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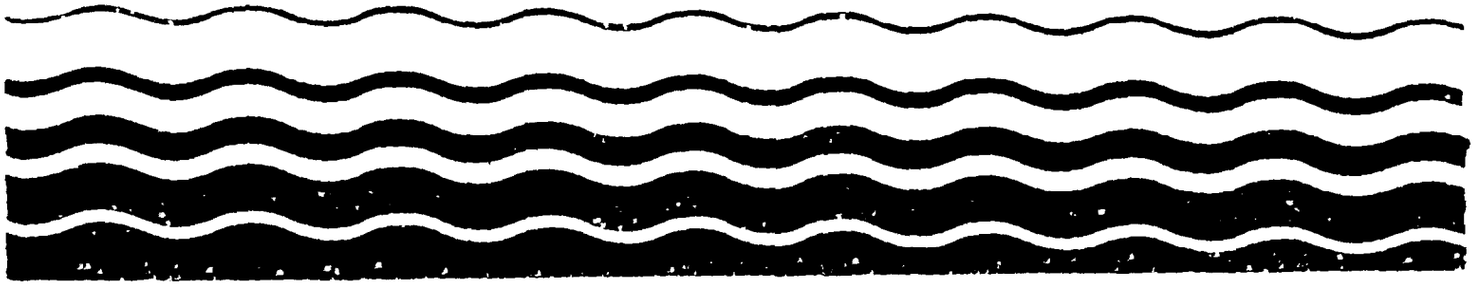
Guidance Manual for the Identification of Hazardous Wastes Delivered to Publicly Owned Treatment Works by Truck, Rail, or Dedicated Pipe



GUIDANCE MANUAL FOR THE IDENTIFICATION OF HAZARDOUS WASTE DELIVERED TO PUBLICLY OWNED TREATMENT WORKS BY TRUCK, RAIL, OR DEDICATED PIPELINE

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EXECUTIVE SUMMARY

Publicly Owned Treatment Works (POTWs) that accept hazardous wastes by truck, rail, or dedicated pipeline within the property boundary of the plant are considered to be hazardous waste treatment, storage, and disposal facilities (TSDFs) and, as such, are subject to regulation under the Resource Conservation and Recovery Act (RCRA). The purposes of this manual are to: (1) offer administrative, and technical recommendations to POTWs seeking to preclude the receipt of hazardous wastes by these transportation methods; and (2) discuss the responsibilities of POTWs choosing to accept hazardous wastes by these transportation methods.

In accomplishing these dual purposes, the manual provides the statutory and regulatory definitions of hazardous wastes. It also describes the RCRA regulatory status of wastes that POTW operators typically may encounter. As this section of the manual demonstrates, the RCRA regulatory status of a waste is not necessarily straightforward. However, the manual provides some guideposts which will assist the operator in making these determinations.

The manual also provides a discussion of legal, administrative, and technical methods to preclude the receipt of hazardous wastes, many of which are already in use. A description of potential liabilities that POTWs may incur as a result of accepting hazardous wastes is also provided. These liabilities may present POTWs with an incentive for adopting programs directed at precluding the receipt of hazardous wastes.

The manual also describes the responsibilities of POTWs that choose to accept hazardous wastes by truck, rail, or dedicated pipeline. This section describes the special regulatory provisions, known as permit by rule requirements, that the RCRA program imposes upon POTWs accepting hazardous wastes by the aforementioned transportation methods.

1. INTRODUCTION

1.1 PURPOSE OF THIS MANUAL

The manual is directed toward two types of facilities. First, guidance is offered to POTWs that wish to preclude the entry of hazardous wastes into their facilities and avoid regulation and liability under RCRA. Administrative and technical recommendations for control of such wastes are provided, many of which are already in use by POTWs. Second, the responsibilities of POTWs that choose to accept hazardous wastes from truck, rail, or dedicated pipeline are discussed, including the relevant regulatory provisions, strict liability and corrective action requirements for releases, and recommended procedures for waste acceptance and management.

Publicly owned treatment works (POTWs) that accept hazardous wastes by truck, rail, or dedicated pipeline within the property boundary of the plant are considered to be hazardous waste treatment, storage, and disposal facilities (TSDFs) and are subject to regulation under the Resource Conservation and Recovery Act (RCRA). This manual provides guidance to POTW operators in determining whether they are regulated by RCRA, describes the relevant regulatory requirements they are subject to under RCRA, and explains methods for avoiding the entry and disposal of hazardous wastes into their sewer systems.

1.2 LEGISLATIVE AND REGULATORY OVERVIEW

RCRA establishes a comprehensive program for managing the disposal of hazardous waste from the time it is generated until its ultimate disposal. This "cradle to grave" management system regulates the hazardous waste activities of generators, transporters, and TSDFs. TSDFs are subject to a wide range of RCRA requirements, encompassing both administrative and technical requirements.

Under RCRA, mixtures of domestic sewage and other wastes that comingle in the POTW's collection system prior to reaching the property boundary, including those wastes that otherwise would be considered hazardous, are excluded

from regulation under the domestic sewage exclusion (see Section 2.1.3 of this guidance for further information regarding this exclusion). However, wastes that are delivered directly to the POTW by truck, rail, or dedicated pipeline do not fall within the exclusion. Hazardous wastes received by these routes may only be accepted by POTWs if the POTWs comply with applicable RCRA requirements for TSDFs.

In promulgating standards for TSDFs under RCRA, the Environmental Protection Agency (EPA) recognized that POTWs already were subjected to extensive Clean Water Act (CWA) requirements and therefore adopted a special TSDF provision known as the "permit by rule" for POTWs accepting hazardous wastes by truck, rail, or dedicated pipeline. These permit by rule requirements are far less comprehensive than those RCRA requirements that apply to non-POTW TSDFs. Under the permit by rule regulation at 40 CFR 270.60(c), a POTW must 1) have a NPDES permit, 2) comply with that permit, 3) obtain a RCRA ID number and comply with certain manifest and reporting requirements under RCRA, 4) satisfy corrective action requirements, and 5) meet all Federal, State, and local pretreatment requirements. (For more information on the procedures for obtaining a permit by rule, please refer to EPA's Guidance for Implementing RCRA Permit By Rule Requirements at POTWs.)

1.3 ORGANIZATION OF THE MANUAL

POTWs must ascertain if they are accepting hazardous wastes regulated by RCRA to determine if they are subject to RCRA permit by rule conditions. Chapter 2 provides the statutory and regulatory definition of "hazardous waste" and describes examples of types of waste that, if received by POTWs, will trigger the RCRA regulations. In addition, the regulatory status of selected wastes that may be received by POTWs is discussed by way of example. Chapter 3 provides guidance to POTWs that choose not to accept regulated hazardous wastes. Control measures are presented that may be employed to prevent the discharge of hazardous wastes inside the POTW's property boundary by truck, rail, or dedicated pipeline. These measures include ordinance provisions, administrative control mechanisms, inspection and sampling techniques to regulate known discharges, and surveillance and investigative procedures to prevent unknown discharges. Chapter 3 also addresses the

development and implementation of a waste monitoring plan as part of the hazardous waste identification process. In Chapter 4, the responsibilities of POTWs that choose to accept hazardous wastes by truck, rail, or dedicated pipeline are discussed, including RCRA permit by rule requirements and the potential liabilities associated with the receipt of hazardous wastes.

2. DESCRIPTION OF RCRA REGULATED WASTES

A POTW must ascertain if hazardous wastes are delivered to the property boundary by truck, rail, dedicated pipeline*, or vessel (the remainder of this document does not refer to "vessels" although the requirements and recommendations are also applicable to them) to determine if it is subject to the RCRA permit by rule requirements. The receipt of hazardous wastes by these transportation methods triggers the permit by rule requirements. Under RCRA, the classification of a material as a hazardous waste is contingent upon several factors, including both legal and technical considerations.

At a minimum, a POTW needs to determine whether the waste it received was accompanied by a Hazardous Waste Manifest since, if it was, the waste was certainly a hazardous waste. However, POTWs may want to ascertain whether wastes not accompanied by a Manifest are also hazardous since POTWs may be subject to RCRA responsibilities even if they unknowingly accept hazardous wastes.

This chapter provides a description of key factors used by EPA in determining whether a material is a hazardous waste. It also provides several examples of common wastes and discusses their regulatory status under RCRA as of the time this manual was prepared. The determination of whether or not a material is a hazardous waste is not a straightforward exercise, and several procedural and technical steps must be taken by the POTW operator to make a positive determination. State and EPA Regional hazardous waste program officials can help POTWs in making these determinations by providing records of known hazardous waste handlers. Recommended steps for determining whether or not a material is a hazardous waste are provided in Chapter 3.

2.1 DEFINITION OF SOLID WASTE

The definition of "solid waste" is central to the determination of whether or not a waste is hazardous. Under RCRA, hazardous wastes are a

*A dedicated pipeline refers to a separate pipeline that is used to carry hazardous wastes directly to a POTW's property boundary without prior mixing with domestic sewage.

subset of solid wastes. Therefore, a material must be considered a solid waste to be defined as a hazardous waste. The term "solid waste" includes essentially all physical forms of waste (i.e., solids, liquids, semisolids, or contained gaseous substances), and is therefore broader than what normally is considered to be "solid."

2.1.1 Definition of Solid Waste

Section 1004(27) of RCRA defines "solid waste" to mean

> . . . any garbage, refuse, sludge from a waste treatment plant, water supply treatment plant, or air pollution control facility and other discarded material, including solid, liquid, semisolid, or contained gaseous materials resulting from industrial, commercial, mining, and agricultural operations, and from community activities . . . does not include solid or dissolved material in domestic sewage, or solid or dissolved materials in irrigation return flows or industrial discharges which are point sources subject to permits under Section 402 of the Federal Water Pollution Control Act, as amended (86 Stat. 880), or source, special nuclear, or byproduct material as defined by the Atomic Energy Act of 1954, as amended (68 Stat. 923).

Under RCRA, if a business generates any material that is discarded or disposed of, it must determine if that material is a "solid waste" according to the regulatory definition. According to the regulatory definition, "solid waste" is any material that is abandoned or disposed of, burned or incinerated, or stored, treated, or accumulated before or in lieu of these actions.

2.1.2 Domestic Sewage Exclusion

Some materials, however, are NOT considered to be solid wastes under RCRA, including domestic sewage or any mixture of domestic sewage and other wastes that pass through a sewer system to a POTW. While this exclusion, known as the domestic sewage exclusion, extends to most wastes that reach POTWs, IT DOES NOT exempt wastes received within the POTW's property boundary by truck, rail, or dedicated pipeline.

2.2 DEFINITION OF HAZARDOUS WASTE

As defined in Section 1004(5) of RCRA, "the term hazardous waste means a solid waste, or combination of solid wastes, which because of its quantity, concentration, or physical, chemical or infectious characteristics may --

(A) cause, or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; or

(B) pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed."

