 provides otherwise.

§ 265.271 [Reserved]

§ 265.272 General operating requirements.

(a) Hazardous waste must not be placed in or on a land treatment facility unless the waste can be made less hazardous or nonhazardous by degradation, transformation, or immobilization processes occurring in or on the soil.

(b) The owner or operator must design, construct, operate, and maintain a run-on control system capable of preventing flow onto the active portions of the facility during peak discharge from at least a 25-year storm.

(c) The owner or operator must design, construct, operate, and maintain a run-off management system capable of collecting and controlling a water volume at least equivalent to a 24-hour, 25-year storm.

(d) Collection and holding facilities (e.g., tanks or basins) associated with run-on and run-off control systems must be emptied or otherwise managed expeditiously after storms to maintain design capacity of the system.

(e) If the treatment zone contains particulate matter which may be subject to wind dispersal, the owner or operator must manage the unit to control wind dispersal.

[45 FR 33232, May 19, 1980, as amended at 47 FR 32368, July 26, 1982; 50 FR 16048, Apr. 23, 1985]

§ 265.273 Waste analysis.

In addition to the waste analyses required by § 265.13, before placing a hazardous waste in or on a land treatment facility, the owner or operator must:

(a) Determine the concentrations in the waste of any substances which exceed the maximum concentrations contained in Table I of § 261.24 of this chapter that cause a waste to exhibit the EP toxicity characteristic;

(b) For any waste listed in Part 261, Subpart D, of this chapter, determine the concentrations of any substances which caused the waste to be listed as a hazardous waste; and

(c) If food chain crops are grown, determine the concentrations in the waste of each of the following constituents: arsenic, cadmium, lead, and mercury, *unless* the owner or operator has written, documented data that show that the constituent is not present.

[*Comment:* Part 261 of this chapter specifies the substances for which a waste is listed as a hazardous waste. As required by § 265.13, the waste analysis plan must include analyses needed to comply with §§ 265.281 and 265.282. As required by § 265.73, the owner or operator must place the results from each waste analysis, or the documented information, in the operating record of the facility.]

§§ 265.274—265.275 [Reserved]

§ 265.276 Food chain crops.

(a) An owner or operator of a hazardous waste land treatment facility on which food chain crops are being grown, or have been grown and will be grown in the future, must notify the Regional Administrator within 60 days after the effective date of this part.

[*Comment:* The growth of food chain crops at a facility which has never before been used for this purpose is a significant change in process under § 122.72(c) of this chapter. Owners or operators of such land treatment facilities who propose to grow food chain crops after the effective date of this part must comply with § 122.72(c) of this chapter.]

(b)(1) Food chain crops must not be grown on the treated area of a hazardous waste land treatment facility unless the owner or operator can demonstrate, based on field testing, that any arsenic, lead, mercury, or other constituents identified under § 265.273(b):

(i) Will not be transferred to the food portion of the crop by plant uptake or direct contact, and will not otherwise be ingested by food chain animals (e.g., by grazing); or

(ii) Will not occur in greater concentrations in the crops grown on the land treatment facility than in the same crops grown on untreated soils under similar conditions in the same region.

(2) The information necessary to make the demonstration required by paragraph (b)(1) of this section must be kept at the facility and must, at a minimum:

(i) Be based on tests for the specific waste and application rates being used at the facility; and

(ii) Include descriptions of crop and soil characteristics, sample selection criteria, sample size determination, analytical methods, and statistical procedures.

(c) Food chain crops must not be grown on a land treatment facility receiving waste that contains cadmium unless all requirements of paragraphs (c)(1)(i) through (iii) of this section or all requirements of paragraphs (c)(2)(i) through (iv) of this section are met

(1)(i) The pH of the waste and soil mixture is 6.5 or greater at the time of each waste application, except for waste containing cadmium at concentrations of 2 mg/kg (dry weight) or less;

(ii) The annual application of cadmium from waste does not exceed 0.5 kilograms per hectare (kg/ha) on land used for production of tobacco, leafy vegetables, or root crops grown for human consumption. For other food chain crops, the annual cadmium application rate does not exceed:

Time period	Annual Cd application rate (kg/ha)
Present to June 30, 1984	2.0
July 1, 1984 to December 31, 1986	1.25
Beginning January 1, 1987	0.5

(iii) The cumulative application of cadmium from waste does not exceed the levels in either paragraph (c)(1)(iii)(A) or (B) of this section.

(A)

Soil caption exchange capacity (meq/100g)	Maximum cumulative application (kg/ha)	
	Background soil pH less than 6.5	Background soil pH greater than 6.5
Less than 5	5	5
5 to 15	5	10
Greater than 15	5	20

(B) For soils with a background pH of less than 6.5, the cumulative cadmium application rate does not exceed the levels below: *Provided,* that the pH of the waste and soil mixture is adjusted to and maintained at 6.5 or greater whenever food chain crops are grown.

Soil caption exchange capacity (meq/100g)	Maximum cumulative application (kg/ha)
Less than 5	5
5 to 15	10
Greater than 15	20

(2)(i) The only food chain crop produced is animal feed

(ii) The pH of the waste and soil mixture is 6.5 or greater at the time of waste application or at the time the crop is planted, whichever occurs later, and this pH level is maintained whenever food chain crops are grown.

(iii) There is a facility operating plan which demonstrates how the animal feed will be distributed to preclude ingestion by humans. The facility operating plan describes the measures to be taken to safeguard against possible health hazards from cadmium entering the food chain, which may result from alternative land uses.

(iv) Future property owners are notified by a stipulation in the land record or property deed which states that the property has received waste at high cadmium application rates and that food chain crops must not be grown except in compliance with paragraph (c)(2) of this section.

[*Comment:* As required by § 265.73, if an owner or operator grows food chain crops on his land treatment facility, he must place the information developed in this section in the operating record of the facility.]

[45 FR 33232, May 19, 1980, as amended at 47 FR 32368, July 26, 1982; 48 FR 14295, Apr. 1, 1983]

§ 265.277 [Reserved]

§ 265.278 Unsaturated zone (zone of aeration) monitoring.

(a) The owner or operator must have in writing, and must implement, an unsaturated zone monitoring plan which is designed to:

(1) Detect the vertical migration of hazardous waste and hazardous waste constituents under the active portion of the land treatment facility, and

(2) Provide information on the background concentrations of the hazardous waste and hazardous waste constituents in similar but untreated soils nearby; this background monitoring must be conducted before or in conjunction with the monitoring required under paragraph (a)(1) of this section.

(b) The unsaturated zone monitoring plan must include, at a minimum:

(1) Soil monitoring using soil cores, and

(2) Soil-pore water monitoring using devices such as lysimeters.

(c) To comply with paragraph (a)(1) of this section, the owner or operator must demonstrate in his unsaturated zone monitoring plan that:

(1) The depth at which soil and soil-pore water samples are to be taken is below the depth to which the waste is incorporated into the soil;

(2) The number of soil and soil-pore water samples to be taken is based on the variability of:

(i) The hazardous waste constituents (as identified in § 265.273(a) and (b)) in the waste and in the soil; and

(ii) The soil type(s); and

(3) The frequency and timing of soil and soil-pore water sampling is based on the frequency, time, and rate of waste application, proximity to ground water, and soil permeability.

(d) The owner or operator must keep at the facility his unsaturated zone monitoring plan, and the rationale used in developing this plan.

(e) The owner or operator must analyze the soil and soil-pore water samples for the hazardous waste constituents that were found in the waste during the waste analysis under § 265.273 (a) and (b).

[*Comment:* As required by § 265.73, all data and information developed by the owner or operator under this section must be placed in the operating record of the facility.]

§ 265.279 Recordkeeping.

The owner or operator must include hazardous waste application dates and rates in the operating record required under § 265.73.

[47 FR 32368, July 26, 1982]

§ 265.280 Closure and post-closure.

(a) In the closure plan under § 265.112 and the post-closure plan under § 265.118, the owner or operator must address the following objectives and indicate how they will be achieved:

(1) Control of the migration of hazardous waste and hazardous waste constituents from the treated area into the ground water;

(2) Control of the release of contaminated run-off from the facility into surface water;

(3) Control of the release of airborne particulate contaminants caused by wind erosion; and

(4) Compliance with § 265.276 concerning the gowth of food-chain crops.

(b) The owner or operator must consider at least the following factors in addressing the closure and post-closure care objectives of paragraph (a) of this section:

(1) Type and amount of hazardous waste and hazardous waste constituents applied to the land treatment facility;

(2) The mobility and the expected rate of migration of the hazardous waste and hazardous waste constituents;

(3) Site location, topography, and surrounding land use, with respect to the potential effects of pollutant migration (e.g., proximity to ground water, surface water and drinking water sources);

(4) Climate, including amount, frequency, and pH of precipitation;

(5) Geological and soil profiles and surface and subsurface hydrology of the site, and soil characteristics, including cation exchange capacity, total organic carbon, and pH;

(6) Unsaturated zone monitoring information obtained under § 265.278; and

(7) Type, concentration, and depth of migration of hazardous waste constituents in the soil as compared to their background concentrations.

(c) The owner or operator must consider at least the following methods in addressing the closure and post-closure care objectives of paragraph (a) of this section:

(1) Removal of contaminated soils;

(2) Placement of a final cover, considering:

(i) Functions of the cover (e.g., infiltration control, erosion and run-off control, and wind erosion control); and

(ii) Characteristics of the cover, including material, final surface contours, thickness, porosity and permeability, slope, length of run of slope, and type of vegetation on the cover; and

(3) Monitoring of ground water.

(d) In addition to the requirements of Subpart G of this part, during the closure period the owner or operator of a land treatment facility must:

(1) Continue unsaturated zone monitoring in a manner and frequency specified in the closure plan, except that soil pore liquid monitoring may be terminated 90 days after the last application of waste to the treatment zone;

(2) Maintain the run-on control system required under § 265.272(b);

(3) Maintain the run-off management system required under § 265.272(c); and

(4) Control wind dispersal of particulate matter which may be subject to wind dispersal.

(e) For the purpose of complying with § 265.115, when closure is completed the owner or operator may submit to the Regional Administrator certification both by the owner or operator and by an independent qualified soil scientist, in lieu of an independent registered professional engineer, that the facility has been closed in accordance with the specifications in the approved closure plan.

(f) In addition to the requirements of § 265.117, during the post-closure care period the owner or operator of a land treatment unit must:

(1) Continue soil-core monitoring by collecting and analyzing samples in a manner and frequency specified in the post-closure plan;

(2) Restrict access to the unit as appropriate for its post-closure use;

(3) Assure that growth of food chain crops complies with § 265.276; and

(4) Control wind dispersal of hazardous waste.

[45 FR 33232, May 19, 1980, as amended at 47 FR 32368, July 26, 1982]

§ 265.281 Special requirements for ignitable or reactive waste.

Ignitable or reactive waste must not be land treated unless:

(a) The waste is immediately incorporated into the soil so that:

(1) The resulting waste, mixture, or dissolution of material no longer meets the definition of ignitable or reactive waste under § 265.21 or § 261.23 of this chapter; and

(2) Section 264.17(b) is complied with; or

(b) The waste is managed in such a way that it is protected from any material or conditions which may cause it to ignite or react.

[47 FR 32368, July 26, 1982]

§ 265.282 Special requirements for incompatible wastes.

Incompatible wastes, or incompatible wastes and materials (see Appendix V for examples), must not be placed in the same land treatment area, unless § 265.17(b) is complied with.

Subpart N—Landfills

§ 265.300 Applicability.

The regulations in this subpart apply to owners and operators of facilities that dispose of hazardous waste in landfills, except as § 265.1 provides otherwise. A waste pile used as a disposal facility is a landfill and is governed by this subpart.

§ 265.301 Design requirements.

(a) The owner or operator of a landfill must install two or more liners and leachate collection systems above and between such liners in accordance with § 264.301(c) of this chapter, with respect to each new unit, replacement of an existing unit, or lateral expansion of an existing unit that is within the area identified in the Part A permit application, and with respect to waste received beginning May 8, 1985.

(b) The owner or operator of each unit referred to in paragraph (a) of this section must notify the Regional Administrator at least sixty days prior to receiving waste. The owner or operator of each facility submitting notice must file a Part B application within six months of the receipt of such notice.

(c) Paragraph (a) of this section will not apply if the owner or operator demonstrates to the Regional Administrator, and the Regional Administrator finds for such landfill, that alternative design and operating practices, together with location characteristics, will prevent the migration of any hazardous constituent into the ground water or surface water at least as effectively as such liners and leachate collection systems.

(d) The double liner requirement set forth in paragraph (a) of this section may be waived by the Regional Administrator for any monofill, if:

(1) The monofill contains only hazardous wastes from foundry furnace emission controls or metal casting molding sand, and such wastes do not contain constituents which would render the wastes hazardous for reasons other than the EP toxicity characteristics in § 261.24 of this chapter; and

(2)(i)(A) The monofill has at least one liner for which there is no evidence that such liner is leaking;

(B) The monofill is located more than one-quarter mile from an underground source of drinking water (as that term is defined in § 144.3 of this chapter); and

(C) The monofill is in compliance with generally applicable groundwater monitoring requirements for facilities with permits under RCRA section 3005(c); or

(ii) The owner or operator demonstrates that the monofill is located, designed and operated so as to assure that there will be no migration of any hazardous constituent into ground water or surface water at any future time.

(e) In the case of any unit in which the liner and leachate collection system has been installed pursuant to the requirements of paragraph (a) of this section and in good faith compliance with paragraph (a) of this section and with guidance documents governing liners and leachate collection systems under paragraph (a) of this section, no liner or leachate collection system which is different from that which was so installed pursuant to paragraph (a) of this section will be required for such unit by the Regional Administrator when issuing the first permit to such facility, except that the Regional Administrator will not be precluded from requiring installation of a new liner when the Regional Administrator has reason to believe that any liner installed pursuant to the requirements of paragraph (a) of this section is leaking.

[50 FR 28750, July 15, 1985]

§ 265.302 General operating requirements.

(a) The owner or operator must design, construct, operate, and maintain a run-on control system capable of preventing flow onto the active portion of the landfill during peak discharge from at least a 25-year storm.

(b) The owner or operator must design, construct, operate and maintain a run-off management system to collect and control at least the water volume resulting from a 24-hour, 25-year storm.

(c) Collection and holding facilities (e.g., tanks or basins) associated with run-on and run-off control systems must be emptied or otherwise managed expeditiously after storms to maintain design capacity of the system.

(d) The owner or operator of a landfill containing hazardous waste which is subject to dispersal by wind must cover or otherwise manage the landfill so that wind dispersal of the hazardous waste is controlled.

[*Comment*: As required by § 265.13, the waste analysis plan must include analyses needed to comply with §§ 265.312, 265.313, and 265.314. As required by § 265.73, the owner or operator must place the results of these analyses in the operating record of the facility.]

[45 FR 33232, May 19, 1980, as amended at 47 FR 32368, July 26, 1982; 50 FR 18374, Apr. 30, 1985]

§§ 265.303—265.308 [Reserved]

§ 265.309 Surveying and recordkeeping.

The owner or operator of a landfill must maintain the following items in the operating record required in § 265.73:

(a) On a map, the exact location and dimensions, including depth, of each cell with respect to permanently surveyed benchmarks; and

(b) The contents of each cell and the approximate location of each hazardous waste type within each cell.

§ 265.310 Closure and post-closure care.

(a) At final closure of the landfill or upon closure of any cell, the owner or operator must cover the landfill or cell with a final cover designed and constructed to:

(1) Provide long-term minimization of migration of liquids through the closed landfill;

(2) Function with minimum maintenance;

(3) Promote drainage and minimize erosion or abrasion of the cover;

(4) Accommodate settling and subsidence so that the cover's integrity is maintained; and

(5) Have a permeability less than or equal to the permeability of any bottom liner system or natural subsoils present.

(b) After final closure, the owner or operator must comply with all post-closure requirements contained in §§ 265.117 through 265.120 including maintenance and monitoring throughout the post-closure care period. The owner or operator must:

(1) Maintain the integrity and effectiveness of the final cover, including making repairs to the cover as necessary to correct the effects of settling, subsidence, erosion, or other events;

(2) Maintain and monitor the ground-water monitoring system and comply with all other applicable requirements of Subpart F of this part;

(3) Prevent run-on and run-off from eroding or otherwise damaging the final cover; and

(4) Protect and maintain surveyed benchmarks used in complying with § 265.309.

[50 FR 16048, Apr. 23, 1985]

§ 265.311 [Reserved]

§ 265.312 Special requirements for ignitable or reactive waste.

(a) Except as provided in paragraph (b) of this section, and in § 265.316, ignitable or reactive waste must not be placed in a landfill, unless the waste is treated, rendered, or mixed before or immediately after placement in a landfill so that:

(1) The resulting waste, mixture, or dissolution or material no longer meets the definition of ignitable or reactive waste under § 261.21 or § 261.23 of this chapter; and

(2) Section 265.17(b) is complied with.

(b) Ignitable wastes in containers may be landfilled without meeting the requirements of paragraph (a) of this section provided that the wastes are disposed in such a way that they are protected from any material or conditions which may cause them to ignite. At a minimum, ignitable wastes must be disposed in non-leaking containers which are carefully handled and placed so as to avoid heat, sparks, rupture, or any other condition that might cause ignition of the wastes; must be covered daily with soil or other non-combustible material to minimize the potential for ignition of the wastes; and must not be disposed in cells that contain or will contain other wastes which may generate heat sufficient to cause ignition of the waste.

[47 FR 32368, July 26, 1982]

§ 265.313 Special requirements for incompatible wastes.

Incompatible wastes, or incompatible wastes and materials, (see Appendix V for examples) must not be placed in the same landfill cell, unless § 265.17(b) is complied with.

§ 265.314 Special requirements for bulk and containerized liquids.

(a) Bulk or non-containerized liquid waste or waste containing free liquids may be placed in a landfill prior to May 8, 1985 only if:

(1) The landfill has a liner and leachate collection and removal system that meets the requirements of § 264.301(a) of this chapter; or

(2) Before disposal, the liquid waste or waste containing free liquids is treated or stabilized, chemically or physically (e.g., by mixing with an absorbent solid), so that free liquids are no longer present.

(b) Effective May 8, 1985, the placement of bulk or non-containerized liquid hazardous waste or hazardous waste containing free liquids (whether or not absorbents have been added) in any landfill is prohibited.

(c) Containers holding free liquids must not be placed in a landfill unless:

(1) All free-standing liquid (i) has been removed by decanting, or other methods, (ii) has been mixed with absorbent or solidified so that free-standing liquid is no longer observed or (iii) had been otherwise eliminated; or

(2) The container is very small, such as an ampule; or

(3) The container is designed to hold free liquids for use other than storage, such as a battery or capacitor; or

(4) The container is a lab pack as defined in § 265.316 and is disposed of in accordance with § 265.316.

(d) To demonstrate the absence or presence of free liquids in either a containerized or a bulk waste, the following test must be used: Method 9095 (Paint Filter Liquids Test) as described in "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods." [EPA Publication No. SW-846].

(e) The date for compliance with paragraph (a) of this section is November 19, 1981. The date for compliance with paragraph (c) of this section is March 22, 1982.

(f) Effective November 8, 1985, the placement of any liquid which is not a hazardous waste in a landfill is prohibited unless the owner or operator of such landfill demonstrates to the Regional Administrator, or the Regional Administrator determines, that:

(1) The only reasonably available alternative to the placement in such landfill is placement in a landfill or unlined surface impoundment, whether or not permitted or operating under interim status, which contains, or may reasonably be anticipated to contain, hazardous waste; and

(2) Placement in such owner or operator's landfill will not present a risk of contamination of any underground source of drinking water (as that term is defined in § 144.3 of this chapter).

(Approved by the Office of Management and Budget under control number 2050-0037)

[45 FR 33232, May 19, 1980, as amended at 47 FR 12318, Mar. 22, 1982; 47 FR 32369, July 26, 1982; 50 FR 18374, Apr. 30, 1985; 50 FR 28750, July 15, 1985; 51 FR 19177, May 28, 1986]

§ 265.315 Special requirements for containers.

Unless they are very small, such as an ampule, containers must be either:

(a) At least 90 percent full when placed in the landfill; or

(b) Crushed, shredded, or similarly reduced in volume to the maximum practical extent before burial in the landfill.

[50 FR 16048, Apr. 23, 1985]

§ 265.316 Disposal of small containers of hazardous waste in overpacked drums (lab packs).

Small containers of hazardous waste in overpacked drums (lab packs) may be placed in a landfull if the following requirements are met:

(a) Hazardous waste must be packaged in non-leaking inside containers. The inside containers must be of a design and constructed of a material that will not react dangerously with, be decomposed by, or be ignited by the waste held therein. Inside containers must be tightly and securely sealed. The inside containers must be of the size and type specified in the Department of Transportation (DOT) hazardous materials regulations (49 CFR Parts 173, 178 and 179), if those regulations specify a particular inside container for the waste.

(b) The inside containers must be overpacked in an open head DOT-specification metal shipping container (49 CFR Parts 178 and 179) of no more than 416-liter (110 gallon) capacity and surrounded by, at a minimum, a sufficient quantity of absorbent material to completely absorb all of the liquid contents of the inside containers. The metal outer container must be full after packing with inside containers and absorbent material.

(c) The absorbent material used must not be capable of reacting dangerously with, being decomposed by, or being ignited by the contents of the inside containers, in accordance with § 265.17(b).

(d) Incompatible wastes, as defined in § 260.10(a) of this chapter, must not be placed in the same outside container.

(e) Reactive waste, other than cyanide- or sulfide-bearing waste as defined in § 261.23(a)(5) of this chapter, must be treated or rendered non-reactive prior to packaging in accordance with paragraphs (a) through (d) of this section. Cyanide- and sulfide-bearing reactive waste may be packaged in accordance with paragraphs (a) through (d) of this section without first being treated or rendered non-reactive.

[46 FR 56596, Nov. 17, 1981]

Subpart O—Incinerators

SOURCE: 46 FR 7680, Jan. 23, 1981, unless otherwise noted.

§ 265.340 Applicability.

(a) The regulations in this subpart apply to owners or operators of facilities that incinerate hazardous waste, except as § 264.1 provides otherwise. The following facility owners or operators are considered to incinerate hazardous waste:

(1) Owners or operators of hazardous waste incinerators (as defined in § 260.10 of this chapter); and

(2) Owners or operators who burn hazardous waste in boilers or in industrial furnaces in order to destroy them, or who burn hazardous waste in boilers or in industrial furnaces for any recycling purpose and elect to be regulated under this subpart.

(b) Owners and operators of incinerators burning hazardous waste are exempt from all of the requirements of this subpart, except § 265.351 (Closure), provided that the owner or operator has documented, in writing, that the waste would not reasonably be expected to contain any of the hazardous constituents listed in Part 261, Appendix VIII, of this chapter, and such documentation is retained at the facility, if the waste to be burned is:

(1) Listed as a hazardous waste in Part 261, Subpart D, of this chapter solely because it is ignitable (Hazard Code I), corrosive (Hazard Code C), or both; or

(2) Listed as a hazardous waste in Part 261, Subpart D, of this chapter solely because it is reactive (Hazard Code R) for characteristics other than those listed in § 261.23(a) (4) and (5), and will not be burned when other hazardous wastes are present in the combustion zone; or

(3) A hazardous waste solely because it possesses the characteristic of ignitability, corrosivity, or both, as determined by the tests for characteristics of hazardous wastes under Part 261, Subpart C, of this chapter; or

(4) A hazardous waste solely because it possesses the reactivity characteristics described by § 261.23(a) (1), (2), (3), (6), (7), or (8) of this chapter, and will not be burned when other hazardous wastes are present in the combustion zone.

[47 FR 27533, June 24, 1982 and 50 FR 666, Jan. 4, 1985, as amended at 50 FR 49203, Nov. 29, 1985]

§ 265.341 Waste analysis.

In addition to the waste analyses required by § 265.13, the owner or operator must sufficiently analyze any waste which he has not previously burned in his incinerator to enable him to establish steady state (normal) operating conditions (including waste and auxiliary fuel feed and air flow) and to determine the type of pollutants which might be emitted. At a minimum, the analysis must determine:

(a) Heating value of the waste;

(b) Halogen content and sulfur content in the waste; and

(c) Concentrations in the waste of lead and mercury, unless the owner or operator has written, documented data that show that the element is not present.

[*Comment:* As required by § 265.73, the owner or operator must place the results from each waste analysis, or the documented information, in the operating record of the facility.]

§§ 265.342—265.344 [Reserved]

§ 265.345 General operating requirements.

During start-up and shut-down of an incinerator, the owner or operator must not feed hazardous waste unless the incinerator is at steady state (normal) conditions of operation, including steady state operating temperature and air flow.

§ 265.346 [Reserved]

§ 265.347 Monitoring and inspections.

The owner or operator must conduct, as a minimum, the following monitoring and inspections when incinerating hazardous waste:

(a) Existing instruments which relate to combustion and emission control must be monitored at least every 15 minutes. Appropriate corrections to maintain steady state combustion conditions must be made immediately either automatically or by the operator. Instruments which relate to combustion and emission control would normally include those measuring waste feed, auxiliary fuel feed, air flow, incinerator temperature, scrubber flow, scrubber pH, and relevant level controls.

(b) The complete incinerator and associated equipment (pumps, valves, conveyors, pipes, etc.) must be inspected at least daily for leaks, spills, and fugitive emissions, and all emergency shutdown controls and system alarms must be checked to assure proper operation.

[46 FR 7678, Jan. 23, 1981, as amended at 47 FR 27533, June 24, 1982]

§§ 265.348—265.350 [Reserved]

§ 265.351 Closure.

At closure, the owner or operator must remove all hazardous waste and hazardous waste residues (including but not limited to ash, scrubber waters, and scrubber sludges) from the incinerator.

[*Comment:* At closure, as throughout the operating period, unless the owner or operator can demonstrate, in accordance with § 261.3(d) of this chapter, that the residue removed from his incinerator is not a hazardous waste, the owner or operator becomes a generator of hazardous waste and must manage it in accordance with all applicable requirements of Parts 262 through 266 of this chapter.]

§ 265.352 Interim status incinerators burning particular hazardous wastes.

(a) Owners or operators of incinerators subject to this subpart may burn EPA Hazardous Wastes FO20, FO21, FO22, FO23, FO26, or FO27 if they receive a certification from the Assistant Administrator for Solid Waste and Emergency Response that they can meet the performance standards of Subpart O of Part 264 when they burn these wastes.

(b) The following standards and procedures will be used in determining whether to certify an incinerator:

(1) The owner or operator will submit an application to the Assistant Administrator for Solid Waste and Emergency Response containing applicable information in §§ 270.19 and 270.62 demonstrating that the incinerator can meet the performance standards in Subpart O of Part 264 when they burn these wastes.

(2) The Assistant Administrator for Solid Waste and Emergency Response will issue a tentative decision as to whether the incinerator can meet the performance standards in Subpart O of Part 264. Notification of this tentative decision will be provided by newspaper advertisement and radio broadcast in the jurisdiction where the incinerator is located. The Assistant Administrator for Solid Waste and Emergency Response will accept comment on the tentative decision for 60 days. The Assistant Administrator for Solid Waste and Emergency Response also may hold a public hearing upon request or at his discretion.

(3) After the close of the public comment period, the Assistant Administrator for Solid Waste and Emergency Response will issue a decision whether or not to certify the incinerator.

[50 FR 2005, Jan. 14, 1985]

§§ 265.353—265.369 [Reserved]

Subpart P—Thermal Treatment

§ 265.370 Other thermal treatment.

The regulations in this subpart apply to owners or operators of facilities that thermally treat hazardous waste in devices other than enclosed devices using controlled flame combustion, except as § 265.1 provides otherwise. Thermal treatment in enclosed devices using controlled flame combustion is subject to the requirements of Subpart O if the unit is an incinerator.

[50 FR 666, Jan. 4, 1985]

§§ 265.371—265.372 [Reserved]

§ 265.373 General operating requirements.

Before adding hazardous waste, the owner or operator must bring his thermal treatment process to steady state (normal) conditions of operation—including steady state operating temperature—using auxiliary fuel or other means, unless the process is a non-continuous (batch) thermal treatment process which requires a complete thermal cycle to treat a discrete quantity of hazardous waste.

§ 265.374 [Reserved]

§ 265.375 Waste analysis.

In addition to the waste analyses required by § 265.13, the owner or operator must sufficiently analyze any waste which he has not previously treated in his thermal process to enable him to establish steady state (normal) or other appropriate (for a non-continuous process) operating conditions (including waste and auxiliary fuel feed) and to determine the type of pollutants which might be emitted. At a minimum, the analysis must determine:

(a) Heating value of the waste;

(b) Halogen content and sulfur content in the waste; and

(c) Concentrations in the waste of lead and mercury, *unless* the owner or operator has written, documented data that show that the element is not present.

[*Comment:* As required by § 265.73, the owner or operator must place the results from each waste analysis, or the documented information, in the operating record of the facility.]

§ 265.376 [Reserved]

§ 265.377 Monitoring and inspections.

(a) The owner or operator must conduct, as a minimum, the following monitoring and inspections when thermally treating hazardous waste:

(1) Existing instruments which relate to temperature and emission control (if an emission control device is present) must be monitored at least every 15 minutes. Appropriate corrections to maintain steady state or other appropriate thermal treatment conditions must be made immediately either automatically or by the operator. Instruments which relate to temperature and emission control would normally include those measuring waste feed, auxiliary fuel feed, treatment process temperature, and relevant process flow and level controls.

(2) The stack plume (emissions), where present, must be observed visually at least hourly for normal appearance (color and opacity). The operator must immediately make any indicated operating corrections necessary to return any visible emissions to their normal appearance.

(3) The complete thermal treatment process and associated equipment (pumps, valves, conveyors, pipes, etc.) must be inspected at least daily for leaks, spills, and fugitive emissions, and all emergency shutdown controls and system alarms must be checked to assure proper operation.

§§ 265.378—265.380 [Reserved]

§ 265.381 Closure.

At closure, the owner or operator must remove all hazardous waste and hazardous waste residues (including, but not limited to, ash) from the thermal treatment process or equipment.

[*Comment:* At closure, as throughout the operating period, unless the owner or operator can demonstrate, in accordance with § 261.3(c) or (d) of this chapter, that any solid waste removed from his thermal treatment process or equipment is not a hazardous waste, the owner or operator becomes a generator of hazardous waste and must manage it in accordance with all applicable requirements of Parts 262, 263, and 265 of this chapter.]

§ 265.382 Open burning; waste explosives.

Open burning of hazardous waste is prohibited except for the open burning and detonation of waste explosives. Waste explosives include waste which has the potential to detonate and bulk military propellants which cannot safely be disposed of through other modes of treatment. Detonation is an explosion in which chemical transformation passes through the material faster than the speed of sound (0.33 kilometers/second at sea level). Owners or operators choosing to open burn or detonate waste explosives must do so in accordance with the following table and in a manner that does not threaten human health or the environment.

Pounds of waste explosives or propellants	Minimum distance from open burning or detonation to the property of others
0 to 100	204 meters (670 feet).
101 to 1,000	380 meters (1,250 feet).
1,001 to 10,000	530 meters (1,730 feet).
10,001 to 30,000	690 meters (2,260 feet).

§ 265.383 Interim status thermal treatment devices burning particular hazardous waste.

(a) Owners or operators of thermal treatment devices subject to this subpart may burn EPA Hazardous Wastes FO20, FO21, FO22, FO23, FO26, or FO27 if they receive a certification from the Assistant Administrator for Solid Waste and Emergency Response that they can meet the performance standards of Subpart O of Part 264 when they burn these wastes.

(b) The following standards and procedures will be used in determining whether to certify a thermal treatment unit:

(1) The owner or operator will submit an application to the Assistant Administrator for Solid Waste and Emergency Response containing the applicable information in §§ 270.19 and 270.62 demonstrating that the thermal treatment unit can meet the performance standard in Subpart O of Part 264 when they burn these wastes.

(2) The Assistant Administrator for Solid Waste and Emergency Response will issue a tentative decision as to whether the thermal treatment unit can meet the performance standards in Subpart O of Part 264. Notification of this tentative decision will be provided by newspaper advertisement and radio broadcast in the jurisdiction where the thermal treatment device is located. The Assistant Administrator for Solid Waste and Emergency Response will accept comment on the tentative decision for 60 days. The Assistant Administrator for Solid Waste and Emergency Response also may hold a public hearing upon request or at his discretion.

(3) After the close of the public comment period, the Assistant Administrator for Solid Waste and Emergency Response will issue a decision whether

or not to certify the thermal treatment unit.

[50 FR 2005, Jan. 14, 1985]

Subpart Q—Chemical, Physical, and Biological Treatment

§ 265.400 Applicability.

The regulations in this subpart apply to owners and operators of facilities which treat hazardous wastes by chemical, physical, or biological methods in other than tanks, surface impoundments, and land treatment facilities, except as § 265.1 provides otherwise. Chemical, physical, and biological treatment of hazardous waste in tanks, surface impoundments, and land treatment facilities must be conducted in accordance with Subparts J, K, and M, respectively.

§ 265.401 General operating requirements.

(a) Chemical, physical, or biological treatment of hazardous waste must comply with § 265.17(b).

(b) Hazardous wastes or treatment reagents must not be placed in the treatment process or equipment if they could cause the treatment process or equipment to rupture, leak, corrode, or otherwise fail before the end of its intended life.

(c) Where hazardous waste is continuously fed into a treatment process or equipment, the process or equipment must be equipped with a means to stop this inflow (e.g., a waste feed cut-off system or by-pass system to a standby containment device).

[*Comment:* These systems are intended to be used in the event of a malfunction in the treatment process or equipment.]

§ 265.402 Waste analysis and trial tests.

(a) In addition to the waste analysis required by § 265.13, whenever:

(1) A hazardous waste which is substantially different from waste previously treated in a treatment process or equipment at the facility is to be treated in that process or equipment, or

(2) A substantially different process than any previously used at the facility is to be used to chemically treat hazardous waste,

the owner or operator must, before treating the different waste or using the different process or equipment:

(i) Conduct waste analyses and trial treatment tests (e.g., bench scale or pilot plant scale tests); or

(ii) Obtain written, documented information on similar treatment of similar waste under similar operating conditions;

to show that this proposed treatment will meet all applicable requirements of § 265.401 (a) and (b).

[*Comment:* As required by § 265.13, the waste analysis plan must include analyses needed to comply with §§ 265.405 and 265.406. As required by § 265.73, the owner or operator must place the results from each waste analysis and trial test, or the documented information, in the operating record of the facility.]

§ 265.403 Inspections.

(a) The owner or operator of a treatment facility must inspect, where present:

(1) Discharge control and safety equipment (e.g., waste feed cut-off systems, by-pass systems, drainage systems, and pressure relief systems) at least once each operating day, to ensure that it is in good working order;

(2) Data gathered from monitoring equipment (e.g., pressure and temperature gauges), at least once each operating day, to ensure that the treatment process or equipment is being operated according to its design;

(3) The construction materials of the treatment process or equipment, at least weekly, to detect corrosion or leaking of fixtures or seams; and

(4) The construction materials of, and the area immediately surrounding, discharge confinement structures (e.g., dikes), at least weekly, to detect erosion or obvious signs of leakage (e.g., wet spots or dead vegetation).

[*Comment:* As required by § 265.15(c), the owner or operator must remedy any deterioration or malfunction he finds.]

§ 265.404 Closure.

At closure, all hazardous waste and hazardous waste residues must be removed from treatment processes or equipment, discharge control equipment, and discharge confinement structures.

[*Comment:* At closure, as throughout the operating period, unless the owner or operator can demonstrate, in accordance with § 261.3 (c) or (d) of this chapter, that any solid waste removed from his treatment process or equipment is not a hazardous waste, the owner or operator becomes a generator of hazardous waste and must manage it in accordance with all applicable requirements of Parts 262, 263, and 265 of this chapter.]

§ 265.405 Special requirements for ignitable or reactive waste.

(a) Ignitable or reactive waste must not be placed in a treatment process or equipment unless:

(1) The waste is treated, rendered, or mixed before or immediately after placement in the treatment process or equipment so that (i) the resulting waste, mixture, or dissolution of material no longer meets the definition of ignitable or reactive waste under § 261.21 or 261.23 or this chapter, and (ii) § 265.17(b) is complied with; or

(2) The waste is treated in such a way that it is protected from any material or conditions which may cause the waste to ignite or react.

§ 265.406 Special requirements for incompatible wastes.

(a) Incompatible wastes, or incompatible wastes and materials, (see Appendix V for examples) must not be placed in the same treatment process or equipment, unless § 265.17(b) is complied with.

(b) Hazardous waste must not be placed in unwashed treatment equipment which previously held an incompatible waste or material, unless § 265.17(b) is complied with.

Subpart R—Underground Injection

§ 265.430 Applicability.

Except as § 265.1 provides otherwise:

(a) The owner or operator of a facility which disposes of hazardous waste by underground injection is excluded from the requirements of Subparts G and H of this part.

(b) The requirements of this subpart apply to owners and operators of wells used to dispose of hazardous waste which are classified as Class I under § 144.6(a) of this chapter and which are classified as Class IV under § 144.6(d) of this chapter.

[*Comment:* In addition to the requirements of Subparts A through E of this part, the owner or operator of a facility which disposes of hazardous waste by underground injection ultimately must comply with the requirements of §§ 265.431 through 265.437. These sections are reserved at this time. The Agency will propose regulations that would establish those requirements.]

[45 FR 33232, May 19, 1980, as amended at 48 FR 30115, June 30, 1983]

Appendix I—Recordkeeping Instructions

The recordkeeping provisions of § 265.73 specify that an owner or operator must keep a written operating record at his facility. This appendix provides additional instructions for keeping *portions* of the operating record. See § 265.73(b) for additional recordkeeping requirements.

The following information must be recorded, as it becomes available, and maintained in the operating record until closure of the facility in the following manner:

Records of each hazardous waste received, treated, stored, or disposed of at the facility which include the following:

(1) A description by its common name and the EPA Hazardous Waste Number(s) from Part 261 of this chapter which apply to the waste. The waste description also must include the waste's physical form, i.e., liquid, sludge, solid, or contained gas. If the waste is not listed in Part 261, Subpart D, of this chapter, the description also must include the process that produced it (for example, solid filter cake from production of ——, EPA Hazardous Waste Number W051).

Each hazardous waste listed in Part 261, Subpart D, of this chapter, and each hazardous waste characteristic defined in Part 261, Subpart C, of this chapter, has a four-digit EPA Hazardous Waste Number assigned to it. This number must be used for recordkeeping and reporting purposes. Where a hazardous waste contains more than one listed hazardous waste, or where more than one hazardous waste characteristic applies to the waste, the waste description must include all applicable EPA Hazardous Waste Numbers.

(2) The estimated or manifest-reported weight, or volume and density, where applicable, in one of the units of measure specified in Table 1; and

TABLE 1

Unit of measure	Symbol[1]	Density
Pounds	P	
Short tons (2000 lbs)	T	
Gallons (U.S.)	G	P/G
Cubic yards	Y	T/Y
Kilograms	K	
Tonnes (1000 kg)	M	
Liters	L	K/L
Cubic meters	C	M/C

[1] Single digit symbols are used here for data processing purposes.

(3) The method(s) (by handling code(s) as specified in Table 2) and date(s) of treatment, storage, or disposal.

TABLE 2—HANDLING CODES FOR TREATMENT, STORAGE, AND DISPOSAL METHODS

Enter the handling code(s) listed below that most closely represents the technique(s) used at the facility to treat, store, or dispose of each quantity of hazardous waste received.

1. Storage

S01 Container (barrel, drum, etc.)
S02 Tank
S03 Waste pile
S04 Surface impoundment
S05 Other (specify)

2. Treatment

(a) Thermal Treatment

T06 Liquid injection incinerator
T07 Rotary kiln incinerator
T08 Fluidized bed incinerator
T09 Multiple hearth incinerator
T10 Infrared furnace incinerator
T11 Molten salt destructor
T12 Pyrolysis
T13 Wet air oxidation
T14 Calcination
T15 Microwave discharge
T16 Cement kiln
T17 Lime kiln
T18 Other (specify)

(b) Chemical Treatment

T19 Absorption mound
T20 Absorption field
T21 Chemical fixation
T22 Chemical oxidation
T23 Chemical precipitation
T24 Chemical reduction
T25 Chlorination
T26 Chlorinolysis
T27 Cyanide destruction
T28 Degradation
T29 Detoxification
T30 Ion exchange
T31 Neutralization
T32 Ozonation
T33 Photolysis
T34 Other (specify)

(c) Physical Treatment:

(1) Separation of components

T35 Centrifugation
T36 Clarification
T37 Coagulation
T38 Decanting
T39 Encapsulation
T40 Filtration
T41 Flocculation
T42 Flotation
T43 Foaming
T44 Sedimentation
T45 Thickening
T46 Ultrafiltration
T47 Other (specify)

(2) Removal of Specific Components

T48 Absorption-molecular sieve
T49 Activated carbon
T50 Blending
T51 Catalysis
T52 Crystallization
T53 Dialysis
T54 Distillation
T55 Electrodialysis
T56 Electrolysis
T57 Evaporation
T58 High gradient magnetic separation
T59 Leaching
T60 Liquid ion exchange
T61 Liquid-liquid extraction
T62 Reverse osmosis
T63 Solvent recovery
T64 Stripping
T65 Sand filter
T66 Other (specify)

(d) Biological Treatment

T67 Activated sludge
T68 Aerobic lagoon
T69 Aerobic tank
T70 Anaerobic lagoon
T71 Composting
T72 Septic tank
T73 Spray irrigation
T74 Thickening filter
T75 Tricking filter
T76 Waste stabilization pond
T77 Other (specify)
T78-79 [Reserved]

3. Disposal

D80 Underground injection
D81 Landfill
D82 Land treatment
D83 Ocean disposal
D84 Surface impoundment (to be closed as a landfill)
D85 Other (specify)

APPENDIX II—[RESERVED]

APPENDIX III—EPA INTERIM PRIMARY DRINKING WATER STANDARDS

Parameter	Maximum level (mg/l)
Arsenic	0.05
Barium	1.0
Cadmium	0.01
Chromium	0.05
Fluoride	1.4–2.4
Lead	0.05
Mercury	0.002
Nitrate (as N)	10
Selenium	0.01
Silver	0.05
Endrin	0.0002
Lindane	0.004
Methoxychlor	0.1
Toxaphene	0.005
2,4-D	0.1
2,4,5-TP Silver	0.01
Radium	5 pCi/1
Gross Alpha	15 pCi/1
Gross Beta	4 millirem/yr
Turbidity	1/TU
Coliform Bacteria	1/100 ml

[*Comment:* Turbidity is applicable only to surface water supplies.]

APPENDIX IV—TESTS FOR SIGNIFICANCE

As required in § 265.93(b) the owner or operator must use the Student's t-test to determine statistically significant changes in the concentration or value of an indicator parameter in periodic ground-water samples when compared to the initial background concentration or value of that indicator parameter. The comparison must consider individually each of the wells in the monitoring system. For three of the indicator parameters (specific conductance, total organic carbon, and total organic halogen) a single-tailed Student's t-test must be used to test at the 0.01 level of significance for significant increases over background. The difference test for pH must be a two-tailed Student's t-test at the overall 0.01 level of significance.

The student's t-test involves calculation of the value of a t-statistic for each comparison of the mean (average) concentration or value (based on a minimum of four replicate measurements) of an indicator parameter with its initial background concentration or value. The calculated value of the t-statistic must then be compared to the value of the t-statistic found in a table for t-test of significance at the specified level of significance. A calculated value of t which exceeds the value of t found in the table indicates a statistically significant change in the concentration or value of the indicator parameter.

Formulae for calculation of the t-statistic and tables for t-test of significance can be found in most introductory statistics texts.

APPENDIX V—EXAMPLES OF POTENTIALLY INCOMPATIBLE WASTE

Many hazardous wastes, when mixed with other waste or materials at a hazardous waste facility, can produce effects which are harmful to human health and the environment, such as (1) heat or pressure, (2) fire or explosion, (3) violent reaction, (4) toxic dusts, mists, fumes, or gases, or (5) flammable fumes or gases.

Below are examples of potentially incompatible wastes, waste components, and materials, along with the harmful consequences which result from mixing materials in one group with materials in another group. The list is intended as a guide to owners or operators of treatment, storage, and disposal facilities, and to enforcement and permit granting officials, to indicate the need for special precautions when managing these potentially incompatible waste materials or components.

This list is not intended to be exhaustive. An owner or operator must, as the regulations require, adequately analyze his wastes so that he can avoid creating uncontrolled substances or reactions of the type listed below, whether they are listed below or not.

It is possible for potentially incompatible wastes to be mixed in a way that precludes a reaction (e.g., adding acid to water rather than water to acid) or that neutralizes them (e.g., a strong acid mixed with a strong base), or that controls substances produced (e.g., by generating flammable gases in a closed tank equipped so that ignition cannot occur, and burning the gases in an incinerator).

In the lists below, the mixing of a Group A material with a Group B material may have the potential consequence as noted.

Group 1-A	Group 1-B
Acetylene sludge	Acid sludge
Akaline caustic liquids	Acid and water
Alkaline cleaner	Battery acid
Alkaline corrosive liquids	Chemical cleaners
Alkaline corrosive battery fluid	Electrolyte, acid
Caustic wastewater	Etching acid liquid or solvent
Lime sludge and other corrosive alkalies	
Lime wastewater	Pickling liquor and other corrosive acids
Lime and water	Spent acid
Spent caustic	Spent mixed acid

Group 1-A	Group 1-B
	Spent sulfuric acid

Potential consequences: Heat generation; violent reaction.

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

Potential consequences: Fire 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_3Cl_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 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 Hyphochlorites Nitrates Nitric acid, fuming Perchlorates Permanganates Peroxides Other strong oxidizers	Acetic acid and other organic acids Concentrated mineral acides 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.

PART 266—STANDARDS FOR THE MANAGEMENT OF SPECIFIC HAZARDOUS WASTES AND SPECIFIC TYPES OF HAZARDOUS WASTE MANAGEMENT FACILITIES

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Subpart F—Recyclable Materials Utilized for Precious Metal Recovery

266.70 Applicability and requirements.

Subpart G—Spent Lead-Acid Batteries Being Reclaimed

266.80 Applicability and requirements.

AUTHORITY: Secs. 1006, 2002(a), 3004, and 3014 of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act of 1976, as amended (42 U.S.C. 6905, 6912(a), 6924, and 6934).

SOURCE: 50 FR 666, Jan. 4, 1985, unless otherwise noted.

Subparts A—B [Reserved]

Subpart C—Recyclable Materials Used in a Manner Constituting Disposal

§ 266.20 Applicability.

(a) The regulations of this subpart apply to recyclable materials that are applied to or placed on the land:

(1) Without mixing with any other substance(s); or

(2) After mixing or conmbination with any other substance(s). These materials will be referred to throughout this subpart as "materials used in a manner that constitutes disposal."

(b) Products produced for the general public's use that are used in a manner that constitutes disposal and that contain recyclable materials are not presently subject to regulation if the recyclable materials have undergone a chemical reaction in the course of producing the product so as to become inseparable by physical means. Commercial fertilizers that are produced for the general public's use that contain recyclable materials also are not presently subject to regulation.

[50 FR 666, Jan. 4, 1985, as amended at 52 FR 21307, June 5, 1987]

§ 266.21 Standards applicable to generators and transporters of materials used in a manner that constitute disposal.

Generators and transporters of materials that are used in a manner that constitutes disposal are subject to the applicable requirements of Parts 262 and 263 of this chapter, and the notification requirement under section 3010 of RCRA.

§ 266.22 Standards applicable to storers of materials that are to be used in a manner that constitutes disposal who are not the ultimate users.

Owners or operators of facilities that store recyclable materials that are to be used in a manner that constitutes disposal, but who are not the ultimate users of the materials, are regulated under all applicable provisions of Subparts A through L of Parts 264 and 265 and Parts 270 and 124 of this chapter and the notification requirement under section 3010 of RCRA.

§ 266.23 Standards applicable to users of materials that are used in a manner that constitutes disposal.

(a) Owners or operators of facilities that use recyclable materials in a manner that constitutes disposal are regulated under all applicable provisions of Subparts A through N of Parts 264 and 265 and Parts 270 and 124 of this chapter and the notification requirement under section 3010 of RCRA. (These requirements do not apply to products which contain these recyclable materials under the provisions of § 266.20(b) of this chapter.)

(b) The use of waste or used oil or other material, which is contaminated with dioxin or any other hazardous waste (other than a waste identified solely on the basis of ignitability), for dust suppression or road treatment is prohibited.

[50 FR 666, Jan. 4, 1985, as amended at 50 FR 28750, July 15, 1985]

Subpart D—Hazardous Waste Burned for Energy Recovery

SOURCE: 50 FR 49204, Nov. 29, 1985, unless otherwise noted.

§ 266.30 Applicability.

(a) The regulations of this subpart apply to hazardous wastes that are burned for energy recovery in any boiler or industrial furnace that is not regulated under Subpart O of Part 264 or 265 of this chapter, except as provided by paragraph (b) of this section. Such hazardous wastes burned for energy recovery are termed "hazardous waste fuel". Fuel produced from hazardous waste by processing, blending, or other treatment is also hazardous waste fuel. (These regulations do not apply, however, to gas recovered from hazardous waste management activities when such gas is burned for energy recovery.)

(b) The following hazardous wastes are not subject to regulation under this subpart:

(1) Used oil burned for energy recovery that is also a hazardous waste solely because it exhibits a characteristic of hazardous waste identified in Subpart C of Part 261 of this chapter. Such used oil is subject to regulation under Subpart E of Part 266 rather than this subpart; and

(2) Hazardous wastes that are exempt from regulation under §§ 261.4 and 261.6(a)(3)(v) through (ix) of this chapter, and hazardous wastes that are subject to the special requirements for small quantity generators under § 261.5 of this chapter.

§ 266.31 Prohibitions.

(a) A person may market hazardous waste fuel only:

(1) To persons who have notified EPA of their hazardous waste fuel activities and have a U.S. EPA Identification Number; and

(2) If the fuel is burned, to persons who burn the fuel in boilers or industrial furnaces identified in paragraph (b) of this section.