Section 3001 of RCRA directs EPA to identify or list those solid wastes that are considered hazardous for regulatory purposes. These regulations are codified in 40 CFR Part 261. All solid waste generators must determine if any of their waste is hazardous. If their waste is hazardous, they must notify EPA or the State of that fact (see Section 4.4.1 of this guidance for details on notification).

There are four steps for determining whether a solid waste is regulated as a hazardous waste under Federal law:

- First, determine if the waste is exempted from regulation as a solid or a hazardous waste (see, for example, Section 2.3.1.1).
- Second, check to see if it is listed as a hazardous waste in Subpart D of 40 CFR 261. Listed wastes are regulated as hazardous wastes unless they have been specifically delisted (see Section 2.2.2).
- If the waste has not been listed as a hazardous waste, determine if it exhibits, on analysis, any of the characteristics of a hazardous waste, cited in Subpart C of 40 CFR 261 (see Section 2.2.1).
- Last, determine if the waste is a mixture. A mixture of a listed waste and a nonhazardous solid waste is considered hazardous unless it has been specifically excluded under 40 CFR Part 261.3. A mixture of a characteristic waste and a nonhazardous solid waste is only considered hazardous if it still exhibits one or more of the hazardous waste characteristics.

Figure 2-1 presents a flow chart of the hazardous waste identification process. The following discussion provides a general overview of this process. More information on this process is provided in 40 CFR Part 261. Note, however, that the definition of hazardous waste provided here is the Federal definition. States may have more stringent or different definitions of hazardous waste. See Section 2.3.1.11.

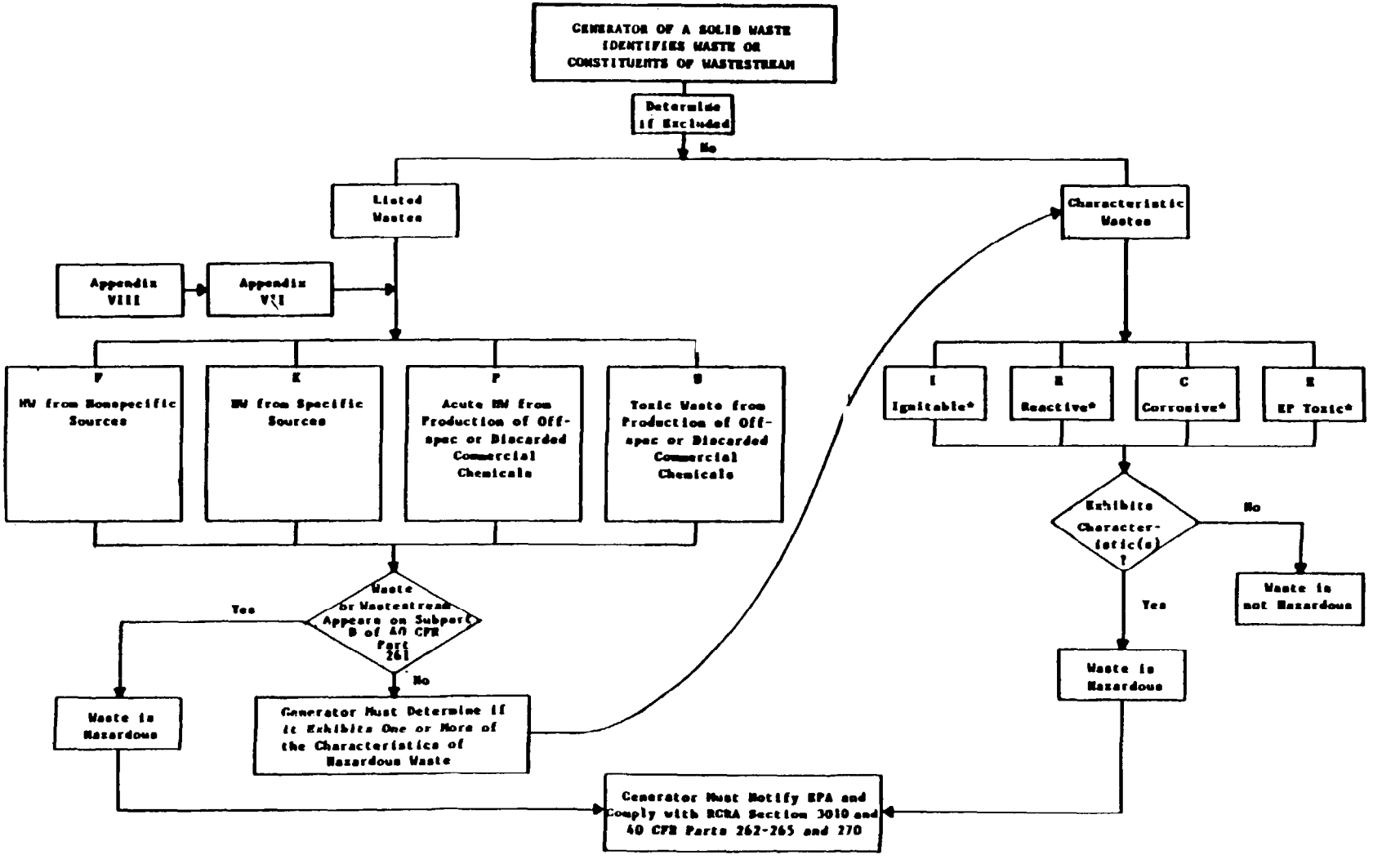
The generator is responsible for determining whether a solid waste is hazardous. A generator must review EPA's hazardous waste listings to determine if the solid waste is a listed hazardous waste. If the waste is not listed, the generator either must test his solid waste using standard methods (specified in 40 CFR Part 261) or have sufficient knowledge about his waste to assess whether it exhibits any of the hazardous waste characteristics. The tests must be run on representative samples to obtain results that adequately characterize the nature of the waste. If the waste exhibits a hazardous waste characteristic, then it is hazardous and must be handled accordingly.

2.2.1 Characteristic Wastes

Any solid waste that exhibits one or more of the hazardous waste characteristics is classified as a hazardous waste under RCRA. For example, if a sewage sludge exhibited any one of the four characteristics below it would be considered a hazardous waste:

- Ignitability
- Corrosivity
- Reactivity
- EP Toxicity.

EPA used two criteria in selecting these characteristics as indicators of hazardous waste. The first criterion was that the characteristics be capable of being defined in terms of physical, chemical, or other properties that cause the waste to meet the definition of hazardous waste in the Act (see pages 2-2 and 2-3). The second criterion was that the properties defining the characteristics be measurable by standardized, available testing protocols. The second criterion was adopted because the primary responsibility for



*See 40 CFR Part 261 Subpart C for specific test criteria to determine characteristics of hazardous waste.
†See Section 2.2.2 for discussion of Appendix VII and VIII.

FIGURE 2-1. HAZARDOUS WASTE IDENTIFICATION PROCESS

determining whether a solid waste exhibits any of the characteristics rests with the generators. EPA was concerned that unless generators were provided with widely available and uncomplicated methods for determining whether their wastes exhibited the characteristics, the identification system would prove unworkable.

As testing protocols become generally acceptable and EPA's confidence in setting minimum thresholds increases, more characteristics will be added. The Hazardous and Solid Waste Amendments (HSWA) of 1984 require that the Administrator promulgate regulations identifying additional characteristics. Section 2.2.1.4 of this guidance describes how EPA plans to expand the coverage of one of the characteristic tests.

The properties of wastes exhibiting any or all of the existing characteristics are defined in 40 CFR Parts 261.20-261.24, and are described briefly below.

2.2.1.1 Ignitability

A solid waste that exhibits any of the following properties is considered hazardous due to its ignitability:

- A liquid, except aqueous solutions containing less than 24 percent alcohol, that has a flashpoint less than 60°C (140°F)
- A nonliquid capable, under normal conditions, of spontaneous and sustained combustion
- An ignitable, compressed gas per Department of Transportation (DOT) regulations
- An oxidizer per DOT regulations (40 CFR Part 261.21).

EPA's objective in selecting ignitability as a hazardous waste characteristic was to identify wastes capable of causing fires during routine transportation, storage, and disposal and/or exacerbating a fire once started. EPA recognized that such fires pose a particular danger to transportation and disposal personnel and also threaten the general public by generating toxic fumes and transporting toxic particulates to the surrounding area. Solid

wastes exhibiting the ignitability characteristic are assigned EPA Hazardous Waste Number D001.

2.2.1.2 Corrosivity

A solid waste that exhibits any of the following properties is considered hazardous due to its corrosivity (40 CFR Part 261.22):

- An aqueous material with pH less than or equal to 2 or greater than or equal to 12.5
- A liquid that corrodes steel at a rate greater than 1/4 inch per year at a temperature of 55°C (130°F).

EPA selected pH as a corrosivity indicator because wastes exhibiting low or high pH can: result in harm to human tissue, promote the migration of toxicants from other wastes, react dangerously with other waste, and cause harm to aquatic life. EPA selected the second indicator of corrosivity because wastes capable of corroding metal can escape from the containers in which they are segregated, thus freeing other wastes to the environment. Solid wastes exhibiting the corrosivity characteristics are assigned EPA Hazardous Waste Number D002.

2.2.1.3 Reactivity

A solid waste that exhibits any of the following properties is considered hazardous due to its reactivity (40 CFR Part 261.23):

- Normally unstable and reacts violently without detonating
- Reacts violently with water
- Forms a potentially explosive mixture with water
- Generates toxic gases, vapors, or fumes when mixed with water
- Contains cyanide or sulfide and generates toxic gases, vapors, or fumes at a pH between 2 and 12.5
- Capable of detonation if heated under confinement or subjected to strong initiating source
- Capable of detonation at standard temperature and pressure
- Listed by DOT as a Class A or B explosive.

As these properties imply, reactivity is largely defined on a qualitative rather than quantitative basis. Reactivity tests yielding quantitative results are difficult to administer and interpret. Nonetheless, reactivity can pose a hazard at any stage of the waste management cycle. Thus, despite the fact that the characteristic of reactivity cannot be easily measured, EPA promulgated reactivity as a hazardous waste characteristic. EPA reasoned that operators, out of concern for their facilities, generally are aware that a waste is reactive. Furthermore, reactive wastes rarely are generated from nonreactive feedstocks. Examples of reactive wastes include water from trinitrotoluene (TNT) operations. Solid wastes exhibiting the reactivity characteristic are assigned EPA Hazardous Waste Number D003.

2.2.1.4 EP Toxicity

The term EP toxicity refers to a characteristic of a waste (40 CFR Part 261.24), as well as a test for that characteristic. The extraction procedure (EP) test is designed to identify wastes likely to leach hazardous concentrations of particular toxic constituents into the ground water as a result of improper management.