(b) Hazardous waste fuel may be burned for energy recovery in only the following devices;

(1) Industrial furnaces identified in § 260.10 of this chapter;

(2) Boilers, as defined in § 260.10 of this chapter, that are identified as follows:

(i) Industrial boilers located on the site of a facility engaged in a manufacturing process where substances are transformed into new products, including the component parts of products, by mechanical or chemical processes; or

(ii) Utility boilers used to produce electric power, steam, or heated or cooled air or other gases or fluids for sale.

(c) No fuel which contains any hazardous waste may be burned in any cement kiln which is located within the boundaries of any incorporated municipality with a population greater than 500,000 (based on the most recent census statistics) unless such kiln fully complies with regulations under this chapter that are applicable to incinerators.

[50 FR 49204, Nov. 29, 1985, as amended at 52 FR 11821, Apr. 13, 1987]

§ 266.32 Standards applicable to generators of hazardous waste fuel.

(a) Generators of hazardous waste that is used as a fuel or used to produce a fuel are subject to Part 262 of this chapter.

(b) Generators who market hazardous waste fuel to a burner also are subject to § 266.34.

(c) Generators who are burners also are subject to § 266.35.

§ 266.33 Standards applicable to transporters of hazardous waste fuel.

Transporters of hazardous waste fuel (and hazardous waste that is used to produce a fuel) are subject to Part 263 of this chapter.

§ 266.34 Standards applicable to marketers of hazardous waste fuel.

Persons who market hazardous waste fuel are termed "marketers", and are subject to the following requirements. Marketers include generators who market hazardous waste fuel directly to a burner, persons who receive hazardous waste from generators and produce, process, or blend hazardous waste fuel from these hazardous wastes, and persons who distribute but do not process or blend hazardous waste fuel.

(a) *Prohibitions.* The prohibitions under § 266.31(a);

(b) *Notification.* Notification of hazardous waste fuel activities. Even if a marketer has previously notified EPA of his hazardous waste management activities and obtained a U.S. EPA Identification Number, he must renotify to identify his hazardous waste fuel activities.

(c) *Storage.* The applicable provisions of § 262.34, and Subparts A through L of Part 264, Subparts A through L of Part 265, and Part 270 of this chapter;

(d) *Off-site shipment.* The standards for generators in Part 262 of this chapter when a marketer initiates a shipment of hazardous waste fuel;

(e) *Required notices.* (1) Before a marketer initiates the first shipment of hazardous waste fuel to a burner or another marketer, he must obtain a one-time written and signed notice from the burner or marketer certifying that:

(i) The burner or marketer has notified EPA and identified his waste-as-fuel activities; and

(ii) If the recipient is a burner, the burner will burn the hazardous waste fuel only in -n industrial furnace or boiler identified in § 266.31(b).

(2) Before a marketer accepts the first shipment of hazardous waste fuel from another marketer, he must provide the other marketer with a one-time written and signed certification that he has notified EPA under section 3010 of RCRA and identified his hazardous waste fuel activities; and

(f) *Recordkeeping.* In addition to the applicable recordkeeping requirements of Parts 262, 264, and 265 of this chapter, a marketer must keep a copy of each certification notice he receives or sends for three years from the date he last engages in a hazardous waste fuel marketing transaction with the person who sends or receives the certification notice.

(The notification requirements contained in paragraph (b) of this section were approved by OMB under control number 2050-0028. The storage requirements contained in paragraph (c) of this section were approved by OMB under control number 2050-0009. The manifest and invoice requirements contained in paragraph (d) of this section were approved by OMB under control numbers 2050-0039 and 2050-0047, respectively. The certification requirements contained in paragraph (e) of this section were approved by OMB under control number 2050-0047. The recordkeeping requirements contained in paragraph (f) of this section were approved by OMB under control number 2050-0047.)

[50 FR 49204, Nov. 29, 1985, as amended at 52 FR 11821, Apr. 13, 1987]

§ 266.35 Standards applicable to burners of hazardous waste fuel.

Owners and operators of industrial furnaces and boilers identified in § 266.31(b) that burn hazardous waste fuel are "burners" and are subject to the following requirements:

(a) *Prohibitions.* The prohibitions under § 266.31(b);

(b) *Notification.* Notification of hazardous waste fuel activities. Even if a burner has previously notified EPA of his hazardous waste management activities and obtained a U.S. EPA Identification Number, he must renotify to identify his hazardous waste fuel activities.

(c) *Storage.* (1) For short term accumulation by generators who burn their hazardous waste fuel on site, the applicable provisions of § 262.34 of this chapter;

(2) For existing storage facilities, the applicable provisions of Subparts A through L of Part 265, and Parts 270 and 124 of this chapter; and

(3) For new storage facilities, the applicable provisions of Subparts A through L of Part 264, and Parts 270 and 124 of this chapter;

(d) *Required notices.* Before a burner accepts the first shipment of hazardous waste fuel from a marketer, he must provide the marketer a one-time written and signed notice certifying that:

(1) He has notified EPA and identified his waste-as-fuel activities; and

(2) He will burn the fuel only in a boiler or furnace identified in § 266.31(b).

(e) *Recordkeeping.* In addition to the applicable recordkeeping requirements of Parts 264 and 265 of this chapter, a burner must keep a copy of each certification notice that he sends to a marketer for three years from the date he last receives hazardous waste fuel from that marketer.

(The notification requirements contained in paragraph (b) of this section were approved

by OMB under control number 2050-0028. The storage requirements contained in paragraph (c) of this section were approved by OMB under control number 2050-0009. The certification requirements contained in paragraph (d) of this section were approved by OMB under control number 2050-0047. The recordkeeping requirements contained in paragraph (e) of this section were approved by OMB under control number 2050-0047.)

[50 FR 49204, Nov. 29, 1985, as amended at 52 FR 11821, Apr. 13, 1987]

Subpart E—Used Oil Burned for Energy Recovery

SOURCE: 50 FR 49205, Nov. 29, 1985, unless otherwise noted.

§ 266.40 Applicability.

(a) The regulations of this subpart apply to used oil that is burned for energy recovery in any boiler or industrial furnace that is not regulated under Subpart O of Part 264 or 265 of this chapter, except as provided by paragraphs (c) and (e) of this section. Such used oil is termed "used oil fuel". Used oil fuel includes any fuel produced from used oil by processing, blending, or other treatment.

(b) "Used oil" means any oil that has been refined from crude oil, used, and, as a result of such use, is contaminated by physical or chemical impurities.

(c) Except as provided by paragraph (d) of this section, used oil that is mixed with hazardous waste and burned for energy recovery is subject to regulation as hazardous waste fuel under Subpart D of Part 266. Used oil containing more than 1000 ppm of total halogens is presumed to be a hazardous waste because it has been mixed with halogenated hazardous waste listed in Subpart D of Part 261 of this chapter. Persons may rebut this presumption by demonstrating that the used oil does not contain hazardous waste (for example, by showing that the used oil does not contain significant concentrations of halogenated hazardous constituents listed in Appendix VIII of Part 261 of this chapter).

(d) Used oil burned for energy recovery is subject to regulation under this subpart rather than as hazardous waste fuel under Subpart D of this part if it is a hazardous waste solely because it:

(1) Exhibits a characteristic of hazardous waste identified in Subpart C of Part 261 of this chapter, provided that it is not mixed with a hazardous waste; or

(2) Contains hazardous waste generated only by a person subject to the special requirements for small quantity generators under § 261.5 of this chapter.

(e) Except as provided by paragraph (c) of this section, used oil burned for energy recovery, and any fuel produced from used oil by processing, blending, or other treatment, is subject to regulation under this subpart unless it is shown not to exceed any of the allowable levels of the constituents and properties in the specification shown in the following table. Used oil fuel that meets the specification is subject only to the analysis and recordkeeping requirements under § 266.43(b) (1) and (6). Used oil fuel that exceeds any specification level is termed "off-specification used oil fuel".

USED OIL EXCEEDING ANY SPECIFICATION LEVEL IS SUBJECT TO THIS SUBPART WHEN BURNED FOR ENERGY RECOVERY [a]

Constituent/property	Allowable level
Arsenic	5 ppm maximum.
Cadmium	2 ppm maximum.
Chromium	10 ppm maximum.
Lead	100 ppm maximum.
Flash Point	100 °F minimum.
Total Halogens	4,000 ppm maximum.[b]

[a] The specification does not apply to used oil fuel mixed with a hazardous waste other than small quantity generator hazardous waste.

[b] Used oil containing more than 1,000 ppm total halogens is presumed to be a hazardous waste under the rebuttable presumption provided under § 266.40(c). Such used oil is subject to Subpart D of this part rather than this subpart when burned for energy recovery unless the presumption of mixing can be successfully rebutted.

§ 266.41 Prohibitions.

(a) A person may market off-specification used oil for energy recovery only:

(1) To burners or other marketers who have notified EPA of their used oil management activities stating the location and general description of such activities, and who have an EPA identification number; and

(2) To burners who burn the used oil in an industrial furnace or boiler identified in paragraph (b) of this section.

(b) Off-specification used oil may be burned for energy recovery in only the following devices:

(1) Industrial furnaces identified in § 260.10 of this chapter; or

(2) Boilers, as defined in § 260.10 of this chapter, that are identified as follows:

(i) Industrial boilers located on the site of a facility engaged in a manufacturing process where substances are transformed into new products, including the component parts of products, by mechanical or chemical processes;

(ii) Utility boilers used to produce electric power, steam, or heated or cooled air or other gases or fluids for sale; or

(iii) Used oil-fired space heaters provided that:

(A) The heater burns only used oil that the owner or operator generates or used oil received from do-it-yourself oil changers who generate used oil as household waste;

(B) The heater is designed to have a maximum capacity of not more than 0.5 million Btu per hour; and

(C) The combustion gases from the heater are vented to the ambient air.

§ 266.42 Standards applicable to generators of used oil burned for energy recovery.

(a) Except as provided in paragraphs (b) and (c) of this section, generators of used oil are not subject to this subpart.

(b) Generators who market used oil directly to a burner are subject to § 266.43.

(c) Generators who burn used oil are subject to § 266.44.

§ 266.43 Standards applicable to marketers of used oil burned for energy recovery.

(a) Persons who market used oil fuel are termed "marketers". Except as provided below, marketers include generators who market used oil fuel directly to a burner, persons who receive used oil from generators and produce, process, or blend used oil fuel from these used oils (including persons sending blended or processed used oil to brokers or other intermediaries), and persons who distribute but do not process or blend used oil fuel. The following persons are not marketers subject to this subpart:

(1) Used oil generators, and collectors who transport used oil received only from generators, unless the generator or collector markets the used oil directly to a person who burns it for energy recovery. However, persons who burn some used oil fuel for purposes of processing or other treatment to produce used oil fuel for marketing are considered to be burning incidentally to processing. Thus, generators and collectors who market to such incidental burners are not marketers subject to this subpart;

(2) Persons who market only used oil fuel that meets the specification under § 266.40(e) and who are not the first person to claim the oil meets the specification (i.e., marketers who do not receive used oil from generators or initial transporters and marketers who neither receive nor market off-specification used oil fuel).

(b) Marketers are subject to the following requirements:

(1) *Analysis of used oil fuel.* Used oil fuel is subject to regulation under this subpart unless the marketer obtains analyses or other information documenting that the used oil fuel meets the specification provided under § 266.40(e).

(2) *Prohibitions.* The prohibitions under § 266.41(a);

(3) *Notification.* Notification to EPA stating the location and general description of used oil management activities. Even if a marketer has previously notified EPA of his hazardous waste management activities under section 3010 of RCRA and obtained a U.S. EPA Identification Number, he must renotify to identify his used oil management activities.

(4) *Invoice system.* When a marketer initiates a shipment of off-specification used oil, he must prepare and send the receiving facility an invoice containing the following information:

(i) An invoice number;

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(ii) His own EPA identification number and the EPA identification number of the receiving facility;

(iii) The names and addresses of the shipping and receiving facilities;

(iv) The quantity of off-specification used oil to be delivered;

(v) The date(s) of shipment or delivery; and

(vi) The following statement: "This used oil is subject to EPA regulation under 40 CFR Part 266";

NOTE: Used oil that meets the definition of combustible liquid (flash point below 200 °F but at or greater than 100 °F) or flammable liquid (flash point below 100 °F) is subject to Department of Transportation Hazardous Materials Regulations at 49 CFR Parts 100 through 177.

(5) *Required notices.* (i) Before a marketer initiates the first shipment of off-specification used oil to a burner or other marketer, he must obtain a one-time written and signed notice from the burner or marketer certifying that:

(A) The burner or marketer has notified EPA stating the location and general description of his used oil management activities; and

(B) If the recipient is a burner, the burner will burn the off-specification used oil only in an industrial furnace or boiler identified in § 266.41(b); and

(ii) Before a marketer accepts the first shipment of off-specification used oil from another marketer subject to the requirements of this section, he must provide the marketer with a one-time written and signed notice certifying that he has notified EPA of his used oil management activities; and

(6) *Recordkeeping*—(i) *Used oil fuel that meets the specification.* A marketer who first claims under paragraph (b)(1) of this section that used oil fuel meets the specification must keep copies of analysis (or other information used to make the determination) of used oil for three years. Such marketers must also record in an operating log and keep for three years the following information on each shipment of used oil fuel that meets the specification. Such used oil fuel is not subject to further regulation, unless it is subsequently mixed with hazardous waste or unless it is mixed with used oil so that it no longer meets the specification.

(A) The name and address of the facility receiving the shipment;

(B) The quantity of used oil fuel delivered;

(C) The date of shipment or delivery; and

(D) A cross-reference to the record of used oil analysis (or other information used to make the determination that the oil meets the specification) required under paragraph (b)(6)(i) of this section.

(ii) *Off-specification used oil fuel.* A marketer who receives or initiates an invoice under the requirements of this section must keep a copy of each invoice for three years from the date the invoice is received or prepared. In addition, a marketer must keep a copy of each certification notice that he receives or sends for three years from the date he last engages in an off-specification used oil fuel marketing transaction with the person who sends or receives the certification notice.

(The analysis requirements contained in paragraph (b)(1) of this section were approved by OMB under control number 2050-0047. The notification requirements contained in paragraph (b)(3) of this section were approved by OMB under control number 2050-0028. The invoice requirements contained in paragraph (b)(4) of this section were approved by OMB under control number 2050-0047. The certification requirements contained in paragraph (b)(5) of this section were approved by OMB under control number 2050-0047. The recordkeeping requirements contained in paragraph (b)(6) of this section were approved by OMB under control number 2050-0047.)

[50 FR 49205, Nov. 29, 1985, as amended at 52 FR 11822, Apr. 13, 1987]

§ 266.44 Standards applicable to burners of used oil burned for energy recovery.

Owners and operators of facilities that burn used oil fuel are "burners" and are subject to the following requirements:

(a) *Prohibition.* The prohibition under § 266.41(b);

(b) *Notification.* Burners of off-specification used oil fuel, and burners of used oil fuel who are the first to claim that the oil meets the specification provided under § 266.40(e), except burners who burn specification oil that they generate, must notify EPA stating the location and general description of used oil management activities. Burners of used oil fuel that meets the specification who receive such oil from a marketer that previously notified EPA are not required to notify. Owners and operators of used oil-fired space heaters that burn used oil fuel under the provisions of § 266.41(b)(2) are exempt from this notification requirement. Even if a burner has previously notified EPA of his hazardous waste management activities under section 3010 of RCRA and obtained an identification number, he must renotify to identify his used oil management activities.

(c) *Required notices.* Before a burner accepts the first shipment of off-specification used oil fuel from a marketer, he must provide the marketer a one-time written and signed notice certifying that:

(1) He has notified EPA stating the location and general description of his used oil management activities; and

(2) He will burn the used oil only in an industrial furnace or boiler identified in § 266.41(b); and

(d) *Used oil fuel analysis.* (1) Used oil fuel burned by the generator is subject to regulation under this subpart unless the burner obtains analysis (or other information) documenting that the used oil meets the specification provided under § 266.40(e).

(2) Burners who treat off-specification used oil fuel by processing, blending, or other treatment to meet the specification provided under § 266.40(e) must obtain analyses (or other information) documenting that the used oil meets the specification.

(e) *Recordkeeping.* A burner who receives an invoice under the requirements of this section must keep a copy of each invoice for three years from the date the invoice is received. Burners must also keep for three years copies of analyses of used oil fuel as may be required by paragraph (d) of this section. In addition, he must keep a copy of each certification notice that he sends to a marketer for three years from the date he last receives off-specification used oil from that marketer.

(The notification requirements contained in paragraph (b) of this section were approved by OMB under control number 2050-0028. The certification requirements contained in paragraph (c) of this section were approved by OMB under control number 2050-0047. The analysis requirements contained in paragraph (d) of this section were approved by OMB under control number 2050-0047. The recordkeeping requirements contained in paragraph (e) of this section were approved by OMB under control number 2050-0047.)

[50 FR 49205, Nov. 29, 1985, as amended at 52 FR 11822, Apr. 13, 1987]

Subpart F—Recyclable Materials Utilized for Precious Metal Recovery

§ 266.70 Applicability and requirements.

(a) The regulations of this subpart apply to recyclable materials that are reclaimed to recover economically significant amounts of gold, silver, platinum, paladium, irridium, osmium, rhodium, ruthenium, or any combination of these.

(b) Persons who generate, transport, or store recyclable materials that are regulated under this subpart are subject to the following requirements:

(1) Notification requirements under section 3010 of RCRA;

(2) Subpart B of Part 262 (for generators), §§ 263.20 and 263.21 (for transporters), and §§ 265.71 and 265.72 (for persons who store) of this chapter;

(c) Persons who store recycled materials that are regulated under this subpart must keep the following records to document that they are not accumulating these materials speculatively (as defined in § 261.1(c) of this chapter);

(1) Records showing the volume of these materials stored at the beginning of the calendar year;

(2) The amount of these materials generated or received during the calendar year; and

(3) The amount of materials remaining at the end of the calendar year.

(d) Recyclable materials that are regulated under this subpart that are accumulated speculatively (as defined in § 261.1(c) of this chapter) are subject to all applicable provisions of

Parts 262 through 265, 270 and 124 of this chapter.

Subpart G—Spent Lead-Acid Batteries Being Reclaimed

§ 266.80 Applicability and requirements.

(a) The regulations of this subpart apply to persons who reclaim spent lead-acid batteries that are recyclable materials ("spent batteries"). Persons who generate, transport, or collect spent batteries, or who store spent batteries but do not reclaim them are not subject to regulation under Parts 262 through 266 or Part 270 or 124 of this chapter, and also are not subject to the requirements of section 3010 of RCRA.

(b) Owners or operators of facilities that store spent batteries before reclaiming them are subject to the following requirements.

(1) Notification requirements under section 3010 of RCRA;

(2) All applicable provisions in Subparts A, B (but not § 264.13 (waste analysis)), C, D, E (but not § 264.71 or § 264.72 (dealing with the use of the manifest and manifest discrepancies)), and F through L of Part 264 of this chapter;

[50 FR 666, Jan. 4, 1985, as amended at 50 FR 33543, Aug. 20, 1985]

PART 267—INTERIM STANDARDS FOR OWNERS AND OPERATORS OF NEW HAZARDOUS WASTE LAND DISPOSAL FACILITIES

Subpart A—General

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267.1 Purpose, scope and applicability.
267.2 Applicability of Part 264 standards.
267.3 Duration of Part 267 standards and their relationship to permits.
267.4 Imminent hazard action.
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267.41 General design requirements.
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Subpart F—Ground-Water Monitoring

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267.51 Ground-water monitoring system.
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Subpart G—Underground Injection

267.60 Applicability.
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267.62 General operating requirements.
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267.64 Additional requirements.

AUTHORITY: Secs. 1006, 2202(a), 3004 and 3005 of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act of 1976, as amended, 42 U.S.C. 6905, 6912(a), 6924 and 6925.

SOURCE: 46 FR 12429, Feb. 13, 1981, unless otherwise noted.

Subpart A—General

§ 267.1 Purpose, scope and applicability.

(a) The purpose of this part is to establish minimum national standards that define the acceptable management of hazardous waste for new land disposal facilities.

(b) The regulations in this part apply to owners and operators of new hazardous waste landfills, surface impoundments, land treatment facilities and Class I underground injection

wells (as defined in § 122.32(g) of this chapter) that require individual RCRA permits under 40 CFR Part 122.

(c) The requirements of this part do not apply to:

(1) A person disposing of hazardous waste by means of ocean disposal subject to a RCRA permit by rule issued under § 122.26(a) of this chapter.

(2) A person disposing of hazardous waste by means of underground injection subject to a RCRA permit by rule under § 122.26(b) of this chapter.

(3) An owner or operator of a POTW subject to a RCRA permit by rule under § 122.26(c) of this chapter.

(4) The owner or operator of a facility permitted, licensed, or registered by a State to manage municipal or industrial solid waste, if the only hazardous waste the facility treats, stores, or disposes of is excluded from regulation under Parts 262 through 265 and Parts 122 and 124 of this chapter by § 261.5 of this chapter;

(5) The owner or operator of a facility which treats or stores hazardous waste, which treatment or storage meets the criteria in § 261.6(A) of this chapter, except to the extent that § 261.6(b) of this chapter provides otherwise;

(6) A generator accumulating waste on-site in compliance with § 262.34 of this chapter;

(7) A farmer disposing of waste pesticides from his own use in compliance with § 262.51 of this chapter;

(8) The owner or operator of a totally enclosed treatment facility, as defined in § 260.10;

(9) The owner or operator of an elementary neutralization unit or a wastewater treatment unit as defined in § 260.10 of this chapter.

(10) Persons with respect to those activities that are carried out to immediately contain or treat a spill of hazardous waste or material which, when spilled, becomes a hazardous waste.

§ 267.2 Applicability of Part 264 standards.

In addition to the standards contained in this part, owners and operators of new hazardous waste landfills, surface impoundments, land treatment facilities and underground injection wells must comply with § 264.18 and Subparts B, C, D, E, G and H of Part 264.

§ 267.3 Duration of Part 267 standards and their relationship to permits.

(a) The regulations in this subpart are applicable, and will serve as a basis for issuing permits, to owners or operators of new hazardous waste landfills, surface impoundments, land treatment facilities, or underground injection facilities until final Part 264 regulations for such facilities become effective or until February 13, 1983, whichever is earlier.

(b) Only those owners and operators of new hazardous waste landfills, surface impoundments, land treatment facilities or underground injection wells who have applied for a permit and for whom public notice of the preparation of a draft permit has been issued under § 124.10 of this chapter by the date final Part 264 regulations for these facilities become effective or [2 years after date of publication], whichever is earlier, may be issued permits under the regulations in this part.

§ 267.4 Imminent hazard action.

Notwithstanding any other provisions of these regulations, enforcement actions may be brought pursuant to section 7003 of RCRA.

§ 267.5 Additional permit procedures applicable to Part 267.

(a) The procedures for issuance, modification, revocation and reissuance, and termination of permits under this part are set forth in Part 124 of this chapter. In addition, the following procedures apply to permits under Part 267:

(1) Any facility for which a draft permit is prepared pursuant to this Part is a major hazardous waste management facility. A fact sheet shall be prepared for each such facility in accordance with § 124.8. Instead of the "brief summary of the basis for the draft permit conditions" required by § 124.8(b)(4), the fact sheet shall include a detailed discussion of basis for the draft permit conditions. This shall include a demonstration that relevant

factors listed in Subparts C through G of this part were considered and a showing of how the draft permit reflects these considerations.

(2) The Administrator shall accept any petition under § 124.19 of this chapter and any appeal under § 124.125 of this chapter to review a permit issued under this part.

(b) The provisions of Subparts A and B in Part 122 of this chapter apply to permits under Part 267. In addition to the information required by § 122.4 and § 122.25 of this chapter, the applications for permits under this part must include the following information:

(1) For a landfill, sufficient information to demonstrate compliance with Subparts C and F of this part.

(2) For a surface impoundment, sufficient information to demonstrate compliance with Subparts D and F of this part.

(3) For a land treatment facility, sufficient information to demonstrate compliance with Subparts E and F of this part.

(4) For an underground injection well, sufficient information to demonstrate compliance with Subpart G of this part.

§ 267.6 Definitions.

Unless otherwise specified in this part, terms used in this regulation are defined in §§ 260.10 and 122.3 of this chapter.

Subpart B—Environmental Performance Standard

§ 267.10 Environmental performance standard.

All new landfills, surface impoundments, land treatment facilities and underground injection wells shall be located, designed, constructed, operated, maintained and closed in a manner that will assure protection of human health and the environment. Protection of human health and the environment shall include, but not be limited to:

(a) Prevention of adverse effects on ground-water quality considering:

(1) The volume and physical and chemical characteristics of the waste in the facility, including its potential for migration through soil or through synthetic liner materials;

(2) The hydrogeological characteristics of the facility and surrounding land;

(3) The quantity, quality and directions of ground-water flow;

(4) The proximity and withdrawal rates of ground-water users;

(5) The existing quality of ground-water, including other sources of contamination and their cumulative impact on the ground-water;

(6) The potential for health risks caused by human exposure to waste constituents;

(7) The potential damage to wildlife, crops, vegetation and physical structures caused by exposure to waste constituents;

(8) The persistence and permanence of the potential adverse effects; and

(b) Prevention of adverse effects on surface water quality considering:

(1) The volume and physical and chemical characteristics of the waste in the facility;

(2) The hydrogeological characteristics of the facility and surrounding land, including the topography of the area around the facility;

(3) The quantity, quality and directions of groundwater flow;

(4) The patterns of rainfall in the region;

(5) The proximity of the facility to surface waters;

(6) The uses of nearby surface waters and any water quality standards established for those surface waters;

(7) The existing quality of surface water, including other sources of contamination and their cumulative impact on surface water;

(8) The potential for health risks caused by human exposure to waste constituents;

(9) The potential damage to wildlife, crops, vegetation and physical structures caused by exposure to waste constitutents;

(10) The persistence and permanence of the potential adverse effects; and

(c) Prevention of adverse effects on air quality, considering:

(1) The volume and physical and chemical characteristics of the waste in the facility, including its potential for volatilization and wind dispersal;

(2) The existing quality of the air, including other sources of contamination and their cumulative impact on the air;

(3) The potential for health risks caused by human exposure to waste constitutents;

(4) The potential damage to wildlife, crops, vegetation and physical structures caused by exposure to waste constituents;

(5) The persistence and permanence of the potential adverse effects; and

(d) Prevention of adverse effects due to migration of waste constituents in the subsurface environment, considering:

(1) The volume and physical and chemical characteristics of the waste in the facility, including its potential for migration through soil;

(2) The geologic characteristics of the facility and surrounding land;

(3) The patterns of land use in the region;

(4) The potential for migration of waste constituents into sub-surface physical structures;

(5) The potential for migration of waste constituents into the root zone of food-chain crops and other vegetation;

(6) The potential for health risks caused by human exposure to waste constituents;

(7) The potential damage to wildlife, crops, vegetation and physical structures caused by exposure to waste constituents; and

(8) The persistence and permanence of the potential adverse effects.

Subpart C—Landfills

§ 267.20 Applicability.

The regulations in this subpart apply to owners and operators of new facilities that dispose of hazardous waste in landfills.

§ 267.21 General design requirements.

(a) Each landfill must include a liner designed to comply with § 267.10 of this part. The design of the facility liner must reflect a consideration of:

(1) The physical and chemical characteristics of the waste in the facility;

(2) The pressure head of leachate on the liner;

(3) Climatic conditions in the area;

(4) The permeability of the liner material, including compaction density and moisture content where earthen materials are present;

(5) The physical and chemical properties of the soil underlying the facility that supports any emplaced liner; and

(6) The potential for damage to the liner system that could occur during installation of any emplaced liner.

(b) Each landfill must include a leachate and runoff control system designed to comply with § 267.10 of this part. The design of the facility leachate and runoff control system must reflect a consideration of:

(1) The physical and chemical characteristics of the waste in the facility;

(2) Climatic conditions in the area;

(3) The volume of leachate or contaminated runoff that could be produced at the facility; and

(4) The available options for managing any leachate or contaminated runoff that is collected at the facility.

§ 267.22 General operating requirements.

(a) Incompatible wastes, or incompatible waste and materials, must not be placed in the same landfill, unless § 264.17(b) is complied with. The waste analysis plan required by § 264.13 must include the analysis needed to comply with this paragraph.

(b) Any emplaced liner material must be installed in a manner that will protect the function and physical integrity of the liner.

(c) The leachate and runoff control system must be operated and maintained in a manner that will comply with § 267.10 of this part. The procedures for operating the leachate and runoff control system must reflect a consideration of:

(1) The volume of leachate or contaminated runoff produced at the facility;

(2) The capacity of any leachate or runoff collection device at the facility;

(3) Climatic conditions in the area; and

(4) The quality of the leachate or runoff produced and the available al-

ternatives for managing any leachate or contaminated runoff produced at the facility.

(d) The landfill must be inspected at a sufficient frequency to assure compliance with § 267.10 of this part.

§ 267.23 Closure and post-closure.

(a) A landfill must be closed in a manner that will comply with § 267.10 of this part. Closure must include placement of a final cover over the landfill, and the closure plan under § 264.112 of this chapter must specify the function and design of the cover. Proper closure of a landfill must reflect a consideration of:

(1) The type and amount of waste in the facility;

(2) The mobility and expected rate of migration of waste;

(3) Site location, topography and surrounding land use;

(4) Climatic conditions in the area;

(5) Characteristics of the cover including material, final surface contours, thickness, porosity and permeability, slope, length of run of slope, and type of vegetation on the cover; and

(6) Geological and soil profiles and surface and subsurface hydrology of the site.

(b) A landfill must be maintained in a manner that complies with § 267.10 of this part during the post-closure period. The post-closure plan under § 264.118 of this chapter must specify the procedures that will be used to satisfy this paragraph. Proper maintenance of a landfill during the post-closure period must reflect a consideration of:

(1) The type and amount of waste in the facility;

(2) The mobility and expected rate of migration of the waste;

(3) Site location, topography and surrounding land use;

(4) Climatic conditions in the area;

(5) Characteristics of the cover including material, final surface contours, thickness, porosity and permeability, slope, length of run of slope, and type of vegetation on the cover;

(6) Geological and soil profiles and surface and subsurface hydrology of the site; and

(7) The maintenance of any groundwater monitoring system or leachate and runoff control system at the facility.

§ 267.24 Treatment of waste.

The Regional Administrator may waive any of the requirements in §§ 267.21, 267.22 or 267.23 of this subpart where necessary to achieve treatment of hazardous waste in a landfill, provided that the waiver does not result in noncompliance with § 267.10.

§ 267.25 Additional requirements.

The Regional Administrator may place additional requirements on owners and operators of new landfills, besides those otherwise required by this subpart, where necessary to comply with § 267.10 of this part.

Subpart D—Surface Impoundments

§ 267.30 Applicability.

The regulations in this subpart apply to owners and operators of new facilities that dispose of hazardous waste in surface impoundments.

§ 267.31 General design requirements.

(a) Each surface impoundment must include a liner designed to comply with § 267.10 of this part. The design of the facility liner must reflect a consideration of:

(1) The physical and chemical characteristics of the waste in the facility;

(2) The pressure head on the liner;

(3) Climatic conditions in the area;

(4) The permeability of the liner material, including compaction density and moisture content where earthen materials are present;

(5) The physical and chemical properties of the soil underlying the facility that supports any emplaced liner; and

(6) The potential for damage to the liner system that could occur during installation of any emplaced liner.

(b) Each surface impoundment must be designed so as to prevent overtopping due to wind and wave action, overfilling, precipitation or any combination thereof.

(c) Where dikes are part of the surface impoundment, the dikes must be

designed to comply with § 267.10 of this part. The design of any facility dikes must reflect a consideration of:

(1) The structural integrity of the dike, including the effects of plants and burrowing animals on earthern dikes;

(2) The potential for water erosion of the dike; and

(3) The potential for wind erosion of the dike.

§ 267.32 General operating requirements.

(a) Incompatible wastes, or incompatible wastes and materials, must not be placed in the same surface impoundment, unless § 264.17(b) is complied with. The waste analysis plan required by § 264.13 must include the analyses needed to comply with this paragraph.

(b) Any emplaced liner material must ber installed in a manner that will protect the function and physical integrity of the liner.

(c) The surface impoundment must be operated so as to prevent overtopping due to wind and wave action, overfilling, precipitation or any combination thereof.

(d) The surface impoundment must be inspected at a sufficient frequency to assure compliance with § 267.10 of this part.

§ 267.33 Closure and post-closure.

(a) A surface impoundment must be closed in a manner that will comply with § 267.10 of this part. Closure must include placement of a final cover over the surface impoundment, and the closure plan under § 264.112 of this chapter must specify the function and design of the cover. Proper closure of a surface impoundment must reflect a consideration of:

(1) The type and amount of waste in the facility, including the amount of free liquids;

(2) The mobility and expected rate of migration of the waste;

(3) Site location, topography and surrounding land use;

(4) Climatic conditions in the area;

(5) Characteristics of the cover including material, final surface contours, thickness, porosity and permeability, slope, length of run of slope and type of vegetation on the cover;

(6) Geological and soil profiles and surface and subsurface hydrology of the site; and

(7) The potential for eliminating free liquids from the facility.

(b) A surface impoundment must be maintained in a manner that complies with § 267.10 of this part during the post-closure period. The post-closure plan under § 264.118 of this chapter must specify the procedures that will be used to satisfy this paragraph. Proper maintenance of a surface impoundment during the post-closure period must reflect a consideration of:

(1) The type and amount of waste in the facility;

(2) The mobility and expected rate of migration of the waste;

(3) Site location, topography and surrounding land use;

(4) Climatic conditions in the area;

(5) Characteristics of the cover including material, final surface contours, thickness, porosity and permeability, slope, length of run of slope, and type of vegetation on the cover;

(6) Geological and soil profiles and surface and subsurface hydrology of the site; and

(7) The maintenance of any groundwater monitoring system at the facility.

§ 267.34 Treatment of waste.

The Regional Administrator may waive any of the requirements in §§ 267.31, 267.32 or 267.33 of this subpart where necessary to achieve treatment of hazardous waste in a surface impoundment, provided that the waiver does not result in noncompliance.

§ 267.35 Additional requirements.

The Regional Administrator may place additional requirements on owners and operators of new surface impoundments, besides those otherwise required by this subpart, where necessary to comply with § 267.10 of this part.

Subpart E—Land Treatment

§ 267.40 Applicability.

The regulations in this subpart apply to owners and operators of new

facilities that dispose of hazardous waste in land treatment facilities.

§ 267.41 General design requirements.

Each land treatment facility must include a runoff control system designed to comply with § 267.10 of this part. The design of the facility runoff control system must reflect a consideration of:

(a) The physical, biological and chemical characteristics of the waste in the facility;

(b) Climatic conditions in the area;

(c) The volume of runoff that could be produced at the facility; and

(d) The available options for managing any contaminated runoff that is collected at the facility.

§ 267.42 General operating requirements.

(a) Incompatible wastes, or incompatible wastes and materials, must not be placed in the same land treatment facility, unless § 264.17(b) is complied with. The waste analysis plan required by § 264.13 must include the analyses needed to comply with this paragraph.

(b) The runoff control system must be operated and maintained in a manner that will comply with § 267.10 of this part. The procedures for operating the runoff control system must reflect a consideration of:

(1) The volume of contaminated runoff produced at the facility;

(2) The capacity of any runoff collection device at the facility;

(3) Climatic conditions in the area; and

(4) The quality of the runoff produced and the available options for managing any contaminated runoff from the facility.

(c) The land treatment facility must be operated to treat the waste in the facility to the extent necessary to comply with § 267.10 of this part.

(d) If food-chain crops are grown at the facility, the facility must be operated in a manner designed to protect the quality of those crops to the extent necessary to comply with § 267.10 of this part. Proper operation of a land treatment facility on which food-chain crops are grown must reflect a consideration of:

(1) The characteristics of the soil, including the pH;

(2) The volume and chemical, biological and physical characteristics of the waste in the facility;

(3) The type of crop to be grown;

(4) The manner in which such crop marketed (e.g. direct sale to consumers, use as an animal feed grain);

(5) The potential future uses of the facility;

(6) The potential for crop uptake of waste constituents; and

(7) The potential exposure of workers who handle the crop to waste constituents.

(e) The treatment facility must be inspected at a sufficient frequency to assure compliance with § 267.10 of this part.

§ 267.43 Unsaturated zone monitoring.

In addition to the ground-water monitoring program required in Subpart F of this part, a land treatment facility must have an unsaturated zone monitoring program which will assure compliance with § 267.10. An unsaturated zone monitoring program must include an unsaturated zone monitoring system at the facility or at a representative test plot, as well as procedures for sampling, analysis and evaluation of data. The unsaturated zone monitoring program required by this paragraph must reflect a consideration of:

(a) The placement and depth of monitoring wells that is necessary to obtain a representative sample of the success of waste treatment in the facility;

(b) Soil characteristics, including its pH, its permeability and the level of microbial activity in the soil;

(c) Climatic conditions in the area;

(d) The potential for rapid migration of waste constituents through the soil; and

(e) The accessibility of the monitoring system devices for maintenance and repair.

§ 267.44 Closure and post-closure.

(a) A land treatment facility must be closed in a manner that will comply with § 267.10 of this part. The closure plan under § 264.112 of this chapter must specify the measures which will be used to satisfy this paragraph.

Proper closure of a land treatment facility must reflect a consideration of:

(1) The type and amount of waste applied to the facility;

(2) The mobility and expected rate of migration of the waste;

(3) Site location, topography and surrounding land use;

(4) Climatic conditions in the area, including the amount, frequency and pH of precipitation;

(5) Geologic and soil profiles and surface and subsurface hydrology of the site, including cation exchange capacity, total organic carbon and pH of the soil; and

(6) Unsaturated zone monitoring information obtained under § 267.43.

(b) A land treatment facility must be maintained in a manner that complies with § 267.10 of this part during the post-closure period. The post-closure plan under § 264.118 of this chapter must specify the procedures that will be used to satisfy this paragraph. Proper maintenance of a land treatment facility during the post-closure period must reflect a consideration of:

(1) The type and amount of waste applied to the facility;

(2) The mobility and expected rate of migration of the waste;

(3) Site location, topography and surrounding land use;

(4) Climatic conditions in the area, including the amount, frequency and pH of precipitation;

(5) Geologic and soil profiles and surface and subsurface hydrology of the site, including cation exchange capacity, total organic carbon and pH of the soil;

(6) Unsaturated zone monitoring information obtained under § 267.43; and

(7) The maintenance of any ground-water monitoring system at the facility.

§ 267.45 Treatment of waste.

The Regional Administrator may waive any of the requirements in § 267.21, § 267.22 or § 267.23 of this subpart where necessary to achieve treatment of hazardous waste in a land treatment facility, provided that the waiver does not result in non-compliance with § 267.10.

§ 267.46 Additional requirements.

The Regional Administrator may place additional requirements on owners or operators of new land treatment facilities, besides those otherwise required by this subpart, where necessary to comply with § 267.10 of this part.

Subpart F—Ground-Water Monitoring

§ 267.50 Applicability.

Each new hazardous waste landfill, surface impoundment, or land treatment facility must have a ground-water monitoring program, which includes a ground-water monitoring system, procedures for sampling, analysis and evaluation of ground-water data, and appropriate response procedures.

§ 267.51 Ground-water monitoring system.

The ground-water system required by this subpart must be capable of determining the facility's impact on ground-water in the uppermost aquifer so as to assure compliance with § 267.10 of this part. The design of the ground-water monitoring system must reflect a consideration of:

(a) The placement and depth of monitoring wells that is necessary to obtain a representative sample of constituents in the uppermost aquifer, including those present in the ground-water upgradient from the facility;

(b) Measures such as casing which maintain the integrity of the monitoring well bore hole; and

(c) Measures which prevent contamination of ground-water samples.

§ 267.52 Ground-water monitoring procedures.

(a) The ground-water monitoring procedures required by this subpart must be capable of assuring compliance with § 267.10 of this part. The procedures must reflect a consideration of:

(1) Sample collection procedures;

(2) Sample preservation and shipment procedures;

(3) Analytical methods;

(4) Chain of custody control; and

(5) Evaluation procedures, including methods for determining the extent

and rate of migration of waste constituents.

(b) The ground-water monitoring procedures required by this subpart must include appropriate procedures for when the ground-water monitoring program indicates that the facility is not in compliance with § 267.10 of this part. Such response procedures must be contained in the contingency plan required by Subpart D of Part 264.

§ 267.53 Additional requirements.

The Regional Administrator may place additional ground-water monitoring requirements on owners or operators of facilities subject to this part, besides those otherwise required by this subpart, where necessary to comply with § 267.10 of this part.

Subpart G—Underground Injection

§ 267.60 Applicability.

The regulations in this subpart apply to owners and operators of new facilities that dispose of hazard waste in underground injection wells which are classified as Class I under § 122.32(a) of this chapter.

§ 267.61 General design requirements.

An injection well must be designed to comply with § 267.10 of this part. The facility design must include measures (*e.g.* casing, tubing and packer set) to prevent the escape of injected fluids to the area above the zone of injection.

§ 267.62 General operating requirements.

An injection well must be operated in a manner that will comply with § 267.10 of this part. The methods for operating the injection well must reflect a consideration of:

(a) The volume and physical and chemical characteristics of the waste injected in the well;

(b) The injection pressure; and

(c) Monitoring measures to assure that the mechanical integrity of the well is maintained.

§ 267.63 Closure.

An injection well must be plugged and sealed at closure to prevent the escape of injected fluids to the area above the zone of injection.

§ 267.64 Additional requirements.

The Regional Administrator may place additional requirements on owners and operators of new injection wells, besides those otherwise required by this subpart, where necessary to comply with § 267.10 of this part.

PART 268—LAND DISPOSAL RESTRICTIONS

Subpart A—General

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268.50 Prohibitions on storage of restricted wastes.

APPENDIX I—TOXICITY CHARACTERISTIC LEACHING PROCEDURE (TCLP)
APPENDIX II—TREATMENT STANDARDS (AS CONCENTRATIONS IN THE TREATMENT RESIDUAL EXTRACT)
APPENDIX III—LIST OF HALOGENATED ORGANIC COMPOUNDS REGULATED UNDER § 268.32

AUTHORITY: 42 U.S.C. 6905, 6912(a), 6921, and 6924.

Subpart A—General

SOURCE: 51 FR 40638, Nov. 7, 1986, unless otherwise noted.

§ 268.1 Purpose, scope and applicability.

(a) This part identifies hazardous wastes that are restricted from land disposal and defines those limited circumstances under which an otherwise prohibited waste may continue to be land disposed.

(b) Except as specifically provided otherwise in this part or Part 261 of this chapter, the requirements of this part apply to persons who generate or transport hazardous waste and owners and operators of hazardous waste treatment, storage, and disposal facilities.

(c) Prohibited wastes may continue to be land disposed as follows:

(1) Where persons have been granted an extension to the effective date of a prohibition under Subpart C of this part or pursuant to § 268.5, with respect to those wastes covered by the extension;

(2) Where persons have been granted an exemption from a prohibition pursuant to a petition under § 268.6, with respect to those wastes and units covered by the petition;

(3) Until November 8, 1988, where the wastes are contaminated soil or debris resulting from a response action taken under section 104 or 106 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 or a corrective action required under the Resource Conservation and Recovery Act;

(4) Where the waste is generated by small quantity generators of less than 100 kilograms of non-acute hazardous wastes per month or less than 1 kilogram acute hazardous waste per month, as defined in § 261.5 of this chapter; or

(5) Where a farmer is disposing of waste pesticides in accordance with § 262.51.

[51 FR 40638, Nov. 7, 1986; 52 FR 21016, June 4, 1987, as amended at 52 FR 25788, July 8, 1987]

§ 268.2 Definitions applicable to this part.

(a) When used in this part the following terms have the meanings given below:

"*Halogenated organic compounds*" or "*HOCs*" means those compounds having a carbon-halogen bond which are listed under Appendix III to this part.

"*Hazardous constituent or constituents*" means those constituents listed in Appendix VIII to Part 261 of this chapter.

"*Land disposal*" means placement in or on the land and includes, but is not limited to, placement in a landfill, surface impoundment, waste pile, injection well, land treatment facility, salt dome formation, salt bed formation, underground mine or cave, or placement in a concrete vault or bunker intended for disposal purposes.

"*Polychlorinated biphenyls*" or "*PCBs*" are halogenated organic compounds defined in accordance with 40 CFR 761.3.

(b) All other terms have the meanings given under §§ 260.10, 261.2, 261.3, or 270.2 of this chapter.

[51 FR 40638, Nov. 7, 1986; 52 FR 21016, June 4, 1987, as amended at 52 FR 25788, July 8, 1987]

§ 268.3 Dilution prohibited as a substitute for treatment.

No generator, transporter, handler, or owner or operator of a treatment, storage, or disposal facility shall in any way dilute a restricted waste or the residual from treatment of a restricted waste as a substitute for adequate treatment to achieve compliance with Subpart D of this part, to circumvent the effective date of a prohibition in Subpart C of this part, to otherwise avoid a prohibition in Subpart C of this part, or to circumvent a land dis-

posal prohibition imposed by RCRA section 3004.

[52 FR 25788, July 8, 1987]

§ 268.4 Treatment surface impoundment exemption.

(a) Wastes which are otherwise prohibited from land disposal under this part may be treated in a surface impoundment or series of impoundments provided that:

(1) Treatment of such wastes occurs in the impoundments;

(2) The residues of the treatment are analyzed, as specified in § 268.7 or § 268.32, to determine if they meet the applicable treatment standards in Subpart D of this part, or, where no treatment standards have been established for the waste, the applicable prohibition levels specified in Subpart C of this part or RCRA section 3004(d). The sampling method, specified in the waste analysis plan under § 264.13 or § 265.13, must be designed such that representative samples of the sludge and the supernatant are tested separately rather than mixed to form homogeneous samples. The treatment residues (including any liquid waste) that do not meet the treatment standards promulgated under Subpart D of this part, or the applicable prohibition levels promulgated under Subpart C of this part or imposed by statute (where no treatment standards have been established), or which are not delisted under § 260.22 of this chapter and no longer exhibit a characteristic of hazardous waste, must be removed at least annually. These residues may not be placed in any other surface impoundment for subsequent management. If the volume of liquid flowing through the impoundment or series of impoundments annually is greater than the volume of the impoundment or impoundments, this flow-through constitutes removal of the supernatant for the purpose of this requirement. The procedures and schedule for the sampling of impoundment contents, the analysis of test data, and the annual removal of residue which does not meet the Subpart D treatment standards, or Subpart C or RCRA section 3004(d) prohibition levels where no treatment standards have been established, must be specified in the facility's waste analysis plan as required under § 264.13 or § 265.13 of this chapter.

(3) The impoundment meets the design requirements of § 264.221(c) or § 265.221(a) of this chapter, regardless that the unit may not be new, expanded, or a replacement, and be in compliance with applicable ground water monitoring requirements of Subpart F of Part 264 or Part 264 of this chapter unless:

(i) Exempted pursuant to § 264.221 (d) or (e) of this chapter, or to § 265.221 (c) or (d) of this chapter; or,

(ii) Upon application by the owner or operator, the Administrator, after notice and an opportunity to comment, has granted a waiver of the requirements on the basis that the surface impoundment:

(A) Has at least one liner, for which there is no evidence that such liner is leaking;

(B) Is located more than one-quarter mile from an underground source of drinking water; and

(C) Is in compliance with generally applicable ground water monitoring requirements for facilities with permits; or,

(iii) Upon application by the owner or operator, the Administrator, after notice and an opportunity to comment, has granted a modification to the requirements on the basis of a demonstration that the surface impoundment is located, designed, and operated so as to assure that there will be no migration of any hazardous constituent into ground water or surface water at any future time.

(4) The owner or operator submits to the Regional Administrator a written certification that the requirements of § 268.4(a)(3) have been met and submits a copy of the waste analysis plan required under § 268.4(a)(2). The following certification is required:

I certify under penalty of law that the requirements of 40 CFR 268.4(a)(3) have been met for all surface impoundments being used to treat restricted wastes. I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

(b) Evaporation of hazardous constituents as the principal means of treatment is not considered to be treatment for purposes of an exemption under this section.

[51 FR 40638, Nov. 7, 1986; 52 FR 21016, June 4, 1987, as amended at 52 FR 25788, July 8, 1987]

§ 268.5 Procedures for case-by-case extensions to an effective date.

(a) Any person who generates, treats, stores, or disposes of a hazardous waste may submit an application to the Administrator for an extension to the effective date of any applicable restriction established under Subpart C of this part. The applicant must demonstrate the following:

(1) He has made a good-faith effort to locate and contract with treatment, recovery, or disposal facilities nationwide to manage his waste in accordance with the effective date of the applicable restriction established under Subpart C of this Part;

(2) He has entered into a binding contractual commitment to construct or otherwise provide alternative treatment, recovery (e.g., recycling), or disposal capacity that meets the treatment standards specified in Subpart D or, where treatment standards have not been specified, such treatment, recovery, or disposal capacity is protective of human health and the environment.

(3) Due to circumstances beyond the applicant's control, such alternative capacity cannot reasonably be made available by the applicable effective date. This demonstration may include a showing that the technical and practical difficulties associated with providing the alternative capacity will result in the capacity not being available by the applicable effective date;

(4) The capacity being constructed or otherwise provided by the applicant will be sufficient to manage the entire quantity of waste that is the subject of the application;

(5) He provides a detailed schedule for obtaining required operating and construction permits or an outline of how and when alternative capacity will be available;

(6) He has arranged for adequate capacity to manage his waste during an extension and has documented in the application the location of all sites at which the waste will be managed; and

(7) Any waste managed in a surface impoundment or landfill during the extension period will meet the requirements of paragraph (h)(2) of this section.

(b) An authorized representative signing an application described under paragraph (a) of this section shall make the following certification:

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

(c) After receiving an application for an extension, the Administrator may request any additional information which he deems as necessary to evaluate the application.

(d) An extension will apply only to the waste generated at the individual facility covered by the application and will not apply to restricted waste from any other facility.

(e) On the basis of the information referred to in paragraph (a) of this section, after notice and opportunity for comment, and after consultation with appropriate State agencies in all affected States, the Administrator may grant an extension of up to 1 year from the effective date. The Administrator may renew this extension for up to 1 additional year upon the request of the applicant if the demonstration required in paragraph (a) of this section can still be made. In no event will an extension extend beyond 24 months from the applicable effective date specified in Subpart C of Part 268. The length of any extension authorized will be determined by the Administrator based on the time required to construct or obtain the type of capacity needed by the applicant as described in the completion schedule discussed in paragraph (a)(5) of this section. The Administrator will give public notice of the intent to approve or deny a petition and provide an op-

portunity for public comment. The final decision on a petition will be published in the FEDERAL REGISTER.

(f) Any person granted an extension under this section must immediately notify the Administrator as soon as he has knowledge of any change in the conditions certified to in the application.

(g) Any person granted an extension under this section shall submit written progress reports at intervals designated by the Administrator. Such reports must describe the overall progress made toward constructing or otherwise providing alternative treatment, recovery or disposal capacity; must identify any event which may cause or has caused a delay in the development of the capacity; and must summarize the steps taken to mitigate the delay. The Administrator can revoke the extension at any time if the applicant does not demonstrate a good-faith effort to meet the schedule for completion, if the Agency denies or revokes any required permit, if conditions certified in the application change, or for any violation of this chapter.

(h) Whenever the Administrator establishes an extension to an effective date under this section, during the period for which such extension is in effect:

(1) The storage restrictions under § 268.50(a) do not apply; and

(2) Such hazardous waste may be disposed of at a facility only if each new landfill or surface impoundment unit, each replacement of an existing landfill or surface impoundment unit, and each lateral expansion of an existing landfill or surface impoundment unit at the facility is in compliance with the following requirements:

(i) The landfill, if in interim status, is in compliance with the requirements of Subpart F of Part 265 and § 265.301 (a), (c), and (d) of this chapter; or,

(ii) The landfill, if permitted, is in compliance with the requirements of Subpart F of Part 264 and § 264.301 (c), (d) and (e) of this chapter;

(iii) The surface impoundment, if in interim status, is in compliance with the requirements of Subpart F of Part 265, § 265.221 (a), (c), and (d) of this chapter, and RCRA section 3005(j)(1); or

(iv) The surface impoundment, if permitted, is in compliance with the requirements of Subpart F of Part 264 and § 264.221 (c), (d) and (e) of this chapter.

(v) The landfill, if disposing of containerized liquid hazardous wastes containing PCBs at concentrations greater than or equal to 50 ppm but less than 500 ppm, is also in compliance with the requirements of 40 CFR 761.75 and Parts 264 and 265.

(i) Pending a decision on the application the applicant is required to comply with all restrictions on land disposal under this part once the effective date for the waste has been reached.

(Approved by the Office of Management and Budget under control number 2050-0062)

[51 FR 40638, Nov. 7, 1986; 52 FR 21016, June 4, 1987, as amended at 52 FR 25788, July 8, 1987]

§ 268.6 Petitions to allow land disposal of a waste prohibited under Subpart C of Part 268.

(a) Any person seeking an exemption from a prohibition under Subpart C of this part for the disposal of a restricted hazardous waste in a particular unit or units must submit a petition to the Administrator demonstrating, to a reasonable degree of certainty, that there will be no migration of hazardous constituents from the disposal unit or injection zone for as long as the wastes remain hazardous. The demonstration must include the following components:

(1) An identification of the specific waste and the specific unit for which the demonstration will be made;

(2) A waste analysis to describe fully the chemical and physical characteristics of the subject waste;

(3) A comprehensive characterization of the disposal unit site including an analysis of background air, soil, and water quality.

(b) The demonstration referred to in paragraph (a) of this section must meet the following criteria:

(1) All waste and environmental sampling, test, and analysis data must be accurate and reproducible to the extent that state-of-the-art techniques allow;

(2) All sampling, testing, and estimation techniques for chemical and physical properties of the waste and all environmental parameters must have been approved by the Administrator;

(3) Simulation models must be calibrated for the specific waste and site conditions, and verified for accuracy by comparison with actual measurements;

(4) A quality assurance and quality control plan that addresses all aspects of the demonstration must be approved by the Administrator; and,

(5) An analysis must be performed to identify and quantify any aspects of the demonstration that contribute significantly to uncertainty. This analysis must include an evaluation of the consequences of predictable future events, including, but not limited to, earthquakes, floods, severe storm events, droughts, or other natural phenomena.

(c) Each petition must be submitted to the Administrator.

(d) Each petition must include the following statement signed by the petitioner or an authorized representative:

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this petition and all attached documents, and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

(e) After receiving a petition, the Administrator may request any additional information that reasonably may be required to evaluate the demonstration.

(f) If approved, the petition will apply to land disposal of the specific restricted waste at the individual disposal unit described in the demonstration and will not apply to any other restricted waste at that disposal unit, or to that specific restricted waste at any other disposal unit.

(g) The Administrator will give public notice in the FEDERAL REGISTER of the intent to approve or deny a petition and provide an opportunity for public comment. The final decision on a petition will be published in the FEDERAL REGISTER.

(h) The term of a petition granted under this section shall be no longer than the term of the RCRA permit if the disposal unit is operating under a RCRA permit, or up to a maximum of 10 years from the date of approval provided under paragraph (g) of this section if the unit is operating under interim status. In either case, the term of the granted petition shall expire upon the termination or denial of a RCRA permit, or upon the termination of interim status or when the volume limit of waste to be land disposed during the term of petition is reached.

(i) Prior to the Administrator's decision, the applicant is required to comply with all restrictions on land disposal under this part once the effective date for the waste has been reached.

(j) The petition granted by the Administrator does not relieve the petitioner of his responsibilities in the management of hazardous waste under 40 CFR Part 260 through Part 271.

(k) Liquid hazardous wastes containing polychlorinated biphenyls at concentrations greater than or equal to 500 ppm are not eligible for an exemption under this section.

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[51 FR 40638, Nov. 7, 1986; 52 FR 21016, June 4, 1987, as amended at 52 FR 25789, July 8, 1987]

§ 268.7 Waste analysis.

(a) Except as specified in § 268.32 of this part, the generator must test his waste or an extract developed using the test method described in Appendix I of this part, or use knowledge of the waste, to determine if the waste is restricted from land disposal under this part.

(1) If a generator determines that he is managing a restricted waste under this part and the waste does not meet the applicable treatment standards, or

where the waste does not comply with the applicable prohibitions set forth in § 268.32 of this part or RCRA section 3004(d), with each shipment of waste the generator must notify the treatment facility in writing of the appropriate treatment standards set forth in Subpart D of this part and any applicable prohibitions set forth in § 268.32 of this part or RCRA section 3004(d). The notice must include the following information:

(i) EPA Hazardous Waste Number;

(ii) The corresponding treatment standards and all applicable prohibitions set forth in § 268.32 or RCRA section 3004(d);

(iii) The manifest number associated with the shipment of waste; and

(iv) Waste analysis data, where available.

(2) If a generator determines that he is managing a restricted waste under this part, and determines that the waste can be land disposed without further treatment, with each shipment of waste he must submit, to the land disposal facility, a notice and a certification stating that the waste meets the applicable treatment standards set forth in Subpart D of this part and the applicable prohibitions set forth in § 268.32 of this part or RCRA section 3004(d).

(i) The notice must include the following information:

(A) EPA Hazardous Waste Number;

(B) The corresponding treatment standards and all appplicable prohibitions set forth in § 268.32 or RCRA section 3004(d);

(C) The manifest number associated with the shipment of waste;

(D) Waste analysis data, where available.

(ii) The certification must be signed by an authorized representative and must state the following:

I certify under penalty of law that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste complies with the treatment standards specified in 40 CFR Part 268 Subpart D and all applicable prohibitions set forth in 40 CFR 268.32 or RCRA section 3004(d). I believe that the information I submitted is true, accurate and complete. I am aware that there are significant penalties for submitting a false certification, including the possiblity of a fine and imprisonment.

(3) If a generator's waste is subject to a case-by-case extension under § 268.5, an exemption under § 268.6, an extension under § 268.1(c)(3), or a nationwide variance under Subpart C, he must forward a notice with the waste to the land disposal facility receiving his waste, stating that the waste is exempt from the land disposal restrictions.

(4) If a generator determines whether the waste is restricted based solely on his knowledge of the waste, all supporting data used to make this determination must be maintained on-site in the generator's files.

(b) For wastes with treatment standards expressed as concentrations in the waste extract (§ 268.41), the owner or operator of the treatment facility must test the treatment residues or an extract of such residues developed using the test method described in Appendix I of this part to assure that the treatment residues or extract meet the applicable treatment standards. For wastes prohibited under § 268.32 of this part or RCRA section 3004(d) which are not subject to any treatment standards under Subpart D of this part, the owner or operator of the treatment facility must test the treatment residues according to the generator testing requirements specified in § 268.32 to assure that the treatment residues comply with the applicable prohibitions. For both circumstances described above, such testing must be performed according to the frequency specified in the facility's waste analysis plan as required by § 264.13 or § 265.13. Where the treatment residues do not comply with the applicable treatment standards or prohibitions, the treatment facility must comply with the notice requirements applicable to generators in paragraph (a)(1) of this section if the treatment residues will be further managed at a different treatment facility.

(1) A notice must be sent with each waste shipment to the land disposal facility which includes the following information:

(i) EPA Hazardous Waste Number;

(ii) The corresponding treatment standards and all applicable prohibitions set forth in § 268.32 or RCRA section 3004(d);

(iii) The manifest number associated with the shipment of waste; and

(iv) Waste analysis data, where available.

(2) The treatment facility must submit a certification with each shipment of waste or treatment residue of a restricted waste to the land disposal facility stating that the waste or treatment residue has been treated in compliance with the applicable performance standards specified in Subpart D of this part and the applicable prohibitions set forth in § 268.32 or RCRA section 3004(d).

(i) For wastes with treatment standards expressed as concentrations in the waste extract or in the waste (§ 268.41 or § 268.43), or for wastes prohibited under § 268.32 of this part or RCRA section 3004(d) which are not subject to any treatment standards under Subpart D of this part, the certification must be signed by an authorized representative and must state the following:

I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification and that, based on my inquiry of those individuals immediately responsible for obtaining this information, I believe that the treatment process has been operated and maintained properly so as to comply with the performance levels specified in 40 CFR Part 268 Subpart D and all applicable prohibitions set forth in 40 CFR 268.32 or RCRA section 3004(d) without dilution of the prohibited waste. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment.

(ii) For wastes with treatment standards expressed as technologies (§ 268.42), the certification must be signed by an authorized representative and must state the following:

I certify under penalty of law that the waste has been treated in accordance with the requirements of 40 CFR 268.42. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment.

(c) The owner or operator of any land disposal facility disposing any waste subject to restrictions under this part must have records of the notice and certification specified in either paragraph (a) or (b) of this section. The owner or operator of the land disposal facility must test the waste or an extract of the waste or treatment residue developed using the test method described in Appendix I of this part, or using any methods required by generators under § 268.32 of this part, to assure that the wastes or treatment residues are in compliance with the applicable treatment standards set forth in Subpart D of this part and all applicable prohibitions set forth in § 268.32 of this part or RCRA section 3004(d). Such testing must be performed according to the frequency specified in the facility's waste analysis plan as required by § 264.13 or § 265.13.

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[51 FR 40638, Nov. 7, 1986; 52 FR 21016, June 4, 1987, as amended at 52 FR 25789, July 8, 1987]

Subpart B—Schedule for Land Disposal Prohibition and Establishment of Treatment Standards

SOURCE: 51 FR 19305, May 28, 1986, unless otherwise noted.

§ 268.10 Identification of wastes to be evaluated by August 8, 1988.

EPA will take action under sections 3004(g)(5) and 3004(m), of the Resource Conservation and Recovery Act, by August 8, 1988, for the following wastes (for ease of understanding the wastes have been listed by the section of 40 CFR Part 261 under which they were listed):

§ 261.31 Wastes

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.

F007—Spent cyanide plating bath solutions from electroplating operations.
F008—Plating bath sludges from the bottom of plating baths from electroplating operations where cyanides are used in the process.
F009—Spent stripping and cleaning bath solutions from electroplating operations where cyanides are used in the process.
F019—Wastewater treatment sludges from the chemical conversion coating of aluminum.

§ 261.32 Wastes

K001—Bottom sediment sludge from the treatment of wastewaters from wood preserving processes that use creosote and/or pentachlorophenol.
K004—Wastewater treatment sludge from the production of zinc yellow pigments.
K008—Over residue from the production of chrome oxide green pigments.
K011—Bottom stream from the wastewater stripper in the production of acrylonitrile.
K013—Bottom stream from the acetonitrile column in the production of acrylonitrile.
K014—Bottoms from the acetonitrile purification column in the production of acrylonitrile.
K015—Still bottoms from the distillation of benzyl chloride.
K016—Heavy ends or distillation residues from the production of carbon tetrachloride.
K017—Heavy ends (still bottoms) from the purification column in the production of epichlorohydrin.
K018—Heavy ends from the fractionation column in ethyl chloride production.
K020—Heavy ends from the distillation of vinyl chloride in vinyl chloride monomer production.
K021—Aqueous spent antimony catalyst waste from fluoromethanes production.
K022—Distillation bottom tars from the production of phenol/acetone from cumane.
K024—Distillation bottoms from the production of phthalic anhydride from naphthalene.
K030—Column bottom or heavy ends from the combined production of trichloroethylene and perchloroethylene.
K031—By-products salts generated in the production of MSMA and cacodylic acid.
K035—Wastewater treatment sludges generated in the production of creosote.
K036—Still bottoms from toluene reclamation distillation in the production of disulfoton.
K037—Wastewater treatment sludge from the production of disulfoton.
K044—Wastewater treatment sludges from the manufacturing and processing of explosives.
K045—Spent carbon from the treatment of wastewater containing explosives.
K046—Wastewater treatment sludges from the manufacturing, formulation and loading of lead-based initiating compounds.
K047—Pink/red water from TNT operations.
K048—Dissolved air flotation (DAF) float from the petroleum refining industry.
K049—Stop oil emulsion solids from the petroleum refining industry.
K050—Heat exchange bundle cleaning sludge from the petroleum refining industry.
K051—API separator sludge from the petroleum refining industry.
K052—Tank bottoms (leaded) from the petroleum refining industry.
K060—Ammonia still lime sludge from coking operations.
K061—Emission control dust/sludge from the primary production of steel in electric furnaces.
K062—Spent pickle liquor from steel finishing operations in chlorine production.
K069—Emission control dust/sludge from secondary lead smelting.
K071—Brine purification muds from the mercury cells process in chlorine production, where separately prepurified brine is not used.
K073—Chlorinated hydrocarbon waste from the purification step of the diaphragm cell process using graphite anodes
K083—Distillation bottoms from aniline production.
K084—Wastewater treatment sludges generated during the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds.
K085—Distillation of fractionation column bottoms from the production of chlorobenzenes.
K086—Solvent washes and sludges; caustic washes and sludges, or water washes and sludges from cleaning tubs and equipment used in the formulation of ink from pigments, driers, soaps, and stabilizers containing chromium and lead.
K087—Decanter tank tar sludge from coking operations.
K099—Untreated wastewater from the production of 2,4-D.
K101—Distillation tar residues from the distillation of aniline-based compounds in the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds.
K102—Residue from the use of activated carbon for decolorization in the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds.
K103—Process residues from aniline extraction from the production of aniline.
K104—Combined wastewater streams generated from nitrobenzene/aniline production.

K106—Waste water treatment sludge from the mercury cell process in chlorine production.

§ 261.33(e) Wastes

P001—Warfarin, when present at concentration greater than 0.3%
P004—Aldrin
P005—Allyl alcohol
P010—Arsenic acid
P011—Arsenic (V) oxide
P012—Arsenic (III) oxide
P015—Beryllium dust
P016—Bis-(chloromethyl) ether
P018—Brucine
P020—Dinoseb
P030—Soluble cyanide salts not elsewhere specified
P036—Dichlorophenylarsine
P037—Dieldrin
P039—Disulfoton
P041—Diethyl-p-nitrophenyl phosphate
P048—2,4-Dinitrophenol
P050—Endosulfan
P058—Fluoracetic acid, sodium salt
P059—Heptachlor
P063—Hydrogen cyanide
P068—Methyl Hydrazine
P069—Methyllactonitrile
P070—Aldicarb
P071—Methyl parathion
P081—Nitroglycerine
P082—N-Nitrosodimethylamine
P084—N-Nitrosomethylvinylamine
P087—Osmium tetraoxide
P089—Parathion
P092—Phenylmercuric acetate
P094—Phorate
P097—Famphur
P102—Propargyl alcohol
P105—Sodium azide
P108—Strychnine and salts
P110—Tetraethyl lead
P115—Thallium (I) sulfate
P120—Vanadium pentoxide
P122—Zinc phosphide, when present at concentrations greater than 10%
P123—Toxaphene

§ 261.33(f) Wastes

U007—Acrylamide
U009—Acrylonitrile
U010—Mitomycin C
U012—Aniline
U016—Benz(c)acridine
U018—Benz(a)anthracene
U019—Benzene
U022—Benzo(a)pyrene
U029—Methyl bromide
U031—n-Butanol
U036—Chlordane, technical
U037—Chlorobenzene
U041—n-Chloro-2,3-epoxypropane
U043—Vinyl chloride
U044—Chloroform
U046—Chloromethyl methyl ether
U050—Chrysene
U051—Creosote
U053—Crotonaldehyde
U061—DDT
U063—Dibenz o (a, h) anthracene
U064—1,2:7,8 Dibenzopyrene
U066—Dibromo-3-chloropropane 1,2-
U067—Ethylene dibromide
U074—1,4-Dichloro-2-butene
U077—Ethane, 1,2-dichloro-
U078—Dichloroethylene, 1,1-
U086—N,N Diethylhydrazine
U089—Diethylstilbestrol
U103—Dimethyl sulfate
U105—2,4-Dinitrotoluene
U108—Dioxane, 1,4-
U115—Ethylene oxide
U122—Formaldehyde
U124—Furan
U129—Lindane
U130—Hexachlorocyclopentadiene
U133—Hydrazine
U134—Hydrofluoric acid
U137—Indeno(1,2,3-cd)pyrene
U151—Mecury
U154—Methanol
U155—Methapyrilene
U157—3-Methylcholanthrene
U158—4,4-Methylene-bis-(2-chloroaniline)
U159—Methyl ethyl ketone
U171—Nitropropane, 2-
U177—N-Nitroso-N-methylurea
U180—N-Nitrosopyrrolidine
U185—Pentachloronitrobenzene
U188—Phenol
U192—Pronamide
U200—Reserpine
U209—Tetrachloroethane, 1,1,2,2-
U210—Tetrachloroethylene
U211—Carbon tetrachloride
U219—Thiourea
U220—Toluene
U221—Toluenediamine
U223—Toluene diisocyanate
U226—Methylchloroform
U227—Trichloroethane, 1,1,2-
U228—Trichloroethylene
U237—Uracil mustard
U238—Ethyl carbamate
U248—Warfarin, when present at concentrations of 0.3% or less
U249—Zinc phosphide, when present at concentrations of 10% or less

§ 268.11 Identification of wastes to be evaluated by June 8, 1989.

EPA will take action under sections 3004(g)(5) and 3004(m) of the Resource Conservation and Recovery Act, by June 8, 1989, for the following wastes (for ease of understanding the wastes have been listed by the section of 40 CFR Part 261 under which they were listed):

§ 261.31 Wastes

F010—Quenching bath sludge from oil baths from metal heat treating operations where cyanides are used in the process.
F011—Spent cyanide solutions from salt bath pot cleaning from metal heat treating operations.
F012—Quenching wastewater treatment sludges from metal heat operations where cyanides are used in the process.
F024—Wastes including but not limited to, distillation residues, heavy ends, tars and reactor clean-out wastes from the production of chlorinated aliphatic hydrocarbons, having carbon content from one to five, utilizing free radical catalyzed processes. [This listing does not include light ends, spent filters and filter aids, spend desiccants, wastewater, wastewater treatment sludges, spent catalysts, and wastes listed in § 261.32.].

§ 261.32 Wastes

K009—Distillation bottoms from the production of acetaldehyde from ethylene.
K010—Distillation side cuts from the productions of acetaldehyde from ethylene.
K019—Heavy ends from the distillation of ethylene dichloride in ethylene dichloride production.
K025—Distillation bottoms from the production of nitrobenzene by the nitration of benzene.
K027—Centrifuge and distillation residues from toluene diisocyanate production.
K028—Spent catalyst from the hydrochlorinator reactor in the production of 1,1,1-trichloroethane.
K029—Waste from the product steam stripper in the production of 1,1,1-trichloroethane.
K038—Wastewater from the washing and stripping of phorate production.
K039—Filter cake from the filtration of diethylphosphoro-dithioic acid in the production of phorate.
K040—Wastewater treatment sludge from the production of phorate.
K041—Wastewater treatment sludge from the production of toxaphene.
K042—Heavy ends or distillation residues from the distillation of tetrachlorobenzene in the production of 2,4,5-T.
K043—2,6-Dichlorophenol waste from the production of 2,4-D.
K095—Distillation bottoms from the production of 1,1,1-trichloroethane.
K096—Heavy ends from the heavy ends column from the production of 1,1,1-trichloroethane.
K097—Vacuum stripper discharge from the chlordane chlorinator in the production of chlordane.
K098—Untreated process wastewater from the production of toxaphene.
K105—Separated aqueous stream from the reactor product washing step in the production of chlorobenzenes.

§ 261.33(e) Wastes

P002—1-Acetyl-2-thiourea
P003—Acrolein
P007—5-(Aminoethyl)-3-isoxazolol
P008—4-Aminopyridine
P014—Thiophenol
P026—1-(o-Chlorophenyl)thiourea
P027—Propanenitrile, 3-chloro
P029—Copper cyanides
P040—O,O-Diethyl o-pyrazinyl phosphorothioate
P043—Diisopropyl fluorophosphate
P044—Dimethoate
P049—2,4-Dithiobiuret
P054—Aziridine
P057—Fluoracetamide
P060—Isodrin
P062—Hexaethyltetraphosphate
P066—Methomyl
P067—2-Methylaziridine
P072—Alpha-naphthylthiourea (ANTU)
P074—Nickel cyanide
P085—Octamethylpyrophosphoramide
P098—Potassium cyanide
P104—Silver cyanide
P106—Sodium cyanide
P107—Strontium sulfide
P111—Tetraethylpyrophosphate
P112—Tetranitromethane
P113—Thallic oxide
P114—Thallium (I) selenite

§ 261.33(f) Wastes

U002—Acetone
U003—Acetonitrile
U005—o-Acetylaminofluorene
U008—Acrylic acid
U011—Amitrole
U014—Auramine
U015—Azaserine
U020—Benzenesulfonyl chloride
U021—Benzidine
U023—Benzotrichloride
U025—Dichloroethyl ether
U026—Chlornaphazine
U028—Bis-(2-ethylhexyl)phthalate
U032—Calcium chromate
U035—Chlorambucil
U047—Beta-chloronaphthalene
U049—4-Chloro-o-toluidine, hydrochloride
U057—Cyclohexanone
U058—Cyclophosphamide
U059—Daunomycin
U060—DDD
U062—Diallate
U070—o-Dichlorobenzene
U073—Dichlorobenzidene, 3,3-
U080—Methylene chloride
U083—Dichloropropane, 1,2-
U092—Dimethylamine
U093—Dimethylaminoazobenzene

U094—Dimethylbenz(a)anthracene,7,12-
U095—Dimethylbenzidine,3,3'-
U097—Dimethylcarbamoyl chloride
U098—Dimethylhydrazine, 1,1-
U099—Dimethylhydrazine, 1,2-
U101—Dimethylphenol, 2,4-
U106—Dinitrotoluene, 2,6-
U107—Di-n-octyl phthalate
U109—1,2,-Diphenylhydrazine
U110—Dipropylamine
U111—Di-N-Propylnitrosamine
U114—Ethylenebis-(dithiocarbamic acid)
U116—Ethylene thiourea
U119—Ethyl methanesulfonate
U127—Hexachlorobenzene
U128—Hexachlorobutadiene
U131—Hexachloroethane
U135—Hydrogen sulfide
U138—Methyl iodide
U140—Isobutyl alcohol
U142—Kepone
U143—Lasiocarpine
U144—Lead acetate
U146—Lead subacetate
U147—Maleic anhydride
U149—Malononitrile
U150—Melphalan
U161—Methyl isobutyl ketone
U162—Methyl methacrylate
U163—N-Methyl-N-nitro-N-nitrosoguanidine
U164—Methylthiouracil
U165—Naphthalene
U168—Napthylamine, 2-
U169—Nitrobenzene
U170—p-Nitrophenol
U172—N-Nitroso-di-n-butylamine
U173—N-Nitroso-diethanolamine
U174—N-Nitroso-diethylamine
U176—N-Nitroso-N-ethylurea
U178—N-Nitroso-N-methylurethane
U179—N-Nitrosopiperidine
U189—Phosphorus sulfide
U193—1,3-Propane sultone
U196—Pyridine
U203—Safrole
U205—Selenium disulfide
U206—Streptozotocin
U208—Terachloroethane, 1,1,1,2-
U213—Tetrahydrofuran
U214—Thallium (I) acetate
U215—Thallium (I) carbonate
U216—Thallium (I) chloride
U217—Thallium (I) nitrate
U218—Thioacetamide
U235—Tris (2,3-Dibromopropyl) phosphate
U239—Xylene
U244—Thiram

§ 268.12 Identification of wastes to be evaluated by May 8, 1990.

EPA will take action under sections 3004(g)(5) and 3004(m) of the Resource Conservation and Recovery Act, by May 8, 1990, for the following wastes (for ease of understanding, the wastes have been listed by the section of 40 CFR Part 261 under which they were listed):

§ 261.32 Wastes

K002—Wastewater treatment sludge from the production of chrome yellow and orange pigments.
K003—Wastewater treatment sludge from the production of molybdate orange pigments.
K005—Wastewater treatment sludge from the production of chrome green pigments.
K006—Wastewater treatment sludge from the production of chrome oxide green pigments (anhydrous and hydrated).
K007—Wastewater treatment sludge from the production of iron blue pigments.
K023—Distillation light ends from the production of phthalic anhydride from naphthalene.
K026—Stripping still tails from the production of methyl ethyl pyridines.
K032—Wastewater treatment sludge from the production of chlordane.
K033—Wastewater and scrub water from the chlorination of cyclopentadiene in the production of chlordane.
K034—Filter solids from the hexachlorocyclopentadiene in the production of chlordane.
K093—Distillation light ends from the production of phthalic anhydride from orthoxylene.
K094—Distillation bottoms from the production of phthalic anhydride from orthoxylene.
K100—Waste leaching solution from acid leaching of emission control dust/sludge from secondary lead smelting.

§ 261.33(e) Wastes

P006—Aluminum phosphide
P009—Ammonium picrate
P013—Barium cyanide
P017—Bromoacetone
P021—Calcium cyanide
P022—Carbon disulfide
P023—Chloroacetaldehyde
P024—p-Chloroaniline
P028—Benzyl chloride
P031—Cyanogen
P033—Cyanogen chloride
P034—4,6-Dinitro-o-cyclohexylphenol
P038—Diethylarsine
P042—Epinephrine
P045—Thiofanox
P046—Alpha, alpha-Dimethylphenethylamine
P047—4,6-Dinitro-o-cresol and salts
P051—Endrin
P056—Fluorine
P064—Methyl isocyanate
P065—Mercury fulminate
P073—Nickel carbonyl

P075—Nicotine and salts
P076—Nitric oxide
P077—p-Nitroaniline
P078—Nitrogen dioxide
P088—Endothall
P093—N-Phenylthiourea
P095—Phosgene
P096—Phosphine
P099—Potassium silver cyanide
P101—Propanenitrile
P103—Selenourea
P109—Tetraethyldithiopyrophosphate
P116—Thiosemicarbazide
P118—Trichloromethanethiol
P119—Ammonium vanadate
P121—Zinc cyanide

§ 261.33(f) Wastes

U001—Acetaldehyde
U004—Acetophenone
U006—Acetyl chloride
U017—Benzal chloride
U024—Bis(2-chloroethoxy)methane
U027—Bis(2-chloroisopropyl)ether
U030—Benzene, 1-bromo-4-phenoxy
U033—Carbonyl fluoride
U034—Chloral
U038—Ethyl-4-4'-dichlorobenzilate
U039—4-Chloro-m-cresol
U042—Vinyl ether, 2-chloroethyl
U045—Methyl chloride
U048—o-Chlorophenol
U052—Cresols
U055—Cumene
U056—Cyclohexane
U068—Methane, dibromo
U069—Dibutyl phthalate
U071—m-Dichlorobenzene
U072—p-Dichlorobenzene
U075—Dichlorodifluoromethane
U076—Ethane, 1,1-dichloro-
U079—1,2-Dichlorethylene
U081—2,4-Dichlorophenol
U082—2,6-Dichlorophenol
U084—1,3-Dichloropropene
U085—2,2'-Bioxirane
U087—0,0,-Diethyl-S-methyl-dithiophosphate
U088—Diethyl phthalate
U090—Dihydrosafrole
U091—3,3'-Dimethoxybenzidine
U096—alpha,alpha-Dimethylbenzylhydroxyperoxide
U102—Dimethyl phthalate
U112—Ethyl acetate
U113—Ethyl acrylate
U117—Ethyl ether
U118—Ethylmethacrylate
U120—Fluoranthene
U121—Trichloromonofluoromethane
U123—Formic acid
U125—Furfural
U126—Glycidylaldehyde
U132—Hexachlorophene
U136—Cacodylic acid
U139—Iron dextran
U141—Isosafrole
U145—Lead phosphate
U148—Maleic hydrazide
U152—Methacrylonitrile
U153—Methanethiol
U156—Methyl chlorocarbonate
U160—Methyl ethyl ketone peroxide
U166—1,4-Naphthaquinone
U167—1-Naphthylamine
U181—5-Nitro-o-toluidine
U182—Paraldehyde
U183—Pentachlorobenzene
U184—Pentachloroethane
U186—1,3-Pentadiene
U187—Phenacetin
U190—Phthalic anhydride
U191—2-Picoline
U194—1-Propanamine
U197—p-Benzoquinone
U201—Resorcinol
U202—Saccharin and salts
U204—Selenious acid
U207—1,2,4,5-tetrachlorobenzene
U222—o-Toluidine hydrochloride
U225—Bromoform
U234—Sym-Trinitrobenzene
U236—Trypan blue
U240—2,4-D, salts and esters
U243—Hexachloropropene
U246—Cyanogen bromide
U247—Methoxychlor

Wastes identified as hazardous based on a characteristic alone (i.e., corrosivity, reactivity, ignitability and EP toxicity).

§ 268.13 Schedule for wastes identified or listed after November 8, 1984.

In the case of any hazardous waste identified or listed under section 3001 after November 8, 1984, the Administrator shall make a land disposal prohibition determination within 6 months after the date of identification or listing.

Subpart C—Prohibitions on Land Disposal

SOURCE: 51 FR 40641, Nov. 7, 1986, unless otherwise noted.

§ 268.30 Waste specific prohibitions—Solvent wastes.

(a) Effective November 8, 1986, the spent solvent wastes specified in 40 CFR 261.31 as EPA Hazardous Waste Nos. F001, F002, F003, F004, and F005, are prohibited from land disposal (except in an injection well) unless one or more of the following conditions apply:

(1) The generator of the solvent waste is a small quantity generator of 100-1000 kilograms of hazardous waste per month; or

(2) The solvent waste is generated from any response action taken under the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) or any corrective action taken under the Resource Conservation and Recovery Act (RCRA), except where the waste is contaminated soil or debris not subject to the provisions of this chapter until November 8, 1988; or

(3) The initial generator's solvent waste is a solvent-water mixture, solvent-containing sludge or solid, or solvent-contaminated soil (non-CERCLA or RCRA corrective action) containing less than 1 percent total F001-F005 solvent constituents listed in Table CCWE of § 268.41 of this part.

(4) The solvent waste is a residue from treating a waste described in paragraph (a)(1), (a)(2), or (a)(3) of this section; or the solvent waste is a residue from treating a waste not described in paragraph (a)(1), (a)(2), or (a)(3) of this section provided such residue belongs to a different treatability group than the waste as initially generated and wastes belonging to such a treatability group are described in paragraph (a)(3) of this section.

(b) Effective November 8, 1988, the F001-F005 solvent wastes listed in paragraphs (a) (1), (2), and (3) of this section are prohibited from land disposal. Between November 8, 1986, and November 8, 1988, wastes included in paragraphs (a) (1), (2), and (3) of this section may be disposed of in a landfill or surface impoundment only if the facility is in compliance with the requirements specified in § 268.5(h)(2).

(c) The requirements of paragraphs (a) and (b) of this section do not apply if:

(1) The wastes meet the standards of Subpart D of this part; or

(2) Persons have been granted an exemption from a prohibition pursuant to a petition under § 268.6, with respect to those wastes and units covered by the petition; or

(3) Persons have been granted an extension to the effective date of a prohibition pursuant to § 268.5, with respect to those wastes covered by the extension.

[51 FR 40641, Nov. 7, 1986; 52 FR 21017, June 4, 1987, as amended at 52 FR 25790, July 8, 1987]

EFFECTIVE DATE NOTE: Section 268.30 was added at 51 FR 40641, Nov. 7, 1986. Paragraph (b) set forth above becomes effective on November 8, 1988.

§ 268.31 Waste specific prohibitions—Dioxin—containing wastes.

(a) Effective November 8, 1988, the dioxin-containing wastes specified in 40 CFR 261.31 as EPA Hazardous Waste Nos. F020, F021, F022, F023, F026, F027, and F028, are prohibited from land disposal.

(b) The requirements of paragraph (a) of this section do not apply if:

(1) The wastes meet the standards of Subpart D of this part; or,

(2) Persons have been granted an exemption from a prohibition pursuant to a petition under § 268.6, with respect to those wastes and units covered by the petition; or

(3) Persons have been granted an extension from the effective date of a prohibition pursuant to § 268.5, with respect to those wastes covered by the extension.

(c) Between November 8, 1986, and November 8, 1988, wastes included in paragraph (a) of this section may be disposed of in a landfill or surface impoundment only if the facility is in compliance with the requirements specified in § 268.5(h)(2) and all other applicable requirements of Parts 264 and 265 of this chapter.

[51 FR 40641, Nov. 7, 1986; 52 FR 21017, June 4, 1987]

EFFECTIVE DATE NOTE: Section 268.31 was added at 51 FR 40641, Nov. 7, 1986. Paragraph (a) set forth above becomes effective on November 8, 1988.

§ 268.32 Waste specific prohibitions—California list wastes.

(a) Effective July 8, 1987, the following hazardous wastes are prohibited from land disposal (except in injection wells):

(1) Liquid hazardous wastes having a pH less than or equal to two (2.0);

(2) Liquid hazardous wastes containing polychlorinated biphenyls (PCBs)

at concentrations greater than or equal to 50 ppm;

(3) Liquid hazardous wastes that are primarily water and contain halogenated organic compounds (HOCs) in total concentration greater than or equal to 1,000 mg/l and less than 10,000 mg/l HOCs.

(b)—(c) [Reserved]

(d) The requirements of paragraph (a) of this section do not apply until November 8, 1988 where the wastes are contaminated soil or debris resulting from a response action taken under section 104 or 106 of the Comprehensive Environmental Response, Compensation, and Liability Act or a corrective action required under RCRA Subtitle C.

(e) Effective July 8, 1989, the following hazardous wastes are prohibited from land disposal (subject to any regulations that may be promulgated with respect to disposal in injection wells):

(1) Liquid hazardous wastes that contain HOCs in total concentration greater than or equal to 1,000 mg/l and are not prohibited under paragraph (a)(3) of this section; and

(2) Nonliquid hazardous wastes containing HOCs in total concentration greater than or equal to 1,000 mg/kg.

(f) Between July 8, 1987 and July 8, 1989, the wastes described in paragraphs (e)(1) and (e)(2) of this section may be disposed of in a landfill or surface impoundment only if the facility is in compliance with the requirements specified in § 268.5(h)(2).

(g) The requirements of paragraphs (a) and (e) of this section do not apply if:

(1) Persons have been granted an exemption from a prohibition pursuant to a petition under § 268.6, with respect to those wastes and units covered by the petition (except for liquid hazardous wastes containing polychlorinated biphenyls at concentrations greater than or equal to 500 ppm which are not eligible for such exemptions); or

(2) Persons have been granted an extension to the effective date of a prohibition pursuant to § 268.5, with respect to those wastes covered by the extension; or

(3) The wastes meet the applicable standards specified in Subpart D of this part or, where treatment standards are not specified, the wastes are in compliance with the applicable prohibitions set forth in this section or RCRA section 3004(d).

(h) The prohibitions and effective dates specified in paragraphs (a)(3) and (e) of this section do not apply where the waste is subject to a Part 268 Subpart C prohibition and effective date for a for a specified HOC (such as a hazardous waste chlorinated solvent, see e.g., § 268.30(a)).

(i) To determine whether or not a waste is a liquid under paragraphs (a) and (e) of this section and under RCRA section 3004(d), the following test must be used: Method 9095 (Paint Filter Liquids Test) as described in "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods," EPA Publication No. SW-846. (Incorporated by reference, see § 260.11(a) of this chapter.)

(j) Except as otherwise provided in this paragraph, the waste analysis and recordkeeping requirements of § 268.7 are applicable to wastes prohibited under this part or RCRA section 3004(d):

(1) The initial generator of a liquid hazardous waste must test his waste (not an extract or filtrate) in accordance with the procedures specified in § 261.22(a)(1), or use knowledge of the waste, to determine if the waste has a pH less than or equal to two (2.0). If the liquid waste has a pH less than or equal to two (2.0), it is restricted from land disposal and all requirements of Part 268 are applicable, except as otherwise specified in this section.

(2) The initial generator of either a liquid hazardous waste containing polychlorinated biphenyls (PCBs) or a liquid or nonliquid hazardous waste containing halogenated organic compounds (HOCs) must test his waste (not an extract or filtrate), or use knowledge of the waste, to determine whether the concentration levels in the waste equal or exceed the prohibition levels specified in this section. If the concentration of PCBs or HOCs in the waste is greater than or equal to the prohibition levels specified in this section, the waste is restricted from land disposal and all requirements of Part 268 are applicable, except as otherwise specified in this section.

[52 FR 25790, July 8, 1987, as amended at 52 FR 41296, Oct. 27, 1987]

Subpart D—Treatment Standards

SOURCE: 51 FR 40642, Nov. 7, 1986, unless otherwise noted.

§ 268.40 Applicability of treatment standards.

(a) A restricted waste identified in this subpart may be land disposed without further treatment only if an extract of the waste or of the treatment residue of the waste developed using the test method in Appendix I of this part does not exceed the value shown in Table CCWE of § 268.41 for any hazardous constituent listed in the Table CCWE for that waste.

(b) A restricted waste for which a treatment technology is specified under § 268.42(a) may be land disposed after it is treated using that specified technology or an equivalent treatment method approved by the Administrator under the procedures set forth in § 268.42(b).

[52 FR 25790, July 8, 1987]

§ 268.41 Treatment standards expressed as concentrations in waste extract.

(a) Table CCWE identifies the restricted wastes and the concentrations of their associated hazardous constituents which may not be exceeded by the extract of a waste or waste treatment residual developed using the test method in Appendix I of this part for the allowable land disposal of such waste. (Appendix II of this part provides Agency guidance on treatment methods that have been shown to achieve the Table CCWE levels for the respective wastes. Appendix II is not a regulatory requirement but is provided to assist generators and owners/operators in their selection of appropriate treatment methods.)

TABLE CCWE—CONSTITUENT CONCENTRATIONS IN WASTE EXTRACT

F001—F005 spent solvents	Concentration (in mg/l)	
	Wastewaters containing spent solvents	All other spent solvent wastes
Acetone	0.05	0.59
n-Butyl alcohol	5.0	5.0
Carbon disulfide	1.05	4.81
Carbon tetrachloride	.05	.96
Chlorobenzene	.15	.05
Cresols (and cresylic acid)	2.82	.75
Cyclohexanone	.125	.75
1,2-Dichlorobenzene	.65	.125
Ethyl acetate	.05	.75
Ethylbenzene	.05	.053
Ethyl ether	.05	.75
Isobutanol	5.0	5.0
Methanol	.25	.75
Methylene chloride	.20	.96
Methylene chloride (from the pharmaceutical industry	12.7	.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

F020–F023 and F026–F028 dioxin containing wastes	Concentration
HxCDD—All Hexachlorodibenzo-p-dioxins	< 1 ppb
HxCDF—All Hexachlorodibenzofurans	< 1 ppb
PeCDD—All Pentachlorodibenzo-p-dioxins	< 1 ppb
PeCDF—All Pentachlorodibenzofurans	< 1 ppb
TCDD—All Tetrachlorodibenzo-p-dioxins	< 1 ppb
TCDF—All Tetrachlorodibenzofurans	< 1 ppb
2,4,5-Trichlorophenol	< 0.05 ppm
2,4,6-Trichlorophenol	< 0.05 ppm
2,3,4,6-Tetrachlorophenol	< 0.10 ppm
Pentachlorophenol	< 0.01 ppm

(b) When wastes with differing treatment standards for a constituent of concern are combined for purposes of treatment, the treatment residue must meet the lowest treatment standard for the constituent of concern.

[51 FR 40642, Nov. 7, 1986; 52 FR 21017, June 4, 1987]

§ 268.42 Treatment standards expressed as specified technologies.

(a) The following wastes must be treated using the identified technology or technologies, or an equivalent

method approved by the Administrator.

(1) Liquid hazardous wastes containing polychlorinated biphenyls (PCBs) at concentrations greater than or equal to 50 ppm but less than 500 ppm must be incinerated in accordance with the technical requirements of 40 CFR 761.70 or burned in high efficiency boilers in accordance with the technical requirements of 40 CFR 761.60. Liquid hazardous wastes containing polychlorinated biphenyls (PCBs) at concentrations greater than or equal to 500 ppm must be incinerated in accordance with the technical requirements of 40 CFR 761.70. Thermal treatment under this section must also be in compliance with applicable regulations in Parts 264, 265, and 266.

(2) Nonliquid hazardous wastes containing halogenated organic compounds (HOCs) in total concentration greater than or equal to 1,000 mg/kg and liquid HOC-containing wastes that are prohibited under § 268.32(e)(1) of this part must be incinerated in accordance with the requirements of Part 264 Subpart O or Part 265 Subpart O. These treatment standards do not apply where the waste is subject to a Part 268 Subpart C treatment standard for a specific HOC (such as a hazardous waste chlorinated solvent for which a treatment standard is established under § 268.41(a)).

(b) Any person may submit an application to the Administrator demonstrating that an alternative treatment method can achieve a measure of performance equivalent to that achievable by methods specified in paragraph (a) of this section. The applicant must submit information demonstrating that his treatment method is in compliance with Federal, state, and local requirements and is protective of human health and the environment. On the basis of such information and any other available information, the Administrator may approve the use of the alternative treatment method if he finds that the alternative treatment method provides a measure of performance equivalent to that achieved by methods specified in paragraph (a) of this section. Any approval must be stated in writing and may contain such provisions and conditions as the Administrator deems appropriate. The person to whom such approval is issued must comply with all limitations contained in such a determination.

[51 FR 40642, Nov. 7, 1986, as amended at 52 FR 25790, July 8, 1987]

§ 268.43 Treatment standards expressed as waste concentrations. [Reserved]

§ 268.44 Variance from a treatment standard.

(a) Where the treatment standard is expressed as a concentration in a waste or waste extract and a waste cannot be treated to the specified level, or where the treatment technology is not appropriate to the waste, the generator or treatment facility may petition the Administrator for a variance from the treatment standard. The petitioner must demonstrate that because the physical or chemical properties of the waste differs significantly from wastes analyzed in developing the treatment standard, the waste cannot be treated to specified levels or by the specified methods.

(b) Each petition must be submitted in accordance with the procedures in § 260.20.

(c) Each petition must include the following statement signed by the petitioner or an authorized representative:

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this petition and all attached documents, and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that these are significant penalties for submitting false information, including the possibility of fine and imprisonment.

(d) After receiving a petition for variance from a treatment standard, the Administrator may request any additional information or samples which he may require to evaluate the petition. Additional copies of the complete petition may be requested as needed to send to affected states and Regional Offices.

(e) The Administrator will give public notice in the FEDERAL REGISTER of the intent to approve or deny a petition and provide an opportunity for public comment. The final decision on a variance from a treatment standard will be published in the FEDERAL REGISTER.

(f) A generator, treatment facility, or disposal facility that is managing a waste covered by a variance from the treatment standards must comply with the waste analysis requirements for restricted wastes found under § 268.7.

(g) During the petition review process, the applicant is required to comply with all restrictions on land disposal under this part once the effective date for the waste has been reached.

[51 FR 40642, Nov. 7, 1986; 52 FR 21017, June 4, 1987]

Subpart E—Prohibitions on Storage

§ 268.50 Prohibitions on storage of restricted wastes.

(a) Except as provided in this section, the storage of hazardous wastes restricted from land disposal under Subpart C of this part of RCRA section 3004 is prohibited, unless the following conditions are met:

(1) A generator stores such wastes in tanks or containers on-site solely for the purpose of the accumulation of such quantities of hazardous waste as necessary to facilitate proper recovery, treatment, or disposal and the generator complies with the requirements in § 262.34 of this chapter. (A generator who is in existence on the effective date of a regulation under this part and who must store hazardous wastes for longer than 90 days due to the regulations under this Part becomes an owner/operator of a storage facility and must obtain a RCRA permit. Such a facility may qualify for interim status upon compliance with the regulations governing interim status under 40 CFR 270.70).

(2) An owner/operator of a hazardous waste treatment, storage, or disposal facility stores such wastes in tanks or containers solely for the purpose of the accumulation of such quantities of hazardous waste as necessary to facilitate proper recovery, treatment, or disposal and:

(i) Each container is clearly marked to identify its contents and the date each period of accumulation begins;

(ii) Each tank is clearly marked with a description of its contents, the quantity of each hazardous waste received, and the date each period of accumulation begins, or such information for each tank is recorded and maintained in the operating record at that facility. Regardless of whether the tank itself is marked, an owner/operator must comply with the operating record requirements specified in § 264.73 or § 265.73.

(3) A transporter stores manifested shipments of such wastes at a transfer facility for 10 days or less.

(b) An owner/operator of a treatment, storage or disposal facility may store such wastes for up to one year unless the Agency can demonstrate that such storage was not solely for the purpose of accumulation of such quantities of hazardous waste as are necessary to facilitate proper recovery, treatment, or disposal.

(c) A owner/operator of a treatment, storage or disposal facility may store such wastes beyond one year; however, the owner/operator bears the burden of proving that such storage was solely for the purpose of accumulation of such quantities of hazardous waste as are necessary to facilitate proper recovery, treatment, or disposal.

(d) The prohibition in paragraph (a) of this section does not apply to the wastes which are the subject of an approved petition under § 268.6 or a nationwide variance contained in Subpart C of this part or an approved case-by-case extension under § 268.5.

(e) The prohibition in paragraph (a) of this section does not apply to hazardous wastes that meet the treatment standards specified under §§ 268.41, 268.42, and 268.43 or the treatment standards specified under the variance in § 268.44, or, where treatment standards have not been specified, is in compliance with the applicable prohibitions specified in § 268.32 or RCRA section 3004.

(f) Liquid hazardous wastes containing polychlorinated biphenyls (PCBs) at concentrations greater than or equal to 50 ppm must be stored at a facility that meets the requirements of

40 CFR 761.65(b) and must be removed from storage and treated or disposed as required by this part within one year of the date when such wastes are first placed into storage. The provisions of paragraph (c) of this section do not apply to such PCB wastes prohibited under § 268.32 of this part

[51 FR 40642, Nov. 7, 1986; 52 FR 21017, June 4, 1987, as amended at 52 FR 25791, July 8, 1987]

APPENDIX I—TOXICITY CHARACTERISTIC LEACHING PROCEDURE (TCLP)

1.0 SCOPE AND APPLICATION

1.1 The TCLP is designed to determine the mobility of both organic and inorganic contaminants present in liquid, solid, and multiphasic wastes.

1.2 If a total analysis of the waste demonstrates that individual contaminants are not present in the waste, or that they are present but at such low concentrations that the appropriate regulatory thresholds could not possibly be exceeded, the TCLP need not be run.

2.0 SUMMARY OF METHOD

(See Figure 1)

2.1 For liquid wastes (i.e., those containing insignificant solid material), the waste, after filtration through a 0.6- to 0.8-um glass fiber filter, is defined as the TCLP extract.

2.2 For wastes comprised of solids or for wastes containing significant amounts of solid material, the particle-size of the waste is reduced (if necessary), the liquid phase, if any, is separated from the solid phase and stored for later analysis. The solid phase is extracted with an amount of extraction fluid equal to 20 times the weight of the solid phase. The extraction fluid employed is a function of the alkalinity of the solid phase of the waste. A special extractor vessel is used when testing for volatiles (See Table 1). Following extraction, the liquid extract is separated from the solid phase by 0.6- to 0.8-um glass fiber filter filtration.

2.3 If compatible (i.e., multiple phases will not form on combination), the initial liquid phase of the waste is added to the liquid extract, and these liquids are analyzed together. If incompatible, the liquids are analyzed separately and the results are mathematically combined to yield a volume-weighted average concentration.

3.0 INTERFERENCES

3.1. Potential interferences that may be encountered during analysis are discussed in the individual analytical methods.

4.0 APPARATUS AND MATERIALS

4.1 *Agitation apparatus:* An acceptable agitation apparatus is one which is capable of rotating the extraction vessel in an end-over-end fashion (See Figure 2) at 30 ± 2 rpm. Suitable devices known to EPA are identified in Table 2.