The contamination of ground water through the leaching of waste contaminants from land disposed wastes is one of the most prevalent pathways by which toxic waste constituents migrate to the environment. The legislative history of RCRA and HSWA indicates that ground water contamination is one of Congress primary areas of concern with regard to hazardous waste management. Under the EP test procedure, constituents are extracted from the waste in a manner designed to simulate the leaching action that occurs in sanitary landfills. This extract then is analyzed to determine whether it possesses any of the toxic contaminants identified in the National Interim Primary Drinking Water Standards (NIPDWS). If the extract contains any of the contaminants in concentrations 100 times greater than that specified in the NIPDWS, the waste is considered to be hazardous. The contaminants of concern, which include eight metals and six herbicides/pesticides, are listed in Table 2-1. Solid wastes exhibiting the EP toxic characteristic are assigned EPA Hazardous Waste Numbers D004 to D017.

TABLE 2-1. CONSTITUENTS AND CONCENTRATIONS FOR 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
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 ($C_{10}H_{19}Cl_8$, 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-Trichlorophenoxy-propionic acid)	1.0

Like other test procedures employed to identify hazardous characteristics, the EP test is intended to serve as a quick means of identifying wastes that are capable of posing a substantial present or potential hazard to human health and the environment when improperly managed. Consequently, in devising the test, EPA necessarily had to make certain assumptions about improper management processes to which toxic wastes capable of contaminating ground water are likely to be subjected. For purposes of modeling EP toxicity, EPA assumed co-disposal of toxic wastes in an actively decomposing municipal landfill overlying a ground water aquifer. This is a relatively conservative assumption, given that municipal landfills are characterized by rapidly decomposing wastes, which tends to generate more aggressive leaching than can be found in other landfills.

As part of HSWA, EPA is required to reconsider the EP toxicity test with respect to two perceived shortcomings. The first shortcoming is the limited number of contaminants addressed by the EP toxicity test (see Table 2-1). The second shortcoming concerns the fact that the existing EP test was optimized to evaluate the leaching of elemental rather than organic constituents. On June 13, 1986, EPA published a notice in the Federal Register (51 FR 21648) which proposed the following amendments to the EP toxicity characteristic: expanding the characteristic to include 38 additional compounds; applying compound specific dilution/attenuating factors (as opposed to a constant dilution factor of 100 to establish acceptable threshold levels for each contaminant); and introducing a second leaching procedure, known as the Toxicity Characteristic Leaching Procedure (TCLP) to address the mobility of both organic and inorganic compounds. EPA intends to replace the EP toxicity test with the TCLP test.

2.2.2 Listed Hazardous Waste

A waste is regulated and must be managed as a hazardous waste if it is listed in 40 CFR Parts 261.31-261.33 (see Appendix A-1). If a waste appears on any of these lists, it is a regulated hazardous waste, regardless of whether or not it displays the hazardous waste characteristics described above. Hazardous wastes may be listed as "toxic," "acutely hazardous," or because they exhibit one or more of the hazardous waste characteristics. A brief explanation of each of these terms is provided below.

Solid wastes are listed as toxic hazardous wastes (hazard code 'T') if they contain a toxic constituent from Appendix VIII and pose a substantial or potential threat to human health and the environment upon consideration of multiple factors that appear in §261.11(a)(3). Appendix VIII constituents, known as "hazardous constituents," are pollutants which have toxic, carcinogenic, mutagenic, or teratogenic effects on humans or other life forms. (Appendix VIII appears as Appendix A-2 of this document). The presence of any of these constituents in the waste is presumed to be sufficient to list the waste unless EPA concludes that the waste is not hazardous, after consideration of the following factors: the type of toxic threat posed; the concentrations of the constituents in the waste; the migration, persistence, and degradation potential of the constituents; the degree to which the constituents bioaccumulate in ecosystems; the plausible types of improper management to which the waste could be subjected; the quantities of waste generated; and other factors, including damage incidents involving wastes containing the constituents and actions taken by other governmental agencies with respect to the waste or its toxic constituents.

Acutely hazardous wastes ('H'), in contrast, are listed because they may "cause or significantly contribute to an increase in serious, irreversible, or incapacitating reversible, illness" even when managed properly (emphasis added).

Solid wastes may also be listed as hazardous wastes if they exhibit one or more of the hazardous waste characeristics. Any waste may be listed as EP toxic ('E') if it contains certain concentrations of heavy metals or pesticides after performing the Extraction Procedure (EP) test prescribed in §261-24. Wastes may also be listed for exhibiting the hazardous characteristics of ignitability ('I'), corrosivity ('C') or reactivity ('R').

Constituent(s) which caused EPA to list a waste as EP toxic ('E') or toxic ('T') appear in Appendix VII of Part 261 of the the RCRA regulations. Appendix VII appears as Appendix A-3 of this document. There is a significant overlap between the CWA priority pollutant list and the Appendix VIII list of hazardous constituents. Many of the priority pollutants have been used as a basis for listing wastes and thus appear in Appendix VII as well.

The listed wastes are subcategorized into four separate categories:

- Hazardous wastes from nonspecific sources -- These wastes are generated by activities that are not specific to a particular industry or process. For example, spent degreasing solvents are listed as hazardous wastes. Wastes listed in this manner appear on the "F" list in Appendix A-1.

- Hazardous wastes from specific sources -- These include wastes generated by a specific product process by a particular industry, such as emission control dust/sludge from secondary lead smelting (K069). They appear on the "K" list in Appendix A-1.

- Acutely hazardous commercial chemical products, off-specification species, container residues, and spill residues -- These wastes are acutely hazardous and include discarded chemical products manufactured or formulated for commercial or manufacturing use, and which consist 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. These wastes were listed to account for all acutely toxic chemical products that are sometimes thrown away in pure or diluted form. Reasons for discarding these materials might be that the materials do not meet required specifications, inventories have been changed, or the product line has been altered. Wastes listed in this manner appear on the "P" list in Appendix A-1.

- Toxic commercial chemical products, off-specification species, container residues, and spill residues -- Substances may be listed as hazardous because they are chronically toxic or they exhibit one or more of the characteristics of hazardous waste (ignitability, corrosivity, reactivity, or EP toxicity). These wastes include chemical products manufactured or formulated for commercial or manufacturing use, and which consist 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. Wastes listed in this manner appear on the "U" list in Appendix A-1.

A generator who handles listed wastes may petition the Administrator to have his waste "delisted." The petitioner must demonstrate to EPA that his waste is not hazardous. To demonstrate this, the generator must provide sampling and analytical data and detailed information on his waste management procedures. Further information on delisting can be found in Guidance Petitions to Delist Hazardous Wastes (EPA/530-SW-85-003, April, 1985).

If a waste does not appear on any of these lists, then the generator must determine whether his solid waste exhibits any of the hazardous waste characteristics, as described in Section 2.2.1.

2.2.3 Mixture Rule

One of the questions that EPA faced when setting conditions for identifying hazardous wastes was how to classify a waste mixture that was composed of both a listed hazardous waste and a nonhazardous solid waste. EPA decided that any waste mixture containing a listed waste would be considered hazardous, regardless of the proportion of the listed waste contained in the mixture. Consequently, if a POTW accepts a listed hazardous waste by truck, rail, or dedicated pipeline, the resulting mixture of sludge and listed hazardous waste is considered hazardous under RCRA.

Without the mixture rule, generators could evade Subtitle C requirements simply by comingling listed wastes with nonhazardous solid wastes. Most of these waste mixtures would not be captured by the four Subtitle C characteristics because they would contain wastes that were listed for reasons other than exhibiting the characteristics (e.g., they are acutely toxic). There are, however, two exceptions to the mixture rule:

- If an industrial wastewater discharge subject to regulation by the CWA is mixed with low concentrations of a listed waste, as specified in 40 CFR Section 261.3(a)(2)(iv), the resultant mixture of specified pollutants is not considered a listed hazardous waste at certain concentrations. For example, if carbon tetrachloride, tetrachloroethylene and/or trichloroethylene are mixed with an industrial waste subject to the pretreatment regulations (e.g., an electroplating wastewater), the mixture is not subject to the RCRA regulations provided that the maximum total usage of these solvents divided by the average weekly flow of wastewater into the headworks of the facility's pretreatment system does not exceed 1 part per million (40 CFR Part 261.3(a)(2)(iv)(A)). However, if such a mixture exhibits one of the characteristics, it is deemed hazardous.

- Mixtures of nonhazardous wastes and listed wastes that are listed solely for exhibiting a hazardous waste characteristic are not considered hazardous if the mixture no longer exhibits any characteristics. Only four wastes on the 'F' and 'K' lists are listed purely due to the fact that they exhibit a hazardous waste characteristic. They are: spent nonhalogenated solvents exhibiting the ignitability

characteristic (F003); and three separate wastestreams from the explosives industry that exhibit reactivity (K044, K045, and K047). Such exceptions may be subject to change.

2.3 RCRA REGULATORY STATUS OF SELECTED WASTES THAT MAY BE RECEIVED BY POTWS

As can be seen from the above definitions of solid and hazardous wastes, determining whether or not a waste is subject to RCRA requirements is not always a straightforward exercise. This section provides examples of wastes that POTW operators typically may encounter and discusses their regulatory status under RCRA. In most cases, determination that a waste is hazardous requires the operator to know: (1) the source of the waste, and/or (2) the waste's composition and characteristics. As illustrated in Table 2-2, the wastes described below may or may not be hazardous. The following discussion provides additional details on how an operator may determine the status of wastes received for treatment by truck, rail, or dedicated pipeline. However, in most cases, the recommended controls discussed in Section 3 must be implemented to make an informed decision.

2.3.1 Selected Wastes

2.3.1.1 Septage Wastes

Septage wastes delivered to POTWs by truck, rail, or dedicated pipeline are regulated as solid wastes under RCRA. However, septage wastes derived from household sources are specifically excluded from regulation as hazardous wastes. Household wastes include materials (i.e., garbage, trash, and sanitary wastes in septic tanks) derived from households including single and multiple residences, hotels and motels, bunk houses, ranger stations, crew quarters, camp grounds, picnic grounds, and day-use recreation areas. On the other hand, septage wastes derived from nonhousehold sources, such as industrial septic tanks, are regulated like any other solid waste under RCRA provisions and may meet the definition of hazardous waste. In addition, household wastes mixed with hazardous waste may meet the definition of hazardous waste via the mixture rule, as described in Section 2.2.3.

In managing septage wastes, a POTW should identify the possible sources of septage wastes (see discussion on legal and administrative procedures in

TABLE 2-2. SUMMARY OF SELECTED WASTES

Waste	Is it RCRA Hazardous?	Determining Variables
Septage Wastes	Potentially	• Is it wholly or in part hauled from an industrial site? If hauled, does it contain or has it been mixed with listed or characteristic wastes?
Metal Finishing Wastes	Potentially	• Is it a listed metal finishing waste-stream? If not, does it exhibit a hazardous waste characteristic?
Spent Solvents	Potentially	• Is it a listed spent solvent?
Pickle Liquor	Potentially	• Is it accepted as waste or is it used as a wastewater conditioner? Is it generated from the iron and steel industry?
Leachate, Contaminated Ground Water, and Impoundment Wastes	Potentially	• Is it wastewater from a RCRA TSDF that has handled listed wastes? • If it is wastewater from a RCRA TSDF that has handled characteristic wastes only, does it exhibit a hazardous waste characteristic?
Superfund Wastes	Potentially	• Was it determined to be a hazardous waste during Agency/State investigations?
Small Quantity Generator Wastes	Potentially	• Does the source facility generate more than 1 kilogram per month of acutely hazardous waste? • Does the source facility generate between 100 and 1,000 kilograms per month of nonacutely hazardous waste?
Used Oil	Potentially	• Used oils intended for disposal which exhibit hazardous waste characteristics are hazardous. Used oil intended for recycling is not considered a listed hazardous waste (51 FR 4190).
Spill Residues (including transportation spills)	Potentially	• Is the spilled material a listed hazardous waste? • Does the spill residue exhibit a hazardous waste characteristic? • Is it a cleanup residue of a spill of any of the 400 commercial chemical products or manufacturing chemical intermediaries identified in RCRA?
PCB Wastes	No	
State Hazardous Wastes	Potentially	• Unless the waste is also considered hazardous under Federal RCRA regulations, receipt will not trigger Federal permit by rule requirements.

Chapter 3). Septage wastes derived exclusively from household sources will not trigger the POTW permit by rule requirements even if the septic wastes include a listed hazardous waste or exhibit a RCRA hazardous characteristic. When septage wastes are derived wholly or in part from nonhousehold sources, such as industrial septic tanks, the wastes are regulated as any other solid wastes, and may be deemed hazardous if the septage has been contaminated with listed or characteristic wastes. Accordingly, a POTW should exercise great care in the management of septage wastes received by truck, rail, or dedicated pipeline that it knows or suspects may originate from industrial sources.

2.3.1.2 Metal Finishing Wastes

Many metal finishing wastes, especially those wastes containing cyanide, are regulated as listed hazardous wastes under RCRA. Examples of these wastes include spent cyanide plating bath solutions, bottom sludges containing cyanide, and wastewater treatment sludges from electroplating operations. Table 2-3 is a partial listing of hazardous wastes that may be found in electroplating operations. Other listed wastes may appear in integrated facilities. In addition, some nonlisted metal finishing wastestreams (e.g., rinse waters) may qualify as characteristic hazardous wastes due to the presence of metal constituent concentrations at levels exceeding the criteria for the EP toxicity characteristic. Chapter 3 describes procedures for making determinations as to whether wastes received from metal finishers may be hazardous.

Under the Clean Water Act's general pretreatment program regulations (40 CFR Part 403), metal finishing wastes sent directly to a POTW by truck, rail, or dedicated pipeline also must meet categorical pretreatment standards (and any local limits) for the metal finishing industrial category and prohibited discharge standards. In view of the typical metal concentrations found in metal finishing wastes, this requirement would imply pretreatment of the waste prior to its delivery to the POTW. Where a metal finishing waste is diluted or mixed with other wastes at the manufacturing facility, a POTW would apply the combined wastestream formula (as described in 40 CFR Part 403.6) to determine appropriate limits for discharge of the wastewater. Pretreating listed hazardous wastes (e.g., spent cyanide plating bath solutions) will not

TABLE 2-3. LISTED METAL FINISHING WASTES

Hazardous Waste Number (Hazard Code)	Listed Hazardous Waste	Appendix VII Constituents
F006 (T)	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.	Cadmium, hexavalent chromium, nickel, cyanide (complexed).
F019 (T)	Wastewater treatment sludges from the chemical conversion coating of aluminum.	Hexavalent chromium, cyanide (complexed).
F007 (R,T)	Spent cyanide plating bath solutions from electroplating operations.	Cyanide (salts).
F008 (R,T)	Plating bath residues from the bottom of plating baths from electroplating operations where cyanides are used in the process.	Cyanide (salts).
F009 (R,T)	Spent stripping and cleaning bath solutions from electroplating operations where cyanides are used in the process.	Cyanide (salts).
F010 (R,T)	Quenching bath residues from oil baths from metal heat treating operations where cyanides are used in the process.	Cyanide (salts).
F011 (R,T)	Spent cyanide solutions from salt bath pot cleaning from metal heat treating operations.	Cyanide (salts).
F012 (T)	Quenching wastewater treatment sludges from metal heat treating operations where cyanides are used in the process.	Cyanide (complexed).

affect their status as hazardous wastes. However, pretreating characteristic wastes, such as highly concentrated metal laden rinse waters, may work to improve the quality of the wastewater to a degree where it no longer displays the relevant characteristic. In this case, the wastewater is no longer hazardous.

2.3.1.3 Spent Solvents

Spent solvents are regulated as listed hazardous wastes under RCRA. Accordingly, hauled wastes containing spent solvents must be handled as hazardous wastes. Spent solvent listings presently encompass 30 organic compounds (see Table 2-4). Several of these solvents are used widely by manufacturing facilities for degreasing metal parts. Discharge of spent solvents from certain industrial sources, such as electroplating operations, also may be regulated under categorical pretreatment standards for parameters such as total toxic organics. See Table 2-4 for the spent solvents listed as hazardous wastes.

2.3.1.4 Pickle Liquor

Most recycled materials are considered solid wastes by EPA, although some of these materials are exempted from the definition of hazardous waste. This distinction depends on both the recycling activity and the nature of the recycled material. An example of a waste that may be sent to a POTW for recycling is spent pickle liquor.

Spent pickle liquor (a metal laden acid bath) from iron and steel industry finishing operations is regulated as a listed hazardous waste. Spent pickle liquor from industrial operations other than the iron and steel industry is not a listed hazardous waste. However, these pickle liquors may be hazardous if they exhibit one or more of the hazardous waste characteristics.

Where utilized as a wastewater conditioner (i.e., phosphorus removal, sludge conditioner) in a POTW, spent pickle liquor can be considered a recycled material exempt from RCRA regulation. Under RCRA provisions,

TABLE 2-4. LISTED SOLVENTS

Hazardous Waste Number (Hazard Code)	Listed Hazardous Waste
F001 (T)	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.
F002 (T)	The following spent halogenated solvents: tetrachloroethylene, methylene chloride, trichloroethylene, 1,1,1-trichloroethane, chlorobenzene, 1,1,2-trichloro-1,2,2-trifluoroethane, ortho-dichlorobenzene, and 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.
F003 (I)	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 solvents and spent solvent mixtures.
F004 (T)	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 the still bottoms from the recovery of these spent solvents and spent solvent mixtures.
F005 (I,T)	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.

materials are not solid wastes when they can be shown to be recycled by being employed in a particular function or applied as an effective substitute for a commercial product. Accordingly, permit by rule requirements will not apply to truck, rail, and dedicated pipeline discharges consisting solely of spent pickle liquor from iron and steel facilities used for wastewater treatment at a POTW. However, spent pickle liquor from iron and steel facilities received at POTWs would be considered hazardous if the material was not being applied as a part of the wastewater treatment operation.

2.3.1.5 Leachate, Contaminated Ground Water, and Impoundment Wastes

Facilities that treat, store, or dispose of RCRA regulated hazardous wastes may generate hazardous waste residuals as a result of normal operations or due to unusual situations (e.g., facility closure requirements). Examples of such residuals are leachates, contaminated ground water. and surface impoundment wastes. The regulatory status of these aqueous waste residuals is determined by the types of waste handled at the TSDF generating the residual wastewater. When the wastewater is derived from the treatment, storage, or disposal of a listed waste at a RCRA TSDF, the residual waste also is regulated as a listed hazardous waste. However, where a mixture of ground water and listed leachate waste can be rendered non-hazardous by treating the mixture to remove the leachate, the ground water is not considered a listed hazardous waste. Where the waste originates from the treatment, storage, or disposal of a characteristic waste at a RCRA TSDF, the residual is hazardous only if it exhibits one of the hazardous waste characteristics. In accordance with RCRA requirements, the generator is responsible for determining whether a solid waste is hazardous. Thus, if a POTW receives, and plans to accept, an unmanifested aqueous waste from a RCRA TSDF, a prudent approach would be to verify that it is not hazardous by obtaining accurate information concerning the types of solid and hazardous wastes managed at the TSDF generating the wastes. The POTW operator also may want to conduct independent verification by sampling and inspections (see Section 3.3).

The regulatory status of residual waste from solid waste management facilities, such as sanitary landfills, also is determined by the types of waste managed at the facility. Under the RCRA exclusion for household wastes,

household wastes and residuals resulting from the treatment, storage, and disposal of household waste are exempt from regulation as hazardous waste. Accordingly, where a leachate or other residual wastewater originates from a solid waste management facility managing only household wastes, the wastewater is exempt from regulation as hazardous waste. Where the facility also accepts nonhousehold wastes such as industrial or commercial wastes, the residual wastewater may be deemed hazardous if it exhibits any characteristic of a hazardous waste. Consequently, POTWs may want to evaluate whether leachate and other wastewaters from solid waste management facilities (known or believed to be managing industrial or commercial wastes) test for possible hazardous characteristics, especially EP toxicity. See Section 3.3 for recommended methods for determining testing requirements.

2.3.1.6 Superfund Waste

Cleanup of Superfund sites by Federal, State, and private parties frequently results in the generation of aqueous wastes such as leachate, contaminated ground water, impoundment wastes, and other wastewaters. Where delivered to a POTW by truck, rail, or dedicated pipeline, some Superfund wastes may be hazardous as defined by RCRA, and therefore may trigger permit by rule requirements for the POTW managing the waste. Substances found most often at Superfund sites include: trichloroethylene, lead, toluene, benzene, PCBs, and chloroform. Wastes from Superfund sites can contain many other substances as well, depending on site-specific characteristics. Before accepting wastes from Superfund sites, POTW operators should ascertain from the EPA/State whether the waste is hazardous and should ensure that any necessary local pretreatment requirements are established and will be met in accordance with 40 CFR Part 403.

2.3.1.7 Small Quantity Generator Waste

It is estimated that 630,000 facilities in the Nation generate less than 1,000 kilograms of hazardous waste per month. Historically, these small quantity generators (SQGs) have been subject to less stringent RCRA disposal requirements than other generators. However, regulations recently promulgated by EPA have significantly tightened these SQG requirements. Nevertheless,

POTWs should be aware that receiving some wastes that might otherwise trigger the RCRA permit by rule requirements for the POTW will not trigger those requirements if the waste originated exclusively with certain SQGs.

When EPA originally promulgated the SQG regulations in May 1980, the exclusion level was set at 1,000 kilograms per month of hazardous waste with the understanding that EPA later would expand the SQG requirements to include facilities generating between 100 and 1,000 kilograms of hazardous waste per month. Pursuant to a mandate in the 1984 HSWA amendments to review and establish regulations for SQGs that generate 100-1,000 kilograms per month, EPA promulgated a second set of regulations, effective September 22, 1986, to strengthen controls on the management of SQG wastes.

For regulatory purposes, three classes of SQGs have been distinguished:

- Generators of less than 1 kilogram per month of acutely hazardous waste ('H' hazard code wastes)
- Generators of less than 100 kilograms per month of nonacutely hazardous wastes ('T' hazard code wastes)
- Generators of between 100 and 1,000 kilograms per month of nonacutely hazardous wastes ('T' hazard code wastes).