4.2 *Extraction Vessel:*

4.2.1 Zero-Headspace Extraction Vessel (ZHE). This device is for use *only* when the waste is being tested for the mobility of volatile constituents (see Table 1). The ZHE is an extraction vessel that allows for liquid/solid separation within the device, and which effectively precludes headspace (as depicted in Figure 3). This type of vessel allows for initial liquid/solid separation, extraction, and final extract filtration without having to open the vessel (see Step 4.3.1). These vessels shall have an internal volume of 500 to 600 mL and be equipped to accommodate a 90-mm filter. Suitable ZHE devices known to EPA are identified in Table 3. These devices contain viton O-rings which should be replaced frequently.

For the ZHE to be acceptable for use, the piston within the ZHE should be able to be moved with approximately 15 psi or less. If it takes more pressure to move the piston, the O-rings in the device should be replaced. If this does not solve the problem, the ZHE is unacceptable for TCLP analyses and the manufacturer should be contacted.

The ZHE should be checked after every extraction. If the device contains a built-in pressure gauge, pressurize the device to 50 psi, allow it to stand unattended for 1 hour, and recheck the pressure. If the device does not have a built-in pressure gauge, pressurize the device to 50 psi, submerge it in water, and check for the presence of air bubbles escaping from any of the fittings. If pressure is lost, check all fittings and inspect and replace O-rings, if necessary. Retest the device. If leakage problems cannot be solved, the manufacturer should be contacted.

4.2.2 When the waste is being evaluated for other than volatile contaminants, an extraction vessel that does not preclude headspace (e.g., a 2-liter bottle) is used. Suitable extraction vessels include bottles made from various materials, depending on the contaminants to be analyzed and the nature of the waste (see Step 4.3.3). It is recommended that borosilicate glass bottles be used over other types of glass, especially when inorganics are of concern. Plastic bottles may be used only if inorganics are to be investigated. Bottles are available from a number of laboratory suppliers. When this type of extraction vessel is used, the filtration device discussed in Step 4.3.2 is used for initial liquid/solid separation and final extract filtration.

4.2.3 Some ZHEs use gas pressure to actuate the ZHE piston, while others use mechanical pressure (see Table 3). Whereas the volatiles procedure (see Section 9.0) refers to pounds-per-square inch (psi), for the mechanically actuated piston, the pressure applied is measured in torque-inch-pounds. Refer to the manufacturer's instructions as to the proper conversion.

4.3 *Filtration Devices:* It is recommended that all filtrations be performed in a hood.

4.3.1 Zero-Headspace Extractor Vessel (see Figure 3): When the waste is being evaluated for volatiles, the zero-headspace extraction vessel is used for filtration. The device shall be capable of supporting and keeping in place the glass fiber filter, and be able to withstand the pressure needed to accomplish separation (50 psi).

NOTE: When it is suspected that the glass fiber filter has been ruptured, an in-line glass fiber filter may be used to filter the material within the ZHE.

4.3.2 Filter Holder: When the waste is being evaluated for other than volatile compounds, a filter holder capable of supporting a glass fiber filter and able to withstand the pressure needed to accomplish separation is used. Suitable filter holders range from simple vacuum units to relatively complex systems capable of exerting pressures of up to 50 psi or more. The type of filter holder used depends on the properties of the material to be filtered (see Step 4.3.3). These devices shall have a minimum internal volume of 300 mL and be equipped to accommodate a minimum filter size of 47 mm (Filter holders having an internal capacity of 1.5 L or greater and equipped to accommodate a 142 mm diameter filter are recommended). Vaccum filtration is only recommended for wastes with low solids content (<10%) and for highly granular (liquid-containing) wastes. All other types of wastes should be filtered using positive pressure filtration. Filter holders known to EPA to be suitable for use are shown in Table 4.

4.3.3 Materials of Construction: Extraction vessels and filtration devices shall be made of inert materials which will not leach or absorb waste components. Glass, polytetrafluoroethylene (PTFE), or type 316 stainless steel equipment may be used when evaluating the mobility of both organic and inorganic components. Devices made of high-density polyethylene (HDPE), polypropylene, or polyvinyl chloride may be used only when evaluating the mobility of metals. Borosilicate glass bottles are recommended for use over other types of glass bottles, especially when inorganics are constituents of concern.

4.4 *Filters:* Filters shall be made of borosilicate glass fiber, shall contain no binder materials, and shall have an effective pore size of 0.6- to 0.8-um, or equivalent. Filters known to EPA to meet these specifications are identified in Table 5. Pre-filters must not be used. When evaluating the mobility of metals, filters shall be acid-washed prior to use by rinsing with 1.0 N nitric acid followed by three consecutive rinses with deionized distilled water (a minimum of 1-L per rinse is recommended). Glass fiber filters are fragile and should be handled with care.

4.5 *pH meters:* Any of the commonly available pH meters are acceptable.

4.6 *ZHE extract collection devices:* TEDLAR® bags or glass, stainless steel or PTFE gas tight syringes are used to collect the initial liquid phase and the final extract of the waste when using the ZHE device. The devices listed are recommended for use under the following conditions.

4.6.1 If a waste contains an aqueous liquid phase or if a waste does not contain a significant amount of non-aqueous liquid (i.e., <1% of total waste), the TEDLAR® bag should be used to collect and combine the initial liquid and solid extract. The syringe is not recommended in these cases.

4.6.2 If a waste contains a significant amount of non-aqueous initial liquid phase (i.e., >1% of total waste), the syringe or the TEDLAR® bag may be used for both the initial solid/liquid separation and the final extract filtration. However, analysts should use one or the other, not both.

4.6.3 If the waste contains no initial liquid phase (is 100% solid) or has no significant solid phase (is 100% liquid), either the TEDLAR® bag or the syringe may be used. If the syringe is used, discard the first 5 mL of liquid expressed from the device. The remaining aliquots are used for analysis.

4.7 *ZHE extraction fluid transfer devices:* Any device capable of transferring the extraction fluid into the ZHE without changing the nature of the extraction fluid is acceptable (e.g., a constant displacement pump, a gas tight syringe, pressure filtration unit (See Step 4.3.2), or another ZHE device).

4.8 *Laboratory balance:* Any laboratory balance accurate to within ±0.01 grams may be used (all weight measurements are to be within ±0.1 grams).

5.0 REAGENTS

5.1 *Reagent water:* Reagent water is defined as water in which an interferent is not observed at or above the method detection limit of the analyte(s) of interest. For non-volatile extractions, ASTM Type II water, or equivalent meets the definition of reagent water. For volatile extractions, it is recommended that reagent water be generated by any of the following methods. Reagent water should be monitored periodically for impurities.

5.1.1 Reagent water for volatile extractions may be generated by passing tap water through a carbon filter bed containing about 500 grams of activated carbon (Calgon Corp., Filtrasorb-300 or equivalent).

5.1.2 A water purification system (Millipore Super-Q or equivalent) may also be used to generate reagent water for volatile extractions.

5.1.3 Reagent water for volatile extractions may also be prepared by boiling water for 15 minutes. Subsequently, while maintaining the water temperature at 90± 5°C, bubble a contaminant-free inert gas (e.g., nitrogen) through the water for 1 hour. While still hot, transfer the water to a narrow-mouth screw-cap bottle under zero-headspace and seal with a Teflon-lined septum and cap.

5.2 1.0 N Hydrochloric acid (HCl) made from ACS reagent grade.

5.3 1.0 N Nitric acid (HNO_3) made from ACS reagent grade.

5.4 1.0 N Sodium hydroxide (NaOH) made from ACS reagent grade.

5.5 Glacial acetic acid (HOAc) ACS reagent grade.

5.6 *Extraction fluid:*

5.6.1 Extraction fluid #1: This fluid is made by adding 5.7 mL glacial HOAc to 500 mL of the appropriate water (see Step 5.1), adding 64.3 mL of 1.0 N NaOH, and diluting to a volume of 1 liter. When correctly prepared, the pH of this fluid will be 4.93 ± 0.05.

5.6.2 Extraction fluid #2: This fluid is made by diluting 5.7 mL glacial HOAc with ASTM Type II water (see Step 5.1) to a volume of 1 liter. When correctly prepared, the pH of this fluid will be 2.88 ± 0.05.

NOTE: It is suggested that these extraction fluids be monitored frequently for impurities. The pH should be checked prior to use to ensure that these fluids are made up accurately.

5.7 Analytical standards shall be prepared according to the appropriate analytical method.

6.0 SAMPLE COLLECTION, PRESERVATION, AND HANDLING

6.1 All samples shall be collected using an appropriate sampling plan.

6.2 At least two separate representative samples of a waste should be collected. If volatile organics are of concern, a third sample should be collected. The first sample is used in several preliminary TCLP evaluations (e.g., to determine the percent solids of the waste; to determine if the waste contains insignificant solids (i.e., the waste is its own extract after filtration); to determine if the solid portion of the waste requires particle-size reduction; and to determine which of the two extraction fluids are to be used for the non-volatile TCLP extraction of the waste). These preliminary evaluations are identified in Section 7.0. The second and, if required, third samples are extracted using the TCLP non-volatile procedure (Section 8.0) and volatile procedure (Section 9.0), respectively.

6.3 Preservatives shall not be added to samples.

6.4 Samples can be refrigerated unless refrigeration results in irreversible physical change to the waste (e.g., precipitation).

6.5 When the waste is to be evaluated for volatile contaminants, care should be taken to minimize the loss of volatiles. Samples shall be taken and stored in a manner to prevent the loss of volatile contaminants. If possible, it is recommended that any necessary particle-size reduction should be conducted as the sample is being taken (See Step 8.5).

6.6 TCLP extracts should be prepared for analysis and analyzed as soon as possible following extraction. If they need to be stored, even for a short period of time, storage shall be a 4° C, and samples for volatiles analysis shall not be allowed to come into contact with the atmosphere (i.e., no headspace). See Section 10.0 (QA requirements) for acceptable sample and extract holding times.

7.0 PRELIMINARY TCLP EVALUATIONS

The preliminary TCLP evaluations are performed on a minimum 100 gram representative sample of waste that will not actually undergo TCLP extraction (designated as the first sample in Step 6.2). These evaluations include preliminary determination of the percent solids of the waste; determination of whether the waste contains insignificant solids, and is therefore, its own extract after filtration; determination of whether the solid portion of the waste requires particle-size reduction; and determination of which of the two extraction fluids are to be used for the non-volatile TCLP extraction of the waste.

7.1 *Preliminary determination of percent solids:* Percent solids is defined as that fraction of a waste sample (as a percentage of the total sample) from which no liquid may be forced out by an applied pressure, as described below.

7.1.1 If the waste will obviously yield no free liquid when subjected to pressure filtration (i.e., is 100% solids) proceed to Step 7.4.

7.1.2 If the sample is liquid or multiphasic, liquid/solid separation to make a preliminary determination of percent solids is required. This involves the filtration device described in Step 4.3.2 and is outlined in Steps 7.1.3 through 7.1.9.

7.1.3 Pre-weigh the filter and the container that will receive the filtrate.

7.1.4 Assemble the filter holder and filter following the manufacturer's instructions.

Place the filter on the support screen and secure.

7.1.5 Weigh out a representative subsample of the waste (100 gram minimum) and record the weight.

7.1.6 Allow slurries to stand to permit the solid phase to settle. Wastes that settle slowly may be centrifuged prior to filtration. Centrifugation is to be used only as an aid to filtration. If used, the liquid should be decanted and filtered followed by filtration of the solid portion of the waste through the same filtration system.

7.1.7 Quantitatively transfer the waste sample to the filter holder (liquid and solid phases). If filtration of the waste at 4° C reduces the amount of expressed liquid over what would be expressed at room temperature then allow the sample to warm up to room temperature in the device before filtering.

NOTE: If waste material (>1% of original sample weight) has obviously adhered to the container used to transfer the sample to the filtration apparatus, determine the weight of this residue and subtract it from the sample weight determined in Step 7.1.5 to determine the weight of the waste sample that will be filtered.

Gradually apply vacuum or gentle pressure of 1-10 psi, until air or pressurizing gas moves through the filter. If this point is not reached under 10 psi, and if no additional liquid has passed through the filter in any 2-minute interval, slowly increase the pressure in 10-psi increments to a maximum of 50 psi. After each incremental increase of 10-psi, if the pressurizing gas has not moved through the filter, and if no additional liquid has passed through the filter in any 2-minute interval, proceed to the next 10-psi increment. When the pressurizing gas begins to move through the filter, or when liquid flow has ceased at 50 psi (i.e., filtration does not result in any additional filtrate within any 2-minute period), filtration is stopped.

NOTE: Instantaneous application of high pressure can degrade the glass fiber filter and may cause premature plugging.

7.1.8 The material in the filter holder is defined as the solid phase of the waste, and the filtrate is defined as the liquid phase.

NOTE: Some wastes, such as oily wastes and some paint wastes, will obviously contain some material that appears to be a liquid. But even after applying vacuum or pressure filtration, as outlined in Step 7.1.7, this material may not filter. If this is the case, the material within the filtration device is defined as a solid. The original filter is *not* to be replaced with a fresh filter under any circumstances. Only one filter is used.

7.1.9 Determine the weight of the liquid phase by subtracting the weight of the filtrate container (See Step 7.1.3) from the total weight of the filtrate-filled container. The weight of the solid phase of the waste sample is determined by subtracting the weight of the liquid phase from the weight of the total waste sample, as determined in Step 7.1.5 or 7.1.7. Record the weight of the liquid and solid phases. Calculate the percent solids as follows:

$$\text{Percent solids} = \frac{\text{Weight of solid (Step 7.1.9)}}{\text{Total weight of waste (Step 7.1.5 or 7.1.7)}} \times 100$$

7.2 *Determination of whether waste is liquid or has insignificant amounts of solid material:* If the sample obviously has a significant amount of solid material, the solid phase must be subjected to extraction; proceed to Step 7.3 to determine if the waste requires particle-size reduction (and to reduce particle-size, if necessary). Determine whether the waste is liquid or has insignificant amounts of solid material (which need not undergo extraction) as follows:

7.2.1 Remove the solid phase and filter from the filtration apparatus.

7.2.2 Dry the filter and solid phase at 100±20° C until two successive weighings yield the same value within ±1%. Record final weight.

NOTE: Caution should be taken to insure that the subject solid will not flash upon heating. It is recommended that the drying oven be vented to a hood or appropriate device.

7.2.3 Calculate the percent dry solids as follows:

20-142 O—88——24

$$\text{Percent dry solids} = \frac{\text{Weight of dry waste and filter} - \text{tared weight of filter}}{\text{Initial weight of waste (Step 7.1.5 or 7.1.1)}} \times 100$$

7.2.4 If the percent dry solids is less than 0.5%, consult Step 6.2 and proceed to Section 8.0 if non-volatiles in the waste are of concern, and to Section 9.0 if volatiles are of interest. In this case, the waste, after filtration is defined as the TCLP extract. If the percent dry solids is greater than or equal to 0.5%, and if the non-volatile TCLP is to be performed, return to the beginning of this Section (7.0) with a new representative waste sample, so that it can be determined if particle-size reduction is necessary (Step 7.3), and so that the appropriate extraction fluid may be determined (Step 7.4) on a fresh portion of the solid phase of the waste. If only the volatile TCLP is to be performed, see the Note in Step 7.4.

7.3 *Determination of whether the wastes requires particle-size reduction (particle-size is reduced during this Step):* Using the solid portion of the waste, evaluate the solid for particle-size. If the solid has a surface area per gram of material equal to or greater than 3.1 cm^2, or is smaller than 1 cm in its narrowest dimension (e.g., is capable of passing through a 9.5-mm (0.375-inch) standard sieve), particle-size reduction is not required (proceed to Step 7.4). If the surface area is smaller or the particle-size larger than described above, the solid portion of the waste is prepared for extraction by crushing, cutting, or grinding the waste to a surface area or particle-size as described above.

NOTE: Surface area requirements are meant for filamentous (e.g., paper, cloth) and similar waste materials. Actual measurement of surface area is not required; nor is it recommended.

7.4 *Determination of appropriate extraction fluid:* If the solid content is greater than or equal to 0.5% of the waste and if TCLP extraction for non-volatile constituents will take place (Section 8.0), determination of the appropriate fluid (Step 5.6) to use for the non-volatiles extraction is performed as follows.

NOTE: TCLP extraction for volatile constituents entails using only extraction fluid #1 (Step 5.6.1). Therefore, if TCLP extraction for non-volatiles extraction is not required, proceed to section 9.0.

7.4.1 Weigh out a small subsample of the solid phase of the waste, reduce the solid (if necessary) to a particle-size of approximately 1mm in diameter or less, and transfer 5.0 grams of the solid phase of the waste to a 500-mL beaker or Erlenmeyer flask.

7.4.2 Add 96.5 mL of reagent water (ASTM Type II) to the beaker, cover with a watchglass, and stir vigorously for 5 minutes using a magnetic stirrer. Measure and record the pH. If the pH is <5.0, extraction fluid #1 is used. Proceed to Section 8.0.

7.4.3 If the pH from Step 7.4.2 is >5.0, add 3.5 mL 1.0 N HCl, slurry briefly, cover with a watchglass, heat to 50 °C, and hold at 50 °C for 10 minutes.

7.4.4 Let the solution cool to room temperature and record the pH. If the pH is <5.0, use extraction fluid #1. If the pH is >5.0, use extraction fluid #2. Proceed to Section 8.0.

7.5 The sample of waste used for performance of this Section shall *not* be used any further. Other samples of the waste (see Step 6.2) should be employed for the Section 8.0 and 9.0 extractions.

8.0 PROCEDURE WHEN VOLATILES ARE NOT INVOLVED

Although a minimum sample size of 100 grams (solid and liquid phases) is required, a larger sample size may be more appropriate, depending on the solids content of the waste sample (percent solids, see Step 7.1), whether the initial liquid phase of the waste will be miscible with the aqueous extract of the solid, and whether inorganics, semivolatile organics, pesticides, and herbicides are all analytes of concern. Enough solids should be generated for extraction such that the volume of TCLP extract will be sufficient to support all of the analyses required. If the amount of extract generated by the performance of a single TCLP extraction will not be sufficient to perform all of the analyses to be conducted, it is recommended that more than one extraction be performed and that the extracts from each extraction be combined and then aliquoted for analysis.

8.1 If the waste will obviously yield no liquid when subjected to pressure filtration (i.e., is 100% solid, see Step 7.1), weigh out a representative subsample of the waste (100 gram minimum) and proceed to Step 8.9.

8.2 If the sample is liquid or multiphasic, liquid/solid separation is required. This involves the filtration device described in Step 4.3.2 and is outlined in Steps 8.3 to 8.8.

8.3 Pre-weigh the container that will receive the filtrate.

8.4 Assemble the filter holder and filter following the manufacturer's instructions. Place the filter on the support screen and secure. Acid wash the filter if evaluating the mobility of metals (See Step 4.4).

NOTE: Acid washed filters may be used for all non-volatile extractions even when metals are not of concern.

8.5 Weigh out a representative subsample of the waste (100 gram minimum) and record the weight. If the waste was shown to contain <0.5% dry solids (Step 7.2), the waste, after filtration is defined as the TCLP extract. Therefore, enough of the sample should be filtered so that the amount of filtered liquid will support all of the analyses required of the TCLP extract. For wastes containing >0.5% dry solids (Steps 7.1 or 7.2), use the percent solids information obtained in Step 7.1 to determine the optimum sample size (100 gram minimum) for filtration. Enough solids should be generated after filtration to support the analyses to be performed on the TCLP extract.

8.6 Allow slurries to stand to permit the solid phase to settle. Wastes that settle slowly may be centrifuged prior to filtration. Centrifugation is to be used only as an aid to filtration. If used, the liquid should be decanted and filtered followed by filtration of the solid portion of the waste through the same filtration system.

8.7 Quantitatively transfer the waste sample (liquid and solid phases) to the filter holder (see Step 4.3.2). If filtration of the waste at 4° C reduces the amount of expressed liquid over what would be expressed at room temperature, then allow the sample to warm up to room temperature in the device before filtering.

NOTE: If waste material (>1% of the original sample weight) has obviously adhered to the container used to transfer the sample to the filtration apparatus, determine the weight of this residue and subtract it from the sample weight determined in Step 8.5, to determine the weight of the waste sample that will be filtered.

Gradually apply vacuum or gentle pressure of 1-10 psi, until air or pressurizing gas moves through the filter. If this point is not reached under 10 psi, and if no additional liquid has passed through the filter in any 2-minute interval, slowly increase the pressure in 10-psi increments to maximum of 50 psi. After each incremental increase of 10 psi, if the pressurizing gas has not moved through the filter, and if no additional liquid has passed through the filter in any 2-minute interval, proceed to the next 10-psi increment. When the pressurizing gas begins to move through the filter, or when the liquid flow has ceased at 50 psi (i.e., filtration does not result in any additional filtrate within a 2-minute period), filtration is stopped.

NOTE: Instantaneous application of high pressure can degrade the glass fiber filter and may cause premature plugging.

8.8 The material in the filter holder is defined as the solid phase of the waste, and the filtrate is defined as the liquid phase. Weigh the filtrate. The liquid phase may now be either analyzed (see Step 8.13) or stored at 4 °C until time of analysis.

NOTE: Some wastes, such as oily wastes and some paint wastes, will obviously contain some material that appears to be a liquid. But even after applying vacuum or pressure filtration, as outlined in Step 8.7, this material may not filter. If this is the case, the material within the filtration device is defined as a solid and is carried through the extraction as a solid. The original filter is *not* to be replaced with a fresh filter under any circumstances. Only one the filter is used.

8.9 If the waste contains <0.5% dry solids (see Step 7.2), proceed to Step 8.13. If the waste contains >0.5% dry solids (see Step 7.1 or 7.2), and if particle-size reduction of the solid was needed in Step 7.3, proceed to Step 8.10. If particle-size reduction was not required in Step 7.3, quantitatively transfer the solid material into the extractor vessel, including the filter used to separate the initial liquid from the solid phase. Proceed to Step 8.11.

8.10 The solid portion of the waste is prepared for extraction by crushing, cutting, or grinding the waste to a surface area of particle-size as described in Step 7.3. When the surface area of particle-size has been appropriately altered, quantitatively transfer the solid material into the extractor vessel, including the filter used to separate the initial liquid from the solid phase.

NOTE: Sieving of the waste through a sieve that is not Teflon coated should not be done due to avoid possible contamination of the sample. Surface area requirements are meant for filamentous (e.g., paper, cloth) and similar waste materials. Actual measurement of surface area is not recommended.

8.11 Determine the amount of extraction fluid to add to the extractor vessel as follows:

$$\text{Weight of extraction fluid} = \frac{20 \times \%\ \text{solids (Step 7.1)} \times \text{weight of waste filtered (Step 8.5 or 8.7)}}{100}$$

Slowly add this amount of appropriate extraction fluid (see Step 7.4) to the extractor vessel. Close the extractor bottle tightly (it is recommended that Teflon tape be used to ensure a tight seal), secure in rotary extractor device, and rotate at 30±2 rpm for 18±2 hours. Ambient temperature (i.e., temperature of room in which extraction is to take place) shall be maintained at 22±3 °C during the extraction period.

NOTE: As agitation continues, pressure may build up within the extractor bottle for some types of wastes (e.g., limed or calcium carbonate containing waste may evolve gases such as carbon dioxide). To relieve excess pressure, the extractor bottle may be periodically opened (e.g., after 15 minutes, 30 minutes, and 1 hour) and vented into a hood.

8.12 Following the 18±2 hour extraction, the material in the extractor vessel is separated into its component liquid and solid phases by filtering through a new glass fiber filter, as outlined in Step 8.7. For final filtration of the TCLP extract, the glass fiber filter may be changed, if necessary, to facilitate filtration. Filter(s) shall be acid-washed (see Step 4.4) if evaluating the mobility of metals.

8.13 The TCLP extract is now prepared as follows:

8.13.1 If the waste contained no initial liquid phase, the filtered liquid material obtained from Step 8.12 is defined as the TCLP extract. Proceed to Step 8.14.

8.13.2 If compatible (e.g., multiple phases will not result on combination), the filtered liquid resulting from Step 8.12 is combined with the initial liquid phase of the waste as obtained in Step 8.7. This combined liquid is defined as the TCLP extract. Proceed to Step 8.14.

8.13.3 If the initial liquid phase of the waste, as obtained from Step 8.7, is not or may not be compatible with the filtered liquid resulting from Step 8.12, these liquids are not combined. These liquids, collectively defined as the TCLP extract, are analyzed separately, and the results are combined mathematically. Proceed to Step 8.14.

8.14 Following collection of the TCLP extract, it is recommended that the pH of the extract be recorded. The extract should be immediately aliquoted for analysis and properly preserved (metals aliquots must be acidified with nitric acid to pH <2; all other aliquots must be stored under refrigeration (4 °C) until analyzed). The TCLP extract shall be prepared and analyzed according to appropriate analytical methods. TCLP extracts to be analyzed for metals, other than mercury, shall be acid digested. If the individual phases are to be analyzed separately, determine the volume of the individual phases (to ±0.5%), conduct the appropriate analyses, and combine the results mathematically by using a simple volume-weighted average:

$$\text{Final Analyte Concentration} = \frac{(V_1)(C_1)+(V_2)(C_2)}{V_1+V_2}$$

where:

V_1 = The volume of the first phase (L).

C_1 = The concentration of the contaminant of concern in the first phase (mg/L).

V_2 = The volume of the second phase (L).

C_2 = The concentration of the contaminant of concern in the second phase (mg/L).

8.15 The contaminant concentrations in the TCLP extract are compared with the thresholds identified in the appropriate regulations. Refer to Section 10.0 for quality assurance requirements.

9.0 PROCEDURE WHEN VOLATILES ARE INVOLVED

The ZHE device is used to obtain TCLP extracts for volatile analysis only. Extract resulting from the use of the ZHE shall not be used to evaluate the mobility of non-volatile analytes (e.g., metals, pesticides, etc.).

The ZHE device has approximately a 500-mL internal capacity. Although a minimum sample size of 100 grams was required in the Section 8.0 procedure, the ZHE can only accommodate a *maximum* of 25 grams of solid (defined as that fraction of a sample from which no liquid (additional) may be forced out by an applied pressure of 50 psi), due to the need to add an amount of extraction fluid equal to 20 times the weight of the solid phase.

The ZHE is charged with sample only once and the device is not opened until the final extract (of the solid) has been collected. Repeated filling of the ZHE of obtain 25 grams of solid is not permitted. The initial filtrate should be weighed and then stored at 4 °C until either analyzed or recombined with the final extract of the solid.

Although the following procedure allows for particle-size reduction during the conduct of the procedure, this could result in the loss of volatile compounds. If possible (e.g., particle-size may be reduced easily by crumbling), particle-size reduction (See Step 9.2) should be conducted on the sample as it is being taken. If necessary, particle-size reduction may be conducted during the procedure.

In carrying out the following steps, do not allow the waste, the initial liquid phase, or the extract to be exposed to the atmosphere for any more time than is absolutely necessary. Any manipulation of these materials should be done when cold (4° C) to minimize loss of volatiles.

9.1 Pre-weigh the (evacuated) container which will receive the filtrate (See Step 4.6), and set aside. If using a TEDLAR® bag, all liquid must be expressed from the device, whether it be for the initial or final liquid/solid separation, and an aliquot taken from the liquid in the bag, for analysis. The containers listed in Step 4.6 are recommended for use under the following conditions.

9.1.1 If a waste contains an aqueous liquid phase or if the waste does not contain a significant amount of non-aqueous liquid (i.e., <1% of total waste), the TEDLAR® bag should be used to collect and combine the initial liquid and solid extract. The syringe is not recommended in these cases.

9.1.2 If a waste contains a significant amount of non-aqueous initial liquid phase (i.e., >1% of total waste), the syringe or the TEDLAR® bag may be used for both the initial solid/liquid separation and the final extract filtration. However, analysts should use one or the other, not both.

9.1.3 If the waste contains no initial liquid phase (is 100% solid) or has no significant solid phase (is 100% liquid), either the TEDLAR® bag or the syringe may be used. If the syringe is used, discard the first 5 mL liquid expressed from the device. The remaining aliquots are used for analysis.

9.2 Place the ZHE piston within the body of the ZHE (it may be helpful first to moisten the piston O-rings slightly with extraction fluid). Adjust the piston within the ZHE body to a height that will minimize the distance the piston will have to move once the ZHE is charged with sample (based upon sample size requirements determined from Section 9.0, Step 7.1 and/or 7.2). Secure the gas inlet/outlet flange (bottom flange) onto the ZHE body in accordance with the manufacturer's instructions. Secure the glass fiber filter between the support screens and set aside. Set liquid inlet/outlet flange (top flange) aside.

9.3 If the waste is 100% solid (see Step 7.1), weigh out a representative subsample (25 gram maximum) of the waste, record weight, and proceed to Step 9.5.

9.4 If the waste was shown to contain <0.5% dry solids (Step 7.2), the waste, after filtration is defined as the TCLP extract. Enough of the sample should be filtered so that the amount of filtered liquid will support all of the volatile analyses required. For wastes containing >0.5% dry solids (Steps 7.1 and/or 7.2), use the percent solids information obtained in Step 7.1 to determine the optimum sample size to charge into the ZHE. The appropriate sample size recommended is as follows:

9.4.1 For wastes containing >5% solids (see Step 7.1), weigh out a representative 500 gram sample or waste and record the weight.

9.4.2 For wastes containing >5% solids (see Step 7.1), the amount of waste to charge into the ZHE is determined as follows:

$$\text{Weight of waste to charge ZHE} = \frac{25}{\%\ \text{solids (Step 7.1)}} \times 100$$

Weigh out a representative subsample of the waste of the appropriate size and record the weight.

9.5 If particle-size reduction of the solid portion of the waste was required in Step 7.3, proceed to Step 9.6. If particle-size reduction was not required in Step 7.3, proceed to Step 9.7.

9.6 The waste is prepared for extraction by crushing, cutting, or grinding the solid portion of the waste to a surface area or particle-size as described in Step 7.3. Wastes and appropriate reduction equipment should be refrigerated, if possible, to 4 °C prior to particle-size reduction. The means used to effect particle-size reduction must not generate heat in and of itself. If reduction of the solid phase of the waste is necessary, exposure of the waste to the atmosphere should be avoided to the extent possible.

NOTE: Sieving of the waste is not recommended due to the possibility that volatiles may be lost. The use of an appropriately graduated ruler is recommended as an acceptable alternative. Surface area requirements are meant for filamentous (e.g., paper, cloth) and similar waste materials.

Actual measurement of surface area is not recommended.

When the surface area or particle-size has been appropriately altered, proceed to Step 9.7.

9.7 Waste slurries need not be allowed to stand to permit the solid phase to settle. Wastes that settle slowly shall not be centrifuged prior to filtration.

9.8 Quantitatively transfer the entire sample (liquid and solid phases) quickly to the ZHE. Secure the filter and support screens into the top flange of the device and secure the top flange to the ZHE body in accordance with the manufacturer's instructions. Tighten all ZHE fittings and place the device in the vertical position (gas inlet/outlet flange on the bottom). *Do not* attach the extraction collection device to the top plate.

NOTE: If waste material (>1% of original sample weight) has obviously adhered to the container used to transfer the sample to the ZHE, determine the weight of this residue and subtract it from the sample weight determined in Step 9.4, to determine the weight of the waste sample that will be filtered.

Attach a gas line to the gas inlet/outlet valve (bottom flange) and, with the liquid inlet/outlet valve (top flange) open, begin applying gentle pressure of 1-10 psi (or more if necessary) to force all headspace (into a hood) slowly out of the ZHE device. At the first appearance of liquid from the liquid inlet/outlet valve, quickly close the valve and discontinue pressure. If filtration of the waste at 4°C reduces the amount of expressed liquid over what would be expressed at room temperature, then allow the sample to warm up to room temperature in the device before filtering. If the waste is 100% solid (see Step 7.1), slowly increase the pressure to a maximum of 50 psi to force most of the headspace out of the device and proceed to Step 9.12.

9.9 Attach the evacuated pre-weighed filtrate collection container to the liquid inlet/outlet valve and open the valve. Begin applying gentle pressure of 1-10 psi to force the liquid phase into the filtrate collection container. If no additional liquid has passed through the filter in any 2-minute interval, slowly increase the pressure in 10-psi increments to a maximum of 50 psi. After each incremental increase of 10 psi, if no additional liquid has passed through the filter in any 2-minute interval, proceed to the next 10-psi increment. When liquid flow has ceased such that continued pressure filtration at 50 psi does not result in any additional filtrate within any 2-minute period, filtration is stopped. Close the liquid inlet/outlet valve, discontinue pressure to the piston, and disconnect the filtrate collection container.

NOTE: Instantaneous application of high pressure can degrade the glass fiber filter and may cause premature plugging.

9.10 The material in the ZHE is defined as the solid phase of the waste and the filtrate is defined as the liquid phase.

NOTE: Some wastes, such as oily wastes and some paint wastes, will obviously contain some material that appears to be a liquid. But even after applying pressure filtration, this material will not filter. If this is the case, the material within the filtration device is defined as a solid and is carried through the TCLP extraction as a solid.

If the original waste contained <0.5% dry solids (see Step 7.2), this filtrate is defined as the TCLP extract and is analyzed directly. Proceed to Step 9.15.

9.11 The liquid phase may now be either analyzed immediately (see Steps 9.13 through 9.15) or stored at 4 °C under minimal headspace conditions until time of analysis. The weight of extraction fluid #1 to add to the ZHE is determined as follows:

$$\text{Weight of extraction fluid} = \frac{20 \times \%\ \text{solids (Step 7.1)} \times \text{weight of waste filtered (Step 9.4 or 9.8)}}{100}$$

9.12 The following steps detail how to add the appropriate amount of extraction fluid to the solid material within the ZHE and agitation of the ZHE vessel. Extraction fluid #1 is used in all cases (see Step 5.6).

9.12.1 With the ZHE in the vertical position, attach a line from the extraction fluid reservior to the liquid inlet/outlet valve. The line used shall contain fresh extraction fluid and should be preflushed with fluid to eliminate any air pockets in the line. Release gas pressure on the ZHE piston (from the gas inlet/outlet valve), open the liquid inlet/outlet valve, and begin transferring extraction fluid (by pumping or similar means) into the ZHE. Continue pumping extraction fluid into the ZHE until the appropriate amount of fluid has been introduced into the device.

9.12.2 After the extraction fluid has been added, immediately close the liquid inlet/outlet valve and disconnect the extraction fluid line. Check the ZHE to ensure that all valves are in their closed positions. Physically rotate the device in an end-over-end fashion 2 or 3 times. Reposition the ZHE in the vertical position with the liquid inlet/outlet valve on top. Put 5-10 psi behind the piston (if necessary) and slowly open the liquid inlet/outlet valve to bleed out any headspace (into a hood) that may have been introduced due to the addition of extraction fluid. This bleeding shall be done quickly and shall be stopped at the first appearance of liquid from the valve. Re-pressurize the ZHE with 5-10 psi and check all ZHE fittings to ensure that they are closed.

9.12.3 Place the ZHE in the rotary extractor apparatus (if it is not already there) and rotate the ZHE at 30±2 rpm for 18±2 hours. Ambient temperature (i.e., temperature of room in which extraction is to occur) shall be maintained at 22±3 °C during agitation.

9.13 Following the 18±2 hour agitation period, check the pressure behind the ZHE piston by quickly opening and closing the gas inlet/outlet valve and noting the escape of gas. If the pressure has not been maintained (i.e., no gas release observed), the device is leaking. Check the ZHE for leaking as specified in Step 4.2.1, and redo the extraction with a new sample of waste. If the pressure within the device has been maintained, the material in the extractor vessel is once again separated into its component liquid and solid phases. If the waste contained an initial liquid phase, the liquid may be filtered directly into the same filtrate collection container (i.e., TEDLAR® bag) holding the initial liquid phase of the waste, unless doing so would create multiple phases, or unless there is not enough volume left within the filtrate collection container. A separate filtrate collection container must be used in these cases. Filter through the glass fiber filter, using the ZHE device as discussed in Step 9.9. All extract shall be filtered and collected in the TEDLAR® bag is used, if the extract is multiphasic, or if the waste contained an initial liquid phase (see Steps 4.6 and 9.1).

NOTE: An in-line glass fiber filter may be used to filter the material within the ZHE when it is suspected that the glass fiber filter has been ruptured.

9.14 If the original waste contained no initial liquid phase, the filtered liquid material obtained from Step 9.13 is defined as the TCLP extract. If the waste contained in initial liquid phase, the filtered liquid material obtained from Step 9.13 and the initial liquid phase (Step 9.9) are collectively defined as the TCLP extract.

9.15 Following collection of the TCLP extract, the extract should be immediately aliquoted for analysis and stored with minimal headspace at 4 °C until analyzed. The TCLP extract will be prepared and analyzed according to the appropriate analytical methods. If the individual phases are to be analyzed separately (i.e., are not miscible), determine the volume of the individual phases (to ±0.5%), conduct the appropriate analyses, and combine the results mathematically by using a simple volume-weighted average:

$$\text{Final Analyte Concentration} = \frac{(V_1)(C_1)+(V_2)(C_2)}{V_1+V_2}$$

where:

V_1 = The volume of the first phases (L).

C_1 = The concentration of the contaminant of concern in the first phase (mg/L).

V_2 = The volume of the second phase (L).

C_2 = The concentration of the contaminant of concern in the second phase (mg/L).

9.16 The contaminant concentrations in the TCLP extract are compared with the thresholds identified in the appropriate regulations. Refer to Section 10.0 for qualify assurance requirements.

10.0 QUALITY ASSURANCE REQUIREMENTS

10.1 All data, including quality assurance data, should be maintained and available for reference or inspection.

10.2 A minimum of one blank (extraction fluid #1) for every 10 extractions that have been conducted in an extraction vessel shall be employed as a check to determine if any memory effects from the extraction equipment are occurring.

10.3 For each analytical batch (up to twenty samples), it is recommended that a matrix spike be performed. Addition of matrix spikes should occur once the TCLP extract has been generated (i.e., should not occur prior to performance of the TCLP procedure). The purpose of the matrix spike is to monitor the adequacy of the analytical methods used on the TCLP extract and for determining if matrix interferences exist in analyte detection.

10.4 All quality control measures described in the appropriate analytical methods shall be followed.

10.5 The method of standard addition shall be employed for each analyte if: 1) recovery of the compound from the TCLP extract is not between 50 and 150%, or 2) if the concentration of the constituent measured in the extract is within 20% of the ap-

propriate regulatory threshold. If more than one extraction is being run on samples of the same waste (up to twenty samples), the method of standard addition need be applied only once and the percent recoveries applied to the remainder of the extractions.

10.6 Samples must undergo TCLP extraction within the following time period after sample receipt: Volatiles, 14 days; Semi-Volatiles, 40 days; Mercury, 28 days; and other Metals, 180 days. Extraction of the solid portion of the waste should be initiated as soon as possible following initial solid/liquid separation. TCLP extracts shall be analyzed after generation and preservation within the following periods: Volatiles, 14 days; Semi-Volatiles, 40 days; Mercury, 28 days; and other Metals, 180 days.

TABLE 1—VOLATILE CONTAMINANTS [1]

Compound	CAS No.
Acetone	67-64-1
n-Butyl alcohol	71-36-6
Carbon disulfide	75-15-0
Carbon tetrachloride	56-23-5
Chlorobenzene	108-90-7
Methylene chloride	75-09-2
Methyl ethyl ketone	78-93-3
Methyl isobutyl ketone	108-10-1
Tetrachloroethylene	127-18-4
Toluene	108-88-3
1,1,1-Trichloroethane	71-55-6
Trichloroethylene	79-01-6
Trichlorofluoromethane	75-69-4

TABLE 1—VOLATILE CONTAMINANTS [1]—Continued

Compound	CAS No.
Xylene	1330-20-7

[1] Includes compounds identified in the Land Disposal Restrictions Rule. If any or all of these compounds are of concern, the zero-headspace extractor vessel shall be used. If other (non-volatile) compounds are of concern, the conventional bottle extractor shall be used.

TABLE 2—SUITABLE ROTARY AGITATION APPARATUS [1]

Company	Location	Model
Associated Design and Manufacturing Company.	Alexandria, VA (703) 549-5999.	4-vessel device, 6-vessel device
Lars Lande Manfacturing.	Whitmore Lake, MI (313) 449-4116.	10-vessel device, 5-vessel device
IRA Machine Shop and Laboratory.	Santurce, PR (809) 752-4004.	16-vessel device
EPRI Extractor		6-vessel device [2]
REXNORD	Milwaukee, WI (414) 643-2850.	6-vessel device
Analytical Testing and Consulting Services, Inc.	Warrington, PA (215) 343-4490.	4-vessel device

[1] Any device that rotates the extraction vessel in an end-over-end fashion at 30±2 rpm is acceptable.

[2] Although this device is suitable, it is not commercially made. It may also require retrofitting to accommodate ZHE devices.

TABLE 3—SUITABLE ZERO-HEADSPACE EXTRACTOR VESSELS

Company	Location	Model No.
Associated Design & Manufacturing Co..	Alexandria, VA, (703) 549-5999	3740-ZHB, Gas Pressure Device.
Millipore Corp.	Bedford, MA, (800) 225-3384	SD1 P581 C5, Gas Pressure Device.
Analytical Testing & Consulting Services, Inc..	Warrington, PA, (215) 343-4490	CI02, Mechanical Pressure Device.

TABLE 4—SUITABLE FILTER HOLDERS [1]

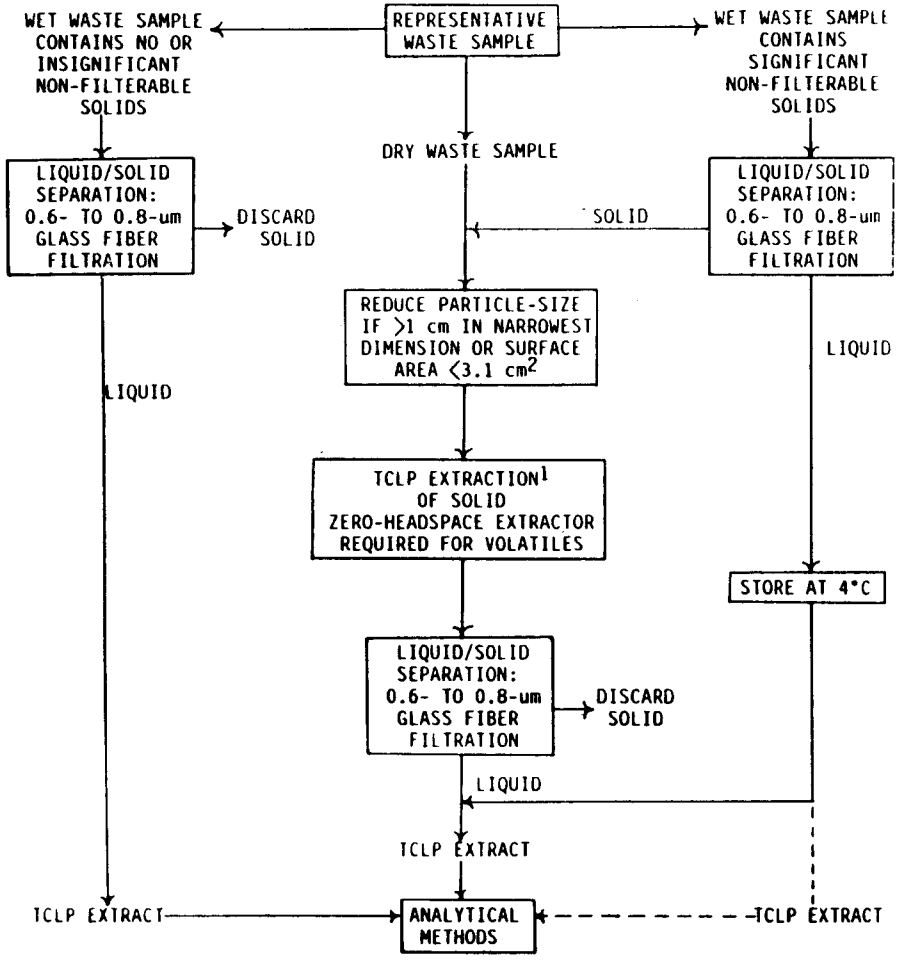
Company	Location	Model	Size
Nuclepore Corp.	Pleasanton, CA, (800) 882-7711	425910	142 mm.
		410400	47 mm.
Micro Filtration Systems	Dublin, CA, (415) 828-6010	302400	142 mm.
Millipore Corp.	Bedford, MA, (800) 225-3384	YT30142HW	142 mm.
		XX1004700	47 mm.

[1] Any device capable of separating the liquid from the solid phase of the waste is suitable, providing that it is chemically compatible with the waste and the constituents to be analyzed. Plastic devices (not listed above) may be used when only inorganic contaminants are of concern. The 142 mm size filter holder is recommended.

TABLE 5—SUITABLE FILTER MEDIA

Company	Location	Model	Pore size[1]
Whatman Laboratory Products, Inc.	Clifton, NJ, (201) 773-5800	GFF	0.7

[1] Nominal pore size.



[1]The extraction fluid employed is a function of the alkalinity of the solid phase of the waste.

FIGURE 1: TCLP FLOWCHART

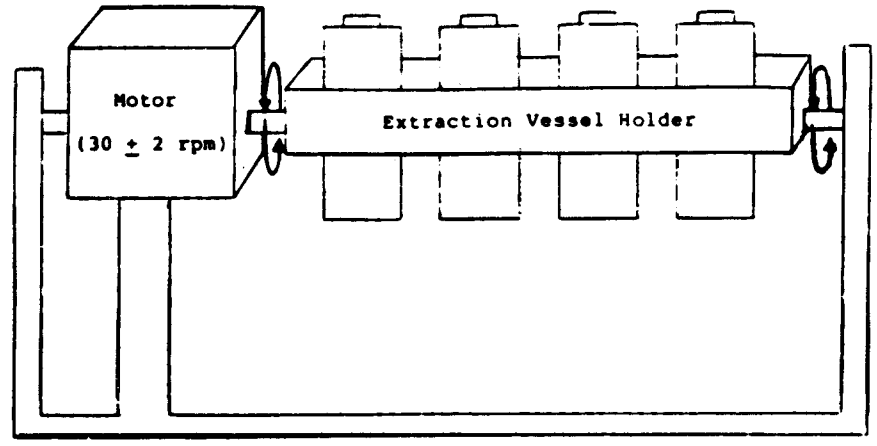


Figure 2: Rotary Agitation

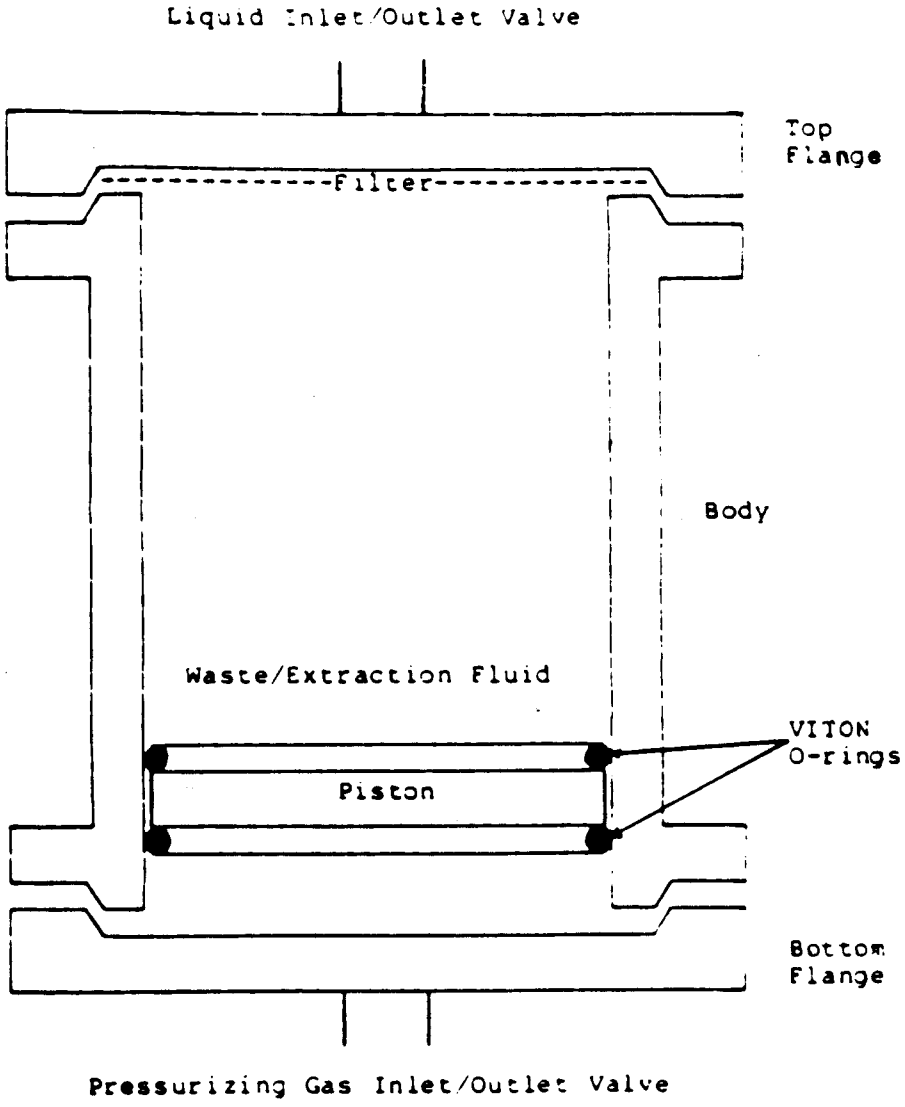


Figure 3: Zero-Headspace Extraction Vessel

[51 FR 40643, Nov. 7, 1986; 52 FR 21018, June 4, 1987]

APPENDIX II—TREATMENT STANDARDS (AS CONCENTRATIONS IN THE TREATMENT RESIDUAL EXTRACT)

[Note: The technologies shown are the basis of the treatment standards. They are not required to be used in meeting the treatment standards]

Constitutents of FOO1-FOO5 Spent Solvent Wastes	Waste Treatability Groups For FOO1-FOO5 Spent Solvent Wastes (mg/l)			
	Wastewater	Technology Basis [1]	Wastewater Generated by Pharmaceutical Plant [2]	All Other [3]
Acetone	0.05	SS		0.59
n-Butyl Alcohol	5.00	SS		5.00
Carbon disulfide	1.05	SS		4.81
Carbon tetrachloride	0.05	B		0.96
Chlorobenzene	0.15	B&AC		0.05
Cresols (cresylic acid)	2.82	AC		0.75
Cyclohexanone	0.125	SS		0.75
1,2-Dichlorobenzene	0.65	B&AC		0.125
Ethyl acetate	0.05	SS		0.75
Ethylbenzene	0.05	B		0.053
Ethyl ether	0.05	SS		0.75
Isobutanol	5.00	SS		5.00
Methanol	0.25	SS		0.75
Methylene chloride	0.20	B	12.7	0.96
Methyl ethyl ketone	0.05	SS		0.75
Methyl isobutyl ketone	0.05	SS		0.33
Nitrobenzene	0.66	SS&AC		0.125
Pyridine	1.12	B&AC		0.33
Tetrachloroethylene	0.079	B		0.05
Toluene	1.12	B&AC		0.33
1,1,1-Trichloroethane	1.05	SS		0.41
1,1,2-Trichloro-1,2,2-trifluoroethane	1.05	SS		0.96
Trichloroethylene	0.062	B&AC		0.091
Trichlorofluoromethane	0.05	B		0.96
Xylene	0.05	AC		0.15

[1] In some instances other technologies achieved somewhat lower treatment values but waste characterization data were insufficient to identify separate treatability groups. Refer to the BDAT background document for a detailed explanation of the determination of the treatment standards.
SS = steam stripping
B = biological treatment
AC = activated carbon
[2] Wastewaters generated by pharmaceutical plants must be treated to the standards given for all other wastewaters except in the case of methylene chloride.
[3] The treatment standards in this treatability group are based on incineration.