The first two categories of SQGs are conditionally exempt SQG's, subject to the following minimal hazardous waste disposal requirements: hazardous waste determination, storage restrictions, and disposal at a state-approved solid waste management or recycling facility. Under RCRA permitting regulations, any facility that treats, stores, or disposes of these conditionally exempt SQG wastes (i.e., less than 1 kilogram per month acutely hazardous wastes or 100 kilograms per month nonacutely hazardous waste) is not required to obtain a RCRA permit. Accordingly, those conditionally exempt SQG wastes will not trigger POTW permit by rule requirements.

The third category of SQGs generate between 100 and 1,000 kilograms per month of nonacutely hazardous waste. They must comply with more comprehensive generator requirements, including hazardous waste determination, notification,

onsite storage restrictions, disposal at a Subtitle C facility, compliance with DOT requirements, and manifesting. Under RCRA permitting regulations, facilities managing these SQG wastes (i.e., between 100 and 1,000 kilograms per month of nonacutely hazardous waste) must obtain a RCRA TSDF permit. Consequently, such SQG wastes delivered to a POTW by truck, rail, or dedicated pipeline will trigger POTW permit by rule requirements. POTWs that receive these SQG wastes by truck, rail, or dedicated pipeline should obtain accurate information on the types and quantities of hazardous wastes generated by these facilities. See Table 2-5 for a list of common SQGs generating hazardous wastes in this volume category.

A transporter may conduct "milk runs" of conditionally exempt SQG wastes from several generators, none of whom contribute enough waste to trigger comprehensive RCRA requirements, including the requirement that the waste be treated, stored, or disposed of at a RCRA TSDF. If a POTW receives such waste, even if the total amounts to greater than 1,000 kilograms, permit by rule requirements would not be triggered. (Nevertheless, the POTW should take precautions to ensure that acceptance of such wastes by the POTW will not cause pass through or interference under the Clean Water Act's pretreatment program.)

2.3.1.8 Used Oil

As defined by RCRA statutory provisions, used oil is any oil that has been refined from crude oil, used and, as a result of such use, contaminated by physical or chemical impurities. Used oils include: (1) spent automotive lubricating oils (including car and truck engine oil), transmission fluid, brake fluid, and off-road engine oil; (2) spent industrial oils, including compressor, turbine, and cleaning oils, hydraulic oils, metal working oils, gear oils, electrical oils, refrigerator oils, and railroad drainage; and (3) spent industrial process oils. Under current RCRA provisions, used oils intended for recycling, including those exhibiting any hazardous waste characteristic, are exempt from RCRA hazardous waste generator, transporter, treatment, storage, and disposal regulations. EPA has decided not to list

TABLE 2-5. ESTIMATED NUMBER OF SMALL QUANTITY GENERATORS (100 KG TO 1,000 KG/MONTH) BY INDUSTRY GROUP[1]

Industry Group	Number of Generators
Pesticide End Users	231
Pesticide-Application Services	1,660
Chemical Manufacturing	391
Wood Preserving	107
Formulators	395
Laundries	2,515
Photography	2,817
Textile Manufacturing	124
Vehicle Maintenance	82,528
Equipment Repair	269
Metal Manufacturing	11,076
Construction	1,117
Motor Freight Terminals	45
Furniture/Wood Manufacture and Refinishing	579
Printing/Ceramics	3,420
Cleaning Agents and Cosmetic Manufacturing	265
Other Manufacturing	946
Paper Industry	83
Analytical and Clinical Laboratories	1,286
Educational and Vocational Establishments	241
Wholesale and Retail Establishments	575
TOTAL	110,677

[1] Source: National Small Quantity Hazardous Waste Generator Survey, ABT Associates, Inc., February 1985.

used oil that is intended to be recycled. Unless EPA decides to list used oil as a hazardous waste, only used oils that exhibit a hazardous waste characteristic and are intended for disposal are considered hazardous wastes.

Used oils are frequently contaminated with metals (e.g., lead, arsenic, cadmium, chromium), solvents (e.g., trichloroethylene 1,1,1-trichloroethane, tetrachloroethylene), and other hazardous constituents (e.g., naphthalene, toluene, phenol) that are naturally occurring in petroleum-derived and synthetic oils.

Some generators have been known to mix hazardous wastes with used oils to disguise the status of the waste. As described in Section 2.2.3, mixtures of hazardous and nonhazardous wastes may qualify as hazardous wastes. Thus, operators should be sure to determine the source of used oils before receiving them for storage, treatment, or disposal. See Chapter 3 for further information on source identification and control.

2.3.1.9 Spill Residues (Including Transportation Spills)

Cleanup residues resulting from spills of hazardous wastes handled by generators, transporters, or TSDFs may be deemed hazardous wastes under RCRA. In the case of a listed hazardous waste that is spilled, spill residues will be considered listed hazardous wastes unless specifically delisted by EPA. In the case of a characteristic hazardous waste, a spill residue will only be hazardous if it continues to exhibit a characteristic of a hazardous waste. RCRA hazardous waste regulations also may apply to cleanup residues resulting from the spill on land or water of any of approximately 400 commercial chemical products or manufacturing chemical intermediates identified in RCRA regulations. Accordingly, spill residues from truck, rail, pipeline, barge, or onsite industrial accidents involving raw materials may be regulated as listed hazardous wastes depending on the chemical involved in the accident (40 CFR Part 261.33). Where delivered to a POTW by truck, rail, or dedicated pipeline, these spill residues, including contaminated wastewaters, may trigger POTW permit by rule requirements.

2.3.1.10 PCB Wastes

PCB wastes are not regulated under existing RCRA hazardous waste regulations. Instead, these wastes are regulated under the Toxic Substances Control Act (TSCA) and 40 CFR Part 761, which establishes storage and disposal restrictions on materials containing PCBs at concentrations greater than or equal to 50 parts per million (ppm). Consequently, unless a PCB-laden waste can be considered hazardous due to some attribute other than the presence of PCBs (e.g., presence of solvents), the waste will not trigger RCRA permitting provisions.

2.3.1.11 State Hazardous Wastes

Some States regulate wastes as hazardous under State hazardous waste laws that are not regarded as hazardous wastes under Federal RCRA regulations. For example, 16 States consider PCBs as hazardous wastes, 12 States list used oil as hazardous, and others list specific contaminants or have additional characteristic tests. Even where delivered to a POTW by truck, rail, or dedicated pipeline, these wastes do not trigger Federal POTW permit by rule provisions since they are not considered to be hazardous under Federal law. Nonetheless, POTW acceptance of these wastes may trigger individual State hazardous waste permit requirements or analogous permit by rule provisions under State law.

3. RESPONSIBILITIES OF POTWs CHOOSING NOT TO ACCEPT HAZARDOUS WASTE

If a POTW accepts hazardous wastes via truck, rail, or dedicated pipeline, it will be required to comply with RCRA permit by rule provisions. Chapter 4 discusses the responsibilities of POTWs that receive hazardous wastes by these transportation methods. This chapter describes steps POTWs may undertake to preclude acceptance of RCRA regulated wastes.

The most direct method of precluding the receipt of hazardous waste by truck, rail, or dedicated pipeline is to prohibit the delivery of any wastes via these methods and to enforce such a prohibition. This may not be a desirable or feasible approach, however, especially if a POTW services a community where septage wastes are generated.

A second way POTWs may preclude the delivery of hazardous wastes is by specifically prohibiting the discharge of hauled industrial wastes, thus limiting the receipt of hauled waste to only household wastes. As discussed in Chapter 2, household wastes are specifically exempted from the definition of hazardous waste. However, even under these circumstances, POTWs run the risk of receiving hazardous wastes as unscrupulous septage haulers may mix hazardous and household wastes.

POTWs that agree to accept hauled wastes from industrial users face additional challenges in precluding the receipt of hazardous wastes, given that some industrial wastes may be considered hazardous. Should POTWs accept hauled industrial wastes, they must ensure that the wastes meet all applicable pretreatment standards (e.g., local limits, prohibited standards, categorical standards) before discharge is allowed. Section 4.3 of this guidance discusses the responsibilities of POTWs for ensuring that hauled wastes comply with pretreatment program requirements and standards.

This chapter discusses how a POTW can develop and implement both regulatory and administrative mechanisms to preclude the discharge of hazardous wastes to its treatment plant via truck, rail, or dedicated pipeline.

Further, this chapter discusses hov to develop and implement a waste monitoring plan that a POTW can use to characterize wastes received by truck, rail, or dedicated pipeline.

3.1 DESCRIPTION OF POTENTIAL LIABILITIES FOR POTWS ACCEPTING HAZARDOUS WASTE

The receipt of hazardous wastes imposes certain responsibilities on a facility. Even if a POTW chooses not to accept hazardous wastes discharged via truck, rail, or dedicated pipeline, the POTW is not necessarily absolved from potential RCRA and Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), otherwise known as "Superfund," liabilities. POTWs may be subject to these liabilities whether or not they are aware of the receipt of hazardous wastes. POTWs also may be liable under RCRA and CERCLA for any past releases of hazardous wastes, hazardous constituents, or hazardous substances to the environment. The definition of "release" under CERCLA is extremely broad and may encompass any "spilling, leaking, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment . . ." The RCRA definition of release for the RCRA corrective action program (see Section 4.5) is at least as broad as the CERCLA definition.

Receiving hazardous wastes by truck, rail, or dedicated pipeline without a RCRA permit or, in a POTW's case, without regard to permit by rule conditions, can lead to enforcement action under RCRA. If a POTW receives hazardous waste without complying with the permit by rule conditions, it may be subject to both criminal and civil penalties. For example, violations of RCRA requirements can result in fines of up to $25,000 per day per violation. POTWs must realize that enforcement actions against noncompliant POTWs can be taken <u>whether or not</u> the POTW operator was aware that the waste received by truck, rail, or dedicated pipeline was a hazardous waste. Consequently, to minimize its liability, it is important that a POTW take steps to discover whether it is receiving hazardous waste by these transport methods. In addition, a POTW conducting a responsible, well designed program to preclude the receipt of hazardous wastes by truck, rail, or dedicated pipeline, although strictly liable under RCRA, would be demonstrating good faith. This could shift the equities and help reduce POTW liabilities resulting from the receipt of such wastes.

Both RCRA and CERCLA impose potential liabilities on facilities that handle, or have handled, hazardous wastes. These responsibilities include corrective measures designed to address releases of hazardous wastes, hazardous constituents, or hazardous substances to the environment that result in a threat to human health and the environment. A more detailed discussion of RCRA corrective action requirements, which encompasses the cleanup of releases of hazardous wastes and constituents, appears in Section 4.5.

Finally, a hazardous waste generated by an industrial user and received by a POTW by truck, rail, or dedicated pipeline, is subject to applicable pretreatment standards (i.e., Federal, State, and/or local standards). Although the industrial user is responsible for ensuring that all pretreatment standards are met, enforcement actions can be taken against a POTW with an approved pretreatment program under the CWA if it fails to implement its pretreatment program by not enforcing applicable standards against the industrial user. In addition, because a permit by rule requires compliance with the pretreatment regulations, if the POTW accepts a hazardous waste from an industry that is not in compliance with pretreatment standards the POTW may also be in violation of its RCRA permit by rule requirements (see Section 4.3).

As explained in the above discussion, although there are no express legal requirements under RCRA/CERCLA for POTWs to adopt programs to preclude the receipt of hazardous wastes, the liabilities associated with unknowing acceptance act as an incentive to develop such a program.

3.2 CONTROL MEASURES TO PREVENT DISCHARGES OF HAZARDOUS WASTE TO POTWS

POTWs can use regulatory and administrative control mechanisms such as ordinances, permits, contracts, physical barriers, and waste tracking systems to prohibit the discharge of hazardous wastes to their treatment plants via truck, rail, or dedicated pipeline. These regulatory and administrative control mechanisms also can be used by POTWs to restrict or oversee the discharge of any nonhazardous wastes by truck, rail, or dedicated pipeline that may be of concern to the POTW. This section discusses these control mechanisms and the benefits and drawbacks associated with their use, and

provides examples of how some POTWs have integrated these different mechanisms into a successful control strategy.

This section refers predominantly to the control of wastes delivered by truck, which is the most likely means by which a POTW would receive a hazardous waste. Many of these same control measures can also be used to control wastes received by rail. However, they may not be applicable to wastes received by dedicated pipeline. A dedicated pipeline refers to a separate pipeline that is used to carry hazardous wastes directly to a POTW's property boundary without prior mixing with domestic sewage. To ensure that a POTW does not receive hazardous wastes from a dedicated pipeline, a POTW would need to apply strictly the control measures used in its pretreatment program (i.e., issuance of local user permits, sampling and inspections, etc.) to those industrial users that discharge to a pipeline that does not receive domestic sewage. Therefore, the POTW will need to determine if hazardous wastes are, or are likely to be, discharged via a dedicated pipeline to the POTW. Section 3.3 provides further guidance on generator audits, which could be used to assist in this determination.

3.2.1 Regulatory Control Mechanisms

3.2.1.1 Applicable Pretreatment Controls

The National Pretreatment Program is designed to protect municipal wastewater treatment plants from the potential adverse effects of industrial discharges. Specific goals of this program are to:

- Prevent interference with POTW operations that could result from the introduction of pollutants that are toxic or inhibitory to the treatment process.
- Prevent the pass through of pollutants to the receiving water. Pollutants that are incompatible or otherwise unaffected by the treatment processes could have an adverse environmental impact on the receiving water body.
- Preserve and improve sludge quality so that the chosen method of sludge disposal can be continued and the possibility of more attractive sludge reuse and recycle options can be enhanced.

All industrial users discharging to POTWs are subject to National Pretreatment Program requirements and standards, as set forth in the General Pretreatment Regulations (40 CFR Part 403). About 1,500 municipalities (POTWs) have been required by EPA or authorized States to develop local pretreatment programs, in pursuit of these goals, to manage and effectively control all nondomestic wastes discharged to, and subsequently treated by, their treatment system. Where POTWs were not required to develop local pretreatment programs, they must still meet certain minimum pretreatment requirements and EPA or States with approved pretreatment programs must apply and enforce certain other applicable pretreatment standards and requirements (e.g., national pretreatment standards for regulated industry categories).

Every component of a local industrial pretreatment program that applies to piped industrial wastes would also apply to hauled wastes. This section discusses many of ~~these components~~. (If a POTW is not required to develop and obtain approval of a local pretreatment program, but is concerned about receiving hazardous waste by truck, rail, or dedicated pipeline, within the POTW property boundary, it may wish to establish such a program voluntarily.) There are several aspects of local pretreatment programs that may need to be modified to ensure adequate control over hauled wastes, including:

- Sewer use ordinance -- Many sewer use ordinances will address the discharge of waste from septage trucks. In many cases, these regulations and references may be vague and provide only minimal controls. A general ordinance should state that the discharge of hazardous waste by septage haulers is prohibited. Specific ordinance changes should include clear definitions of hazardous, industrial, and domestic wastes geared toward the type of industrial users making use of the POTW so that no ambiguity exists with respect to the intent or applicability of the ordinance. Section 3.2.2 provides further guidance regarding sewer use ordinance provisions for waste received by truck, rail, or dedicated pipeline.

- Multijurisdictional arrangements -- As per 40 CFR Part 403.8(b)(1), a POTW must be able to enforce against all individual users making use of the treatment system. While it is recognized that developing such an arrangement with a user outside the jurisdictional boundaries of the POTW may be difficult, the requirements of 40 CFR Part 403.8(b)(1) must be satisfied. The POTW must enter into an arrangement with the industry to allow for the extension of the POTW's legal authority to inspect and sample at the generating facility, take enforcement action, and require remedies consistent with the receiving POTW's sewer use ordinance and pretreatment program.

- Control mechanisms -- The POTW should require discharge permits for generating industries and operating permits for waste haulers. Local sewer use ordinances (and in some cases State law) may need to be amended to extend POTW authority to issue these permits. Section 3.2.3 discusses in detail the provisions necessary for development of a control mechanism for waste haulers.

- Compliance sampling and inspections -- The POTW's compliance program must ensure industry compliance with local and applicable Federal standards and requirements. Generators of industrial wastes could be inspected with the same frequency as other significant or categorical industrial users. These inspections should verify information submitted by the industry on permit application forms, baseline monitoring reports, compliance schedules, and self-monitoring reports. Each inspection should cover waste hauling records and manifests, providing sufficient information to account for all wastes generated since the previous inspection. If the industry is subject to categorical standards and the combined wastestream formula is used, or if solvent management plans are employed, actual industry practices must be verified.

Sampling and analysis should be undertaken consistent with EPA procedures (40 CFR Part 136) and analysis must be performed for at least all regulated pollutants. All inspection and sampling events must be documented properly to ensure admissibility in possible legal actions. POTWs should take special care when sampling hauled wastes. Primary concerns are unrepresentative samples due to partitioning in the tank truck (solids will settle, and organics may float), and possible safety concerns due to toxic fumes that could build up in the tank head space. Changes in the sampling and analysis procedures may be necessary to ensure adequate coverage of hazardous waste. Section 3.3 provides further guidance on the monitoring of hauled wastes.

3.2.1.2 Other Regulatory Control Mechanisms

POTWs may use regulations or ordinances to prevent discharges or deliveries of hazardous waste to their treatment facilities by truck, rail, or dedicated pipeline. Most communities already have sewer use ordinances to regulate the use of publicly owned sewers. Prohibitions on discharges by truck, rail, or dedicated pipeline within the POTW boundary can be incorporated easily into most sewer use ordinances.

To prevent truck, rail, or dedicated pipeline discharges of hazardous waste to its facility, a POTW could incorporate a prohibition on such discharges into its ordinance. There are at least three major degrees of regulatory control alternatives that can be implemented by the POTW to improve the implementation of this prohibition. These are: prohibiting the discharge of all hauled wastes (including septage); prohibiting the discharge of wastes from industrial sites; and prohibiting the discharge of wastes containing industrial wastes. In considering these alternatives, the POTW may want to reserve the option of accepting hazardous wastes under well defined circumstances, e.g. receipt of contaminated leachate from a local CERCLA site. A summary description of these three supplementary control alternatives appears in Table 3-1, along with a short description of advantages and disadvantages. The discussion below expands upon the tabular explanation.

- Prohibiting All Wastes Discharged to a POTW by Truck, Rail, or Dedicated Pipeline

Sewer use ordinances (or equivalent POTW use and treatment rules) for POTWs that want to ensure that they will not receive discharges of hazardous waste by truck, rail, or dedicated pipeline could set forth explicit prohibitions for discharges to the POTW through any means other than normal sewer connections. This type of local ordinance prohibition would be the most effective way for a POTW to ensure that hazardous wastes are not knowingly discharged to their collection or treatment system because all hauled wastes, including septage, industrial hazardous wastes, and mixed wastes would be prohibited from being discharged. Appendix B provides example language that a POTW may wish to include in its local sewer use ordinance to prohibit the discharge of all hauled wastes. In addition to being the most effective way to preclude hazardous waste discharges, strict prohibitions on all hauled wastes do not require implementation of administrative controls (as described in Section 3.2.3). However, such a prohibition is not always practical or desirable.

TABLE 3-1. RECOMMENDED REGULATORY MECHANISMS FOR PREVENTING DISCHARGES OF HAZARDOUS WASTE BY TRUCK, RAIL, OR DEDICATED PIPELINE TO THE FACILITY BOUNDARY

Regulatory Control Mechanisms	Advantages	Disadvantages
• Prohibit all truck, rail, and dedicated pipeline discharges to the POTW	• Most protective method of avoiding reception of hazardous wastes • No administrative controls are required for implementation	• May conflict with nee to serve nonsewered community • May create incentives for illegal midnight dumping
• Prohibit discharge of all hauled industrial wastes	• Provides service to residential community • Protects against discharge of hazardous industrial wastes	• Industrial wastes may be surreptitiously mixed with residentia wastes • Suggests need for stringent administrative and waste monitoring control
• Prohibit discharge of industrial process wastes only	• Allows service of domestic type sewage from industrial facilities	• Industrial process wastes may be illegally mixed with domestic type sewage • Suggests need for administrative and waste monitoring controls

- Prohibiting Wastes from Industrial Sites Discharged to a POTW by Truck, Rail, or Dedicated Pipeline

For many POTWs, prohibiting all hauled wastes from being discharged to either its treatment system may be infeasible. Certain sections of a POTW's service area may not be connected to the POTW treatment system, and many domestic and/or industrial customers may still need to use septic tank systems. These POTWs should consider only accepting hauled wastes from domestic sources and prohibiting hauled wastes from industrial sites. Provisions to this effect could be included in local sewer use ordinances. Appendix B provides example language that a POTW may wish to include in its local sewer use ordinance to prohibit the discharge of hauled wastes from industrial sites.

The benefit of this approach is that POTWs can be relatively confident that a hazardous waste will not be received, since, as explained in Section 2.3, household wastes, such as domestic septage, are specifically exempted from the definition of hazardous waste. However, since the POTW still would be accepting hauled wastes, it also should implement an administrative control mechanism (see Section 3.2.3), in addition to ordinance prohibitions and restrictions, to ensure that only wastes from domestic sources are delivered and discharged to the POTW. This is especially important in light of the fact that mixtures of domestic and hazardous wastes could be considered hazardous (see discussion of mixture of listed and characteristic wastes in Section 2.2).