[51 FR 40653, Nov. 7, 1986]

APPENDIX III—LIST OF HALOGENATED ORGANIC COMPOUNDS REGULATED UNDER § 268.32

In determining the concentration of HOCs in a hazardous waste for purposes of the § 268.32 land disposal prohibition, EPA has defined the HOCs that must be included in the calculation as any compounds having a carbon-halogen bond which are listed in this Appendix (see § 268.2). Appendix III to Part 268 consists of the following compounds:

Volatiles

Bromodichloromethane
Bromomethane
Carbon Tetrachloride
Chlorobenzene
2-Chloro-1,3-butadiene
Chlorodibromomethane
Chloroethane
2-Chloroethyl vinyl ether
Chloroform
Chloromethane
3-Chloropropene
1,2-Dibromo-3-chloropropane
1,2-Dibromomethane
Dibromomethane
Trans-1,4-Dichloro-2-butene
Dichlorodifluoromethane
1,1-Dichloroethane
1,2-Dichloroethane
1,1-Dichloroethylene
Trans-1,2-Dichloroethene
1,2-Dichloropropane
Trans-1,3-Dichloropropene
cis-1,3-Dichloropropene
Iodomethane
Methylene chloride
1,1,1,2-Tetrachloroethane
1,1,2,2-Tetrachloroethane
Tetrachloroethene

Tribromomethane
1,1,1-Trichloroethane
1,1,2-Trichloroethane
Trichloroethene
Trichloromonofluoromethane
1,2,3-Trichloropropane
Vinyl chloride

Semivolatiles

Bis(2-chloroethoxy)ethane
Bis(2-chloroethyl)ether
Bis(2-chloroisopropyl) ether
p-Chloroaniline
Chlorobenzilate
p-Chloro-m-cresol
2-Chloronaphthalene
2-Chlorophenol
3-Chloropropionitrile
m-Dichlorobenzene
o-Dichlorobenzene
p-Dichlorobenzene
3,3'-Dichlorobenzidine
2,4-Dichlorophenol
2,6-Dichlorophenol
Hexachlorobenzene
Hexachlorobutadiene
Hexachlorocyclopentadiene
Hexachloroethane
Hexachloroprophene
Hexachloropropene
4,4'-Methylenebis(2-chloroaniline)
Pentachlorobenzene
Pentachloroethane
Pentachloronitrobenzene
Pentachlorophenol
Pronamide
1,2,4,5-Tetrachlorobenzene
2,3,4,6-Tetrachlorophenol
1,2,4-Trichlorobenzene
2,4,5-Trichlorophenol
2,4,6-Trichlorophenol
Tris(2,3-dibromopropyl)phosphate

Organochlorine Pesticides

Aldrin
alpha-BHC
beta-BHC
delta-BHC
gamma-BHC
Chlordane
DDD
DDE
DDT
Dieldrin
Endosulfan I
Endosulfan II
Endrin
Endrin aldehyde
Heptachlor
Heptachlor epoxide
Isodrin
Kepone
Methoxyclor
Toxaphene

Phenoxyacetic Acid Herbicides

2,4-Dichlorophenoxyacetic acid

Silvex
2,4,5-T

PCBs

Aroclor 1016
Aroclor 1221
Aroclor 1232
Aroclor 1242
Aroclor 1248
Aroclor 1254
Aroclor 1260
PCBs not otherwise specified

Dioxins and Furans

Hexachlorodibenzo-p-dioxins
Hexachlorodibenzofuran
Pentachlorodibenzo-p-dioxins
Pentachlorodibenzofuran
Tetrachlorodibenzo-p-dioxins
Tetrachlorodibenzofuran
2,3,7,8-Tetrachlorodibenzo-p-dioxin

[52 FR 25791, July 8, 1987]

PART 270—EPA ADMINISTERED PERMIT PROGRAMS: THE HAZARDOUS WASTE PERMIT PROGRAM

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Subpart G—Interim Status

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270.71 Operation during interim status.
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AUTHORITY: 42 U.S.C. 6905, 6912, 6925, 6927, 6939, and 6974.

SOURCE: 48 FR 14228, Apr. 1, 1983, unless otherwise noted.

Subpart A—General Information

§ 270.1 Purpose and scope of these regulations.

(a) *Coverage.* (1) These permit regulations establish provisions for the Hazardous Waste Permit Program under Subtitle C of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act of 1976, as amended (RCRA), (Pub. L. 94-580, as amended by Pub. L. 95-609 and by Pub. L. 96-482; 42 U.S.C. 6091 et seq.). They apply to EPA and to approved States to the extent provided in Part 271.

(2) The regulations in this part cover basic EPA permitting requirements, such as application requirements, standard permit conditions, and monitoring and reporting requirements. These regulations are part of a regulatory scheme implementing RCRA set forth in different parts of the Code of Federal Regulations. The following chart indicates where the regulations implementing RCRA appear in the Code of Federal Regulations.

Section of RCRA	Coverage	Final regulation
Subtitle C	Overview and definitions	40 CFR Part 260
3001	Indentification and listing of hazardous waste.	40 CFR Part 261
3002	Generators of hazardous waste.	40 CFR Part 262
3003	Transporters of hazardous waste.	40 CFR Part 263
3004	Standards for HWM facilities.	40 CFR Parts 264, 265, 266, and 267
3005	Permit requirements for HWM facilities.	40 CFR Parts 270 and 124
3006	Guidelines for State programs.	40 CFR Part 271
3010	Preliminary notification of HWM activity.	(public notice) 45 *FR* 12746 February 26, 1980

(3) *Technical regulations.* The RCRA permit program has separate additional Regulations that contain technical requirements. These separate regulations are used by permit issuing authorities to determine what requirements must be placed in permits if they are issued. These separate regulations are located in 40 CFR Parts 264, 266, and 267.

(b) *Overview of the RCRA Permit Program.* Not later than 90 days after the promulgation or revision of regulations in 40 CFR Part 261 (identifying and listing hazardous wastes) generators and transporters of hazardous waste, and owners or operators of hazardous waste treatment, storage, or disposal facilities may be required to file a notification of that activity under section 3010. Six months after the initial promulgation of the Part 261 regulations, treatment, storage, or disposal of hazardous waste by any person who has not applied for or received a RCRA permit is prohibited. A RCRA permit application consists of two parts, Part A (see § 270.13) and

Part B (see § 270.14 and applicable sections in §§ 270.15 through 270.29). For "existing HWM facilities," the requirement to submit an application is satisfied by submitting only Part A of the permit application until the date the Director sets for submitting Part B of the application. (Part A consists of Forms 1 and 3 of the Consolidated Permit Application Forms.) Timely submission of both notification under section 3010 and Part A qualifies owners and operators of existing HWM facilities (who are required to have a permit) for interim status under section 3005(e) of RCRA. Facility owners and operators with interim status are treated as having been issued a permit until EPA or a State with interim authorization for Phase II or final authorization under Part 271 makes a final determination on the permit application. Facility owners and operators with interim status must comply with interim status standards set forth at 40 CFR Part 265 or with the analagous provisions of a State program which has received interim or final authorization under Part 271. Facility owners and operators with interim status are not relieved from complying with other State requirements. For existing HWM facilities, the Director shall set a date, giving at least six months notice, for submission of Part B of the application. There is no form for Part B of the application; rather, Part B must be submitted in narrative form and contain the information set forth in the applicable sections of §§ 270.14 through 270.29. Owners or operators of new HWM facilities must submit Parts A and B of the permit application at least 180 days before physical construction is expected to commence.

(c) *Scope of the RCRA permit requirement.* RCRA requires a permit for the "treatment," "storage," and "disposal" of any "hazardous waste" as identified or listed in 40 CFR Part 261. The terms "treatment," "storage," "disposal," and "hazardous waste" are defined in § 270.2. Owners and operators of hazardous waste management units must have permits during the active life (including the closure period) of the unit. Owners or operators of surface impoundments, landfills, land treatment units, and waste pile units that received wastes after July 26, 1982, or that certified closure (according to § 265.115) after January 26, 1983, must have post-closure permits, unless they demonstrate closure by removal as provided under § 270.1(c) (5) and (6). If a post-closure permit is required, the permit must address applicable Part 264 Groundwater Monitoring, Unsaturated Zone Monitoring, Corrective Action, and Post-closure Care Requirements of this chapter.

(1) *Specific inclusions.* Owners and operators of certain facilities require RCRA permits as well as permits under other programs for certain aspects of the facility operation. RCRA permits are required for:

(i) Injection wells that dispose of hazardous waste, and associated surface facilities that treat, store or dispose of hazardous waste, (See § 270.64). However, the owner and operator with a UIC permit in a State with an approved or promulgated UIC program, will be deemed to have a RCRA permit for the injection well itself if they comply with the requirements of § 270.60(b) (permit-by-rule for injection wells).

(ii) Treatment, storage, or disposal of hazardous waste at facilities requiring an NPDES permit. However, the owner and operator of a publicly owned treatment works receiving hazardous waste will be deemed to have a RCRA permit for that waste if they comply with the requirements of § 270.60(c) (permit-by-rule for POTWs).

(iii) Barges or vessels that dispose of hazardous waste by ocean disposal and onshore hazardous waste treatment or storage facilities associated with an ocean disposal operation. However, the owner and operator will be deemed to have a RCRA permit for ocean disposal from the barge or vessel itself it they comply with the requirements of § 270.60(a) (permit-by-rule for ocean disposal barges and vessels).

(2) *Specific exclusions.* The following persons are among those who are not required to obtain a RCRA permit:

(i) Generators who accumulate hazardous waste on-site for less than the time periods provided in 40 CFR 262.34.

(ii) Farmers who dispose of hazardous waste pesticides from their own use as provided in 40 CFR 262.51.

(iii) Persons who own or operate facilities solely for the treatment, storage or disposal of hazardous waste excluded from regulations under this part by 40 CFR 261.4 or 261.5 (small generator exemption).

(iv) Owners or operators of totally enclosed treatment facilities as defined in 40 CFR 260.10.

(v) Owners and operators of elementary neutralization units or wastewater treatment units as defined in 40 CFR 260.10.

(vi) Transporters storing manifested shipments of hazardous waste in containers meeting the requirements of 40 CFR 262.30 at a transfer facility for a period of ten days or less.

(vii) Persons adding absorbent material to waste in a container (as defined in § 260.10 of this chapter) and persons adding waste to absorbent material in a container, provided that these actions occur at the time waste is first placed in the container; and §§ 264.17(b), 264.171, and 264.172 of this chapter are complied with.

(3) *Further exclusions.* (i) A person is not required to obtain an RCRA permit for treatment or containment activities taken during immediate response to any of the following situations:

(A) A discharge of a hazardous waste;

(B) An imminent and substantial threat of a discharge of hazardous waste;

(C) A discharge of a material which, when discharged, becomes a hazardous waste.

(ii) Any person who continues or initiates hazardous waste treatment or containment activities after the immediate response is over is subject to all applicable requirements of this part for those activities.

(4) *Permits for less than an entire facility.* EPA may issue or deny a permit for one or more units at a facility without simultaneously issuing or denying a permit to all of the units at the facility. The interim status of any unit for which a permit has not been issued or denied is not affected by the issuance or denial of a permit to any other unit at the facility.

(5) *Closure by removal.* Owners/operators of surface impoundments, land treatment units, and waste piles closing by removal or decontamination under Part 265 standards must obtain a post-closure permit unless they can demonstrate to the Regional Administrator that the closure met the standards for closure by removal or decontamination in § 264.228, § 264.280(e), or § 264.258, respectively. The demonstration may be made in the following ways:

(i) If the owner/operator has submitted a Part B application for a post-closure permit, the owner/operator may request a determination, based on information contained in the application, that section 264 closure by removal standards were met. If the Regional Administrator believes that § 264 standards were met, he/she will notify the public of this proposed decision, allow for public comment, and reach a final determination according to the procedures in paragraph (c)(6) of this section.

(ii) If the owner/operator has not submitted a Part B application for a post-closure permit, the owner/operator may petition the Regional Administrator for a determination that a post-closure permit is not required because the closure met the applicable Part 264 closure standards.

(A) The petition must include data demonstrating that closure by removal or decontamination standards were met, or it must demonstrate that the unit closed under State requirements that met or exceeded the applicable 264 closure-by-removal standard.

(B) The Regional Administrator shall approve or deny the petition according to the procedures outlined in paragraph (c)(6) of this section.

(6) *Procedures for closure equivalency determination.* (i) If a facility owner/operator seeks an equivalency demonstration under § 270.1(c)(5), the Regional Administrator will provide the public, through a newspaper notice, the opportunity to submit written comments on the information submitted by the owner/operator within 30 days from the date of the notice.

The Regional Administrator will also, in response to a request or at his/her own discretion, hold a public hearing whenever such a hearing might clarify one or more issues concerning the equivalence of the Part 265 closure to a Part 264 closure. The Regional Administrator will give public notice of the hearing at least 30 days before it occurs. (Public notice of the hearing may be given at the same time as notice of the opportunity for the public to submit written comments, and the two notices may be combined.)

(ii) The Regional Administrator will determine whether the Part 265 closure met 264 closure by removal or decontamination requirements within 90 days of its receipt. If the Regional Administrator finds that the closure did not meet the applicable Part 264 standards, he/she will provide the owner/operator with a written statement of the reasons why the closure failed to meet Part 264 standards. The owner/operator may submit additional information in support of an equivalency demonstration within 30 days after receiving such written statement. The Regional Administrator will review any additional information submitted and make a final determination within 60 days.

(iii) If the Regional Administrator determines that the facility did not close in accordance with Part 264 closure by removal standards, the facility is subject to post-closure permitting requirements.

[48 FR 14228, Apr. 1, 1983, as amended at 48 FR 30113, June 30, 1983; 51 FR 10176, Mar. 24, 1986; 52 FR 45798, Dec. 1, 1987]

§ 270.2 Definitions.

The following definitions apply to Parts 270, 271 and 124. Terms not defined in this section have the meaning given by RCRA.

Administrator means the Administrator of the United States Environmental Protection Agency, or an authorized representative.

Application means the EPA standard national forms for applying for a permit, including any additions, revisions or modifications to the forms; or forms approved by EPA for use in approved States, including any approved modifications or revisions. Application also includes the information required by the Director under §§ 270.14 through 270.29 (contents of Part B of the RCRA application).

Approved program or approved State means a State which has been approved or authorized by EPA under Part 271.

Aquifer means a geological formation, group of formations, or part of a formation that is capable of yielding a significant amount of water to a well or spring.

Closure means the act of securing a Hazardous Waste Management facility pursuant to the requirements of 40 CFR Part 264.

CWA means the Clean Water Act (formerly referred to as the Federal Water Pollution Control Act or Federal Water Pollution Control Act amendments of 1972) Pub. L. 92-500, as amended by Pub. L. 92-217 and Pub. L. 95-576; 33 U.S.C. 1251 *et seq.*

Director means the Regional Administrator or the State Director, as the context requires, or an authorized representative. When there is no approved State program, and there is an EPA administered program, Director means the Regional Administrator. When there is an approved State program, Director normally means the State Director. In some circumstances, however, EPA retains the authority to take certain actions even when there is an approved State program. In such cases, the term Director means the Regional Administrator and not the State Director.

Disposal means the discharge, deposit, injection, dumping, spilling, leaking, or placing of any hazardous waste into or on any land or water so that such hazardous waste or any constituent thereof may enter the environment or be emitted into the air or discharged into any waters, including ground water.

Disposal facility means a facility or part of a facility at which hazardous waste is intentionally placed into or on the land or water, and at which hazardous waste will remain after closure.

Draft permit means a document prepared under § 124.6 indicating the Director's tentative decision to issue or deny, modify, revoke and reissue, terminate, or reissue a permit. A notice of intent to terminate a permit, and a notice of intent to deny a permit, as discussed in § 124.5, are types of draft permits. A denial of a request for modification, revocation and reissuance, or termination, as discussed in § 124.5 is not a "draft permit." A proposed permit is not a draft permit.

Elementary neutralization unit means a device which:

(a) Is used for neutralizing wastes which are hazardous wastes only because they exhibit the corrosivity characteristic defined in § 261.22 of this chapter, or are listed in Subpart D of Part 261 of this chapter only for this reason; and

(b) Meets the definition of tank, container, transport vehicle, or vessel in § 260.10 of this chapter.

Emergency permit means a RCRA permit issued in accordance with § 270.61.

Environmental Protection Agency (EPA) means the United States Environmental Protection Agency.

EPA means the United States Environmental Protection Agency.

Existing hazardous waste management (HWM) facility or existing facility means a facility which was in operation or for which construction commenced on or before November 19, 1980. A facility has commenced construction if:

(a) The owner or operator has obtained the Federal, State and local approvals or permits necessary to begin physical construction; and either

(b)(1) A continuous on-site, physical construction program has begun; or

(2) The owner or operator has entered into contractual obligations which cannot be cancelled or modified without substantial loss—for physical construction of the facility to be completed within a reasonable time.

Facility or activity means any HWM facility or any other facility or activity (including land or appurtenances thereto) that is subject to regulation under the RCRA program.

Federal, State and local approvals or permits necessary to begin physical construction means permits and approvals required under Federal, State or local hazardous waste control statutes, regulations or ordinances.

Final authorization means approval by EPA of a State program which has met the requirements of section 3006(b) of RCRA and the applicable requirements of Part 271, Subpart A.

Generator means any person, by site location, whose act, or process produces "hazardous waste" identified or listed in 40 CFR Part 261.

Ground water means water below the land surface in a zone of saturation.

Hazardous waste means a hazardous waste as defined in 40 CFR 261.3.

Hazardous Waste Management facility (HWM facility) means 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 (for example, one or more landfills, surface impoundments, or combinations of them).

HWM facility means Hazardous Waste Management facility.

Injection well means a well into which fluids are being injected.

In operation means a facility which is treating, storing, or disposing of hazardous waste.

Interim authorization means approval by EPA of a State hazardous waste program which has met the requirements of section 3006(c) of RCRA and applicable requirements of Part 271, Subpart B.

Major facility means any facility or activity classified as such by the Regional Administrator, or, in the case of approved State programs, the Regional Administrator in conjunction with the State Director.

Manifest means the shipping document originated and signed by the generator which contains the information required by Subpart B of 40 CFR Part 262.

National Pollutant Discharge Elimination System means the national program for issuing, modifying, revoking and reissuing, terminating, monitoring and enforcing permits, and imposing and enforcing pretreatment requirements, under sections 307, 402, 318, and 405 of the CWA. The term includes an approved program.

NPDES means National Pollutant Discharge Elimination System.

New HWM facility means a Hazardous Waste Management facility which began operation or for which construction commenced after November 19, 1980.

Off-site means any site which is not on-site.

On-site means on the same or geographically continguous property which may be divided by public or private right(s)-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(s)-of-way. Noncontiguous properties owned by the same person but connected by a right-of-way which the person controls and to which the public does not have access, is also considered on-site property.

Owner or operator means the owner or operator of any facility or activity subject to regulation under RCRA.

Permit means an authorization, license, or equivalent control document issued by EPA or an approved State to implement the requirements of this part and Parts 271 and 124. Permit includes permit by rule (§ 270.60), and emergency permit (§ 270.61). Permit does not include RCRA interim status (Subpart G of this part), or any permit which has not yet been the subject of final agency action, such as a draft permit or a proposed permit.

Permit-by-rule means a provision of these regulations stating that a facility or activity is deemed to have a RCRA permit if it meets the requirements of the provision.

Person means an individual, association, partnership, corporation, municipality, State or Federal agency, or an agent or employee thereof.

Phase I means that phase of the Federal hazardous waste management program commencing on the effective date of the last of the following to be initially promulgated: 40 CFR Parts 260, 261, 262, 263, 265, 270 and 271. Promulgation of Phase I refers to promulgation of the regulations necessary for Phase I to begin.

Phase II means that phase of Federal hazardous waste management program commencing on the effective date of the first subpart of 40 CFR Part 264, Subparts F through R to be initially promulgated. Promulgation of Phase II refers to promulgation of the regulations necessary for Phase II to begin.

Physical construction means excavation, movement of earth, erection of forms or structures, or similar activity to prepare an HWM facility to accept hazardous waste.

POTW means publicly owned treatment works.

Publicly owned treatment works (POTW) means any device or system unsed 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. This definition includes sewers, pipes, or other conveyances only if they convey wastewater to a POTW providing treatment.

RCRA means the Solid Waste Disposal Act as amended by the Resource Conservation and Recovery Act of 1976 (Pub. L. 94-580, as amended by Pub. L. 95-609 and Pub. L. 96-482, 42 U.S.C. 6901 *et seq.*)

Regional Administrator means the Regional Administrator of the appropriate Regional Office of the Environmental Protection Agency or the authorized representative of the Regional Administrator.

Schedule of compliance means a schedule of remedial measures included in a permit, including an enforceable sequence of interim requirements (for example, actions, operations, or milestone events) leading to compliance with the Act and regulations.

SDWA means the Safe Drinking Water Act (Pub. L. 95-523, as amended by Pub. L. 95-1900; 42 U.S.C. 3001 *et seq.*).

Site means the land or water area where any facility or activity is physically located or conducted, including adjacent land used in connection with the facility or activity.

State means any of the 50 States, the District of Columbia, Guam, the Commonwealth of Puerto Rico, the Virgin Islands, American Samoa, and the Commonwealth of the Northern Mariana Islands.

State Director means the chief administrative officer of any State

agency operating an approved program, or the delegated representative of the State Director. If responsibility is divided among two or more State agencies, State Director means the chief administrative officer of the State agency authorized to perform the particular procedure or function to which reference is made.

State/EPA Agreement means an agreement between the Regional Administrator and the State which coordinates EPA and State activities, responsibilities and programs.

Storage means the holding of hazardous waste for a temporary period, at the end of which the hazardous waste is treated, disposed, or stored elsewhere.

Transfer facility means any transportation-related facility including loading docks, parking areas, storage areas and other similar areas where shipments of hazardous waste are held during the normal course of transportation.

Transporter means a person engaged in the off-site transportation of hazardous waste by air, rail, highway or water.

Treatment means 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 wastes, or so as to recover energy or material resources from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store, or dispose of; or amenable for recovery, amenable for storage, or reduced in volume.

UIC means the Underground Injection Control Program under Part C of the Safe Drinking Water Act, including an approved program.

Underground injection means a well injection.

Underground source of drinking water (USDW) means an aquifer or its portion:

(a)(1) Which supplies any public water system; or

(2) Which contains a sufficient quantity of ground water to supply a public water system; and

(i) Currently supplies drinking water for human consumption; or

(ii) Contains fewer than 10,000 mg/l total dissolved solids; and

(b) Which is not an exempted aquifer.

USDW means underground source of drinking water.

Wastewater treatment unit means a device which:

(a) Is part of a wastewater treatment facility which is subject to regulation under either section 402 or 307(b) of the Clean Water Act; and

(b) Receives and treats or stores an influent wastewater which is a hazardous waste as defined in § 261.3 of this chapter, or generates and accumulates a wastewater treatment sludge which is a hazardous waste as defined in § 261.3 of this chapter, or treats or stores a wastewater treatment sludge which is a hazardous waste as defined in § 261.3 of this chapter; and

(c) Meets the definition of tank in § 260.10 of this chapter.

[48 FR 14228, Apr. 1, 1983, as amended at 48 FR 30113, June 30, 1983]

§ 270.3 Considerations under Federal law.

The following is a list of Federal laws that may apply to the issuance of permits under these rules. When any of these laws is applicable, its procedures must be followed. When the applicable law requires consideration or adoption of particular permit conditions or requires the denial of a permit, those requirements also must be followed.

(a) *The Wild and Scenic Rivers Act.* 16 U.S.C. 1273 *et seq.* Section 7 of the Act prohibits the Regional Administrator from assisting by license or otherwise the construction of any water resources project that would have a direct, adverse effect on the values for which a national wild and scenic river was established.

(b) *The National Historic Preservation Act of 1966.* 16 U.S.C. 470 *et seq.* Section 106 of the Act and implementing regulations (36 CFR Part 800) require the Regional Administrator, before issuing a license, to adopt measures when feasible to mitigate potential adverse effects of the licensed activity and properties listed or eligible for listing in the National Register of Historic Places. The Act's require-

ments are to be implemented in cooperation with State Historic Preservation Officers and upon notice to, and when appropriate, in consultation with the Advisory Council on Historic Preservation.

(c) *The Endangered Species Act.* 16 U.S.C. 1531 *et seq.* Section 7 of the Act and implementing regulations (50 CFR Part 402) require the Regional Administrator to ensure, in consultation with the Secretary of the Interior or Commerce, that any action authorized by EPA is not likely to jeopardize the continued existence of any endangered or threatened species or adversely affect its critical habitat.

(d) *The Coastal Zone Management Act.* 16 U.S.C. 1451 *et seq.* Section 307(c) of the Act and implementing regulations (15 CFR Part 930) prohibit EPA from issuing a permit for an activity affecting land or water use in the coastal zone until the applicant certifies that the proposed activity complies with the State Coastal Zone Management program, and the State or its designated agency concurs with the certification (or the Secretary of Commerce overrides the State's nonconcurrence).

(e) *The Fish and Wildlife Coordination Act.* 16 U.S.C. 661 *et seq.* requires that the Regional Administrator, before issuing a permit proposing or authorizing the impoundment (with certain exemptions), diversion, or other control or modification of any body of water, consult with the appropriate State agency exercising jurisdiction over wildlife resources to conserve those resources.

(f) *Executive orders.* [Reserved]

(Clean Water Act (33 U.S.C. 1251 et seq.), Safe Drinking Water Act (42 U.S.C. 300f et seq.), Clean Air Act (42 U.S.C. 7401 et seq.), Resource Conservation and Recovery Act (42 U.S.C. 6901 et seq.))

[48 FR 14228, Apr 1, 1983, as amended at 48 FR 39622, Sept. 1, 1983]

§ 270.4 Effect of a permit.

(a) Compliance with an RCRA permit during its term constitutes compliance for purpose of enforcement, with Subtitle C of RCRA except for those requirements not included in the permit which become effective by statute, or which are promulgated under Part 268 of this chapter restricting the placement of hazardous wastes in or on the land.

(b) The issuance of a permit does not convey any property rights of any sort, or any exclusive privilege.

(c) The issuance of a permit does not authorize any injury to persons or property or invasion of other private rights, or any infringement of State or local law or regulations.

[48 FR 14228, Apr. 1, 1983, as amended at 52 FR 45799, Dec. 1, 1987]

§ 270.5 Noncompliance and program reporting by the Director.

The Director shall prepare quarterly and annual reports as detailed below. When the State is the permit-issuing authority, the State Director shall submit any reports required under this section to the Regional Administrator. When EPA is the permit-issuing authority, the Regional Administrator shall submit any report required under this section to EPA Headquarters. For purposes of this section only, RCRA permittees shall include RCRA interim status facilities, when appropriate.

(a) *Quarterly reports.* The Director shall submit quarterly narrative reports for major facilities as follows:

(1) *Format.* The report shall use the following format:

(i) Information on noncompliance for each facility;

(ii) Alphabetize by permittee name. When two or more permittees have the same name, the lowest permit number shall be entered first;

(iii) For each entry on the list, include the following information in the following order:

(A) Name, location, and permit number of the noncomplying permittee.

(B) A brief description and date of each instance of noncompliance for that permittee. Instances of noncompliance may include one or more of the kinds set forth in paragraph (a)(2) of this section. When a permittee has noncompliance of more than one kind, combine the information into a single entry for each such permittee.

(C) The date(s) and a brief description of the action(s) taken by the Director to ensure compliance.

(D) Status of the instance(s) of noncompliance with the date of the review of the status or the date of resolution.

(E) Any details which tend to explain or mitigate the instance(s) of noncompliance.

(2) *Instances of noncompliance to be reported.* Any instances of noncompliance within the following categories shall be reported in successive reports until the noncompliance is reported as resolved. Once noncompliance is reported as resolved it need not appear in subsequent reports.

(i) *Failure to complete construction elements.* When the permittee has failed to complete, by the date specified in the permit, an element of a compliance schedule involving either planning for construction (for example, award of a contract, preliminary plans), or a construction step (for example, begin construction, attain operation level); and the permittee has not returned to compliance by accomplishing the required element of the schedule within 30 days from the date a compliance schedule report is due under the permit.

(ii) *Modifications to schedules of compliance.* When a schedule of compliance in the permit has been modified under § 270.41 or § 270.42 because of the permittee's noncompliance.

(iii) *Failure to complete or provide compliance schedule or monitoring reports.* When the permittee has failed to complete or provide a report required in a permit compliance schedule (for example, progress report or notice of noncompliance or compliance) or a monitoring report; and the permittee has not submitted the complete report within 30 days from the date it is due under the permit for compliance schedules, or from the date specified in the permit for monitoring reports.

(iv) *Deficient reports.* When the required reports provided by the permittee are so deficient as to cause misunderstanding by the Director and thus impede the review of the status of compliance.

(v) *Noncompliance with other permit requirements.* Noncompliance shall be reported in the following circumstances:

(A) Whenever the permittee has violated a permit requirement (other than reported under paragraph (a)(2)(i) or (ii) of this section), and has not returned to compliance within 45 days from the date reporting of noncompliance was due under the permit; or

(B) When the Director determines that a pattern of noncompliance exists for a major facility permittee over the most recent four consecutive reporting periods. This pattern includes any violation of the same requirement in two consecutive reporting periods, and any violation of one or more requirements in each of four consecutive reporting periods; or

(C) When the Director determines significant permit non-compliance or other significant event has occurred such as a fire or explosion or migration of fluids into a USDW.

(vi) *All other.* Statistical information shall be reported quarterly on all other instances of noncompliance by major facilities with permit requirements not otherwise reported under paragraph (a) of this section.

(b) *Annual reports*—(1) *Annual noncompliance report.* Statistical reports shall be submitted by the Director on nonmajor RCRA permittees indicating the total number reviewed, the number of noncomplying nonmajor permittees, the number of enforcement actions, and number of permit modifications extending compliance deadlines. The statistical information shall be organized to follow the types of noncompliance listed in paragraph (a) of this section.

(2) In addition to the annual noncompliance report, the Director shall prepare a "program report" which contains information (in a manner and form prescribed by the Administrator) on generators and transporters and the permit status of regulated facilities. The Director shall also include, on a biennial basis, summary information on the quantities and types of hazardous wastes generated, transported, treated, stored and disposed during the preceding odd-numbered year. This summary information shall be reported in a manner and form pre-

scribed by the Administrator and shall be reported according to EPA characteristics and lists of hazardous wastes at 40 CFR Part 261.

(c) *Schedule.* (1) For all quarterly reports. On the last working day of May, August, November, and February, the State Director shall submit to the Regional Administrator information concerning noncompliance with RCRA permit requirements by major facilities in the State in accordance with the following schedule. The Regional Administrator shall prepare and submit information for EPA-issued permits to EPA Headquarters in accordance with the same schedule.

QUARTERS COVERED BY REPORTS ON NONCOMPLIANCE BY MAJOR DISCHARGERS

[Date for completion of reports]

January, February, and March	[1] May 31
April, May, and June	[1] August 31
July, August, and September	[1] November 30
October, November, and December.	[1] February 28

[1] Reports must be made available to the public for inspection and copying on this date.

[48 FR 14228, Apr. 1, 1983, as amended at 48 FR 30113, June 30, 1983]

§ 270.6 References.

(a) When used in Part 270 of this chapter, the following publications are incorporated by reference:

"Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", EPA Publication SW-846 [Second Edition, 1982 as amended by Update I (April, 1984), and Update II (April, 1985)]. The second edition of SW-846 and Updates I, II and III are available from the National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22161, (703) 487-4600, as document no. PB 87-120-291. The cost is $48.95 for paper and $13.50 for microfiche.

(b) The references listed in paragraph (a) of this section are also available for inspection at the Office of the Federal Register, 1100 L Street, NW., Washington, DC 20408. These incorporations by reference were approved by the Director of the Federal Register. These materials are incorporated as they exist on the date of approval and a notice of any change in these materials will be published in the FEDERAL REGISTER.

[48 FR 14228, Apr. 1, 1983, as amended at 48 FR 30113, June 30, 1983; 52 FR 8073, Mar. 16, 1987]

Subpart B—Permit Application

§ 270.10 General application requirements.

(a) *Permit application.* Any person who is required to have a permit (including new applicants and permittees with expiring permits) shall complete, sign, and submit an application to the Director as described in this section and §§ 270.70 through 270.73. Persons currently authorized with interim status shall apply for permits when required by the Director. Persons covered by RCRA permits by rule (§ 270.60), need not apply. Procedures for applications, issuance and administration of emergency permits are found exclusively in § 270.61. Procedures for application, issuance and administration of research, development, and demonstration permits are found exclusively in § 270.65.

(b) *Who applies?* When a facility or activity is owned by one person but is operated by another person, it is the operator's duty to obtain a permit, except that the owner must also sign the permit application.

(c) *Completeness.* The Director shall not issue a permit before receiving a complete application for a permit except for permits by rule, or emergency permits. An application for a permit is complete when the Director receives an application form and any supplemental information which are completed to his satisfaction. An application for a permit is complete notwithstanding the failure of the owner or operator to submit the exposure information described in paragraph (j) of this section.

(d) *Information requirements.* All applicants for RCRA permits shall provide information set forth in § 270.13 and applicable sections in §§ 270.14 through 270.29 to the Director, using the application form provided by the Director.

(e) *Existing HWM facilities and interim status qualifications.* (1) Owners and operators of existing hazardous waste management facilities or of hazardous waste management facilities in existence on the effective date of statutory or regulatory amendments under the act that render the facility subject to the requirement to have a RCRA permit must submit Part A of their permit application no later than:

(i) Six months after the date of publication of regulations which first require them to comply with the standards set forth in 40 CFR Part 265 or 266, or

(ii) Thirty days after the date they first become subject to the standards set forth in 40 CFR Part 265 or 266, whichever first occurs.

(iii) For generators generating greater than 100 kilograms but less than 1000 kilograms of hazardous waste in a calendar month and treats, stores, or disposes of these wastes on-site, by March 24, 1987.

NOTE: For facilities which must comply with Part 265 because they handle a waste listed in EPA's May 19, 1980, Part 261 regulations (45 FR 33006 *et seq.*), the deadline for submitting an application is November 19, 1980. Where other existing facilities must begin in complying with Part 265 or 266 at a later date because of revisions to Part 260, 261, 265, or 266, the Administrator will specify in the preamble to those revisions when those facilities must submit a permit application.

(2) The Administrator may by publication in the FEDERAL REGISTER extend the date by which owners and operators of specified classes of existing hazardous waste management facilities must submit Part A of their permit application if he finds that (i) there has been substantial confusion as to whether the owners and operators of such facilities were required to file a permit application and (ii) such confusion is attributed to ambiguities in EPA's Parts 260, 261, 265, or 266 regulations.

(3) The Administrator may by compliance order issued under section 3008 of RCRA extend the date by which the owner and operator of an existing hazardous waste management facility must submit Part A of their permit application.

(4) At any time after promulgation of Phase II the owner and operator of an existing HWM facility may be required to submit Part B of their permit application. The State Director may require submission of Part B (or equivalent completion of the State RCRA application process) if the State in which the facility is located has received interim authorization for Phase II or final authorization; if not, the Regional Administrator may require submission of Part B. Any owner or operator shall be allowed at least six months from the date of request to submit Part B of the application. Any owner or operator of an existing HWM facility may voluntarily submit Part B of the application at any time. Notwithstanding the above, any owner or operator of an existing HWM facility must submit a Part B permit application in accordance with the dates specified in § 270.73. Any owner or operator of a land disposal facility in existence on the effective date of statutory or regulatory amendments under this Act that render the facility subject to the requirement to have a RCRA permit must submit a Part B application in accordance with the dates specified in § 270.73.

(5) Failure to furnish a requested Part B application on time, or to furnish in full the information required by the Part B application, is grounds for termination of interim status under Part 124.

(f) *New HWM facilities.* (1) Except as provided in paragraph (f)(3) of this section, no person shall begin physical construction of a new HWM facility without having submitted Parts A and B of the permit application and having received a finally effective RCRA permit.

(2) An application for a permit for a new HWM facility (including both Parts A and B) may be filed any time after promulgation of those standards in Part 264, Subpart I *et seq.* applicable to such facility. The application shall be filed with the Regional Administrator if at the time of application the State in which the new HWM facility is proposed to be located has not received Phase II interim authorization for permitting such facility or final authorization; otherwise it shall be filed with the State Director. Except as provided in paragraph (f)(3) of this section, all applications must be submitted at least 180 days before

physical construction is expected to commence.

(3) Notwithstanding paragraph (f)(1) of this section, a person may construct a facility for the incineration of polychlorinated biphenyls pursuant to an approval issued by the Administrator under section (6)(e) of the Toxic Substances Control Act and any person owning or operating such a facility may, at any time after construction or operation of such facility has begun, file an application for a RCRA permit to incinerate hazardous waste authorizing such facility to incinerate waste identified or listed under Subtitle C of RCRA.

(g) *Updating permit applications.* (1) If any owner or operator of a HWM facility has filed Part A of a permit application and has not yet filed Part B, the owner or operator shall file an amended Part A application:

(i) With the Regional Administrator, if the facility is located in a State which has not obtained interim authorization for phase II or final authorization, within six months after the promulgation of revised regulations under Part 261 listing or identifying additional hazardous wastes, if the facility is treating, storing, or disposing of any of those newly listed or identified wastes.

(ii) With the State Director, if the facility is located in a State which has obtained Phase II interim authorization or final authorization, no later than the effective date of regulatory provisions listing or designating wastes as hazardous in that State in addition to those listed or designated under the previously approved State program, if the facility is treating, storing, or disposing of any of those newly listed or designated wastes; or

(iii) As necessary to comply with provisions of § 270.72 for changes during interim status or with the analogous provisions of a State program approved for final authorization or interim authorization for Phase II. Revised Part A applications necessary to comply with the provisions of § 270.72 shall be filed with the Regional Administrator if the State in which the facility in question is located does not have Phase II interim authorization or final authorization; otherwise it shall be filed with the State Director (if the State has an analogous provision).

(2) The owner or operator of a facility who fails to comply with the updating requirements of paragraph (g)(1) of this section does not receive interim status as to the wastes not covered by duly filed Part A applications.

(h) *Reapplications.* Any HWM facility with an effective permit shall submit a new application at least 180 days before the expiration date of the effective permit, unless permission for a later date has been granted by the Director. (The Director shall not grant permission for applications to be submitted later than the expiration date of the existing permit.)

(i) *Recordkeeping.* Applicants shall keep records of all data used to complete permit applications and any supplemental information submitted under §§ 270.10(d), 270.13, 270.14 through 270.21 for a period of at least 3 years from the date the application is signed.

(j) *Exposure information.* (1) After August 8, 1985, any Part B permit application submitted by an owner or operator of a facility that stores, treats, or dispose of hazardous waste in a surface impoundment or a landfill must be accompanied by information, reasonably ascertainable by the owner or operator, on the potential for the public to be exposed to hazardous wastes or hazardous constituents through releases related to the unit. At a minimum, such information must address:

(i) Reasonably foreseeable potential releases from both normal operations and accidents at the unit, including releases associated with transportation to or from the unit;

(ii) The potential pathways of human exposure to hazardous wastes or constituents resulting from the releases described under paragraph (j)(1)(i) of this section; and

(iii) The potential magnitude and nature of the human exposure resulting from such releases.

(2) By August 8, 1985, owners and operators of a landfill or a surface impoundment who have already submitted a Part B application must submit the exposure information required in paragraph (j)(1) of this section.

(k) The Director may require a permittee or an applicant to submit information in order to establish permit conditions under §§ 270.32(b)(2) and 270.50(d) of this chapter.

(Approved by the Office of Management and Budget under control numbers 2050-0009, 2050-0002, and 2050-0007)

[48 FR 14228, Apr. 1, 1983; 48 FR 30114, June 30, 1983, as amended at 50 FR 28751, July 15, 1985; 51 FR 10176, Mar. 24, 1986; 52 FR 45799, Dec. 1, 1987]

§ 270.11 Signatories to permit applications and reports.

(a) *Applications.* All permit applications shall be signed as follows:

(1) *For a corporation:* By a responsible corporate officer. For the purpose of this section, a responsible corporate officer means (i) A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decisionmaking functions for the corporation, or (ii) the manager of one or more manufacturing, production or operating facilities employing more than 250 persons or having gross annual sales or expenditures exceeding $25 million (in second-quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

NOTE: EPA does not require specific assignments or delegations of authority to responsible corporate officers identified in § 270.11(a)(1)(i). The Agency will presume that these responsible corporate officers have the requisite authority to sign permit applications unless the corporation has notified the Director to the contrary. Corporate procedures governing authority to sign permit applications may provide for assignment or delegation to applicable corporate positions under § 270.11(a)(1)(ii) rather than to specific individuals.

(2) *For a partnership or sole proprietorship;* by a general partner or the proprietor, respectively; or

(3) *For a municipality, State, Federal, or other public agency:* by either a principal executive officer or ranking elected official. For purposes of this section, a principal executive officer of a Federal agency includes: (i) The chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of EPA).

(b) *Reports.* All reports required by permits and other information requested by the Director shall be signed by a person described in paragraph (a) of this section, or by a duly authorized representative of that person. A person is a duly authorized representative only if:

(1) The authorization is made in writing by a person described in paragraph (a) of this section;

(2) The authorization specifies either an individual or a position having responsibility for overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, or position of equivalent responsibility. (A duly authorized representative may thus be either a named individual or any individual occupying a named position); and

(3) The written authorization is submitted to the Director.

(c) *Changes to authorization.* If an authorization under paragraph (b) of this section is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of paragraph (b) of this section must be submitted to the Director prior to or together with any reports, information, or applications to be signed by an authorized representative.

(d) *Certification.* Any person signing a document under paragraph (a) or (b) of this section shall make the following certification:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to be the best of my knowledge and belief, true, accurate, and complete. I am aware

that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

(Clean Water Act (33 U.S.C. 1251 et seq.), Safe Drinking Water Act (42 U.S.C. 300f et seq.), Clean Air Act (42 U.S.C. 7401 et seq.), Resource Conservation and Recovery Act (42 U.S.C. 6901 et seq.))

[48 FR 14228, Apr. 1, 1983, as amended at 48 FR 39622, Sept. 1, 1983]

§ 270.12 Confidentiality of information.

(a) In accordance with 40 CFR Part 2, any information submitted to EPA pursuant to these regulations may be claimed as confidential by the submitter. Any such claim must be asserted at the time of submission in the manner prescribed on the application form or instructions or, in the case of other submissions, by stamping the words "confidential business information" on each page containing such information. If no claim is made at the time of submission, EPA may make the information available to the public without further notice. If a claim is asserted, the information will be treated in accordance with the procedures in 40 CFR Part 2 (Public Information).

(b) Claims of confidentiality for the name and address of any permit applicant or permittee will be denied.

§ 270.13 Contents of Part A of the permit application.

Part A of the RCRA application shall include the following information:

(a) The activities conducted by the applicant which require it to obtain a permit under RCRA.

(b) Name, mailing address, and location, including latitude and longitude of the facility for which the application is submitted.

(c) Up to four SIC codes which best reflect the principal products or services provided by the facility.

(d) The operator's name, address, telephone number, ownership status, and status as Federal, State, private, public, or other entity.

(e) The name, address, and phone number of the owner of the facility.

(f) Whether the facility is located on Indian lands.

(g) An indication of whether the facility is new or existing and whether it is a first or revised application.

(h) For existing facilities, (1) a scale drawing of the facility showing the location of all past, present, and future treatment, storage, and disposal areas; and (2) photographs of the facility clearly delineating all existing structures; existing treatment, storage, and disposal areas; and sites of future treatment, storage, and disposal areas.

(i) A description of the processes to be used for treating, storing, and disposing of hazardous waste, and the design capacity of these items.

(j) A specification of the hazardous wastes listed or designated under 40 CFR Part 261 to be treated, stored, or disposed of at the facility, an estimate of the quantity of such wastes to be treated, stored, or disposed annually, and a general description of the processes to be used for such wastes.

(k) A listing of all permits or construction approvals received or applied for under any of the following programs:

(1) Hazardous Waste Management program under RCRA.

(2) UIC program under the SWDA.

(3) NPDES program under the CWA.

(4) Prevention of Significant Deterioration (PSD) program under the Clean Air Act.

(5) Nonattainment program under the Clean Air Act.

(6) National Emission Standards for Hazardous Pollutants (NESHAPS) preconstruction approval under the Clean Air Act.

(7) Ocean dumping permits under the Marine Protection Research and Sancturaies Act.

(8) Dredge or fill permits under section 404 of the CWA.

(9) Other relevant environmental permits, including State permits.

(l) A topographic map (or other map if a topographic map is unavailable) extending one mile beyond the property boundaries of the source, depicting the facility and each of its intake and discharge structures; each of its hazardous waste treatment, storage, or disposal facilities; each well where fluids from the facility are injected underground; and those wells, springs, other surface water bodies, and drinking water wells listed in public records or otherwise known to the applicant within ¼ mile of the facility property boundary.

(m) A brief description of the nature of the business.

§ 270.14 Contents of Part B: General requirements.

(a) Part B of the permit application consists of the general information requirements of this section, and the specific information requirements in §§ 270.14 through 270.29 applicable to the facility. The Part B information requirements presented in §§ 270.14 through 270.29 reflect the standards promulgated in 40 CFR Part 264. These information requirements are necessary in order for EPA to determine compliance with the Part 264 standards. If owners and operators of HWM facilities can demonstrate that the information prescribed in Part B can not be provided to the extent required, the Director may make allowance for submission of such information on a case-by-case basis. Information required in Part B shall be submitted to the Director and signed in accordance with requirements in § 270.11. Certain technical data, such as design drawings and specifications, and engineering studies shall be certified by a registered professional engineer.

(b) General information requirements. The following information is required for all HWM facilities, except as § 264.1 provides otherwise:

(1) A general description of the facility.

(2) Chemical and physical analyses of the hazardous waste to be handled at the facility. At a minimum, these analyses shall contain all the information which must be known to treat, store, or dispose of the wastes properly in accordance with Part 264.

(3) A copy of the waste analysis plan required by § 264.13(b) and, if applicable § 264.13(c).

(4) A description of the security procedures and equipment required by § 264.14, or a justification demonstrating the reasons for requesting a waiver of this requirement.

(5) A copy of the general inspection schedule required by § 264.15(b). Include, where applicable, as part of the inspection schedule, specific requirements in §§ 264.174, 264.194, 264.226, 264.254, 264.273, 264.303, and 264.602.

(6) A justification of any request for a waiver(s) of the preparedness and prevention requirements of Part 264, Subpart C.

(7) A copy of the contingency plan required by Part 264, Subpart D. Note: Include, where applicable, as part of the contingency plan, specific requirements in §§ 264.227, 264.255, and 264.200.

(8) A description of procedures, structures, or equipment used at the facility to:

(i) Prevent hazards in unloading operations (for example, ramps, special forklifts);

(ii) Prevent runoff from hazardous waste handling areas to other areas of the facility or environment, or to prevent flooding (for example, berms, dikes, trenches);

(iii) Prevent contamination of water supplies;

(iv) Mitigate effects of equipment failure and power outages; and

(v) Prevent undue exposure of personnel to hazardous waste (for example, protective clothing).

(9) A description of precautions to prevent accidental ignition or reaction of ignitable, reactive, or incompatible wastes as required to demonstrate compliance with § 264.17 including documentation demonstrating compliance with § 264.17(c).

(10) Traffic pattern, estimated volume (number, types of vehicles) and control (for example, show turns across traffic lanes, and stacking lanes (if appropriate); describe access road surfacing and load bearing capacity; show traffic control signals).

(11) Facility location information;

(i) In order to determine the applicability of the seismic standard [§ 264.18(a)] the owner or operator of a new facility must identify the political jurisdiction (e.g., county, township, or election district) in which the facility is proposed to be located.

[*Comment*: If the county or election district is not listed in Appendix VI of Part 264, no

further information is required to demonstrate compliance with § 264.18(a).]