- Prohibiting Industrial Process Wastes Discharged to a POTW by Truck, Rail, or Dedicated Pipeline

It may not be feasible or desirable for a POTW to prohibit the discharge of hauled domestic type wastes generated at industrial facilities. However, to ensure that hazardous wastes are not contained in wastes hauled from industrial facilities, a POTW can specifically prohibit the delivery and discharge of industrial process wastes, spill residues, etc. This type of control can be contained in local sewer use ordinances, which can be amended to prohibit specifically the discharge of hauled industrial wastes. Appendix B contains example language that a POTW may wish to include in its local sewer

use ordinance to prohibit the discharge of hauled industrial waste. As industrial hazardous wastes may be mixed with domestic type wastes that are hauled from an industrial facility, it is strongly recommended that a POTW also implement administrative controls to enforce applicable sever user ordinance provisions.

3.2.2 Administrative Controls

Administrative controls can allow POTWs to place specific restrictions on businesses involved in generating or transporting nondomestic wastes. Specifically, these controls can assist a POTW in ensuring that hazardous wastes are not being discharged to its treatment system, thus avoiding liabilities under RCRA. In addition, implementation of these administrative controls by a POTW can assist in protecting treatment plant operations. For example, a POTW may wish to restrict metals concentrations in hauled waste to ~~protect the sludge~~ quality. Similarly, accepting volatile solvents may create interference with biological treatment systems or cause explosive hazards at the plant. The following sections describe five types of administrative controls that can be used by POTWs to oversee the discharge of hauled wastes. These controls include the use of permits, a waste tracking system, physical restrictions, surveillance, and inspections and sampling. A listing of these administrative control mechanisms appears in Table 3-2. A discussion of inspection and sampling methods appears in Section 3.3. Although each administrative control mechanism is discussed in Table 3-2 separately, a POTW could use all, or any combination, of these administrative controls. This guidance recommends that POTWs adopt all aspects of these five types of administrative controls, adjusting the intensity of use of each aspect to suit its own needs. The following sections provide an indepth discussion of these mechanisms.

3.2.2.1 Permits

The most direct way to restrict the discharge of wastes received from haulers is for the POTW to issue permits that would outline the conditions that would have to be met before a waste could be discharged to the POTW. These conditions may be similar to those conditions or requirements for indus-

TABLE 3-2. RECOMMENDED ADMINISTRATIVE MECHANISMS FOR PREVENTING DISCHARGES OF HAZARDOUS WASTE BY TRUCK, RAIL, OR DEDICATED PIPELINE

Administrative Control Mechanisms	Features	Advantages	Disadvantages
• Permits for waste generator and/or hauler	• Highly recommended: - Right of refusal to accept wastes - Prohibited or restricted substances - Designated disposal sites - Monitoring and sampling - Waste tracking - Damage liability - Notification of change of waste type - Penalties and other remedies - Permit revocation - Fee system • Others: - Spill prevention and notification - Equipment performance standards - Liability insurance	• Most direct method of restricting discharges • Limits and improves knowledge of user community • Provides guidance to users • Allows regulatory flexibility • Assigns liabilities • Provides remedies/acts as enforcement mechanism	• Requires resources to implement procedures to maximize usefulness and to ensure compliance
• Waste Tracking System	• Completed by Generator or Hauler: - Name, address, and phone number of facility - Waste type and volume - SIC code	• Identifies waste • Regulates discharges • Aids in discovery of illegal hauling	• Requires analysis to ensure accuracy
• Restriction of discharge points	• Discharge point at treatment plant or in collection system • Restrict time and flow of discharge • Supervise discharge	• Enhances inspection capabilities • Allows inspection and sampling of wastes, verification of waste tracking records, supervision of discharge, and prevention of incompatible wastes from entering plant	• If discharge point is in the collection system, oversight may be difficult. Manifest violations may occur.

TABLE 3-2. RECOMMENDED ADMINISTRATIVE MECHANISMS FOR PREVENTING DISCHARGES OF HAZARDOUS WASTE BY TRUCK, RAIL, OR DEDICATED PIPELINE (Continued)

Administrative Control Mechanisms	Features	Advantages	Disadvantages
• Inspections and sampling/analysis		• Allows first-hand waste characterization • Allows identification of other, nonhazardous wastes at facility that may pose a hazard to the system • Sampling acts as a deterrent to unpermitted discharges, provides identification of violator after the event	• Resource intensive: Personnel, equipment, cost of analysis
• Surveillance and investigative techniques	• Surveillance and monitoring of possible discharge points for illegal discharges • Surveillance of suspicious hauler practices • Coordination with RCRA officials and State/local law enforcement officials	• Results in detection of illegal discharges	• Resource intensive: Personnel, equipment, cost of analysis

trial users subject to a local pretreatment program. POTWs can issue permits to either the waste transporter and/or the waste source or generator. Requiring permits is an effective means of limiting the community of users. This method of control improves the POTW's knowledge of transporters/ generators and improves its overall ability to ensure that the receipt of hazardous waste is prohibited.

For a permit to be effective in controlling wastes discharged to POTWs, the establishment of discharge conditions is recommended. The following are several conditions that are highly recommended to be included as part of a permitting system. These conditions could be placed directly into the permit, or the permit simply could require compliance with the local sewer use ordinance, which could contain these conditions:

- Right of refusal to accept waste -- The POTW should reserve the right to refuse any waste suspected or proven to be hazardous to avoid RCRA responsibilities. Reason for refusal of certain wastes, such as solvents or those wastes with high metals concentrations, may protect the plant, worker safety, or the environment.

- Prohibited or restricted substances -- The permit could contain explicit restrictions on pollutant concentrations, waste characteristics, or waste types. If the POTW chooses to prohibit all RCRA wastes from being hauled and directly discharged, the criteria or wastes listed in 40 CFR Part 261 could be adopted as specific prohibitions in the permit (e.g., corrosive or EP toxic wastes, or specific listed wastestreams). In the alternative, the control mechanism could clearly identify the wastes that will be acceptable, taking care that the Part 261 wastes and criteria are <u>not</u> included in the permit.

- Notification of change of waste type -- The POTW may want to require that any new industrial or commercial waste be approved by the POTW prior to being hauled. The hauler and/or generator could be required to notify the POTW of requests to haul new or significantly different waste from recognized, permitted sources or waste from previously unrecognized sources. (To implement this requirement, the POTW would have to clearly define what constitutes a "significantly different" waste). This ensures that the POTW knows of its introduction into the system and can adequately characterize this new waste. After this characterization of wastes is performed, the POTW could accept the wastes, or deny the discharge because the wastes are hazardous or otherwise incompatible with the treatment works.

- Waste tracking -- Each permit could require the waste generator and/or waste hauler to use a waste tracking system that enables the POTW to track the sources, types, and quantities of wastes delivered to the

POTW. (Section 4.4.2 provides a discussion of RCRA waste manifest system.) The use of a waste tracking system is useful in determining if a waste is a RCRA hazardous waste, in recognizing possible illegal hauling, or in identifying wastes that have a potential to cause upsets or other treatment plant problems. The POTW could develop and require the use of a form that provides relevant information on the hauled waste, including the source, address, telephone number, time and date of pickup, waste type, known or suspected pollutants, and certification that the waste is not hazardous. (Section 3.2.3.2 provides more information on the implementation of a waste tracking system.)

- Monitoring and sampling -- The permit could explicitly allow the POTW operator or a designated representative the opportunity to sample prior to discharge by the septage hauler. The permit also can require the hauler to sample any waste where it is generated, before it is initially pumped into the truck or rail car. If haulers are required to sample, sampling and preservation procedures can be specified in the permit by the POTW. The permit could also make the industrial user aware of its responsibilities to determine that its solid waste is a hazardous waste. (Section 3.3 provides further information on monitoring strategies.)

- Designated disposal points -- Each permit could designate specific discharge times and points at the treatment plant. Ideally, disposal should occur where direct supervision by plant personnel is available (e.g., at the headworks or into a holding tank at the plant). This allows plant personnel to inspect easily the waste tracking manifest, verify its information, sample the waste, and ensure that incompatible wastes are not dumped into the system. Receipt of hazardous waste to a point in the collection system constitutes a violation of RCRA manifest requirements. Therefore, before receiving solid wastes into the collection system, the POTW should ensure that such wastes are not hazardous wastes.

- Fee system -- A fee schedule for treatment of hauled wastes can be described within the permit, setting forth baseline charges for a specific volume of waste as well as high strength surcharges. Extra charges to cover the cost of sampling and analysis also may be included. These costs may vary dependent on techniques used (see discussion of waste monitoring plan in Section 3.3).

- Penalties and other remedies for noncompliance -- Each permit could describe the penalties and other remedies available to the POTW should a waste hauler violate any conditions of discharge. For example, hauling waste in violation of Federal or local limits may carry a different fine or legal action than violating waste tracking procedures or discharging waste that damages the treatment plant. In addition, the permit could specify the legal procedures (e.g., show cause hearings or issuing injunctions) that would be available under

appropriate circumstances of noncompliance. Permits also could describe federally imposed penalties that generators/transporters may face. For example, Section 3008(e) of RCRA provides for penalties of up to $250,000 and 15 years imprisonment for placing a person in imminent danger of death or bodily injury.

- Damage liability -- The permit should contain language that describes the liability of a hauler who discharges waste that damages the treatment plant or collection system, causes injury to plant personnel, contaminates sludge, or otherwise results in problems for the POTW. This liability should include the legal costs the POTW incurs in assessing damages, as well as the cost to repair plant damages, etc. Upon proof of willful or intentional damage, and as allowed by State and local law, the POTW may assess additional liability (e.g., several times the amount of the actual damage) as a punitive measure. Dependent on State and local law, a POTW might also hold the waste hauler liable for the civil penalties and fines a POTW may incur for noncompliance with RCRA permit by rule requirements or for releases of hazardous waste or hazardous constituents to the environment, should the hauler knowingly discharge a hazardous waste to the POTW without notifying and receiving permission from the POTW.

- Permit revocation -- The permit could be revocable in the case of a significant violation or a pattern of violations by the waste hauler, or by the waste generator or storage facility from which waste is hauled to the POTW. By specifying that the permit is revocable, the POTW can deter haulers from transporting potentially hazardous wastes. As a result, haulers may be more selective in receiving wastes from industrial facilities.

Some POTWs have adopted the following conditions, in addition to those listed above, as part of their control programs. The following conditions, while not directly related to preventing the receipt of hazardous wastes, may be used to improve waste management procedures:

- Liability insurance -- To ensure that the hauler can reimburse the POTW for damages caused by discharging an incompatible waste, the POTW could require the hauler to obtain liability insurance as a condition in the permit. The amount of liability insurance coverage can vary tremendously, depending on the potential for damage to the system. One large urban POTW requires haulers to obtain coverage for at least $1 million for each occurrence. Potential plant damage will depend on the size and complexity of the POTW.

- Equipment performance standards -- The permit may contain minimum performance requirements for the permittee's vehicle, as well as procedures for pumping, discharging, and measuring waste. These requirements can prevent inadvertent leakage and can facilitate trouble-free discharging of waste. For example, the POTW could

require the hauler to maintain the waste hauling tank without leaks or corrosion, to install a positive check valve or use a level gauge to prevent over-fill, or to maintain a suitable discharge valve, hose, and connector, etc.