(ii) If the facility is proposed to be located in an area listed in Appendix VI of Part 264, the owner or operator shall demonstrate compliance with the seismic standard. This demonstration may be made using either published geologic data or data obtained from field investigations carried out by the applicant. The information provided must be of such quality to be acceptable to geologists experienced in identifying and evaluating seismic activity. The information submitted must show that either:

(A) No faults which have had displacement in Holocene time are present, or no lineations which suggest the presence of a fault (which have displacement in Holocene time) within 3,000 feet of a facility are present, based on data from:

(*1*) Published geologic studies,

(*2*) Aerial reconnaissance of the area within a five-mile radius from the facility.

(*3*) An analysis of aerial photographs covering a 3,000 foot radius of the facility, and

(*4*) If needed to clarify the above data, a reconnaissance based on walking portions of the area within 3,000 feet of the facility, or

(B) If faults (to include lineations) which have had displacement in Holocene time are present within 3,000 feet of a facility, no faults pass with 200 feet of the portions of the facility where treatment, storage, or disposal of hazardous waste will be conducted, based on data from a comprehensive geologic analysis of the site. Unless a site analysis is otherwise conclusive concerning the absence of faults within 200 feet of such portions of the facility data shall be obtained from a subsurface exploration (trenching) of the area within a distance no less than 200 feet from portions of the facility where treatment, storage, or disposal of hazardous waste will be conducted. Such trenching shall be performed in a direction that is perpendicular to known faults (which have had displacement in Holocene time) passing within 3,000 feet of the portions of the facility where treatment, storage, or disposal of hazardous waste will be conducted. Such investigation shall document with supporting maps and other analyses, the location of faults found.

[*Comment*: The Guidance Manual for the Location Standards provides greater detail on the content of each type of seismic investigation and the appropriate conditions under which each approach or a combination of approaches would be used.]

(iii) Owners and operators of all facilities shall provide an identification of whether the facility is located within a 100-year floodplain. This identification must indicate the source of data for such determination and include a copy of the relevant Federal Insurance Administration (FIA) flood map, if used, or the calculations and maps used where an FIA map is not available. Information shall also be provided identifying the 100-year flood level and any other special flooding factors (e.g., wave action) which must be considered in designing, constructing, operating, or maintaining the facility to withstand washout from a 100-year flood.

[*Comment*: Where maps for the National Flood Insurance Program produced by the Federal Insurance Administration (FIA) of the Federal Emergency Management Agency are available, they will normally be determinative of whether a facility is located within or outside of the 100-year floodplain. However, where the FIA map excludes an area (usually areas of the floodplain less than 200 feet in width), these areas must be considered and a determination made as to whether they are in the 100-year floodplain. Where FIA maps are not available for a proposed facility location, the owner or operator must use equivalent mapping techniques to determine whether the facility is within the 100-year floodplain, and if so located, what the 100-year flood elevation would be.]

(iv) Owners and operators of facilities located in the 100-year floodplain must provide the following information:

(A) Engineering analysis to indicate the various hydrodynamic and hydrostatic forces expected to result at the site as consequence of a 100-year flood.

(B) Structural or other engineering studies showing the design of operational units (e.g., tanks, incinerators) and flood protection devices (e.g., floodwalls, dikes) at the facility and how these will prevent washout.

(C) If applicable, and in lieu of paragraphs (b)(11)(iv) (A) and (B) of this section, a detailed description of procedures to be followed to remove hazardous waste to safety before the facility is flooded, including:

(*1*) Timing of such movement relative to flood levels, including estimated time to move the waste, to show that such movement can be completed before floodwaters reach the facility.

(*2*) A description of the location(s) to which the waste will be moved and demonstration that those facilities will be eligible to receive hazardous waste in accordance with the regulations under Parts 270, 271, 124, and 264 through 266 of this chapter.

(*3*) The planned procedures, equipment, and personnel to be used and the means to ensure that such resources will be available in time for use.

(*4*) The potential for accidental discharges of the waste during movement.

(v) Existing facilities NOT in compliance with § 264.18(b) shall provide a plan showing how the facility will be brought into compliance and a schedule for compliance.

(12) An outline of both the introductory and continuing training programs by owners or operators to prepare persons to operate or maintain the HWM facility in a safe manner as required to demonstrate compliance with § 264.16. A brief description of how training will be designed to meet actual job tasks in accordance with requirements in § 264.16(a)(3).

(13) A copy of the closure plan and, where applicable, the post-closure plan required by §§ 264.112 and 264.118. Include, where applicable, as part of the plans, specific requirements in §§ 264.178, 264.197, 264.228, 264.258, 264.280, 264.310, 264.351, 264.601, and 264.603.

(14) For hazardous waste disposal units that have been closed, documentation that notices required under § 264.119 have been filed.

(15) The most recent closure cost estimate for the facility prepared in accordance with § 264.142 and a copy of the documentation required to demonstrate financial assurance under § 264.143. For a new facility, a copy of the required documentation may be submitted 60 days prior to the initial receipt of hazardous wastes, if that is later than the submission of the Part B.

(16) Where applicable, the most recent post-closure cost estimate for the facility prepared in accordance with § 264.144 plus a copy of the documentation required to demonstrate financial assurance under § 264.145. For a new facility, a copy of the required documentation may be submitted 60 days prior to the initial receipt of hazardous wastes, if that is later than the submission of the Part B.

(17) Where applicable, a copy of the insurance policy or other documentation which comprises compliance with the requirements of § 264.147. For a new facility, documentation showing the amount of insurance meeting the specification of § 264.147(a) and, if applicable, § 264.147(b), that the owner or operator plans to have in effect before initial receipt of hazardous waste for treatment, storage, or disposal. A request for a variance in the amount of required coverage, for a new or existing facility, may be submitted as specified in § 264.147(c).

(18) Where appropriate, proof of coverage by a State financial mechanism in compliance with § 264.149 or § 264.150.

(19) A topographic map showing a distance of 1000 feet around the facility at a scale of 2.5 centimeters (1 inch) equal to not more than 61.0 meters (200 feet). Contours must be shown on the map. The contour interval must be sufficient to clearly show the pattern of surface water flow in the vicinity of and from each operational unit of the facility. For example, contours with an interval of 1.5 meters (5 feet), if relief is greater than 6.1 meters (20 feet), or an interval of 0.6 meters (2 feet), if relief is less than 6.1 meters (20 feet). Owners and operators of HWM facilities located in mountainous areas should use large contour intervals to adequately show topographic profiles of facilities. The map shall clearly show the following:

(i) Map scale and date.

(ii) 100-year floodplain area.

(iii) Surface waters including intermittant streams.

(iv) Surrounding land uses (residential, commercial, agricultural, recreational).

(v) A wind rose (i.e., prevailing windspeed and direction).

(vi) Orientation of the map (north arrow).

(vii) Legal boundaries of the HWM facility site.

(viii) Access control (fences, gates).

(ix) Injection and withdrawal wells both on-site and off-site.

(x) Buildings; treatment, storage, or disposal operations; or other structure (recreation areas, runoff control systems, access and internal roads, storm, sanitary, and process sewerage systems, loading and unloading areas, fire control facilities, etc.)

(xi) Barriers for drainage or flood control.

(xii) Location of operational units within the HWM facility site, where hazardous waste is (or will be) treated, stored, or disposed (include equipment cleanup areas).

NOTE: For large HWM facilities the Agency will allow the use of other scales on a case-by-case basis.

(20) Applicants may be required to submit such information as may be necessary to enable the Regional Administrator to carry out his duties under other Federal laws as required in § 270.3 of this part.

(21) For land disposal facilities, if a case-by-case extension has been approved under § 268.5 or a petition has been approved uner § 268.6, a copy of the notice of approval for the extension or petition is required.

(c) *Additional information requirements.* The following additional information regarding protection of groundwater is required from owners or operators of hazardous waste facilities containing a regulated unit except as provided in § 264.90(b) of this chapter:

(1) A summary of the ground-water monitoring data obtained during the interim status period under §§ 265.90 through 265.94, where applicable.

(2) Identification of the uppermost aquifer and aquifers hydraulically interconnected beneath the facility property, including ground-water flow direction and rate, and the basis for such identification (*i.e.*, the information obtained from hydrogeologic investigations of the facility area).

(3) On the topographic map required under paragraph (b)(19) of this section, a delineation of the waste management area, the property boundary, the proposed "point of compliance" as defined under § 264.95, the proposed location of ground-water monitoring wells as required under § 264.97, and, to the extent possible, the information required in paragraph (c)(2) of this section.

(4) A description of any plume of contamination that has entered the ground water from a regulated unit at the time that the application was submitted that:

(i) Delineates the extent of the plume on the topographic map required under paragraph (b)(19) of this section;

(ii) Identifies the concentration of each Appendix IX, of Part 264 of this chapter, constituent throughout the plume or identifies the maximum concentrations of each Appendix IX constituent in the plume.

(5) Detailed plans and an engineering report describing the proposed ground water monitoring program to be implemented to meet the requirements of § 264.97.

(6) If the presence of hazardous constituents has *not* been detected in the ground water at the time of permit application, the owner or operator must submit sufficient information, supporting data, and analyses to establish a detection monitoring program which meets the requirements of § 264.98. This submission must address the following items specified under § 264.98:

(i) A proposed list of indicator parameters, waste constituents, or reaction products that can provide a reliable indication of the presence of hazardous constituents in the ground water;

(ii) A proposed ground-water monitoring system;

(iii) Background values for each proposed monitoring parameter or constituent, or procedures to calculate such values; and

(iv) A description of proposed sampling, analysis and statistical comparison procedures to be utilized in evaluating ground-water monitoring data.

(7) If the presence of hazardous constituents has been detected in the ground water at the point of compliance at the time of the permit application, the owner or operator must submit sufficient information, supporting data, and analyses to establish a compliance monitoring program which meets the requirements of § 264.99. Except as provided in § 264.98(h)(5), the owner or operator must also submit an engineering feasibility plan for a corrective action program necessary to meet the requirements of § 264.100, unless the owner or operator obtains written authorization in advance from the Regional Administrator to submit a proposed permit schedule for submittal of such a plan. To demonstrate compliance with § 264.99, the owner or operator must address the following items:

(i) A description of the wastes previously handled at the facility;

(ii) A characterization of the contaminated ground water, including concentrations of hazardous constituents;

(iii) A list of hazardous constituents for which compliance monitoring will be undertaken in accordance with §§ 264.97 and 264.99;

(iv) Proposed concentration limits for each hazardous constituent, based on the criteria set forth in § 264.94(a), including a justification for establishing any alternate concentration limits;

(v) Detailed plans and an engineering report describing the proposed ground-water monitoring system, in accordance with the requirements of § 264.97; and

(vi) A description of proposed sampling, analysis and statistical comparison procedures to be utilized in evaluating ground-water monitoring data.

(8) If hazardous constituents have been measured in the ground water which exceed the concentration limits established under § 264.94 Table 1, or if ground water monitoring conducted at the time of permit application under §§ 265.90 through 265.94 at the waste boundary indicates the presence of hazardous constituents from the facility in ground water over background concentrations, the owner or operator must submit sufficient information, supporting data, and analyses to establish a corrective action program which meets the requirements of § 264.100. However, an owner or operator is not required to submit information to establish a corrective action program if he demonstrates to the Regional Administrator that alternate concentration limits will protect human health and the environment after considering the criteria listed in § 264.94(b). An owner or operator who is not required to establish a corrective action program for this reason must instead submit sufficient information to establish a compliance monitoring program which meets the requirements of § 264.99 and paragraph (c)(6) of this section. To demonstrate compliance with § 264.100, the owner or operator must address, at a minimum, the following items:

(i) A characterization of the contaminated ground water, including concentrations of hazardous constituents;

(ii) The concentration limit for each hazardous constituent found in the ground water as set forth in § 264.94;

(iii) Detailed plans and an engineering report describing the corrective action to be taken; and

(iv) A description of how the groundwater monitoring program will demonstrate the adequacy of the corrective action.

(v) The permit may contain a schedule for submittal of the information required in paragraphs (c)(8) (iii) and (iv) provided the owner or operator obtains written authorization from the Regional Administrator prior to submittal of the complete permit application.

(d) Information requirements for solid waste management units.

(1) The following information is required for each solid waste management unit at a facility seeking a permit:

(i) The location of the unit on the topographic map required under paragraph (b)(19) of this section.

(ii) Designation of type of unit.

(iii) General dimensions and structural description (supply any available drawings).

(iv) When the unit was operated.

(v) Specification of all wastes that have been managed at the unit, to the extent available.

(2) The owner or operator of any facility containing one or more solid waste management units must submit all available information pertaining to any release of hazardous wastes or hazardous constituents from such unit or units.

(3) The owner/operator must conduct and provide the results of sampling and analysis of groundwater, landsurface, and subsurface strata, surface water, or air, which may include the installation of wells, where the Director ascertains it is necessary to complete a RCRA Facility Assessment that will determine if a more complete investigation is necessary.

(Approved by the Office of Management and Budget under control numbers 2050-0009, 2050-0002, and 2050-0007)

[48 FR 14228, Apr. 1, 1983; 48 FR 30114, June 30, 1983, as amended at 50 FR 2006, Jan. 14, 1985; 51 FR 16458, May 2, 1986; 51 FR 25486, July 14, 1986; 51 FR 40653, Nov. 7, 1986; 52 FR 23450, July 9, 1987; 52 FR 25953, July 9, 1987; 52 FR 33936, Sept. 9, 1987; 52 FR 45799, Dec. 1, 1987; 52 FR 46965, Dec. 10, 1987]

§ 270.15 Specific Part B information requirements for containers.

Except as otherwise provided in § 264.170, owners or operators of facilities that store containers of hazardous waste must provide the following additional information:

(a) A description of the containment system to demonstrate compliance with § 264.175. Show at least the following:

(1) Basic design parameters, dimensions, and materials of construction.

(2) How the design promotes drainage or how containers are kept from contact with standing liquids in the containment system.

(3) Capacity of the containment system relative to the number and volume of containers to be stored.

(4) Provisions for preventing or managing run-on.

(5) How accumulated liquids can be analyzed and removed to prevent overflow.

(b) For storage areas that store containers holding wastes that do not contain free liquids, a demonstration of compliance with § 264.175(c), including:

(1) Test procedures and results or other documentation or information to show that the wastes do not contain free liquids; and

(2) A description of how the storage area is designed or operated to drain and remove liquids or how containers are kept from contact with standing liquids.

(c) Sketches, drawings, or data demonstrating compliance with § 264.176 (location of buffer zone and containers holding ignitable or reactive wastes) and § 264.177(c) (location of incompatible wastes), where applicable.

(d) Where incompatible wastes are stored or otherwise managed in containers, a description of the procedures used to ensure compliance with §§ 264.177 (a) and (b), and 264.17 (b) and (c).

[48 FR 14228, Apr. 1, 1983; 48 FR 30114, June 30, 1983]

§ 270.16 Specific Part B information requirements for tank systems.

Except as otherwise provided in § 264.190, owners and operators of facilities that use tanks to store or treat hazardous waste must provide the following additional information:

(a) A written assessment that is reviewed and certified by an independent, qualified, registered professional engineer as to the structural integrity and suitability for handling hazardous waste of each tank system, as required under §§ 264.191 and 264.192;

(b) Dimensions and capacity of each tank;

(c) Description of feed systems, safety cutoff, bypass systems, and pressure controls (e.g., vents);

(d) A diagram of piping, instrumentation, and process flow for each tank system;

(e) A description of materials and equipment used to provide external corrosion protection, as required under § 264.192(a)(3)(ii);

(f) For new tank systems, a detailed description of how the tank system(s) will be installed in compliance with § 264.192 (b), (c), (d), and (e);

(g) Detailed plans and description of how the secondary containment system for each tank system is or will be designed, constructed, and operated to meet the requirements of § 264.193 (a), (b), (c), (d), (e), and (f);

(h) For tank systems for which a variance from the requirements of § 264.193 is sought (as provided by §§ 264.193(g)):

(1) Detailed plans and engineering and hydrogeologic reports, as appropriate, describing alternate design and operating practices that will, in conjunction with location aspects, prevent the migration of any hazardous waste or hazardous constituents into the ground water or surface water during the life of the facility, or

(2) A detailed assessment of the substantial present or potential hazards posed to human health or the environment should a release enter the environment.

(i) Description of controls and practices to prevent spills and overflows, as required under § 264.194(b); and

(j) For tank systems in which ignitable, reactive, or incompatible wastes are to be stored or treated, a description of how operating procedures and tank system and facility design will achieve compliance with the requirements of §§ 264.198 and 264.199.

(Information collection requirements contained in paragraphs (a)-(j) were approved by the Office of Management and Budget under control number 2050-0050)

[51 FR 25486, July 14, 1986; 51 FR 29431, Aug. 15, 1986]

§ 270.17 Specific Part B information requirements for surface impoundments.

Except as otherwise provided in § 264.1, owners and operators of facilities that store, treat or dispose of hazardous waste in surface impoundments must provide the following additional information:

(a) A list of the hazardous wastes placed or to be placed in each surface impoundment;

(b) Detailed plans and an engineering report describing how the surface impoundment is or will be designed, constructed, operated and maintained to meet the requirements of § 264.221. This submission must address the following items as specified in § 264.221:

(1) The liner system (except for an existing portion of a surface impoundment). If an exemption from the requirement for a liner is sought as provided by § 264.221(b), submit detailed plans and engineering and hydrogeologic reports, as appropriate, describing alternate design and operating practices that will, in conjunction with location aspects, prevent the migration of any hazardous constituents into the ground water or surface water at any future time;

(2) Prevention of overtopping; and

(3) Structural integrity of dikes;

(c) A description of how each surface impoundment, including the liner and cover systems and appurtenances for control of overtopping, will be inspected in order to meet the requirements of § 264.226(a) and (b). This information should be included in the inspection plan submitted under § 270.14(b)(5);

(d) A certification by a qualified engineer which attests to the structural integrity of each dike, as required under § 264.226(c). For new units, the owner or operator must submit a statement by a qualified engineer that he will provide such a certification upon completion of construction in accordance with the plans and specifications;

(e) A description of the procedure to be used for removing a surface impoundment from service, as required under § 264.227(b) and (c). This information should be included in the contingency plan submitted under § 270.14(b)(7);

(f) A description of how hazardous waste residues and contaminated materials will be removed from the unit at closure, as required under § 264.228(a)(1). For any wastes not to be removed from the unit upon closure, the owner or operator must submit detailed-plans and an engineering report describing how § 264.228(a)(2) and (b) will be complied with. This information should be included in the closure plan and, where applicable, the post-closure plan submitted under § 270.14(b)(13);

(g) If ignitable or reactive wastes are to be placed in a surface impoundment, an explanation of how § 264.229 will be complied with;

(h) If incompatible wastes, or incompatible wastes and materials will be placed in a surface impoundment, an explanation of how § 264.230 will be complied with.

(i) A waste management plan for EPA Hazardous Waste Nos. FO20, FO21, FO22, FO23, FO26, and FO27 describing how the surface impoundment is or will be designed, constructed, operated, and maintained to meet the requirements of § 264.231. This submission must address the following items as specified in § 264.231:

(1) The volume, physical, and chemical characteristics of the wastes, including their potential to migrate through soil or to volatilize or escape into the atmosphere;

(2) The attenuative properties of underlying and surrounding soils or other materials;

(3) The mobilizing properties of other materials co-disposed with these wastes; and

(4) The effectiveness of additional treatment, design, or monitoring techniques.

[48 FR 14228, Apr. 1, 1983, as amended at 50 FR 2006, Jan. 14, 1985; 50 FR 28752, July 15, 1985]

§ 270.18 Specific Part B information requirements for waste piles.

Except as otherwise provided in § 264.1, owners and operators of facilities that store or treat hazardous waste in waste piles must provide the following additional information:

(a) A list of hazardous wastes placed or to be placed in each waste pile;

(b) If an exemption is sought to § 264.251 and Subpart F of Part 264 as provided by § 264.250(c) or § 264.90(2), an explanation of how the standards of § 264.250(c) will be complied with or detailed plans and an engineering report describing how the requirements of § 264.90(b)(2) will be met.

(c) Detailed plans and an engineering report describing how the pile is or will be designed, constructed, operated and maintained to meet the requirements of § 264.251. This submission must address the following items as specified in § 264.251:

(1) The liner system (except for an existing portion of a pile). If an exemption from the requirement for a liner is sought, as provided by § 264.252(b), the owner or operator must submit detailed plans and engineering and hydrogeologic reports, as applicable, describing alternate design and operating practices that will, in conjunction with location aspects, prevent the migration of any hazardous constituents into the ground water or surface water at any future time;

(2) Control of run-on;

(3) Control of run-off;

(4) Management of collection and holding units associated with run-on and run-off control systems; and

(5) Control of wind dispersal of particulate matter, where applicable;

(d) A description of how each waste pile, including the liner and appurtenances for control of run-on and run-off, will be inspected in order to meet the requirements of § 264.254(a) and (b). This information should be included in the inspection plan submitted under § 270.14(b)(5).

(e) If treatment is carried out on or in the pile, details of the process and equipment used, and the nature and quality of the residuals;

(f) If ignitable or reactive wastes are to be placed in a waste pile, an explanation of how the requirements of § 264.256 will be complied with;

(g) If incompatible wastes, or incompatible wastes and materials will be place in a waste pile, an explanation of how § 264.257 will be complied with;

(h) A description of how hazardous waste residues and contaminated materials will be removed from the waste pile at closure, as required under § 264.258(a). For any waste not to be removed from the waste pile upon closure, the owner or operator must submit detailed plans and an engineering report describing how § 264.310 (a) and (b) will be complied with. This information should be included in the closure plan and, where applicable, the post-closure plan submitted under § 270.14(b)(13)

(i) A waste management plan for EPA Hazardous Waste Nos. FO20, FO21, FO22, FO23, FO26, and FO27 describing how a waste pile that is not enclosed (as defined in § 264.250(c)) is or will be designed, constructed, operated, and maintained to meet the requirements of § 264.259. This submission must address the following items as specified in § 264.259:

(1) The volume, physical, and chemical characteristics of the wastes to be disposed in the waste pile, including their potential to migrate through soil or to volatilize or escape into the atmosphere;

(2) The attenuative properties of underlying and surrounding soils or other materials;

(3) The mobilizing properties of other materials co-disposed with these wastes; and

(4) The effectiveness of additional treatment, design, or monitoring techniques.

[48 FR 14228, Apr. 1, 1983, as amended at 50 FR 2006, Jan. 14, 1985; 50 FR 28752, July 15, 1985]

§ 270.19 Specific Part B information requirements for incinerators.

Except as § 264.340 of this chapter provides otherwise, owners and operators of facilities that incinerate hazardous waste must fulfill the requirements of (a), (b), or (c) of this section.

(a) When seeking an exemption under § 264.340 (b) or (c) of this chapter (Ignitable, corrosive, or reactive wastes only):

(1) Documentation that the waste is listed as a hazardous waste in Part 261, Subpart D of this chapter, solely because it is ignitable (Hazard Code I) or corrosive (Hazard Code C) or both; or

(2) Documentation that the waste is listed as a hazardous waste in Part 261, Subpart D of this chapter, solely because it is reactive (Hazard Code R) for characteristics other than those listed in § 261.23(a) (4) and (5) of this chapter, and will not be burned when other hazardous wastes are present in the combustion zone; or

(3) Documentation that the waste is a hazardous waste solely because it possesses the characteristic of ignitability, corrosivity, or both, as determined by the tests for characteristics of hazardous waste under Part 261, Subpart C of this chapter; or

(4) Documentation that the waste is a hazardous waste solely because it possesses the reactivity characteristics listed in § 261.23(a) (1), (2), (3), (6), (7), or (8) of this chapter, and that it will not be burned when other hazardous wastes are present in the combustion zone; or

(b) Submit a trial burn plan or the results of a trial burn, including all required determinations, in accordance with § 270.62; or

(c) In lieu of a trial burn, the applicant may submit the following information:

(1) An analysis of each waste or mixture of wastes to be burned including:

(i) Heat value of the waste in the form and composition in which it will be burned.

(ii) Viscosity (if applicable), or description of physical form of the waste.

(iii) An identification of any hazardous organic constituents listed in Part 261, Appendix VIII, of this chapter, which are present in the waste to be burned, except that the applicant need not analyze for constituents listed in Part 261, Appendix VIII, of this chapter which would reasonably not be expected to be found in the waste. The constituents excluded from analysis must be identified and the basis for their exclusion stated. The waste analysis must rely on analytical techniques specified in "Test methods for the evaluation of Solid Waste, Physical/Chemical Methods" (incorporated by reference, see § 270.6 and referenced in 40 CFR Part 261, Appendix III), or their equivalent.

(iv) An approximate quantification of the hazardous constituents identified in the waste, within the precision produced by the analytical methods specified in "Test Methods for the Evaluation of Solid Waste, Physical/Chemical Methods" (incorporated by reference, see § 270.6).

(v) A quantification of those hazardous constituents in the waste which may be designated as POHC's based on data submitted from other trial or operational burns which demonstrate compliance with the performance standards in § 264.343 of this chapter.

(2) A detailed engineering description of the incinerator, including:

(i) Manufacturer's name and model number of incinerator.

(ii) Type of incinerator

(iii) Linear dimension of incinerator unit including cross sectional area of combustion chamber.

(iv) Decription of auxiliary fuel system (type/feed).

(v) Capacity of prime mover.

(vi) Description of automatic waste feed cutoff system(s).

(vii) Stack gas monitoring and pollution control monitoring system.

(viii) Nozzle and burner design.

(ix) Construction materials.

(x) Location and description of temperature, pressure, and flow indicating devices and control devices.

(3) A description and analysis of the waste to be burned compared with the waste for which data from operational or trial burns are provided to support the contention that a trial burn is not needed. The data should include those items listed in paragraph (c)(1) of this section. This analysis should specify the POHC's which the applicant has idenitified in the waste for which a permit is sought, and any differeneces from the POHC's in the waste for which burn data are provided.

(4) The design and operating conditions of the incinerator unit to be used, compared with that for which comparative burn data are available.

(5) A description of the results submitted from any previously conducted trial burn(s) including:

(i) Sampling and analysis techniques used to calculate performance standards in § 264.343 of this chapter,

(ii) Methods and results of monitoring temperatures, waste feed rates, carbon monoxide, and an appropriate indicator of combustion gas velocity (including a statement concerning the precision and accuracy of this measurement),

(6) The expected incinerator operation information to demonstrate compliance with §§ 264.343 and 264.345 of this chapter including:

(i) Expected carbon monoxide (CO) level in the stack exhaust gas.

(ii) Waste feed rate.

(iii) Combustion zone temperature.

(iv) Indication of combustion gas velocity.

(v) Expected stack gas volume, flow rate, and temperature.

(vi) Computed residence time for waste in the combustion zone.

(vii) Expected hydrochloric acid removal efficiency.

(viii) Expected fugitive emissions and their control procedures.

(ix) Proposed waste feed cut-off limits based on the identified significant operating parameters.

(7) Such supplemental information as the Director finds necessary to achieve the purposes of this paragraph.

(8) Waste analysis data, including that submitted in paragraph (c)(1) of this section, sufficient to allow the Director to specify as permit Principal Organic Hazardous Constituents (permit POHC's) those constituents for which destruction and removal efficiencies will be required.

(d) The Director shall approve a permit application without a trial burn if he finds that:

(1) The wastes are sufficiently similar; and

(2) The incinerator units are sufficiently similar, and the data from other trial burns are adequate to specify (under § 264.345 of this chapter) operating conditions that will ensure that the performance standards in § 264.343 of this chapter will be met by the incinerator.

§ 270.20 Specific Part B information requirements for land treatment facilities.

Except as otherwise provided in § 264.1, owners and operators of facilities that use land treatment to dispose of hazardous waste must provide the following additional information:

(a) A description of plans to conduct a treatment demonstration as required under § 264.272. The description must include the following information;

(1) The wastes for which the demonstration will be made and the potential hazardous constituents in the waste;

(2) The data sources to be used to make the demonstration (*e.g.*, literature, laboratory data, field data, or operating data);

(3) Any specific laboratory or field test that will be conducted, including:

(i) The type of test (*e.g.*, column leaching, degradation);

(ii) Materials and methods, including analytical procedures;

(iii) Expected time for completion;

(iv) Characteristics of the unit that will be simulated in the demonstration, including treatment zone characteristics, climatic conditions, and operating practices.

(b) A description of a land treatment program, as required under § 264.271. This information must be submitted with the plans for the treatment demonstration, and updated following the treatment demonstration. The land treatment program must address the following items:

(1) The wastes to be land treated;

(2) Design measures and operating practices necessary to maximize treatment in accordance with § 264.273(a) including:

(i) Waste application method and rate;

(ii) Measures to control soil pH;

(iii) Enhancement of microbial or chemical reactions;

(iv) Control of moisture content;

(3) Provisions for unsaturated zone monitoring, including:

(i) Sampling equipment, procedures, and frequency;

(ii) Procedures for selecting sampling locations;

(iii) Analytical procedures;

(iv) Chain of custody control;

(v) Procedures for establishing background values;

(vi) Statistical methods for interpreting results;

(vii) The justification for any hazardous constituents recommended for selection as principal hazardous constituents, in accordance with the criteria for such selection in § 264.278(a);

(4) A list of hazardous constituents reasonably expected to be in, or derived from, the wastes to be land treated based on waste analysis performed pursuant to § 264.13;

(5) The proposed dimensions of the treatment zone;

(c) A description of how the unit is or will be designed, constructed, operated, and maintained in order to meet the requirements of § 264.273. This submission must address the following items:

(1) Control of run-on;

(2) Collection and control of run-off;

(3) Minimization of run-off of hazardous constituents from the treatment zone;

(4) Management of collection and holding facilities associated with run-on and run-off control systems;

(5) Periodic inspection of the unit. This information should be included in the inspection plan submitted under § 270.14(b)(5);

(6) Control of wind dispersal of particulate matter, if applicable;

(d) If food-chain crops are to be grown in or on the treatment zone of the land treatment unit, a description of how the demonstration required under § 264.276(a) will be conducted including:

(1) Characteristics of the food-chain crop for which the demonstration will be made.

(2) Characteristics of the waste, treatment zone, and waste application method and rate to be used in the demonstration;

(3) Procedures for crop growth, sample collection, sample analysis, and data evaluation;

(4) Characteristics of the comparison crop including the location and conditions under which it was or will be grown;

(e) If food-chain crops are to be grown, and cadmium is present in the land-treated waste, a description of how the requirements of § 264.276(b) will be complied with;

(f) A description of the vegetative cover to be applied to closed portions of the facility, and a plan for maintaining such cover during the post-closure care period, as required under § 264.280(a)(8) and § 264.280(c)(2). This information should be included in the closure plan and, where applicable, the post-closure care plan submitted under § 270.14(b)(13);

(g) If ignitable or reactive wastes will be placed in or on the treatment zone, an explanation of how the requirements of § 264.281 will be complied with;

(h) If incompatible wastes, or incompatible wastes and materials, will be placed in or on the same treatment zone, an explanation of how § 264.282 will be complied with.

(i) A waste management plan for EPA Hazardous Waste Nos. FO20,

FO21, FO22, FO23, FO26, and FO27 describing how a land treatment facility is or will be designed, constructed, operated, and maintained to meet the requirements of § 264.283. This submission must address the following items as specified in § 264.283:

(1) The volume, physical, and chemical characteristics of the wastes, including their potential to migrate through soil or to volatilize or escape into the atmosphere;

(2) The attenuative properties of underlying and surrounding soils or other materials;

(3) The mobilizing properties of other materials co-disposed with these wastes; and

(4) The effectiveness of additional treatment, design, or monitoring techniques.

[48 FR 14228, Apr. 1, 1983; 48 FR 30114, June 30, 1983, as amended at 50 FR 2006, Jan. 14, 1985]

§ 270.21 Specific Part B information requirements for landfills.

Except as otherwise provided in § 264.1, owners and operators of facilities that dispose of hazardous waste in landfills must provide the following additional information:

(a) A list of the hazardous wastes placed or to be placed in each landfill or landfill cell;

(b) Detailed plans and an engineering report describing how the landfill is or will be designed, constructed, operated and maintained to comply with the requirements of § 264.301. This submission must address the following items as specified in § 264.301:

(1) The liner system and leachate collection and removal system (except for an existing portion of a landfill). If an exemption from the requirements for a liner and a leachate collection and removal system is sought as provided by § 264.301(b), submit detailed plans and engineering and hydrogeologic reports, as appropriate, describing alternate design and operating practices that will, in conjunction with location aspects, prevent the migration of any hazardous constituent into the ground water or surface water at any future time;

(2) Control of run-on;

(3) Control of run-off;

(4) Management of collection and holding facilities associated with run-on and run-off control systems; and

(5) Control of wind dispersal of particulate matter, where applicable;

(c) If an exemption from Subpart F of Part 264 is sought, as provided by § 264.302(a), the owner or operator must submit detailed plans and an engineering report explaining the location of the saturated zone in relation to the landfill, the design of a double-liner system that incorporates a leak detection system between the liners, and a leachate collection and removal system above the liners;

(d) A description of how each landfill, including the liner and cover systems, will be inspected in order to meet the requirements of § 264.303 (a) and (b). This information should be included in the inspection plan submitted under § 270.14(b)(5).

(e) Detailed plans and an engineering report describing the final cover which will be applied to each landfill or landfill cell at closure in accordance with § 264.310(a), and a description of how each landfill will be maintained and monitored after closure in accordance with § 264.310(b). This information should be included in the closure and post-closure plans submitted under § 270.14(b)(13).

(f) If ignitable or reactive wastes will be landfilled, an explanation of how the standards of § 264.312 will be complied with;

(g) If incompatible wastes, or incompatible wastes and materials will be landfilled, an explanation of how § 264.313 will be complied with;

(h) If bulk or non-containerized liquid waste or wastes containing free liquids is to be landfilled prior to May 8, 1985, an explanation of how the requirements of § 264.314(a) will be complied with;

(i) If containers of hazardous waste are to be landfilled, an explanation of how the requirements of § 264.315 or § 264.316, as applicable, will be complied with.

(j) A waste management plan for EPA Hazardous Waste Nos. FO20, FO21, FO22, FO23, FO26, and FO27 describing how a landfill is or will be designed, constructed, operated, and maintained to meet the requirements of § 264.317. This submission must address the following items as specified in § 264.317:

(1) The volume, physical, and chemical characteristics of the wastes, including their potential to migrate through soil or to volatilize or escape into the atmosphere;

(2) The attenuative properties of underlying and surrounding soils or other materials;

(3) The mobilizing properties of other materials co-disposed with these wastes; and

(4) The effectiveness of additional treatment, design, or monitoring techniques.

[48 FR 14228, Apr. 1, 1983; 48 FR 30114, June 30, 1983, as amended at 50 FR 2006, Jan. 14, 1985; 50 FR 28752, July 15, 1985]

§§ 270.22 [Reserved]

§ 270.23 Specific Part B information requirements for miscellaneous units.

Except as otherwise provided in § 264.600, owners and operators of facilities that treat, store, or dispose of hazardous waste in miscellaneous units must provide the following additional information:

(a) A detailed description of the unit being used or proposed for use, including the following:

(1) Physical characteristics, materials of construction, and dimensions of the unit;

(2) Detailed plans and engineering reports describing how the unit will be located, designed, constructed, operated, maintained, monitored, inspected, and closed to comply with the requirements of §§ 264.601 and 264.602; and

(3) For disposal units, a detailed description of the plans to comply with the post-closure requirements of § 264.603.

(b) Detailed hydrologic, geologic, and meteorologic assessments and land-use maps for the region surrounding the site that address and ensure compliance of the unit with each factor in the environmental performance standards of § 264.601. If the applicant can demonstrate that he does not violate the environmental performance standards of § 264.601 and the Director agrees with such demonstration, preliminary hydrologic, geologic, and meteorologic assessments will suffice.

(c) Information on the potential pathways of exposure of humans or environmental receptors to hazardous waste or hazardous constituents and on the potential magnitude and nature of such exposures.

(d) For any treatment unit, a report on a demonstration of the effectiveness of the treatment based on laboratory or field data.

(e) Any additional information determined by the Director to be necessary for evaluation of compliance of the unit with the environmental performance standards of § 264.601.

(Information collection requirements in this section have been approved by the Office of Management and Budget under control number 2050-0074)

Subpart C—Permit Conditions

§ 270.30 Conditions applicable to all permits.

The following conditions apply to all RCRA permits, and shall be incorporated into the permits either expressly or by reference. If incorporated by reference, a specific citation to these regulations (or the corresponding approved State regulations) must be given in the permit.

(a) *Duty to comply.* The permittee must comply with all conditions of this permit, except that the permittee need not comply with the conditions of this permit to the extent and for the duration such noncompliance is authorized in an emergency permit. (See § 270.61). Any permit noncompliance, except under the terms of an emergency permit, constitutes a violation of the appropriate Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application.

(b) *Duty to reapply.* If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for and obtain a new permit.

(c) *Need to halt or reduce activity not a defense.* It shall not be a defense for a permittee in an enforcement

action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

(d) In the event of noncompliance with the permit, the permittee shall take all reasonable steps to minimize releases to the environment, and shall carry out such measures as are reasonable to prevent significant adverse impacts on human health or the environment.

(e) *Proper operation and maintenance.* The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the opration of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of the permit.

(f) *Permit actions.* This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

(g) *Property rights.* The permit does not convey any property rights of any sort, or any exclusive privilege.

(h) *Duty to provide information.* The permittee shall furnish to the Director, within a reasonable time, any relevant information which the Director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the Director, upon request, copies of records required to be kept by this permit.

(i) *Inspection and entry.* The permittee shall allow the Director, or an authorized representative, upon the presentation of credentials and other documents as may be required by law to:

(1) Enter at reasonable times upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept, under the conditions of this permit;

(2) Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

(3) Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and

(4) Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by RCRA, any substances or parameters at any location.

(j) *Monitoring and records.* (1) Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.

(2) The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, the certification required by § 264.73(b)(9) of this chapter, and records of all data used to complete the application for this permit, for a period of at least 3 years from the date of the sample, measurement, report, certification, or application. This period may be extended by request of the Director at any time. The permittee shall maintain records from all ground-water monitoring wells and associated ground-water surface elevations, for the active life of the facility, and for disposal facilities for the post-closure care period as well.

(3) Records for monitoring information shall include:

(i) The date, exact place, and time of sampling or measurements;

(ii) The individual(s) who performed the sampling or measurements;

(iii) The date(s) analyses were performed;

(iv) The individual(s) who performed the analyses;

(v) The analytical techniques or methods used; and

(vi) The results of such analyses.

(k) *Signatory requirements.* All applications, reports, or information submitted to the Director shall be signed and certified (See § 270.11.)

(l) *Reporting requirements.* (1) *Planned changes.* The permittee shall give notice to the Director as soon as possible of any planned physical alterations or additions to the permitted facility.

(2) *Anticipated noncompliance.* The permittee shall give advance notice to the Director of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements. For a new facility, the permittee may not treat, store, or dispose of hazardous waste; and for a facility being modified, the permittee may not treat, store, or dispose of hazardous waste in the modified portion of the facility, until:

(i) The permittee has submitted to the Director by certified mail or hand delivery a letter signed by the permittee and a registered professional engineer stating that the facility has been constructed or modified in compliance with the permit; and

(ii)(A) The Director has inspected the modified or newly constructed facility and finds it is in compliance with the conditions of the permit; or

(B) Within 15 days of the date of submission of the letter in paragraph (l)(2)(i) of this section, the permittee has not received notice from the Director of his or her intent to inspect, prior inspection is waived and the permittee may commence treatment, storage, or disposal of hazardous waste.

(3) *Transfers.* This permit is not transferable to any person except after notice to the Director. The Director may require modification or revocation and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under RCRA. (See § 270.40)

(4) *Monitoring reports.* Monitoring results shall be reported at the intervals specified elsewhere in this permit.

(5) *Compliance schedules.* Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each schedule date.

(6) *Twenty-four hour reporting.* (i) The permittee shall report any noncompliance which may endanger health or the environment orally within 24 hours from the time the permittee becomes aware of the circumstances, including:

(A) Information concerning release of any hazardous waste that may cause an endangerment to public drinking water supplies.

(B) Any information of a release or discharge of hazardous waste or of a fire or explosion from the HWM facility, which could threaten the environment or human health outside the facility.

(ii) The description of the occurrence and its cause shall include:

(A) Name, address, and telephone number of the owner or operator;

(B) Name, address, and telephone number of the facility;

(C) Date, time, and type of incident;

(D) Name and quantity of material(s) involved;

(E) The extent of injuries, if any;

(F) An assessment of actual or potential hazards to the environment and human health outside the facility, where this is applicable; and

(G) Estimated quantity and disposition of recovered material that resulted from the incident.

(iii) A written submission shall also be provided within 5 days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. The Director may waive the five day written notice requirement in favor of a written report within fifteen days.

(7) *Manifest discrepancy report:* If a significant discrepancy in a manifest is discovered, the permittee must attempt to reconcile the discrepancy. If not resolved within fifteen days, the

permittee must submit a letter report, including a copy of the manifest, to the Director. (See 40 CFR 264.72.)

(8) *Unmanifested waste report:* This report must be submitted to the Director within 15 days of receipt of unmanifested waste. (See 40 CFR 264.76)

(9) *Biennial report:* A biennial report must be submitted covering facility activities during odd numbered calendar years. (See 40 CFR 264.75.)

(10) *Other noncompliance.* The permittee shall report all instances of noncompliance not reported under paragraphs (i)(4), (5), and (6) of this section, at the time monitoring reports are submitted. The reports shall contain the information listed in paragraph (i)(6) of this section.

(11) *Other information.* Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Director, it shall promptly submit such facts or information.

(Clean Water Act (33 U.S.C. 1251 et seq.), Safe Drinking Water Act (42 U.S.C. 300f et seq.), Clean Air Act (42 U.S.C. 7401 et seq.), Resource Conservation and Recovery Act (42 U.S.C. 6901 et seq.))

[48 FR 14228, Apr. 1, 1983, as amended at 48 FR 30114, June 30, 1983; 48 FR 39622, Sept. 1, 1983; 50 FR 28752, July 15, 1985]

§ 270.31 Requirements for recording and reporting of monitoring results.

All permits shall specify:

(a) Requirements concerning the proper use, maintenance, and installation, when appropriate, of monitoring equipment or methods (including biological monitoring methods when appropriate);

(b) Required monitoring including type, intervals, and frequency sufficient to yield data which are representative of the monitored activity including, when appropriate, continuous monitoring;

(c) Applicable reporting requirements based upon the impact of the regulated activity and as specified in Parts 264, 266 and 267. Reporting shall be no less frequent than specified in the above regulations.

§ 270.32 Establishing permit conditions.

(a) In addition to conditions required in all permits (§ 270.30), the Director shall establish conditions, as required on a case-by-case basis, in permits under §§ 270.50 (duration of permits), 270.33(a) (schedules of compliance), 270.31 (monitoring), and for EPA issued permits only, 270.33(b) (alternate schedules of compliance) and 270.3 (considerations under Federal law).

(b)(1) Each RCRA permit shall include permit conditions necessary to achieve compliance with the Act and regulations, including each of the applicable requirements specified in Parts 264 and 266 through 268 of this chapter. In satisfying this provision, the Administrator may incorporate applicable requirements of Parts 264 and 266 through 268 of this chapter directly into the permit or establish other permit conditions that are based on these parts.

(2) Each permit issued under section 3005 of this act shall contain terms and conditions as the Administrator or State Director determines necessary to protect human health and the environment.

(c) For a State issued permit, an applicable requirement is a State statutory or regulatory requirement which takes effect prior to final administrative disposition of a permit. For a permit issued by EPA, an applicable requirement is a statutory or regulatory requirement (including any interim final regulation) which takes effect prior to the issuance of the permit (except as provided in § 124.86(c) for RCRA permits being processed under Subpart E or F of Part 124). Section 124.14 (reopening of comment period) provides a means for reopening EPA permit proceedings at the discretion of the Director where new requirements become effective during the permitting process and are of sufficient magnitude to make additional proceedings desirable. For State and EPA administered programs, an applicable requirement is also any requirement which takes effect prior to the modification or revocation and reissuance of a permit, to the extent allowed in § 270.41.

(d) New or reissued permits, and to the extent allowed under § 270.41, modified or revoked and reissued permits, shall incorporate each of the applicable requirements referenced in this section and in 40 CFR 270.31.

(e) *Incorporation.* All permit conditions shall be incorporated either expressly or by reference. If incorporated by reference, a specific citation to the applicable regulations or requirements must be given in the permit.

[48 FR 14228, Apr. 1, 1983, as amended at 50 FR 28752, July 15, 1985; 51 FR 40653, Nov. 7, 1986]

§ 270.33 Schedules of compliance.

(a) The permit may, when appropriate, specify a schedule of compliance leading to compliance with the Act and regulations.

(1) *Time for compliance.* Any schedules of compliance under this section shall require compliance as soon as possible.

(2) *Interim dates.* Except as provided in paragraph (b)(1)(ii) of this section, if a permit establishes a schedule of compliance which exceeds 1 year from the date of permit issuance, the schedule shall set forth interim requirements and the dates for their achievement.

(i) The time between interim dates shall not exceed 1 year.

(ii) If the time necessary for completion of any interim requirement is more than 1 year and is not readily divisible into stages for completion, the permit shall specify interim dates for the submission of reports of progress toward completion of the interim requirements and indicate a projected completion date.

(3) *Reporting.* The permit shall be written to require that no later than 14 days following each interim date and the final date of compliance, the permittee shall notify the Director in writing, of its compliance or noncompliance with the interim or final requirements.

(b) *Alternative schedules of compliance.* An RCRA permit applicant or permittee may cease conducting regulated activities (by receiving a terminal volume of hazardous waste and, for treatment and storage HWM facilities, closing pursuant to applicable requirements; and, for disposal HWM facilities, closing and conducting post-closure care pursuant to applicable requirements) rather than continue to operate and meet permit requirements as follows:

(1) If the permittee decides to cease conducting regulated activities at a given time within the term of a permit which has already been issued:

(i) The permit may be modified to contain a new or additional schedule leading to timely cessation of activities; or

(ii) The permittee shall cease conducting permitted activities before noncompliance with any interim or final compliance schedule requirement already specified in the permit.

(2) If the decision to cease conducting regulated activities is made before issuance of a permit whose term will include the termination date, the permit shall contain a schedule leading to termination which will ensure timely compliance with applicable requirements.

(3) If the permittee is undecided whether to cease conducting regulated activities, the Director may issue or modify a permit to contain two schedules as follows:

(i) Both schedules shall contain an identical interim deadline requiring a final decision on whether to cease conducting regulated activities no later than a date which ensures sufficient time to comply with applicable requirements in a timely manner if the decision is to continue conducting regulated activities;

(ii) One schedule shall lead to timely compliance with applicable requirements;

(iii) The second schedule shall lead to cessation of regulated activities by a date which will ensure timely compliance with applicable requirements;

(iv) Each permit containing two schedules shall include a requirement that after the permittee has made a final decision under paragraph (b)(3)(i) of this section it shall follow the schedule leading to compliance if the decision is to continue conducting regulated activities, and follow the schedule leading to termination if the decision is to cease conducting regulated activities.

(4) The applicant's or permittee's decision to cease conducting regulated activities shall be evidenced by a firm public commitment satisfactory to the Director, such as resolution of the board of directors of a corporation.

[48 FR 14228, Apr. 1, 1983, as amended at 48 FR 30114, June 30, 1983]

Subpart D—Changes to Permit

§ 270.40 Transfer of permits.

Transfers by modification. A permit may be transferred by the permittee to a new owner or operator only if the permit has been modified or revoked and reissued (under § 270.41(b)(2)), or a minor modification made (under § 270.42(d)), to identify the new permittee and incorporate such other requirements as may be necessary under the appropriate Act.

§ 270.41 Major modification or revocation and reissuance of permits.

When the Director receives any information (for example, inspects the facility, receives information submitted by the permittee as required in the permit (see § 270.30)), receives a request for modification or revocation and reissuance under § 124.5, or conducts a review of the permit file) he or she may determine whether or not one or more of the causes listed in paragraphs (a) and (b) of this section for modification, or revocation and reissuance or both exist. If cause exists, the Director may modify or revoke and reissue the permit accordingly, subject to the limitations of paragraphs (c) of this section, and may request an updated application if necessary. When a permit is modified, only the conditions subject to modification are reopened. If a permit is revoked and reissued, the entire permit is reopened and subject to revision and the permit is reissued for a new term. See 40 CFR 124.5(c)(2). If cause does not exist under this section or 40 CFR 270.42, the Director shall not modify or revoke and reissue the permit. If a permit modification satisfies the criteria in 40 CFR 270.42 for a minor modification, the permit may be modified without a draft permit or public review. Otherwise, a draft permit must be prepared and other procedures in Part 124 (or procedures of an approved State program) followed.

(a) *Causes for modification.* The following are causes for modification, but not revocation and reissuance, of permits; the following may be causes for revocation and reissuance, as well as modification, when the permittee requests or agrees.

(1) *Alterations.* There are material and substantial alterations or additions to the permitted facility or activity which occurred after permit issuance which justify the application of permit conditions that are different or absent in the existing permit.

(2) *Information.* The Director has received information. Permits may be modified during their terms for this cause only if the information was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) and would have justified the application of different permit conditions at the time of issuance.

(3) *New statutory requirements or regulations.* The standards or regulations on which the permit was based have been changed by statute, through promulgation of new or amended standards or regulations, or by judicial decision after the permit was issued. Permits may be modified during their terms for this cause as follows:

(i) Director may modify the permit when the standards or regulations on which the permit was based have been changed by statute or amended standards or regulations.

(ii) Permittee may request modification when:

(A) The permit condition to be modified was based on a promulgated regulation under Parts 124 of this chapter, Parts 260—268 of this chapter, or Part 270 of this chapter; and

(B) EPA has revised, withdrawn, or modified that portion of the regulation on which the permit condition was based; or

(C) A permittee requests modification in accordance with § 124.5 of this chapter within 90 days after FEDERAL REGISTER notice of the action on which the request is based.

(iii) For judicial decisions, a court of competent jurisdiction has remanded and stayed EPA-promulgated regulations if the remand and stay concern that portion of the regulations on which the permit condition was based or if a request is filed by the permittee in accordance with § 124.5 of this chapter within 90 days of judicial remand.

(4) *Compliance schedules.* The Director determines good cause exists for modification of a compliance schedule, such as an act of God, strike, flood, or materials shortage or other events over which the permittee has little or no control and for which there is no reasonably available remedy.

(5) The Director may also modify a permit:

(i) When modification of a closure plan is required under § 264.112(b) or § 264.118(b).

(ii) After the Director receives the notification of expected closure under § 264.113, when the Director determines that extension of the 90 to 180 day periods under § 264.113, modification of the 30-year post-closure period under § 264.117(a), continuation of security requirements under § 264.117(b), or permission to disturb the integrity of the containment system under § 264.117(c) are unwarranted.

(iii) When the permittee has filed a request under § 264.147(c) for a variance to the level of financial responsibility or when the Director demonstrates under § 264.147(d) that an upward adjustment of the level of financial responsibility is required.

(iv) When the corrective action program specified in the permit under § 264.100 has not brought the regulated unit into compliance with the ground-water protection standard within a reasonable period of time.

(v) To include a detection monitoring program meeting the requirements of § 264.98, when the owner or operator has been conducting a compliance monitoring program under § 264.99 or a corrective action program under § 264.100 and compliance period ends before the end of the post-closure care period for the unit.

(vi) When a permit requires a compliance monitoring program under § 264.99, but monitoring data collected prior to permit issuance indicate that the facility is exceeding the ground-water protection standard.

(vii) To include conditions applicable to units at a facility that were not previously included in the facility's permit.

(viii) When a land treatment unit is not achieving complete treatment of hazardous constituents under its current permit conditions.

(6) Notwithstanding any other provision in this section, when a permit for a land disposal facility is reviewed by the Director under § 270.50(d), the Director shall modify the permit as necessary to assure that the facility continues to comply with the currently applicable requirements in Parts 124, 260 through 266, and 270.

(b) *Causes for modification or revocation and reissuance.* The following are causes to modify or, alternatively, revoke and reissue a permit:

(1) Cause exists for termination under § 270.43, and the Director determines that modification or revocation and reissuance is appropriate.

(2) The Director has received notification (as required in the permit, see § 270.30(l)(3)) of a proposed transfer of the permit.

(c) *Facility siting.* Suitability of the facility location will not be considered at the time of permit modification or revocation and reissuance unless new information or standards indicate that a threat to human health or the environmental exists which was unknown at the time of permit issuance.

[48 FR 14228, Apr. 1, 1983, as amended at 48 FR 30114, June 30, 1983; 50 FR 28752, July 15, 1985; 52 FR 45799, Dec. 1, 1987]

§ 270.42 Minor modifications of permits.

Upon the consent of the permittee, the Director may modify a permit to make the corrections or allowances for changes in the permitted activity listed in this section, without following the procedures of Part 124. Any permit modification not processed as a minor modification under this section must be made for cause and with Part 124 draft permit and public notice as required in § 270.41. Minor modifications may only:

(a) Correct typographical errors;

(b) Require more frequent monitoring or reporting by the permittee;

(c) Change an interim compliance date in a schedule of compliance, provided the new date is not more than 120 days after the date specified in the existing permit and does not interfere with attainment of the final compliance date requirement;

(d) Allow for a change in ownership or operational control of a facility where the Director determines that no other change in the permit is necessary, provided that a written agreement containing a specific date for transfer of permit responsibility between the current and new permittees has been submitted to the Director. Changes in the ownership or operational control of a facility may be made if the new owner or operator submits a revised permit application no later than 90 days prior to the scheduled change. When a transfer of ownership or operational control of a facility occurs, the old owner or operator shall comply with the requirements of 40 CFR Part 264, Subpart H (Financial Requirements), until the new owner or operator has demonstrated to the Director that he is complying with the requirements of that subpart. The new owner or operator must demonstrate compliance with Subpart H requirements within six months of the date of the change in the ownership or operational control of the facility. Upon demonstration to the Director by the new owner or operator of compliance with Subpart H, the Director shall notify the old owner or operator in writing that he no longer needs to comply with Subpart H as of the date of demonstration.

(e) Change the lists of facility emergency coordinators or equipment in the permit's contingency plan;

(f) Change estimates of maximum inventory under § 264.112(a)(2);

(g) Change estimates of expected year of closure or schedules for final closure under § 264.112(a)(4);

(h) Approve periods longer than 90 days or 180 days under § 264.113 (a) and (b);

(i) Change the ranges of the operating requirements set in the permit to reflect the results of the trial burn, provided that the change is minor;

(j) Change the operating requirements set in the permit for conducting a trial burn, provided that the change is minor;

(k) Grant one extension of the time period for determining operational readiness following completion of construction, for up to 720 hours operating time for treatment of hazardous waste;

(l) Change the treatment program requirements for land treatment units under § 264.271 to improve treatment of hazardous constituents, provided that the change is minor;

(m) Change any conditions specified in the permit for land treatment units to reflect the results of field tests or laboratory analyses used in making a treatment demonstration in accordance with § 270.63, provided that the change is minor; and

(n) Allow a second treatment demonstration for land treatment to be conducted when the results of the first demonstration have not shown the conditions under which the waste or wastes can be treated completely as required by § 254.272(a), provided that the conditions for the second demonstration are substantially the same as the conditions for the first demonstration.

(o) Allow treatment of hazardous wastes not previously specified in the permit if:

(1) The hazardous waste has been prohibited from one or more methods of land disposal under Part 268 Subpart C or RCRA section 3004;

(2) Treatment is in accordance with § 268.4 (if applicable), § 268.3; and:

(i) Treatment is in accordance with applicable standards established under § 268.41, § 268.42, or § 268.44; or

(ii) Where no treatment standards have been established, treatment renders the waste no longer subject to the applicable prohibitions set forth in § 268.32 or RCRA section 3004.

(3) Handling and treatment of the restricted waste will not present risks substantially different from those of wastes listed in the permit; and

(4) Federal or State approval of a minor permit modification request is granted. No permit changes can occur except for the addition of new waste codes and administrative or technical changes necessary to handle new wastes. Changes in treatment processes or physical equipment may not be made under this paragraph.

(p) Allow permitted facilities to change their operations to treat or store hazardous wastes subject to land disposal restrictions imposed by Part 268 or RCRA § 3004 provided such treatment or storage occurs in containers or tanks and the permittee:

(1) Requests a major permit modification pursuant to § 124.5 and § 270.41;

(2) Demonstrates in the major permit modification request that the treatment or storage is necessary to comply with the land disposal restrictions of Part 268 or RCRA section 3004; and

(3) Ensures that the treatment or storage units comply with the applicable Part 265 and part 268 standards pending final administrative disposition of the major modification request. The authorization to make changes conferred in this paragraph shall terminate upon final administrative disposition of the permittee's major modification request under § 270.41 or termination of the permit under § 270.43.

[48 FR 14228, Apr. 1, 1983, as amended at 51 FR 16458, May 2, 1986; 51 FR 40653, Nov. 7, 1986; 52 FR 25792, July 8, 1987]

§ 270.43 Termination of permits.

(a) The following are causes for terminating a permit during its term, or for denying a permit renewal application:

(1) Noncompliance by the permittee with any condition of the permit;

(2) The permittee's failure in the application or during the permit issuance process to disclose fully all relevant facts, or the permittee's misrepresentation of any relevant facts at any time; or

(3) A determination that the permitted activity endangers human health or the environment and can only be regulated to acceptable levels by permit modification or termination.

(b) The Director shall follow the applicable procedures in Part 124 or State procedures in terminating any permit under this section.

Subpart E—Expiration and Continuation of Permits

§ 270.50 Duration of permits.

(a) RCRA permits shall be effective for a fixed term not to exceed 10 years.

(b) Except as provided in § 270.51, the term of a permit shall not be extended by modification beyond the maximum duration specified in this section.

(c) The Director may issue any permit for a duration that is less than the full allowable term under this section.

(d) Each permit for a land disposal facility shall be reviewed by the Director five years after the date of permit issuance or reissuance and shall be modified as necessary, as provided in § 270.41.

[48 FR 14228, Apr. 1, 1983, as amended at 50 FR 28752, July 15, 1985]

§ 270.51 Continuation of expiring permits.

(a) *EPA permits.* When EPA is the permit-issuing authority, the conditions of an expired permit continue in force under 5 U.S.C. 558(c) until the effective date of a new permit (see § 124.15) if:

(1) The permittee has submitted a timely application under § 270.14 and the applicable sections, in §§ 270.15 through 270.29 which is a complete (under § 270.10(c)) application for a new permit; and

(2) The Regional Administrator through no fault of the permittee, does not issue a new permit with an effective date under § 124.15 on or before the expiration date of the previous permit (for example, when issuance is impracticable due to time or resource constraints).

(b) *Effect.* Permits continued under this section remain fully effective and enforceable.

(c) *Enforcement.* When the permittee is not in compliance with the conditions of the expiring or expired permit, the Regional Administrator may choose to do any or all of the following:

(1) Initiate enforcement action based upon the permit which has been continued;

(2) Issue a notice of intent to deny the new permit under § 124.6. If the permit is denied, the owner or operator would then be required to cease the activities authorized by the continued permit or be subject to enforcement action for operating without a permit;

(3) Issue a new permit under Part 124 with appropriate conditions; or

(4) Take other actions authorized by these regulations.

(d) *State continuation.* In a State with an hazardous waste program authorized under 40 CFR Part 271, if a permittee has submitted a timely and complete application under applicable State law and regulations, the terms and conditions of an EPA-issued RCRA permit continue in force beyond the expiration date of the permit, but only until the effective date of the State's issuance or denial of a State RCRA permit.

(Clean Water Act (33 U.S.C. 1251 et seq.), Safe Drinking Water Act (42 U.S.C. 300f et seq.), Clean Air Act (42 U.S.C. 7401 et seq.), Resource Conservation and Recovery Act (42 U.S.C. 6901 et seq.))

[48 FR 14228, Apr. 1, 1983, as amended at 48 FR 39622, Sept. 1, 1983]

Subpart F—Special Forms of Permits

§ 270.60 Permits by rule.

Notwithstanding any other provision of this part or Part 124, the following shall be deemed to have a RCRA permit if the conditions listed are met:

(a) *Ocean disposal barges or vessels.* The owner or operator of a barge or other vessel which accepts hazardous waste for ocean disposal, if the owner or operator:

(1) Has a permit for ocean dumping issued under 40 CFR Part 220 (Ocean Dumping, authorized by the Marine Protection, Research, and Sanctuaries Act, as amended, 33 U.S.C. 1420 *et seq.*);

(2) Complies with the conditions of that permit; and

(3) Complies with the following hazardous waste regulations:

(i) 40 CFR 264.11, Identification number;

(ii) 40 CFR 264.71, Use of manifest system;

(iii) 40 CFR 264.72, Manifest discrepancies;

(iv) 40 CFR 264.73(a) and (b)(1), Operating record;

(v) 40 CFR 264.75, Biennial report; and

(vi) 40 CFR 264.76, Unmanifested waste report.

(b) *Injection wells.* The owner or operator of an injection well disposing of hazardous waste, if the owner or operator:

(1) Has a permit for underground injection issued under Part 144 or 145; and

(2) Complies with the conditions of that permit and the requirements of § 144.14 (requirements for wells managing hazardous waste).

(3) For UIC permits issued after November 8, 1984:

(i) Complies with 40 CFR 264.101; and

(ii) Where the UIC well is the only unit at a facility which requires a RCRA permit, complies with 40 CFR 270.14(d).

(c) *Publicly owned treatment works.* The owner or operator of a POTW which accepts for treatment hazardous waste, if the owner or operator:

(1) Has an NPDES permit;

(2) Complies with the conditions of that permit; and

(3) Complies with the following regulations:

(i) 40 CFR 264.11, Identification number;

(ii) 40 CFR 264.71, Use of manifest system;

(iii) 40 CFR 264.72, Manifest discrepancies;

(iv) 40 CFR 264.73(a) and (b)(1), Operating record;

(v) 40 CFR 264.75, Biennial report;

(vi) 40 CFR 264.76, Unmanifested waste report; and

(vii) For NPDES permits issued after November 8, 1984, 40 CFR 264.101.

(4) If the waste meets all Federal, State, and local pretreatment requirements which would be applicable to the waste if it were being discharged into the POTW through a sewer, pipe, or similar conveyance.

(Approved by the Office of Management and Budget under control number 2050-0007)

[48 FR 14228, Apr. 1, 1983, as amended at 50 FR 28752, July 15, 1985; 52 FR 45799, Dec. 1, 1987]

§ 270.61 Emergency permits.

(a) Notwithstanding any other provision of this part or Part 124, in the event the Director finds an imminent and substantial endangerment to human health or the environment the Director may issue a temporary emergency permit: (1) To a non-permitted facility to allow treatment, storage, or disposal of hazardous waste or (2) to a permitted facility to allow treatment, storage, or disposal of a hazardous waste not covered by an effective permit.

(b) This emergency permit:

(1) May be oral or written. If oral, it shall be followed in five days by a written emergency permit;

(2) Shall not exceed 90 days in duration;

(3) Shall clearly specify the hazardous wastes to be received, and the manner and location of their treatment, storage, or disposal;

(4) May be terminated by the Director at any time without process if he or she determines that termination is appropriate to protect human health and the environment;

(5) Shall be accompanied by a public notice published under § 124.11(b) including:

(i) Name and address of the office granting the emergency authorization;

(ii) Name and location of the permitted HWM facility;

(iii) A brief description of the wastes involved;

(iv) A brief description of the action authorized and reasons for authorizing it; and

(v) Duration of the emergency permit; and

(6) Shall incorporate, to the extent possible and not inconsistent with the emergency situation, all applicable requirements of this part and 40 CFR Parts 264 and 266.

[48 FR 14228, Apr. 1, 1983, as amended at 48 FR 30114, June 30, 1983]

§ 270.62 Hazardous waste incinerator permits.

(a) For the purposes of determining operational readiness following completion of physical construction, the Director must establish permit conditions, including but not limited to allowable waste feeds and operating conditions, in the permit to a new hazardous waste incinerator. These permit conditions will be effective for the minimum time required to bring the incinerator to a point of operational readiness to conduct a trial burn, not to exceed 720 hours operating time for treatment of hazardous waste. The Director may extend the duration of this operational period once, for up to 720 additional hours, at the request of the applicant when good cause is shown. The permit may be modified to reflect the extension according to § 270.42 (Minor modifications of permits) of this chapter.

(1) Applicants must submit a statement, with Part B of the permit application, which suggests the conditions necessary to operate in compliance with the performance standards of § 264.343 of this chapter during this period. This statement should include, at a minimum, restrictions on waste constituents, waste feed rates and the operating parameters identified in § 264.345 of this chapter.

(2) The Director will review this statement and any other relevant information submitted with Part B of the permit application and specify requirements for this period sufficient to meet the performance standards of § 264.343 of this chapter based on his engineering judgment.

(b) For the purposes of determining feasibility of compliance with the performance standards of § 264.343 of this chapter and of determining adequate operating conditions under § 264.345 of this chapter, the Director must establish conditions in the permit for a new hazardous waste incinerator to be effective during the trial burn.

(1) Applicants must propose a trial burn plan, prepared under paragraph (b)(2) of this section with a Part B of the permit application.

(2) The trial burn plan must include the following information:

(i) An analysis of each waste or mixture of wastes to be burned which includes:

(A) Heat value of the waste in the form and composition in which it will be burned.

(B) Viscosity (if applicable), or description of the physical form of the waste.

(C) An identification of any hazardous organic constituents listed in Part 261, Appendix VIII of this chapter, which are present in the waste to be burned, except that the applicant need not analyze for constituents listed in Part 261, Appendix VIII, of this chapter which would reasonably not be expected to be found in the waste. The constituents excluded from analysis must be identified, and the basis for the exclusion stated. The waste analysis must rely on analytical techniques specified in "Test Methods for the Evaluation of Solid Waste, Physical/Chemical Methods" (incorporated by reference, see § 270.6), or other equivalent.

(D) An approximate quantification of the hazardous constituents identified in the waste, within the precision produced by the analytical methods specified in "Test Methods for the Evaluation of Solid Waste, Physical/Chemical Methods," (incorporated by reference, see § 270.6), or their equivalent.

(ii) A detailed engineering description of the incinerator for which the permit is sought including:

(A) Manufacturer's name and model number of incinerator (if available).

(B) Type of incinerator.

(C) Linear dimensions of the incinerator unit including the cross sectional area of combustion chamber.

(D) Description of the auxiliary fuel system (type/feed).

(E) Capacity of prime mover.

(F) Description of automatic waste feed cut-off system(s).

(G) Stack gas monitoring and pollution control equipment.

(H) Nozzle and burner design.

(I) Construction materials.

(J) Location and description of temperature, pressure and flow indicating and control devices.

(iii) A detailed description of sampling and monitoring procedures, including sampling and monitoring locations in the system, the equipment to be used, sampling and monitoring frequency, and planned analytical procedures for sample analysis.

(iv) A detailed test schedule for each waste for which the trial burn is planned including date(s), duration, quantity of waste to be burned, and other factors relevant to the Director's decision under paragraph (b)(5) of this section.

(v) A detailed test protocol, including, for each waste identified, the ranges of temperature, waste feed rate, combustion gas velocity, use of auxiliary fuel, and any other relevant parameters that will be varied to affect the destruction and removal efficiency of the incinerator.

(vi) A description of, and planned operating conditions for, any emission control equipment which will be used.

(vii) Procedures for rapidly stopping waste feed, shutting down the incinerator, and controlling emissions in the event of an equipment malfunction.

(viii) Such other information as the Director reasonably finds necessary to determine whether to approve the trial burn plan in light of the purposes of this paragraph and the criteria in paragraph (b)(5) of this section.

(3) The Director, in reviewing the trial burn plan, shall evaluate the sufficiency of the information provided and may require the applicant to supplement this information, if necessary, to achieve the purposes of this paragraph.

(4) Based on the waste analysis data in the trial burn plan, the Director will specify as trial Principal Organic Hazardous Constituents (POHCs), those constituents for which destruction and removal efficiencies must be calculated during the trial burn. These trial POHCs will be specified by the Director based on his estimate of the difficulty of incineration of the constituents identified in the waste analysis, their concentration or mass in the waste feed, and, for wastes listed in Part 261, Subpart D, of this chapter, the hazardous waste organic constituent or constituents identified in Appendix VII of that part as the basis for listing.

(5) The Director shall approve a trial burn plan if he finds that:

(i) The trial burn is likely to determine whether the incinerator performance standard required by § 264.343 of this chapter can be met;

(ii) The trial burn itself will not present an imminent hazard to human health or the environment;

(iii) The trial burn will help the Director to determine operating requirements to be specified under § 264.345 of this chapter; and

(iv) The information sought in paragraphs (b)(5) (i) and (ii) of this section cannot reasonably be developed through other means.

(6) During each approved trial burn (or as soon after the burn as is practicable), the applicant must make the following determinations:

(i) A quantitative analysis of the trial POHCs in the waste feed to the incinerator.

(ii) A quantitative analysis of the exhaust gas for the concentration and mass emissions of the trial POHCs, oxygen (O_2) and hydrogen chloride (HCl).

(iii) A quantitative analysis of the scrubber water (if any), ash residues, and other residues, for the purpose of estimating the fate of the trial POHCs.

(iv) A computation of destruction and removal efficiency (DRE), in accordance with the DRE formula specified in § 264.343(a) of this chapter.

(v) If the HCl emission rate exceeds 1.8 kilograms of HCl per hour (4 pounds per hour), a computation of HCl removal efficiency in accordance with § 264.343(b) of this chapter.

(vi) A computation of particulate emissions, in accordance with § 264.343(c) of this chapter.

(vii) An identification of sources of fugitive emissions and their means of control.

(viii) A measurement of average, maximum, and minimum temperatures and combustion gas velocity.

(ix) A continuous measurement of carbon monoxide (CO) in the exhaust gas.

(x) Such other information as the Director may specify as necessary to ensure that the trial burn will determine compliance with the performance standards in § 264.343 of this chapter and to establish the operating conditions required by § 264.345 of this chapter as necessary to meet that performance standard.

(7) The applicant must submit to the Director a certification that the trial burn has been carried out in accordance with the approved trial burn plan, and must submit the results of all the determinations required in paragraph (b)(6) of this section. This submission shall be made within 90 days of completion of the trial burn, or later if approved by the Director.

(8) All data collected during any trial burn must be submitted to the Director following the completion of the trial burn.

(9) All submissions required by this paragraph must be certified on behalf of the applicant by the signature of a person authorized to sign a permit application or a report under § 270.11.

(10) Based on the results of the trial burn, the Director shall set the operating requirements in the final permit according to § 264.345 of this chapter. The permit modification shall proceed as a minor modification according to § 270.42.

(c) For the purposes of allowing operation of a new hazardous waste incinerator following completion of the trial burn and prior to final modification of the permit conditions to reflect the trial burn results, the Director may establish permit conditions, including but not limited to allowable waste feeds and operating conditions sufficient to meet the requirements of § 264.345 of this chapter, in the permit to a new hazardous waste incinerator. These permit conditions will be effective for the minimum time required to complete sample analysis, data computation and submission of the trial burn results by the applicant, and modification of the facility permit by the Director.

(1) Applicants must submit a statement, with Part B of the permit application, which identifies the conditions necessary to operate in compliance with the performance standards of § 264.343 of this chapter, during this period. This statement should include, at a minimum, restrictions on waste constituents, waste feed rates, and the operating parameter § 264.345 of this chapter.

(2) The Director will review this statement, and any other relevant information submitted with Part B of the permit application and specify those requirements for this period most likely to meet the performance standards of § 264.343 of this chapter based on his engineering judgment.

(d) For the purposes of determining feasibility of compliance with the performance standards of § 264.343 of this chapter and of determining adequate operating conditions under § 264.345 of this chapter, the applicant for a permit to an existing hazardous waste incinerator may prepare and submit a trial burn plan and perform a trial burn in accordance with paragraphs (b)(2) through (9) of this section. Applicants who submit trial burn plans and receive approval before submission of a permit application must complete the trial burn and submit the results, specified in paragraph (b)(6), with Part B of the permit application. If completion of this process conflicts with the date set for submission of the Part B application, the applicant must contact the Director to establish a later date for submission of the Part B application or the trial burn results. If the applicant submits a trial burn plan with Part B of the permit application, the trial burn must be conducted and the results submitted within a time period to be specified by the Director.

§ 270.63 Permits for land treatment demonstrations using field test or laboratory analyses.

(a) For the purpose of allowing an owner or operator to meet the treatment demonstration requirements of § 264.272 of this chapter, the Director may issue a treatment demonstration permit. The permit must contain only those requirements necessary to meet the standards in § 264.272(c). The permit may be issued either as a treatment or disposal permit covering only the field test or laboratory analyses, or as a two-phase facility permit covering the field tests, or laboratory analyses, and design, construction operation and maintenance of the land treatment unit.

(b) The Director may issue a two-phase facility permit if he finds that, based on information submitted in Part B of the application, substantial, although incomplete or inconclusive, information already exists upon which to base the issuance of a facility permit.

(2) If the Director finds that not enough information exists upon which he can establish permit conditions to attempt to provide for compliance with all of the requirements of Subpart M, he must issue a treatment demonstration permit covering only the field test or laboratory analyses.

(b) If the Director finds that a phased permit may be issued, he will establish, as requirements in the first phase of the facility permit, conditions for conducting the field tests or laboratory analyses. These permit conditions will include design and operating parameters (including the duration of the tests or analyses and, in the case of field tests, the horizontal and vertical dimensions of the treatment zone), monitoring procedures, post-demonstration clean-up activities, and any other conditions which the Director finds may be necessary under § 264.272(c). The Director will include conditions in the second phase of the facility permit to attempt to meet all Subpart M requirements pertaining to unit design, construction, operation, and maintenance. The Director will establish these conditions in the second phase of the permit based upon the substantial, but incomplete, or inconclusive information contained in the Part B application.

(1) The first phase of the permit will be effective as provided in § 124.15(b) of this chapter.

(2) The second phase of the permit will be effective as provided in paragraph (d) of this section.

(c) When the owner or operator who has been issued a two-phase permit has completed the treatment demonstration, he must submit to the Director a certification, signed by a person authorized to sign a permit application or report under § 270.11, that the field tests or laboratory analyses have been carried out in accordance with the conditions specified in phase one of the permit for conducting such tests or analyses. The owner or operator must also submit all data collected during the field tests or laboratory analyses within 90 days of completion of those tests or analyses unless the Director approves a later date.

(d) If the Director determines that the results of the field tests or laboratory analyses meet the requirements of § 264.272 of this chapter, he will modify the second phase of the permit to incorporate any requirements necessary for operation of the facility in compliance with Part 264, Subpart M, of this chapter, based upon the results of the field tests or laboratory analyses.

(1) This permit modification may proceed as a minor modification under § 270.42, provided any such change is minor, or otherwise will proceed as a modification under § 270.41(a)(2).

(2) If no modifications of the second phase of the permit are necessary, or if only minor modifications are necessary and have been made, the Director will give notice of his final decision to the permit applicant and to each person who submitted written comments on the phased permit or who requested notice of the final decision on the second phase of the permit. The second phase of the permit then will become effective as specified in § 124.15(b).

(3) If modifications under § 270.41(a)(2) are necessary, the second phase of the permit will become effective only after those modifications have been made.

§ 270.64 Interim permits for UIC wells.

The Director may issue a permit under this part to any Class I UIC well (see § 144.6) injecting hazardous wastes within a State in which no UIC program has been approved or promulgated. Any such permit shall apply and insure compliance with all applicable requirements of 40 CFR Part 264, Subpart R (RCRA standards for wells), and shall be for a term not to exceed two years. No such permit shall be issued after approval or promulgation of a UIC program in the State. Any permit under this section shall contain a condition providing that it will terminate upon final action by the Director under a UIC program to issue or deny a UIC permit for the facility.

[48 FR 14228, Apr. 1, 1983; 48 FR 30114, June 30, 1983]

§ 270.65 Research, development, and demonstration permits.

(a) The Administrator may issue a research, development, and demonstration permit for any hazardous waste treatment facility which proposes to utilize an innovative and experimental hazardous waste treatment technology or process for which permit standards for such experimental activity have not been promulgated under Part 264 or 266. Any such permit shall include such terms and conditions as will assure protection of human health and the environment. Such permits:

(1) Shall provide for the construction of such facilities as necessary, and for operation of the facility for not longer than one year unless renewed as provided in paragraph (d) of this section, and

(2) Shall provide for the receipt and treatment by the facility of only those types and quantities of hazardous waste which the Administrator deems necessary for purposes of determining the efficacy and performance capabilities of the technology or process and the effects of such technology or process on human health and the environment, and

(3) Shall include such requirements as the Administrator deems necessary to protect human health and the environment (including, but not limited to, requirements regarding monitoring, operation, financial responsibility, closure, and remedial action), and such requirements as the Administrator deems necessary regarding testing and providing of information to the Administrator with respect to the operation of the facility.

(b) For the purpose of expediting review and issuance of permits under this section, the Administrator may, consistent with the protection of human health and the environment, modify or waive permit application and permit issuance requirements in Parts 124 and 270 except that there may be no modification or waiver of regulations regarding financial responsibility (including insurance) or of procedures regarding public participation.

(c) The Administrator may order an immediate termination of all oper-

ations at the facility at any time he determines that termination is necessary to protect human health and the environment.

(d) Any permit issued under this section may be renewed not more than three times. Each such renewal shall be for a period of not more than 1 year.

[50 FR 28752, July 15, 1985]

Subpart G—Interim Status

§ 270.70 Qualifying for interim status.

(a) Any person who owns or operates an "existing HWM facility" or a facility in existence on the effective date of statutory or regulatory amendments under the Act that render the facility subject to the requirement to have an RCRA permit shall have interim status and shall be treated as having been issued a permit to the extent he or she has:

(1) Complied with the requirements of section 3010(a) of RCRA pertaining to notification of hazardous waste activity.

[*Comment*: Some existing facilities may not be required to file a notification under section 3010(a) of RCRA. These facilities may qualify for interim status by meeting paragraph (a)(2) of this section.]

(2) Complied with the requirements of § 270.10 governing submission of Part A applications;

(b) Failure to qualify for interim status. If EPA has reason to believe upon examination of a Part A application that it fails to meet the requirements of § 270.13, it shall notify the owner or operator in writing of the apparent deficiency. Such notice shall specify the grounds for EPA's belief that the application is deficient. The owner or operator shall have 30 days from receipt to respond to such a notification and to explain or cure the alleged deficiency in his Part A application. If, after such notification and opportunity for response, EPA determines that the application is deficient it may take appropriate enforcement action.

(c) Paragraph (a) of this section shall not apply to any facility which has been previously denied a RCRA permit or if authority to operate the facility under RCRA has been previously terminated.

[48 FR 14228, Apr. 1, 1983, as amended at 49 FR 17718, Apr. 24, 1984; 50 FR 28753, July 15, 1985]

§ 270.71 Operation during interim status.

(a) During the interim status period the facility shall not:

(1) Treat, store, or dispose of hazardous waste not specified in Part A of the permit application;

(2) Employ processes not specified in Part A of the permit application; or

(3) Exceed the design capacities specified in Part A of the permit application.

(b) Interim status standards. During interim status, owners or operators shall comply with the interim status standards at 40 CFR Part 265.

§ 270.72 Changes during interim status.

(a) New hazardous wastes not previously identified in Part A of the permit application may be treated, stored, or disposed of at a facility if the owner or operator submits a revised Part A permit application prior to such a change;

(b) Increases in the design capacity of processes used at a facility may be made if the owner or operator submits a revised Part A permit application prior to such a change (along with a justification explaining the need for the change) and the Director approves the change because of a lack of available treatment, storage, or disposal capacity at other hazardous waste management facilities;

(c) Changes in the processes for the treatment, storage, or disposal of hazardous waste may be made at a facility or additional processes may be added if the owner or operator submits a revised Part A permit application prior to such a change (along with a justification explaining the need for the change) and the Director approves the change because:

(1) It is necessary to prevent a threat to human health or the environment because of an emergency situation, or

(2) It is necessary to comply with Federal regulations (including the interim status standards at 40 CFR Part 265) or State or local laws.

(d) Changes in the ownership or operational control of a facility may be made if the new owner or operator submits a revised Part A permit application no later than 90 days prior to the scheduled change. When a transfer of ownership or operational control of a facility occurs, the old owner or operator shall comply with the requirements of 40 CFR Part 265, Subpart H (Financial Requirements), until the new owner or operator has demonstrated to the Director that he is complying with the requirements of that subpart. The new owner or operator must demonstrate compliance with Subpart H requirements within six months of the date of the change in the ownership or operational control of the facility. Upon demonstration to the Director by the new owner or operator of compliance with Subpart H, the Director shall notify the old owner or operator in writing that he no longer needs to comply with Subpart H as of the date of demonstration. All other interim status duties are transferred effective immediately upon the date of the change of ownership or operational control of the facility.

(e) In no event shall changes be made to an HWM facility during interim status which amount to reconstruction of the facility. Reconstruction occurs when the capital investment in the changes to the facility exceeds fifty percent of the capital cost of a comparable entirely new HWM facility. Changes prohibited under this paragraph do not include changes to treat or store in containers or tanks hazardous wastes subject to land disposal restrictions imposed by Part 268 or RCRA section 3004, provided that such changes are made solely for the purpose of complying with Part 268 or RCRA section 3004.

[48 FR 14228, Apr. 1, 1983, as amended at 51 FR 16459, May 2, 1986; 51 FR 25486, July 14, 1986; 52 FR 25792, July 8, 1987]

§ 270.73 Termination of interim status.

Interim status terminates when:

(a) Final administrative disposition of a permit application is made; or

(b) Interim status is terminated as provided in § 270.10(e)(5).

(c) For owners or operators of each land disposal facility which has been granted interim status prior to November 8, 1984, on November 8, 1985, unless:

(1) The owner or operator submits a Part B application for a permit for such facility prior to that date; and

(2) The owner or operator certifies that such facility is in compliance with all applicable ground-water monitoring and financial responsibility requirements.

(d) For owners or operators of each land disposal facility which is in existence on the effective date of statutory or regulatory amendments under the Act that render the facility subject to the requirement to have a RCRA permit and which is granted interim status, twelve months after the date on which the facility first becomes subject to such permit requirement unless the owner or operator of such facility:

(1) Submits a Part B application for a RCRA permit for such facility before the date 12 months after the date on which the facility first becomes subject to such permit requirement; and

(2) Certifies that such facility is in compliance with all applicable ground water monitoring and financial responsibility requirements.

(e) For owners or operators of each incinerator facility on November 8, 1989, unless the owner or operator of the facility submits a Part B application for a RCRA permit for an incinerator facility by November 8, 1986.

(f) For owners or operators of any facility (other than a land disposal or an incinerator facility) on November 8, 1992, unless the owner or operator of the facility submits a Part B application for a RCRA permit for the facility by November 8, 1988.

(Approved by the Office of Management and Budget under control number 2050-0037)

[48 FR 14228, Apr. 1, 1983, as amended at 50 FR 28753, July 15, 1985]

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS, TEXAS 75202-2733

November 14, 1989

Mr. Boyd Hamilton
Environmental Supervisor
Environmental Improvement Division
The Health and Environment Department
P.O. Box 968
Santa Fe, New Mexico 87504-0968

Dear Mr. Hamilton:

I have enclosed the Hazardous and Solid Waste Amendments (HSWA) permit for Cannon Air Force Base (NM7572124454). If you have any questions, please contact Richard Mayer of my staff at (214) 655-6775.

Sincerely yours,

WK Honker

William K. Honker
Chief
RCRA Permits Branch

Enclosure

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS, TEXAS 75202

November 14, 1989

Colonel David Benson, Commander
27 Combat Support Group
Cannon Air Force Base
New Mexico 88103

Re: Transmittal of Hazardous Waste Permit for
Cannon Air Force Base
NM7572124454

Dear Colonel Benson:

Enclosed is a copy of your permit to operate a hazardous waste facility, under the Hazardous and Solid Waste Amendments of 1984 (HSWA). Also enclosed is EPA's response to the changes in the draft HSWA permit.

The New Mexico Environmental Improvement Division (NMEID) and the Environmental Protection Agency (EPA) have entered into a joint permitting agreement, whereby permits may be issued in New Mexico in accordance with the New Mexico Hazardous Waste Management Act, as well as RCRA. The agreement will remain effective until the State hazardous waste program receives authorization under RCRA to administer HSWA. In order for an applicant to have a fully effective permit, both the NMEID and the EPA must issue the permit.

This letter transmits a copy of your HSWA permit with the necessary signature for EPA approval for permit issuance. The RCRA part of the full permit will be sent to you by the NMEID. The permit will become effective on the date indicated. The provisions of this permit may be appealed within 30 days of issuance, pursuant to 40 CFR 124.19.

If you have any questions, please contact Bill Gallagher of my staff at (214 655-6775.

Sincerely yours,

Allyn M. Davis
Director
Hazardous Waste Management Division

Enclosure

cc: Richard Mitzefelt
New Mexico Environmental Improvement Division

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, REGION 6

HAZARDOUS WASTE PERMIT (HAZARDOUS AND SOLID WASTE AMENDMENTS, 1984)

PERMITTEE: Cannon Air Force Base

OWNER: U.S. Air Force

LOCATION: 27th CSG/CC

Cannon Air Force Base, New Mexico 88103

I.D. NUMBER: NM7572124454

EFFECTIVE DATE: December 17, 1989 RFI due 180 days June 15, 1990

EXPIRATION DATE: December 17, 1999

Pursuant to the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act (RCRA), as amended (42 U.S.C. 6901, et seq.) and the Hazardous and Solid Waste Amendments of 1984 (HSWA), a permit is issued to Cannon Air Force Base (hereafter called the Permittee) to operate a hazardous waste disposal facility at the location stated above.

The Permittee must comply with all the terms and conditions of this permit. This permit consists of the conditions contained herein (including the attachments). Said conditions are needed to ensure that the Permittee's hazardous waste management activities comply with all applicable Federal, statutory and regulatory requirements. Applicable requirements are those which are found in, referenced in, or incorporated into that version of RCRA or the regulations promulgated pursuant to RCRA that are in effect on the date this permit is issued. (See 40 CFR 270.32 (c).)

This permit is issued in part pursuant to the provisions of Section 201, 202, 203, 206, 207, 212, 215, and 224 of HSWA which modified Sections 3004 and 3005 of RCRA. These require corrective action for all releases of hazardous waste or hazardous constituents from any solid waste management unit at a treatment, storage, or disposal facility seeking a permit, regardless of the time at which the waste was placed in such unit and provides the authority to review and modify the permit at any time. The decision to issue this permit is based on the assumption that all information contained in the permit application is accurate and that the facility will be operated as specified in the permit application. Any inaccuracies found in the application may be grounds for termination or modification of this permit (see 40 CFR 270.41, 270.42 and 270.43) and potential enforcement action.

Under Federal Law, this permit is effective on the effective date specified above unless a petition to the Administrator of the U.S. Environmental Protection Agency is filed in accordance with the requirements of 40 CFR 124.19.

Issued this 14th day of Novmeber, 1989

by _____

Allyn M. Davis, Director
Hazardous Waste Management Division

RESPONSE TO COMMENTS
ON EPA DRAFTED HSWA
PERMIT - MODULE IV
OF RCRA PERMIT FOR
CANNON AIR FORCE BASE
EPA I.D. #NM7572124454
OCTOBER 3, 1989

I. BACKGROUND INFORMATION

1. Facility Location:

Cannon Air Force Base is located in Curry County, New Mexico, approximately 7 miles west of the City of Clovis. The base is situated on approximately 4,320 acres of land in east central New Mexico.

2. Facility Activities And Waste Handling:

Since 1971, the primary mission of Cannon AFB has been to develop and maintain an F-111D tactical fighter wing, capable of day, night, and all-weather combat operations and to provide replacement training of combat aircrews for tactical organizations worldwide. Wastes have been generated and disposed of at Cannon AFB since the beginning of industrial operations in 1942. The major industrial operations which have occurred at the base include jet engine repair, pneumatic and hydraulic systems maintenance, aerospace ground equipment (AGE) maintenance, corrosion control, vehicle maintenance shops, and the non-destructive inspection (NDI) lab. These industrial operations generate varying quantities of waste oils, recoverable fuels, and spent solvents and cleaners.

3. **Public Notice:** The public notice of the proposed permit satisfied the public notice requirements specified in 40 CFR 124.17. The public notice comment period closed on September 11, 1989.

II. CHANGES MADE IN FINALIZING THE EPA PERMIT

Below are the changes which EPA made to the Cannon Air Force Base HSWA permit. Some provisions had minor word, typographical corrections, or sentence phrases changed. Throughout the permit, the words "Corrective Action Schedule of Compliance" have been changed to "this module" or "module IV". Module IV.B.3.(a)&(b) were deleted because they were incorrectly placed. Module IV.P.2. was deleted because financial assurance is not required from a Federal facility. Module IV.G. was revised to enhance the clarity and to allow the Permittee more flexibility. Appendix I and III were revised to make the permit more specific.

1. **Page 2; Module IV.B.3.(a)&(b):** These provisions have been deleted from the permit.

2. **Page 16; Module IV.P.2.:** This provision has been deleted from the permit.

3. **Pages 13, 14, 15, & 16; Modules IV.O.& P.:** These provisions have been deleted from the permit.

4. **Page 8 Module IV.G.2.:** The following provision has been added to the permit: "Corrective Action work done on any SWMU listed in Appendix I, II, or III under the Air Force's IRP program should be included in the appropriate RFI workplan (i.g., such as work on SWMU #74, Appendix I, would be required within 180 days of the effective date). The Administrative Authority will review this work to see if it meets the requirements of a RCRA Facility Investigation. The Administrative Authority will then notify the Permittee (either by a RFI deficiency letter or an RFI approval letter) in writing, specifying whether the work done under the IRP program for a particular unit will (either in full, partial, or none) fulfill the RFI requirements."

5. **Appendix I:** The AGE Drainage Ditch SWMU number has been changed to number 34. The Wastewater Playa lake has been moved to Appendix III and the Stormwater Drainage and Retention pond has been deleted from Appendix I.

6. **Appendix III:** Oil/Water Separator No. 326 (SWMU 70), Oil/Water Separator near tank 4095 (SWMU 127) and Oil/Water Separator near tank 4095 (SWMU 128) have had their associated leach fields added to Appendix III.

III. RESPONSE TO COMMENTS

There were no comments received on the Cannon AFB HSWA permit.

MODULE IV.
SPECIAL CONDITIONS PURSUANT TO THE 1984 HAZARDOUS AND SOLID WASTE AMENDMENTS TO RCRA FOR U.S. CANNON AIR FORCE BASE

A. DEFINITIONS

For purposes of this Corrective Action Schedule of Compliance the following definitions shall apply:

"Facility" means all contiguous property under the control of the owner or operator seeking a permit under Subtitle C of RCRA.

"Release" means any spilling, leaking, pouring, emitting, emptying, discharging, injecting, pumping, escaping, leaching, dumping, or disposing of hazardous wastes (including hazardous constituents) into the environment (including the abandonment or discarding of barrels, containers, and other closed receptacles containing hazardous wastes or hazardous constituents).

"Solid Waste Management Unit" means any discernible unit at which solid wastes have been placed at any time, irrespective of whether the unit was intended for the management of solid or hazardous waste. Such units include any area at or around a facility at which solid wastes have been routinely and systematically released.

"Hazardous waste" means a solid waste, or combination of solid wastes, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may cause, or significantly contribute to, an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; or pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed. The term hazardous waste includes hazardous constituent as defined below.

"Hazardous constituent" means any constituent identified in Appendix VIII of 40 CFR Part 261, or any constituent identified in Appendix IX of 40 CFR Part 264.

"Administrative Authority" means the Director of the New Mexico Environmental Improvement Division, or his/her designee or, in case of HSWA provisions (Module IV.) for which the State is not authorized, the U.S. Environmental Protection Agency shall be the Administrative Authority.

If subsequent to the issuance of this permit, these terms are redefined in promulgated regulations, the Administrative Authority may, at its discretion, apply the new definition to this permit.

B. SPECIFIC CONDITIONS

1. Waste Minimization

The Permittee shall certify in writing annually by October 1, for the previous year ending August 31, that:

(a) the Permittee has a program in place to reduce the volume and toxicity of all hazardous wastes which are generated by the Permittee's facility's operation to the degree determined to be economically practicable; and

(b) the proposed method of treatment, storage, or disposal is that practicable method currently available to the Permittee which minimizes the present and future threat to human health and the environment.

The Permittee shall include the certification in the operating record.

2. Dust Suppression

Pursuant to 40 CFR 266.23(b), the Permittee shall not use waste or used oil or any other material, which is contaminated with dioxin, PCB, or any other hazardous waste (other than a waste identified solely on the basis of ignitability), for dust suppression or road treatment.

3. Permit Review

This permit will be reviewed by the Administrative Authority five years after the date of permit issuance and will be modified as necessary as provided for in 40 CFR 270.41.

4. Compliance with Permit

Compliance with this permit during its term constitutes compliance, for the purposes of enforcement, with 40 CFR Parts 264 and 266 only for those management practices specifically authorized by this permit. The Permittee is also required to comply with Parts 260, 261, 262, and 263 to the extent the requirements of those Parts are applicable.

5. Specific Waste Ban

(a) The Permittee shall not place in any land disposal unit the wastes specified in RCRA Section 3004 after the effective date of the prohibition unless the Administrator has established disposal or treatment standards for the hazardous waste and the Permittee meets such standards and other applicable conditions of this permit.

(b) The Permittee may store wastes restricted under 40 CFR 268 solely for the purpose of accumulating quantities necessary to facilitate proper recovery, treatment, or disposal provided that it meets the requirements of 40 CFR 268.50 (a)(2) including, but not limited to, clearly marking each tank or container.

(c) The Permittee is required to comply with the all the requirements of 40 CFR 268.7 as amended. Changes to the waste analysis plan will be processed as minor modifications, pursuant to 40 CFR 270.42.

(d) The Permittee shall perform a waste analysis at least annually or when a process changes, to determine whether the waste meets applicable treatment standards. Results shall be maintained in the operating record.

(e) Compliance with a RCRA permit during its term constitutes compliance, for the purpose of enforcement, with Subtitle C of RCRA except for those requirements not included in the permit which become effective by statute, or which are promulgated under Part 268 of this chapter restricting the placement of hazardous wastes in or on the land.

6. Closure

Pursuant to Section 3005 (j)(1) of the Hazardous and Solid Waste Amendments of 1984, the Permittee shall close surface impoundment(s) in existence on November 8, 1984 and qualifying for interim status (see Federal Register 24717-24720, 6/30/88) in accordance with the following provisions:

(a) The Permittee shall not place hazardous waste in the surface impoundment(s); and

(b) The Permittee shall close the surface impoundment(s) in accordance with the closure plan(s) approved by the New Mexico Environmental Improvement Division.

7. Operation of Land Disposal

The Permittee shall not place hazardous waste in any surface impoundment or landfill unless such unit has a permit meeting the Minimum Technological Requirements outlined in Section 3004(o) of the Resource Conservation and Recovery Act. The Administrative Authority must approve the plans and specifications for retrofitting prior to commencement of construction.

8. Additional Waste Ban Requirements

The Permittee shall not land dispose any hazardous waste restricted by 40 CFR 268 unless:

(a) the waste meets treatment standards specified in 40 CFR 268.40, .41, .42, or .43;

(b) a variance from the treatment standards has been granted pursuant to 40 CFR 268.44;

(c) a petition has been granted on a case-by-case extension to the effective date, pursuant to 40 CFR 268.5;

(d) a "no-migration" petition has been granted pursuant to 40 CFR 268.6; or

(e) the surface impoundment is exempt under 40 CFR 268.4.

C. STANDARD CONDITIONS

1. Section 3004(u) of RCRA, as amended by HSWA, and 40 CFR 264.101 require that permits issued after November 8, 1984, address corrective action for releases of hazardous waste including hazardous constituents from any solid waste management unit (SWMU) at the facility, regardless of when the waste was placed in the unit.

   Section 3004(V) of RCRA (Section 207 of the Hazardous and Solid Waste Amendments of 1984) and federal regulations promulgated as 40 CFR 264.101, require corrective action beyond the facility boundary, where necessary to protect human health and the environment, unless the owner or operator was unable to obtain the necessary permission to undertake such actions. The Permittee is not relieved of all responsibility to clean up a release that has migrated beyond the facility boundary where offsite access is denied.

2. Failure to submit the information required in this Module, or falsification of any submitted information, is grounds for termination of this Permit (40 CFR 270.43). The Permittee shall ensure that all plans, reports, notifications, and other submissions to the Administrative Authority required in this Module are signed and certified in accordance with 40 CFR 270.11. Two (2) copies and one compatable disk copy of these plans, reports, notifications or other submissions shall be submitted to the Administrative Authority and sent by Certified mail or hand delivered to both:

U.S. EPA, Region 6 Hazardous Waste Division 1445 Ross Avenue Dallas, Texas 75202-2733	&	Mr. Richard Mitzelfelt, Director Environmental Improvement Division The Health and Environment Department 1190 St. Francis Drive Harold Runnels Building Santa Fe, New Mexico 87503

3. All plans and schedules required by the conditions of this Module are, upon approval of the Administrative Authority, incorporated into this Module by reference and become an enforceable part of this Permit. Any noncompliance with such approved plans and schedules shall be termed noncompliance with this Permit. Extensions of the due dates for submittals may be granted by the Administrative Authority in accordance with the permit modification process under 40 CFR 270.41.

   The required information shall include each item specified under RFI tasks I-V and CMS tasks VI-IX. Since these required items are essential elements of this permit, failure to submit any of these elements or submission of inadequate or insufficient information may subject the Permittee to enforcement action under Section 3008 of RCRA which may include fines, suspension, or revocation of the permit.

If the Administrative Authority determines that further actions beyond those provided in this Module, or changes to that which is stated herein, are warranted, the Regional Administrator shall modify this Module either according to procedures in Section O of this Permit, or according to the permit modification processes under 40 CFR 270.41.

4. All raw data, such as laboratory reports, drilling logs, bench-scale or pilot-scale data, and other supporting information gathered or generated during activities undertaken pursuant to this Module shall be maintained at the facility during the term of this Permit, including any reissued Permits.

D. REPORTING REQUIREMENTS

1. The Permittee shall submit to the Administrative Authority signed quarterly progress reports of all activities (i.e., SWMU Assessment, Interim Measures, RCRA Facility Investigation, Corrective Measures Study) conducted pursuant to the provisions of this Module, beginning no later than ninety (90) calendar days from the effective date of this permit. These reports shall contain:

   a. A description of the work completed;

   b. Summaries of all findings, including summaries of laboratory data;

   c. Summaries of all problems or potential problems encountered during the reporting period and actions taken to rectify problems; and B.1(e); Projected work for the next reporting period.

2. Copies of other reports (e.g., inspection reports), drilling logs and laboratory data shall be made available to the Director upon request.

3. As specified under Permit Conditions, E., F., and J. the Director may require the Permittee to conduct new or more extensive assessments, investigations, or studies, as needed, based on information provided in these progress reports or other supporting information.

E. NOTIFICATION REQUIREMENTS FOR AND ASSESSMENT OF NEWLY-IDENTIFIED SOLID WASTE MANAGEMENT UNIT(s) (SWMUs)

1. The Permittee shall notify the Administrative Authority, in writing, of any newly-identified SWMU(s) (i.e., a unit not specifically identified during the RCRA Facility Assessment (RFA), discovered during the course of ground water monitoring, field investigations, environmental audits, or other means, no later than fifteen (15) calendar days after discovery.

2. The Permittee shall submit a SWMU Assessment Report to the Administrative Authority no later than ninety (90) calendar days from notification. The SWMU Assessment Report shall describe all results obtained from the SWMU investigation. At a minimum, the Report shall provide the following information for each newly-identified SWMU:

   a. The location of the newly-identified SWMU in relation to other SWMUs;

   b. The type and function of the unit;

   c. The general dimensions, capacities, and structural description of the unit (supply any available drawings);

   d. The period during which the unit was operated;

   e. The specifics on all wastes that have been or are being managed at the SWMU, to the extent available; and

   f. The results of any sampling and analysis conducted for the purpose of determining whether releases of hazardous wastes including hazardous constituents have occurred, are occurring, or are likely to occur from the unit.

3. Based on the results of this Report, the Administrative Authority shall determine the need for further investigations or corrective measures at specific unit(s) covered in the SWMU Assessment. If the Administrative Authority determines that such investigations are needed, the Administrative Authority may require the Permittee to prepare a plan for such investigations. This plan will be reviewed for approval as part of the RFI Workplan under Permit Condition IV.G.

F. NOTIFICATION REQUIREMENTS FOR NEWLY-DISCOVERED RELEASES AT SWMU(s)

The Permittee shall notify the Administrative Authority, in writing, of any release(s) of hazardous waste including hazardous constituents discovered during the course of ground water monitoring, field investigation, environmental auditing, or other activities undertaken after the commencement of the RFI, no later that fifteen (15) calendar days after discovery. Such newly-discovered releases may be from newly-identified units, from units for which, based on the findings of the RFA, the Administrative Authority has previously determined that no further investigation was necessary, or from units investigated as part of the RCRA Facility Investigation (RFI). The Administrative Authority may require further investigation of the newly-identified release(s). A plan for such investigation will be reviewed for approval as part of the RFI Workplan under Permit Condition.

G. RCRA FACILITY INVESTIGATION (RFI) WORKPLAN

1. On or before one hundred eighty (180) days of the effective date of this permit, the Permittee shall submit to the Administrative Authority a Current Conditions Report describing the current conditions at the facility as outlined in the RFI scope of work, Task I. This Preliminary Report is limited to SWMUs not identified in the Part B or to recent information not addressed in the RCRA Facility Assessment. The Preliminary Report shall address the background information pertinent to the facility and the nature and extent of contamination.

2. Corrective Action work done on any SWMU listed in Appendix I, II, or III under the Air Forces IRP program should be included in the appropriate RFI workplan (i.e. such as work on SWMU #74, Appendix I, would be required within 180 days of the effective date). The Administrative Authority will review this work to see if it meets the requirements (either fully, partially, or none) of a RCRA Facility Investigation. The Administrative Authority will then notify the Permittee (either by a RFI deficiency letter or an RFI approval letter) in writing specifying whether the work done under the IRP program for a particular unit will fulfill the requirements.

3. The RFI workplan shall be submitted in three (3) parts. The first part shall be submitted to the Administrative Authority within one hundred eighty (180) days of the effective date of this permit. This workplan shall address releases of hazardous waste, including hazardous constituents to all media for those units listed in Appendix I, attached. The SWMU numbers are from the RFA Report, prepared by A.T. Kearney, Inc., dated July, 1987.

   The second RFI workplan shall be submitted to the Administrative Authority within 18 months from the effective date of this permit, and shall address those units listed in Appendix II, attached.

   The third RFI workplan shall be submitted to the Administrative Authority within 30 months from the effective date of this permit, and shall address those units listed in Appendix III, attached.

   a. The Workplans shall describe the objectives of the investigations and the overall technical and analytical approach to completing all actions necessary to characterize the nature, direction, rate, movement, and concentration of releases of hazardous waste including hazardous constituents from specific units or groups of units, and their actual or potential receptors. The Workplans shall detail all proposed activities and procedures to be conducted at the facility, the schedule for implementing and completing such investigations, the qualifications of personnel performing or directing the investigations, including contractor personnel, and the overall management of the RFI. The Scope of Work for a RCRA Facility Investigation (RFI) is in Section Q.

   b. In addition, the workplans shall discuss sampling and data collection quality assurance and data management procedures, including formats for documenting and tracking data and other results of investigations, and health and safety procedures.

4. After the Permittee submits the workplans, the Administrative Authority will either approve, disapprove, or modify the Workplans in writing.

   If the Administrative Authority disapproves a Workplan, the Administrative Authority shall notify the Permittee, in writing, of the Workplan's deficiencies and specify a due date for submittal of a revised Plan. If this Workplan is not approved, the Administrative Authority will revise the Workplan and notify the Permittee of the revisions. This modified Workplan becomes the Approved RFI Workplan. All approved Workplans become a part of this permit.

5. The Administrative Authority shall review for approval as part of the RFI Workplan any plans developed pursuant to Permit Condition E. addressing further investigations of newly-identified SWMUs, or Section addressing new releases from previously-identified units. The Regional Administrator shall modify this Module either according to procedures in this Permit, or according to the permit modification procedures under 40 CFR 270.41, to incorporate these units and releases into the RFI Workplan.

H. RCRA FACILITY INVESTIGATION WORKPLAN IMPLEMENTATION

Immediately upon receipt of written approval from the Administrative Authority for the RFI Workplan, the Permittee shall begin implementation of the RCRA Facility Investigation according to the Schedules specified in the RFI Workplan. The RFI shall be conducted in accordance with the approved RFI Workplan. The Permittee shall prepare the RFI Workplan and undertake the facility investigation in accordance with the following:

1. Development of the RFI Workplan and reporting of data shall be consistent with the RCRA Facility Investigation Guidance Document (OSWER Directive 9502.00-6d) or the equivalent thereof;

2. EPA and NMEID reserve the right to split samples. The Permittee shall notify EPA and NMEID at least 10 days prior to any sampling activity;

3. When developing ground water related investigations, the Permittee shall be consistent with the RCRA Ground water Monitoring Technical Enforcement Guidance Document (EPA OSWER Directive 9950-1, September 1986) or the equivalent thereof to determine methods and materials that are acceptable to EPA;

4. Any deviations from the approved RFI Workplan which are necessary during implementation of the investigations must be approved by the Administrative Authority and fully documented and described in the progress reports and in the draft RFI report.

I. RCRA FACILITY INVESTIGATION REPORT AND SUMMARY REPORT

1. Within sixty (60) calendar days after the completion of the RFI, the Permittee shall submit an RFI Final Report and Summary. The RFI Report shall describe the procedures, methods, and results of all investigations of SWMUs and their releases, including information

the facility, sources and migration pathways, and actual or potential receptors. The RFI Final Report shall present all information gathered under the approved RFI Workplan. The Final Report must contain adequate information to support further corrective action decisions at the facility. The Summary shall describe more briefly the procedures, methods, and results from the facility investigation described in Scope of Work, Task III.

2. After the Permittee submits the RFI Final report and Summary, the Administrative Authority shall either approve or disapprove the Reports in writing.

   If the Administrative Authority approved the RFI Report and Summary, the Permittee shall mail the approved Summary to all individuals on the facility mailing list established pursuant to 40 CFR 124.10(c)(1)(viii), within fifteen (15) calendar days of receipt of approval.

   If the Administrative Authority determines the RFI Final Report and Summary do not fully detail the objectives stated under Permit Condition IV.I.1., the Administrative Authority may disapprove the RFI Final Report and Summary. If the Administrative Authority disapproves the Report, the Administrative Authority shall notify the Permittee in writing of the Reports' deficiencies and specify a due date for submittal of a revised Final Report and Summary, which once approved, the Summary shall be mailed to all individuals on the facility mailing list.

J. <u>INTERIM MEASURES</u>

1. If during the course of any activity initiated under this Module, the Administrative Authority determines that a release or potential release of hazardous constituents from a SWMU poses a threat to human health and the environment, the Administrative Authority may specify interim measures. The Administrative Authority shall determine the specific measure, including potential permit modifications and the schedule for implementing the required measures. The Administrative Authority shall notify the Permittee in writing of the requirement to perform such interim measures. The Administrative Authority shall modify this Module either according to procedures in this Permit, or according to the permit modification procedures under 40 CFR 270.41, to incorporate such interim measures into the Permit.

2. The following factors may be considered by the Administrative Authority in determining the need for interim measures:

   a. Time required to develop and implement a final remedy;

   b. Actual and potential exposure to human and environmental receptors;

c. Actual and potential contamination of drinking water supplies and sensitive ecosystems;

d. The potential for further degradation of the medium absent interim measures;

e. Presence of hazardous waste in containers that may pose a threat of release;

f. Presence and concentration of hazardous waste including hazardous constituents in soil that have the potential to migrate to ground water or surface water;

g. Weather conditions that may affect the current levels of contamination;

h. Risks of fire, explosion, or accident; and

i. Other situations that may pose threats to human health and the environment.

K. DETERMINATION OF NO FURTHER ACTION

1. Based on the results of the RFI and other relevant information, the Permittee may submit an application to the Administrative Authority for a Class III permit modification under 40 CFR 270.42(c) to terminate the RFI/CMS process for a specific unit. This permit modification application must contain information demonstrating that there are no releases of hazardous wastes including hazardous constituents from a particular SWMU at the facility that pose a threat to human health and the environment, as well as information required in 40 CFR 270.42.(c), which incorporates by reference 40 CFR 270.13 through 270.21, 270.62, and 260.63.

   If, based upon review of the Permittee's request for a permit modification, the results of the RFI, and other information, including comments received during the sixty (60) day public comment period required for Class III permit modifications, the Administrative Authority determines that releases or suspected releases which were investigated either are non-existent or do not pose a threat to human health and the environment, the Administrative Authority will grant the requested modification.

2. A determination of no further action shall not preclude the Administrative Authority from requiring continued or periodic monitoring of air, soil, ground water, or surface water, when site-specific circumstances indicate that release of hazardous wastes including hazardous constituents are likely to occur, if necessary to protect human health and the environment.

3. A determination of no further action shall not preclude the Administrative Authority from requiring further investigations, studies, or remediation at a later date, if new information or

subsequent analysis indicates a release or likelihood of a release from a SWMU at the facility that is likely to pose a threat to human health or the environment. In such a case, the Administrative Authority shall initiate either a modification to this Module according to procedures in this Permit, or a major permit modification according to 40 CFR 270.41, to rescind the determination made in accordance with Permit Condition K.1.

L. CORRECTIVE MEASURES STUDY (CMS) PLAN

1. If the Administrative Authority has reason to believe that a SWMU has released concentrations of hazardous constituents, or if the Administrative Authority determines that contaminants present a threat to human health and the environment given site-specific exposure conditions, the Administrative Authority may require a Corrective Measures Study (CMS) and shall notify the Permittee in writing. The notification may also specify remedial alternatives to be evaluated by the Permittee during the CMS.

2. The Permittee shall submit a draft CMS Plan to the Administrative Authority within ninety (90) calendar days from notification of the requirement to conduct a CMS. The Scope of Work for a Corrective Measure Study (CMS) is in Section R.

   The CMS Plan shall provide the following information:

   a. A description of the general approach to investigation and potential remedies;

   b. A definition of the overall objectives of the study;

   c. The specific plans for evaluating remedies to ensure compliance with remedy standards;

   d. The schedules for conducting the study; and

   e. The proposed format for the presentation of information.

3. After the Permittee submits the draft CMS plan, the Administrative Authority will either approve or disapprove the plan. If the plan is not approved, the Administrative Authority will notify the Permittee in writing of the plan's deficiencies and specify a due date for submittal of the revised plan. If this plan is not approved, the Administrative Authority will revise the Plan and notify the Permittee of the revisions. This Administrative Authority revised Plan becomes the approved Plan.

M. CORRECTIVE MEASURES STUDY IMPLEMENTATION

No later than fifteen (15) calendar days after the Permittee has received written approval from the Administrative Authority for the CMS Plan, the Permitteee shall begin to implement the Corrective Measures Study according to the schedules specified in the CMS Plan. Pursuant to Permit Condition the CMS shall be conducted in accordance with the approved Plan.

N. CORRECTIVE MEASURES STUDY FINAL REPORT

1. Within sixty (60) calendar days after the completion of the CMS, the Permittee shall submit a CMS Final report. The CMS Final report shall summarize the results of the investigations for each remedy studied and of any bench-scale or pilot tests conducted. The CMS Report must include an evaluation of each remedial alternative. The CMS Report shall present all information gathered under the approved CMS Plan. The final report must contain adequate information to support the Administrative Authority in the remedy selection decision making process.

2. If the Administrative Authority determines that the CMS Final Report does not fully satisfy the information requirements specified under Permit condition IV.N.1., the Administrative Authority may disapprove the CMS Final Report. If the Administrative Authority disapproves the Final Report, the Administrative Authority shall notify the Permittee in writing of deficiencies in the Report and specify a due date for submittal of a revised Final Report (e.g., thirty (30) days after notification).

3. Based on preliminary results and the final CMS report, the Administrative Authority may require the Permittee to evaluate additional remedies.

Q. MODIFICATION OF THE CORRECTIVE ACTION SCHEDULE OF COMPLIANCE

1. If at any time the Administrative Authority determines that modification of this Module is necessary, he or she may initiate a modification to this Module according to the procedures of this Section. If the Administrative Authority initiates a modification, he or she shall:

   a. Notify the Permittee in writing of the proposed modification and the date by which comments on the proposed modification must be received; and

   b. Publish a notice of the proposed modification in a locally distributed newspaper, mail a notice to all persons on the facility mailing list maintained according to 40 CFR 124.10 (c)(1)(viii), and place a notice in the facility's information repository (i.e., a central source of all pertinent documents concerning the remedial action, usually maintained at the facility or some other public place, such as a public library, that is accessible to the public) if one is required.

      1. If the Administrative Authority receives no written comment on the proposed modification, the modification shall become effective five (5) calendar days after the close of the comment period.

      2. If the Administrative Authority receives written comment on the proposed modification, the Administrative Authority shall make a final determination concerning the modification after the end of the comment period.

   c. Notify the Permittee in writing of the final decision.

      1. If no written comment was received, the Administrative Authority shall notify individuals on the facility mailing list in writing that the modification has become effective and shall place a copy of the modified Module in the information repository, if a repository is required for the facility.

      2. If written comment was received, the Administrative Authority shall provide notice of the final modification decision in a locally distributed newspaper and place a copy of the modified Module in the information repository, if a repository is required for the facility.

2. Modifications to this Module do not constitute a reissuance of the permit.

P. MODULE IV SUBMISSION SUMMARY

Below is a summary of the planned reporting requirements pursuant to this Module;

Facility Submission Requirements	Due Date
Notification of newly-identified SWMUs	fifteen (15) calendar days after discovery
Notification of newly-discovered releases	fifteen (15) calendar days after discovery
Progress reports on all activities	quarterly no later that ninety (90) calendar days after effective date of permit
Description of Current Conditions Report	Ninety (90) days from effective date of permit
SWMU Assessment Plan for newly-identified SWMUs	ninety (90) calendar days after receipt of request
Revised SWMU Assessment Plan	as determined
SWMU Assessment Report	sixty (60) calendar days after completion of implementation of SWMU Assessment Plan
RFI Workplan for SWMU(s) identified at time of permit issuance	one hundred eighty (180) calendar days after the effective date of the permit, 18 Months, 30 months
RFI Preliminary Report	as specified in approved RFI Workplan
Revised RFI Workplan	as determined by Administrative Authority usually within 30 days of receipt of NOD
RFI Report and Summary Report	sixty (60) calendar days after completion of RFI
Revised RFI Report and Summary	thirty (30) calendar days after notification of deficiency

Interim Measures Plan for interim measures required after permit issuance	thirty (30) calendar days after notification
Revised Interim Measure Plan	as determined
CMS Plan	ninety (90) calendar days after notification of requirement to perform CMS
Revised CMS Plan	as determined
CMS Report	sixty (60) calendar days after completion of CMS
Revised CMS Report	thirty (30) calendar days after notification of deficiency

Q. SCOPE OF WORK FOR A RCRA FACILITY INVESTIGATION (RFI) AT U.S. CANNON AIR FORCE BASE

PURPOSE

The purpose of this RCRA Facility Investigation is to determine the nature and extent of releases of hazardous waste or hazardous constituents from solid waste management units. The Permittee shall furnish all personnel, materials, and services necessary for, or incidental to, performing the RCRA Facility Investigation at U.S. Cannon Air Force Base.

If the Permittee believes that certain requirements of the scope of work are not applicable, the specific requirements shall be identified and the rationale for inapplicability shall be provided.

SCOPE

The RCRA Facility Investigation consists of five tasks:

Task I: Description of Current Conditions

A. Facility Background
B. Nature and Extent of Contamination

Task II: RFI Workplan

A. Data Collection Quality Assurance Plan
B. Data Management Plan
C. Health and Safety Plan
D. Community Relations Plan

Task III: Facility Investigation

A. Environmental Setting
B. Source Characterization
C. Contamination Characterization
D. Potential Receptor Identification

Task IV: Investigative Analysis

A. Data Analysis
B. Protection Standards

Task V: Reports

A. Preliminary and Workplan
B. Progress
C. Draft and Final

2. A history and description of ownership and operation, solid and hazardous waste generation, treatment, storage and disposal activities at the facility;

3. Approximate dates or periods of past waste spills, identification of the materials spilled, the amount spilled, the location where spilled, and a description of the response actions conducted (local, state, or federal response units or private parties), including any inspection reports or technical reports generated as a result of the response.

4. Documentation of all interim measures which were or are being undertaken at the facility other than those specified in this permit.

5. A reference of all environmental, geologic, and hydrogeologic studies performed at and/or by the facility, with a short summary of purpose scope and significant findings thereof.
6. A reference of all environmental permits, applied for and/or received, the purpose thereof, and a short summary of requirements.

B. Nature and Extent of Contamination

The Permittee shall include in the Preliminary Report the existing information on the nature and extent of contamination.

1. The Permittee's report shall summarize all possible source areas of contamination. This, at a minimum, should include all solid waste management units. For each area, the Permittee shall identify the following:

   a. Location of unit/area (which shall be depicted on a facility map);

   b. Quantities of solid and hazardous wastes;

   c. Hazardous waste, radiochemical and hazardous constituents, to the extent known; and

   d. Identification of areas where additional information is necessary.

2. The Permittee shall prepare an assessment and description of the existing degree and extent of contamination. This should include:

   a. Available monitoring data and qualitative information on locations and levels of contamination at the facility;

   b. All potential migration pathways including information on geology, pedology, hydrogeology, physiography, hydrology, water quality, meteorology, and air quality; and

TASK I: DESCRIPTION OF CURRENT CONDITIONS REPORT

The Permittee shall submit to the Administrative Authority a Preliminary Report providing the background information pertinent to the facility, contamination and any type of on-going corrective action as set forth below. This report is limited to SWMUs not identified in the Part B permit application or to recent information not addressed in the RCRA Facility Assessment.

A. Facility Background

The report shall summarize the regional location, pertinent boundary features, general facility physiography, hydrogeology, and historical use of the facility for the treatment, storage or disposal of solid and hazardous waste. Information from existing reports and studies is acceptable for any requirement in this permit, as long as the source of this information is documented and it is pertinent and reflective of current conditions, and meets the format for the RFI investigations. The report shall include:

1. Map(s) depicting the following:

   a. General geographic location;

   b. Property lines, with the owners of all adjacent property clearly indicated;

   c. Topography (with a contour interval of five (5) or ten (10) feet and a scale of 1 inch - 100 feet), waterways, all wetlands, floodplains, water features, drainage patterns;

   d. All solid waste management units;

   e. All known past solid or hazardous waste treatment, storage or disposal areas regardless of whether they were active on November 19, 1980;

   f. Surrounding land uses (residential, commercial, agricultural, recreational); and

   g. The location of all production and groundwater monitoring wells. These wells shall be clearly labeled and ground and top of casing elevations included (these elevations may be included as an attachment);

   All maps shall be of sufficient detail and accuracy to locate and report all current and future work performed at the site;

c. The potential impact(s) on human health and the environment, including demography, ground water and surface water use, and land use.

C. Implementation of Interim Measures

The Permittee shall document and report on all interim measures which were or are being undertaken at the facility other than those specified in the permit. This shall include:

1. Objectives of the interim measures: how the measure is mitigating a potential threat to human health and the environment and/or is consistent with and integrated into any long term solution at the facility;

2. Design, construction, operation, and maintenance requirements;

3. Schedules for design, construction and monitoring; and

4. Schedule for progress reports.

TASK II: RFI WORKPLAN REQUIREMENTS

The Permittee shall prepare a RCRA Facility Investigation (RFI) Workplan. This RFI Workplan shall include the development of several plans, which shall be prepared concurrently. During the RCRA Facility Investigation, it may be necessary to revise the RFI Workplan to increase or decrease the detail of information collected to accommodate the facility specific situation. The RFI Workplan shall include the following:

A. Data Collection Quality Assurance Plan

The Permittee shall prepare a plan to document all monitoring procedures: sampling, field measurements and sample analysis performed at the facility during the investigation to characterize the environmental setting, source, and contamination, so as to ensure that all information, data, and resulting decisions are technically sound, statistically valid, and properly documented.

1. Data Collection Strategy

   The strategy section of the Data Collection Quality Assurance Plan shall include but not be limited to the following:

   a. Description of the intended uses for the data, and the necessary level of precision and accuracy for these intended uses;

   b. Description of methods and procedures to be used to assess the precision, accuracy and completeness of the measurement data;

2. Sampling and Field Measurements

   The Sampling Field Measurements Section of the Data Collection Quality Assurance Plan shall at least discuss:

   a. Selecting appropriate sampling and field measurements locations, depths, etc.;

   b. Providing a statistically sufficient number of sampling and field measurement sites;

   c. Determining conditions under which sampling or field measurements should be conducted;

   d. Determining which parameters are to be measured and where;

   e. Selecting the frequency of sampling and length of sampling period;

   f. Selecting the types of sample (e.g., composites vs. grabs) and number of samples to be collected;

   g. Measures to be taken to prevent contamination of sampling or field measurements equipment and cross contamination between sampling points;

h. Documenting field sampling operations and procedures;

i. Selecting appropriate sample containers;

j. Sample preservation; and

k. Chain-of-custody.

3. Sample Analysis

a. Chain-of-custody procedures;

b. Sample storage procedures and holding times;

c. Sample preparation methods;

d. Analytical procedures;

e. Calibration procedures and frequency;

f. Data reduction, validation and reporting; and

g. Internal quality control checks, laboratory performance and systems audits and frequency.

B. Data Management Plan

The Permittee shall develop and initiate a Data Management Plan to document and track investigation data and results. This plan shall identify and set up data documentation materials and procedures, project file requirements, and project-related progress reporting procedures and documents. The plan shall also provide the format to be used to present the raw data and conclusions of the investigation, such as:

1. Data Record

2. Tabular Displays

3. Graphical Displays

C. Health and Safety Plan

The Permittee shall prepare a facility Health and Safety Plan.

1. Major elements of the Health and Safety Plan shall include:

a. Facility description including availability of resources such as roads, water supply, electricity and telephone service;

b. Describe the known hazards and evaluate the risks associated with the incident and with each activity conducted;

c. List key personnel and alternatives responsible for site safety, responses operations, and for protection of public health;

d. Delineate work area;

e. Describe levels of protection to be worn by personnel in work area;

f. Establish procedures to control site access;

g. Describe decontamination procedures for personnel and equipment;

h. Establish site emergency procedures;

i. Address emergency medical care for injuries and toxicological problems;

j. Describe requirements for an environmental field monitoring program;

k. Specify any routine and special training required for responders; and

l. Establish procedures for protecting workers from weather-related problems.

2. The Facility Health and Safety Plan shall be consistent with:

a. NIOSH Occupation Safety and Health Guidance Manual for Hazardous Waste Site Activities (1985);

b. EPA Order 1440.1 - Respiratory Protection;

c. EPA Order 1440.3 - Health and Safety Requirements for Employees engaged in Field Activities;

d. Approved Facility Contingency Plan;

e. EPA Operating Safety Guide (1984);

f. OSHA regulations particularly in 29 CFR 1910 and 1926;

g. State and local regulations; and

h. Other EPA guidance as provided.

D. Community Relations Plan

The Permittee shall prepare a plan, for the dissemination of information to the public regarding investigation activities and results.

E. Project Management Plan

The Permittee shall prepare a Project Management Plan which will include a discussion of the technical approach, schedules, budget, and key project personnel. The project management plan will also include a description of qualifications of key project personnel performing or directing the RFI, including contractor personnel. This plan shall also document the overall management approach to the RFI.

TASK III: FACILITY INVESTIGATION

The Permittee shall conduct those investigations of SWMUs previously identified with known or suspected releases of contamination as necessary to protect human health and the environment to: characterize the facility (Environmental Setting); define the source (Source Characterization); define the degree and extent of contamination (Contamination Characterization); and identify actual or potential receptors.

Investigations should result in data of adequate technical quality to support the development and evaluation of the corrective measure alternative or alternatives during the Corrective Measures Study, when necessary.

The facility investigation activities shall when conducted follow the plans set forth in Task II. All sampling and analyses shall be conducted in accordance with the Data Collection Quality Assurance Plan. All sampling locations shall be documented in a log and identified on a detailed site map.

A. Environmental Setting

The Permittee shall collect information to supplement and verify existing information on the environmental setting at the facility. The Permittee shall characterize the following:

1. Hydrogeology

   The Permittee shall conduct a program to evaluate hydrogeologic conditions at the facility. This program shall provide the following information:

   a. A description of the regional and facility SWMU geologic and hydrogeologic characteristics affecting ground water flow beneath the facility.

   b. An analysis of any topographic features that might influence the groundwater flow system. (Note: Stereographic analysis of aerial photographs may aid in this analysis).

   c. Based on field data, tests, (gamma and neutron logging of existing and new wells, piezometers and borings) and cores, a representative and accurate classification and description of the hydrogeologic units which may be part of the migration pathways at the facility (i.e., the aquifers and any intervening saturated and unsaturated units).

   d. Based on field studies and cores, structural geology and hydrogeologic cross sections showing the extent (depth, thickness, lateral extent) of hydrogeologic units which may be part of the migration pathways identifying:

      i) Unconsolidated sand and gravel deposits;

ii) Zones of fracturing or channeling in consolidated or unconsolidated deposits; and

iii) Zones of high permeability or low permeability that might direct and restrict the flow of contaminants.

e. Based on data obtained from ground water monitoring wells and piezometers installed upgradient and downgradient of the potential contaminant source, a representative description of water level or fluid pressure monitoring.

f. A description of man-made influences that may affect the hydrogeology of the site.

2. Soils

The Permittee shall conduct a program to characterize the soil and rock units above the water table in the vicinity of the contaminant release(s). Such characterization shall include, but not be limited to, the following information:

a. Surface soil distribution;

b. Soil profile, including ASTM classification of soils;

c. Transects of soil stratigraphy;

d. Saturated hydraulic conductivity;

e. Porosity;

f. Cation exchange capacity (CEC);

g. Soil pH;

i. Particle size distribution;

j. Depth of water table;

k. Moisture content;

l. Effect of stratification on unsaturated flow;

m. Infiltration

n. Evaportranspiration;

o. Residual concentration of contaminants in soil; and

p. Mineral and metal content.

B. Source Characterization

The Permittee shall collect analytical data to completely characterize the wastes and the areas where wastes have been placed, including: type; quantity; physical form; disposition (containment or nature of deposits); and the facility characteristics affecting release (e.g., facility security, and engineered barriers). This shall include quantification of the following specific characteristics, at each source area:

1. Unit/Disposal Area Characteristics

   a. Location of unit/disposal area;

   b. Type of unit/disposal area;

   c. Design features;

   d. Operating practices (past and present);

   e. Period of operation;

   f. Age of unit/disposal area;

   g. General physical conditions; and

   h. Method used to close the unit/disposal area.

2. Waste Characteristics

   a. Type of waste placed in unit;

   b. Physical and chemical characteristics; and

   c. Migration and dispersal characteristics of the waste.

The Permittee shall document the procedures used in making the above determinations.

C. Contamination Characteristics

The Permittee shall collect analytical data on groundwater, soils, surface water, sediment, and subsurface gas contamination when necessary to characterize contamination from a SWMU. This data shall be sufficient to define the extent, origin, direction, and rate of movement of contaminant plumes. Data shall include time and location of sampling, media sampled, concentrations found, conditions during sampling, and the identity of the individual(s) performing the sampling and analysis. Each media must be investigated, if the permittee believes certain media could not be affected by a release from a specific unit, a detailed justification for not investigating that media must be provided. The Permittee shall address the following types of contamination at the facility:

1. Groundwater Contamination

The Permittee shall conduct a ground water Investigation to characterize any plumes of contamination at the facility. This investigation shall at a minimum provide the following information:

a. A description of the horizontal and vertical extent of any immiscible or dissolved plume(s) originating from the facility;

b. The horizontal and vertical direction of contamination movement;

c. The velocity of contaminant movement;

d. The horizontal and vertical concentration profiles of any Appendix IX constituents and radiochemical constituents in the plume(s);

e. An evaluation of factors influencing the plume movement; and

f. An extrapolation of future contaminant movement.

The Permittee shall document the procedures used in making the above determinations (e.g., well design, well construction, geophysics, modeling, etc.).

2. Soil Contamination

The Permittee shall conduct an investigation to characterize the contamination of the soil and rock units above the water table in the vicinity of the contaminant release. The investigation shall include the following information:

a. A description of the vertical and horizontal extent of contamination;

b. A description of contaminant and soil chemical properties within the contaminant source area and plume migration and transformation;

c. Specific contaminant concentrations;

d. The velocity and direction of contaminant movement; and

e. An extrapolation of future contaminant movement.

The Permittee shall document the procedures used in making the above determinations.

3. Surface Water Contamination

The Permittee shall conduct a surface water investigation to characterize contamination in surface water bodies resulting from contaminant releases at the facility. The investigation shall include the following:

a. A description of the horizontal and vertical extent of any immiscible or dissolved plumes originating from the facility, and the extent of contamination in the underlying sediments;

b. The horizontal and vertical direction and velocity of contaminant movement;

c. An evaluation of the physical, biological, chemical, and radiochemical factors influencing contaminant movement;

d. An extrapolation of future contaminant movement; and

e. A description of the chemistry and radiochemistry of the contaminated surface waters and sediments. This includes determining the pH, total dissolved solids, specific contaminant contaminant concentrations, etc.

The Permittee shall document the procedures used in making the above determinations.

4. Air Contamination

The Permittee shall conduct an investigation to characterize the particulate and gaseous contaminants released into the atmosphere.

This investigation shall provide the following information:

a. A description of the horizontal and vertical direction and velocity of contaminant movement;

b. The rate and amount of the release; and

c. The chemical, radiochemical, and physical composition of the contaminants released, including horizontal and vertical concentration profiles.

5. Subsurface Gas

The Permittee shall provide information characterizing the nature, rate and extent of releases of reactive gases from the units. Such information shall include, but not be limited to: provisions for monitoring subsurface gases released from the unit; and an assessment of the potential for these releases to have a threat to human health and environment.

The Permittee shall document the procedures used in making the above determination.

D. Potential Receptors

The Permittee shall collect data describing the human populations and environmental systems that are susceptible to contaminant exposure from the facility. Chemical and radiochemical analysis of biological samples may be needed. Data on observable effects in ecosystems may also be obtained.

TASK IV: INVESTIGATIVE ANALYSIS

The Permittee shall prepare an analysis and summary of all facility investigations and their results. The objective of this task shall be to ensure that the investigation data are sufficient in quality (e.g., quality assurance procedures have been followed) and quantity to describe the nature and extent of contamination, potential threat to human health and/or the environment, and to support the Corrective Measures Study, if one is required.

The Permittee shall analyze all facility investigation data outlined in Task III and prepare a report on the type and extent of contamination at the facility including sources and migration pathways. The report shall describe the extent of contamination (qualitative/quantitative) in relation to the background levels indicative for the area.

The Permittee shall identify all relevant and applicable standards for the protection of human health and the environment (e.g. National Ambient Air Quality Standards, Federally-approved state water quality standards, Groundwater protection standards, etc.)

TASK V: REPORTS

A. Preliminary and Workplan

The Permittee shall submit to the Administrative Authority the Preliminary Report (Task I) and the RCRA Facility Investigation Workplan (Task II) as described in the Permit.

B. Progress

Within 90 days of the effective date of this permit, the Permittee shall provide the Administrative Authority with signed, quarterly progress reports containing:

1. A description and estimate of the percentage of the RFI completed;

2. Summaries of contacts pertaining to corrective action or environmental matters with representatives of the local community, public interest groups or State government during the reporting period;

3. Summaries of problems or potential problems encountered during the reporting period;

4. Actions being taken to rectify problems;

5. Changes in key project personnel during the reporting period;

6. Projected work for the next reporting period;

7. Summaries of all findings to date; and

8. Summaries of all changes made in the RFI during the reporting period.

C. RFI REPORT

The RFI Report shall be developed for the Administrative Authority's review. The RFI Report shall be revised incorporating any comments received on the RFI Report.

Two hard copies and one compatible disk copy of all reports, including the Task I report, Task II workplan and RFI Reports (Task III-IV) shall be provided by the Permittee to the Administrative Authority.

RFI Submission Summary

A summary of the information reporting requirements contained in the RCRA Facility Investigation Scope of Work is presented below:

RFI Submission	Due Date
Desription of Current Conditions (Task I)	90 days*
RFI Workplan (Task II)	180 days
RFI Report	60 days after completion of RFI
Progress reports on Tasks I through V and interim measures	Quarterly

* Dates are calculated from the effective date of this permit unless otherwise specified.

R. SCOPE OF WORK FOR A RCRA CORRECTIVE MEASURE STUDY (CMS) AT U.S. CANNON AIR FORCE BASE

PURPOSE

The purpose of this Corrective Measure Study (CMS) is to develop and evaluate the corrective action alternative or alternatives and to recommend the corrective measure or measures to be taken at U.S. Cannon Air Force Base. The Permittee will furnish the personnel, materials, and services necessary to prepare the CMS, except as otherwise specified.

If the Permittee believes that certain requirements of the scope of work are not applicable, the specific requirements shall be identified and the rationale for inapplicability shall be provided.

SCOPE

The Corrective Measure Study consists of four tasks:

Task VI: Identification and Development of the Corrective Measure Alternative(s)

A. Description of Current Situation
B. Establishment of Corrective Action Objectives
C. Laboratory and Bench-Scale Study
D. Screening of Corrective Measures Technologies
E. Identification of the Corrective Measure Alternative(s)

Task VII: Evaluation of the Corrective Measure Alternative(s)

A. Technical/Environmental/Human Health/Institutional
B. Cost Estimate

Task VIII: Justification and Recommendation of the Corrective Measure(s)

A. Technical
B. Human Health
C. Environmental

Task IX: Reports

A. Progress
B. Draft
C. Final

TASK VI: IDENTIFICATION AND DEVELOPMENT OF THE CORRECTIVE ACTION ALTERNATIVE(S)

Based on the results of the RCRA Facility Investigation (RFI) the Permittee shall identify, screen, and develop the alternative(s) for removal, containment, treatment and/or other remediation of the contamination based on the objectives established for the corrective action.

A. Description of Current Situation

The Permittee shall submit an update to the information describing the current situation at the facility and the known nature and extent of the contamination as documented by the RFI report. The Permittee shall provide an update to information presented in Task I of the RFI to the Administrative Authority regarding previous response activities and any interim measures which have or are being implemented at the facility. The Permittee shall also make a facility-specific statement of the purpose for the response, based on the results of the RFI. The statement of purpose should identify the actual or potential exposure pathways that should be addressed by corrective measures.

B. Establishment of Corrective Action Objectives

The Permittee, in conjunction with the Administrative Authority, shall establish site specific objectives for the corrective action. These objectives shall be based on public health and environmental criteria, information gathered during the RCRA Facility Investigation, EPA guidance and the requirements of any applicable Federal statutes. At a minimum, all corrective actions concerning groundwater releases from solid waste management units must be consistent with, and as stringent as, those required under 40 CFR 264.100.

C. Laboratory and Bench-Scale Study

When a new technology is being proposed or similar waste streams have not routinely been treated or disposed using the technology the Permittee shall conduct laboratory and/or bench-scale studies to determine the applicability of a corrective measure technology or technologies to the facility conditions. The Permittee shall analyze the technologies, based on literature review, vendor contracts, and past experience to determine the testing requirements.

The Permittee shall develop a testing plan identifying the type(s) and goal(s) of the study(ies), the level of effort needed, and the procedures to be used for data management and interpretation.

Upon completion of testing, the Permittee shall evaluate the testing results to assess the technology or technologies with respect to the site-specific questions identified in the test plan.

The Permittee shall prepare a report summarizing the testing program and its results, both positive and negative.

D. Screening of Corrective Measure Technologies

The Permittee shall review the results of the RFI and reassess the technologies specified in Task II and identify any additional technologies which are applicable to the facility. The Permittee shall screen the preliminary corrective measure technologies identified in Task II of the RFI and any supplemental technologies to eliminate those that may prove not feasible to implement, that rely on technologies unlikely to perform satisfactorily or reliably, or that do not achieve the corrective measure objective within a reasonable time period. This screening process focuses on eliminating those technologies which have severe limitations for a given set of waste and site-specific conditions. The screening step may also eliminate technologies based on inherent technology limitations.

Site, waste, and technology characteristics which are used to screen inapplicable technologies are described in more detail below:

1. Site Characteristics

   Site data should be reviewed to identify conditions that may limit or promote the use of certain technologies. Technologies whose use is clearly precluded by site characteristics should be eliminated from further consideration;

2. Waste Characteristics

   Identification of waste characteristics that limit the effectiveness or feasibility of technologies is an important part of the screening process. Technologies clearly limited by these waste characteristics should be eliminated from consideration. Waste characteristics particularly affect the feasibility of in-situ methods, direct treatment methods, and land disposal (on/off-site); and

3. Technology Limitations

   The level of technology development, performance record, and inherent construction, operation and maintenance problems shall be identified for each technology considered. Technologies that are unreliable, perform poorly, or are not fully demonstrated may be eliminated in the screening process. For example, certain treatment methods have been developed to a point where they can be implemented in the field without extensive technology transfer or development.

E. Identification of the Corrective Measure Alternatives

The Permittee shall develop the corrective measure alternatives based on the corrective measure objectives. The Permittee shall rely on engineering practice to determine which technologies appear most suitable for the site. Technologies can be combined to form the overall corrective action alternatives. The alternatives developed should represent a workable number of options that each appear to adequately address all site problems and corrective action objectives. Each alternative may consist of an individual technology or a combination of technologies. The Permittee shall document the reasons for excluding technologies, identified in Task I, as supplemented in the development of the alternative.

TASK VII: EVALUATION OF THE CORRECTIVE MEASURE ALTERNATIVE(S)

The Permittee shall describe each corrective measure alternative that passed the Initial Screening in Task VI and evaluate each corrective measure alternative and it's components. The evaluation shall be based on technical, environmental, human health and institutional concerns. The Permittee shall also develop cost estimates for each corrective measure.

A. Technical/Environmental/Human Health/Institutional

The Permittee shall provide a description of each corrective measure alternative which includes but is not limited to the following: preliminary process flow sheets; preliminary sizing and type of construction for buildings and structures; and rough quantities of utilities required. The Permittee shall evaluate each alternative in the four following areas:

1. Technical

The Permittee shall evaluate each corrective measure alternative based on performance, reliability, implementability and safety.

a. The Permittee shall evaluate performance based on the effectiveness and useful life of the corrective measure:

i) Effectiveness shall be evaluated in terms of the ability to perform intended functions such as containment, diversion, removal, destruction, or treatment. The effectiveness of each corrective measure shall be determined either through design specifications or by performance evaluation. Any specific waste or site characteristics which could potentially impede effectiveness shall be considered. The evaluation should also consider the effectiveness of combinations of technologies; and

ii) Useful life is defined as the length of time the level of effectiveness can be maintained. Most corrective measure technologies, with the exception of destruction, deteriorate with time. Often, deterioration can be slowed through proper system operation and maintenance, but the technology eventually may require replacement. Each corrective measure shall be evaluated in terms of the projected service lives of its component technologies. Resource availability in the future life of the technology, as well as appropriateness of the technologies, must be considered in estimating the useful life of the project.

b. The Permittee shall provide information on the reliability of each corrective measure including their operation and maintenance requirements and their demonstrated reliability:

i) Operation and maintenance requirements include the frequency and complexity of necessary operation and maintenance. Technologies requiring frequent or complex operation and maintenance activities should be regarded as less reliable than technologies requiring little or straightforward operation and maintenance. The availability of labor and materials to meet these requirements shall also be considered; and

ii) Demonstrated and expected reliability is a way of measuring the risk and effect of failure. The Permittee should evaluate whether the technologies have been used effectively under analogous conditions; whether the combination of technologies have been used together effectively; whether failure of any one technology has an immediate impact on receptors; and whether the corrective measure has the flexibility to deal with uncontrollable changes at the site.

c. The Permittee shall describe the implementability of each corrective measure including the relative ease of installation (constructibility) and the total time required to achieve a given level of response:

i) Constructibility is determined by conditions both internal and external to the facility conditions and includes such items as location of underground utilities, depth to water table, heterogeneity of subsurface materials, and location of the facility (i.e., remote location vs. a congested urban area). The Permittee shall evaluate what measures can be taken to facilitate construction under these conditions. External factors which affect implementation include the need for special permits or agreements, equipment availability, and the location of suitable off-site treatment or disposal facilities;

ii) Time has two components that shall be addressed: the time it takes to implement a corrective measure and the time it takes to actually see beneficial results. Beneficial results are defined as the reduction of contaminants to some acceptable, pre-established level.

d. The Permittee shall evaluate each corrective measure alternative with regard to safety. This evaluation shall include threats to the safety of nearby communities and environments as well as those to workers during implementation. Factors to consider include fire, explosion, and exposure to hazardous substances.

2. Environmental

The Permittee shall perform an Environmental Assessment for each alternative. The Environmental Assessment shall focus on facility conditions and pathways of contamination actually addressed by each alternative. The Environmental Assessment for each altenative will include, at a minimum, an evaluation of: the short-and long-term beneficial and adverse effects of the response alternative; any adverse effects on environmentally sensitive areas; and an analysis of measures to mitigate adverse impacts.

3. Human Health

The Permittee shall assess each alternative in terms of the extent which it mitigates short- and long-term potential exposure to any residual contamination and protects human health both during and after implementation of the corrective measure. The assessment will describe the levels and characterizations of contaminants on-site, potential exposure routes, and potentially affected populations. Each alternative will be evaluated to determine the level of exposure to contaminants and the reduction over time. For management of mitigation measures, the relative reduction of impact will be determined by comparing residual levels of each alternative with existing criteria, standards, or regulations acceptable to the Administrative Authority.

4. Institutional

The Permittee shall assess relevant institutional needs for each alternative. Specifically, the effects of Federal, State, and local environmental and public health standards, regulations, guidance, advisories, ordinances, or community relations on the design, operation, and timing of each alternative.

B. Cost Estimate

The Permittee shall develop an estimate of the cost of each corrective measure alternative (and for each phase or segment of the alternative). The cost estimate shall include capital, and operation and maintenance costs.

1. Capital costs consist of direct (construction) and indirect (nonconstruction and overhead) costs.

   a. Direct capital costs include:

      i) Construction costs: Cost of materials, labor (including fringe benefits and worker's compensation), and equipment required to install the corrective measure alternative.

      ii) Equipment costs: Costs of treatment, containment, disposal and/or service equipment necessary to implement the action; these materials remain until the corrective action is completed;

iii) Land and site development costs: Expenses associated with purchase of land and development of existing property; and

iv) Building and services costs: Costs of process and nonprocess buildings, utility connections, purchased services, and disposal costs.

b. Indirect capital costs include:

i) Engineering expenses: Costs of administration, design construction supervision, drafting, and testing of corrective measure alternatives;

ii) Legal fees and license or permit costs: Administrative and technical costs necessary to obtain licenses and permits for installation and operation;

iii) Start-up and shakedown costs: Costs incurred during corrective measure start-up; and

iv) Contingency allowances: Funds to cover costs resulting from unforeseen circumstances, such as adverse weather conditions, strikes, and inadequate facility characterization.

2. Operation and maintenance costs are post-construction costs necessary to ensure continued effectiveness of a corrective measure. The Permittee shall consider the following operation and maintenance cost components:

a. Operating labor costs: Wages salaries, training, overhead, and fringe benefits associated with the labor needed for post-construction operation;

b. Maintenance materials and labor costs: Costs for labor, parts, and other resources required for routine maintenance of facilities and equipment;

c. Auxiliary materials and energy: Costs of such items as chemicals and electricity for treatment plant operations, water and sewer service, and fuel;

d. Purchased services: Sampling costs, laboratory fees, and professional fees for which the need can be predicted;

e. Disposal and treatment: Costs of transporting, treating, and disposing of waste materials, such as treatment plant residues generated during operation;

f. Administrative costs: Costs associated with administration of corrective measure operation and maintenance not included under other categories;

g. Insurance, taxes, and licensing costs: Costs of such items as liability and sudden accidental insurance; real estate taxes on purchased land or rights-of-way; licensing fees for certain technologies; and permit renewal and reporting costs;

h. Maintenance reserve and contingency funds: Annual payments into escrow funds to cover (1) costs of anticipated replacement or rebuilding of equipment and (2) any large unanticipated operation and maintenance costs; and

i. Other costs: Items that do not fit any of the above categories.

TASK VIII. JUSTIFICATION AND RECOMMENDATION OF THE CORRECTIVE MEASURE(S)

The Permittee shall justify and recommend a corrective measure alternative using technical, human health, and environmental criteria. This recommendation shall include summary tables which allow the alternative or alternatives to be understood easily. Trade-offs among health risks, environmental effects, and other pertinent factors shall be highlighted. The Administrative Authority will approve the corrective measure alternative or alternatives to be implemented based on the results of Tasks VIII and IX. At a minimum, the following criteria will be used to justify the final corrective measure or measures.

A. Technical

1. Performance - corrective measure or measures which are most effective at performing their intended functions and maintaining the performance over extended periods of time will be given preference;

2. Reliability - corrective measure or measures which do not require frequent or complex operation and maintenance activities and have proven effective under waste and facility conditions similar to those anticipated will be given preference;

3. Implementability - corrective measure or measures which can be constructed and operated to reduce levels of contamination to attain or exceed applicable standards in the shortest period of time will be preferred; and

4. Safety - corrective measure or measures which pose the least threat to the safety of nearby residents and environments as well as workers during implementation will be preferred.

B. Human Health

The corrective measure or measures must comply with existing U.S. EPA criteria, standards, or regulations for the protection of human health. Corrective measures which provide the minimum level of exposure to contaminants and the maximum reduction in exposure with time are preferred.

C. Environmental

The corrective measure or measures posing the least adverse impact (or greatest improvement) on the environment over the shortest period of time will be favored.

TASK IX: REPORTS

The Permittee shall prepare a Corrective Measure Study Report presenting the results of Tasks VII through IX recommending a corrective measure alternative. Two (2) copies and one compatible disk copy of the draft and final reports shall be provided to the the Administrative Authority by the Permittee.

A. Progress

The Permittee shall at a minimum provide the Administrative Authority with signed quarterly progress reports containing:

1. A description and estimate of the percentage of the CMS completed;

2. Summaries of contacts relevant to corrective action with representatives of the local community, public interest groups or State government during the reporting period;

3. Summaries of problems or potential problems relevant to corrective action encountered during the reporting period;

4. Actions being taken to rectify problems;

5. Changes in key project personnel during the reporting period;

6. Projected work for the next reporting period; and

7. Summaries of changes made in the CMS during the reporting period.

B. Corrective Measures Study Report

The Report shall at a minimum include:

1. A summary of the corrective measure or measures and rationale

   a. Description of the corrective measure or measures and rationale for selection;

   b. Performance expectations;

   c. Preliminary design criteria and rationale;

   d. General operation and maintenance requirements;

   e. Long-term monitoring requirements

Appendix I

SWMU #	Unit
34	AGE Drainage Ditch
74	Landfill No. 1
75	Sanitary Sewage Lift Station Overflow Pit ✓
76	Sludge Weathering Pit
78	Fire Department Training Area No. 1
81	Solvent Disposal Site ✓ Couldn't find this one
82	Landfill No. 2
85	Stormwater Collection Point ✓
86	Engine Test Cell
87	Former Overflow Pit
88	Former Leaching Field
89	Evaporation Pond
95	NE Stormwater Drainage Area
96	Old Entomology Rinse Area
98	Sanitary Sewerage Line
101	Wastewater Treatment System - Lagoons
102	" " Effluent Discharge
104	Landfill No. 4
105	" " 3
106	Fire Dept. Training Area No. 2
107	" " " " " 3
109	" " " " " 4
111	Unlined pit
113	Landfill No. 5

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Appendix II

SWMU #	Unit
1	Oil/Water Separator No. 119
3	" " " " 108
5	" " " " 121
7	" " " " 129
8	" " " " 165
11	" " " " 170
16	" " " " 680
32	" " " " 186 (#1)
33	" " " " " (#2)
38	" " " " 194
39	" " " " 195
2	Recovered Diesel Tank No. 108
4	" " " " 121
6	POL Tank No. 129
9	Aircraft Washrack Drain system
10	POL Tank No. 170
48a&b	Underground Waste Oil Tank (48-A) and Aboveground Overflow Capacity Tank (48-B)
49	Inactive POL Storage Tank No. 4028a
50	" " " " " 4028b
71	Recovered JP-4 Fuel Tank No. 390
79	Underground Tank
83	Sump
108	Explosive Ordinance Disposal Activities Area
110	Underground Waste Oil Tank No. 2336
124	Inactive Underground Tank 1
125	" " " 2
126	" " " 3

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Appendix III

SWMU #	Unit
31	AEG Maintenance Shop Pad
46	Oil/Water Separator No. 196
47	" " " " 494
51	" " " " 375
57	" " " " 379
61	" " " " 5077a
62	" " " " 5077b
63	" " " " 5077c
70	" " " " 326 and leach field
72	" " " " 390
90	" " " " 5114
92	" " " " 5120
93	" " " " 5121
94	" " " " 5144
112	" " " " 2336
127	" " " Near Tank 4095 (#1) and leach field
128	" " " " " " (#2) and leach field
55	Lead Acid Battery Accumulation Point
77	Civil Engineering Container Storage Area
91	Recovered Fuel Tank No. 5114
97	Concrete Rubble Pile
103	Wastewater Playa Lake

AOC	Unit
A	MOGAS Spill
B	JP-4 Fuel Spill
C	Blown Capacitors Site

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