- Spill prevention/notification -- The POTW could require that waste haulers take precautions to avoid spills and notify the POTW when spills occur. Spilled wastes should not enter the sewer system without being sampled and determined compatible with the treatment system. If the waste is potentially toxic (e.g., industrial), the POTW can also contact appropriate environmental authorities or document its introduction into the system and sample the appropriate sewer lines for contamination.

In summary, the permit provides three distinct and useful functions: an informational function, a regulatory function, and an enforcement function. As an informational tool, the septage hauler or waste generator can improve treatment or hauling system procedures to avoid mixing solid and hazardous wastes. The permit also provides a means for the POTW to develop an inventory of haulers and generators, thereby improving control over use of the treatment system.

Permits may be used by a POTW to require the hauler or generator to meet specific requirements necessary to ensure that hazardous wastes are not received at the treatment plant. Permits may also be used to protect plant operations and the environment, and include limitations on waste type or pollutant concentrations and self-monitoring requirements to ensure such protection. Using a permit also allows the POTW to place specific restrictions on waste haulers and generators who use the POTW, creating a foundation for possible enforcement actions. An example waste hauler permit is presented in Appendix C.

As an enforcement tool, a permit can define the criteria for determining when a violation has occurred and set appropriate penalties. It also may specify hauler or generator liability, and define procedures and responsibilities in legal hearings. A permit also can be revoked by the POTW under appropriate circumstances, constituting a ban on accepting waste from a hauler or generator. Consequently, use of an administrative and/or regulatory structure to control the practice of hauling waste to the plant allows the

POTW to protect itself from receiving hazardous wastes, potentially hazardous wastes, or dangerous, incompatible wastes.

3.2.2.2 Waste Tracking System

A waste tracking system is another mechanism a POTW can use to ensure that a waste being hauled and subsequently discharged is not hazardous. A waste tracking system will enable the POTW to track the sources, types, and quantities of waste that are being hauled to the treatment plant. As previously discussed in Section 3.2.2.1, compliance with a waste tracking system, including the submission of a waste tracking form, can be required as a condition in a permit. Alternatively, a waste tracking system can be used independently of other control mechanisms.

In developing a waste tracking system, POTWs will need to rely on one of two strategies:

- Require the waste generator to obtain a waste tracking form from the POTW, list the type and volume of waste, SIC code, source, address, telephone number, time and date of pickup, waste type, known or suspected pollutants, and certification that the waste is not hazardous on the form and transmit the form to the POTW via the waste hauler. Restrict waste haulers to hauling only wastes accompanied by completed waste tracking forms.

- Require the waste hauler to list the SIC code, source, address, telephone number, time and date of pickup, waste type, known or suspected pollutants and certification that the waste is not hazardous for each generator serviced on a waste tracking form and transmit the form to the plant operator before discharge of the waste would be allowed.

Use of waste tracking, in concert with a source control program (i.e., permitting, sampling, and inspecting the generator), and a hauler sampling program will provide a high degree of control by the POTW over incoming wastes. By requiring the use of waste tracking forms, the POTW can determine the source of the waste, its probable content, and its volume before allowing it to be discharged. This information can be checked by sampling and comparing the volume noted on the tracking form to the hauled volume, and by contacting the waste generator to verify that waste was pumped and hauled from

the source listed on the waste tracking form. An example waste tracking form that can be used by POTWs to track hauled wastes is presented in Appendix D.

3.2.2.3 Physical Restrictions

To minimize illegal discharges and to ensure that the POTW has the opportunity to exercise control over incoming hauled waste, discharge points for hauled wastes should be restricted and supervised. Restrictions of discharge points for hauled wastes can be implemented through a permit or contract (as discussed in Section 3.2.3.1) or as an independent control mechanism. Following are some alternatives for physically restricting the discharge of hauled wastes should a POTW choose to use this type of administrative control.

The advantage of using a discharge point in the collection system is that hauled wastes may have the opportunity to mix adequately with other wastes in the collection system before reaching the treatment plant headworks. Again, this may be desirable for smaller POTWs or those POTWs susceptible to shock or slug loads. The disadvantage of a collection system discharge point is that the POTW may not be able to oversee discharge activities as easily as if discharge occurred at the treatment plant. Thus, a collection system discharge point, with restricted access controls, should be identified that can be surveyed easily by the POTW to ensure proper oversight of waste hauler activity.

Accepting hazardous waste in the collection system may pose additional legal concerns to the POTW. Hazardous waste generators are required to send their hazardous waste to permitted TSDFs, accompanied by a RCRA manifest. The dumping of hazardous waste down a manhole outside of the POTW facility is a violation of RCRA hazardous waste generation and transportation requirements. Thus, the generator and transportator could both be liable for manifest violations. It is unlikely that a POTW which unknowingly receives hazardous waste which had been illegally dumped down a manhole would independently be in violation of RCRA requirements. However, POTWs which knowingly allow or participate in such activities may be subject to criminal liability under a variety of statutes as an accessory to generator and transporter violations.

In many cases, treatment plant access may result in discharges directly to the headworks. This is normally allowed at larger POTWs, which can handle the slug load from the hauler without any detrimental effects on the POTW operations. However, in some cases where storage or equalization capacity is available, hauled waste can be required to be discharged to equalization or holding tanks, where it can be characterized prior to introduction to (or restriction from) the treatment system. However, receipt of hazardous wastes to equalization and holding tanks would trigger RCRA permit by rule requirements. Equalization and holding tanks also will allow smaller POTWs, or those POTWs susceptible to shock or slug loads, to regulate the introduction of the hauled wastes into the treatment system. EPA is currently developing a guidance manual on the prevention of interference with POTW operations. Sections of this guidance manual will discuss waste management techniques which may lessen impacts from discharged wastes.

The benefits of restricting discharges to a single area within the POTW boundaries are that the plant operator can easily inspect and sample any or all hauled waste, verify waste tracking records, supervise the discharge of waste, and prohibit wastes that are incompatible with the treatment system. By restricting access and supervising the discharge of hauled waste, POTWs can discourage haulers from attempting to discharge illegally incompatible toxic or hazardous industrial wastes.

Some POTWs have chosen to issue magnetic cards to haulers to gain access to discharge areas. These cards signal the operator that a hauler is discharging, identify the hauler, and calculate the volume of waste being discharged. While this measure offers some level of control, it is not as effective as the POTW manning the discharge area and conducting sampling. As an additional measure of control, some POTWs simply use a gate with a padlock to restrict discharges. Typically, discharging is only allowed during a specified period in the day (e.g., 8:00 a.m. to 3:30 p.m.), enabling the plant operator to supervise the discharge of hauled wastes.

3.2.2.4 Surveillance and Investigative Techniques

All POTWs, by nature of their collection systems, are subject to unknown discharges of incompatible wastes (e.g., illegal "midnight dumping"). POTWs may want to pursue a course of surveillance and/or sampling as a control mechanism to detect the sources of these unknown discharges. Monitoring to detect illegal dumping may entail periodic sampling of suspected sewer lines, and/or surveillance of manholes or storm drains. POTWs can contact State or Federal RCRA authorities to determine likely sources of hazardous waste and obtain records of their disposal practices, compliance history, waste types, etc. Many States also have illegal discharge enforcement programs, which can assist POTWs in their surveillance programs. Local law enforcement officials can be requested to assist in surveillance activities and enforcement of municipal statutes and regulations dealing with illegal discharges. Some POTWs have chosen to use video cameras to monitor septage discharge stations. In cases where illegal dumping is suspected, video surveillance can be used at manholes or storm drains where surveillance by POTW personnel is infeasible. Where POTWs suspect that a septage hauler is mixing hazardous and domestic wastes, the POTW may want to follow the hauler schedule on a random basis.

3.3 WASTE MONITORING PLAN

A POTW also may want to design a waste monitoring plan as part of its administrative control system. While a hazardous waste may not be transported legally without a hazardous waste manifest, POTWs should be aware that some haulers may carry unmanifested hazardous wastes illegally. Therefore, even if a POTW does not receive manifested wastes, it may be receiving hazardous wastes and thus may still be responsible for obtaining and satisfying the requirements of a RCRA permit by rule. The purpose of the waste monitoring plan is to complement the aforementioned administrative techniques, thereby helping to identify unmanifested hazardous wastes and preclude their entry into the POTW system.

Since the definition of hazardous waste is a legal definition, and not strictly based on the presence of pollutants or the concentration of those pollutants in a waste, a waste monitoring plan may not, by itself, work to

preclude the entry of hazardous wastes. This is especially true given that a listed hazardous waste, when mixed with a solid waste, remains a hazardous waste without regard to the resultant concentrations. Nonetheless, a well-executed waste monitoring plan can work as an effective mechanism to deter unscrupulous waste generators and haulers.

As described in Sections 3.1 and 3.2, it is recommended that if a POTW accepts hauled wastes, it should limit its receipt of these hauled wastes to a well-defined set of generators and haulers. By monitoring the set of waste generators, the POTW can exercise a high degree of control over incoming waste. While this approach should limit any potential for receipt of hazardous wastes, some opportunity remains as a result of either unscrupulous or careless behavior by generators and haulers. The design of a waste monitoring program can be more complex where the POTW is seeking to identify a hazardous constituent or hazardous waste characteristic from an unknown source. Given the fact that hazardous wastes can be extremely varied and at times difficult to detect, the implementation of a waste monitoring plan can be a time consuming, costly exercise. Full consideration was given to time and cost constraints in the recommendations provided in Sections 3.3.1 and 3.3.2 so that a POTW can structure a workable program.

3.3.1 Identification of Potential Hazardous Waste Source and Types

As described in Section 3.2, a POTW could maintain a legal/administrative system that limits the number and types of hauled wastes that could be accepted at the treatment plant. By using such a system, the POTW can tailor a waste analysis plan to the characteristics of each generator. However, even with such a system, permitted generators and/or haulers may mix solid or domestic wastes with "nonmanifested" hazardous wastes as a result of either unscrupulous or careless practices. Consequently, in these cases, the POTW will need to make a reasoned effort in determining probable hazardous waste contamination sources and design a program to detect mixing of hazardous waste with domestic waste from these sources. This section presents methodologies for designing a waste monitoring plan in two separate cases: (1) where the generator is unknown and the POTW must screen the waste at the treatment plant before allowing it to be discharged, and (2) where the generator is known and is subject to waste monitoring prior to hauling waste.

3.3.1.1 Identification of Hazardous Wastes from Unknown Generators

Designing a waste monitoring plan to detect hazardous wastes from an unknown hazardous waste generator can be challenging. This will be the case if the POTW is seeking to detect hazardous wastes mixed with septage sewage. While the steps described in this section can be expected to reduce the number of potential parameters of concern, this list still may be large and varied (e.g., metals, volatile organics). Section 2.3 provided discussions on those wastes that may be commonly discharged to POTWs. These discussions should provide the POTW with an idea of some of the hazardous wastes and constituents that may be generated in its service area. POTWs can refine this list by focusing on industries located in its service area and researching their waste types and quantities reported through CWA and RCRA mechanisms (e.g. RCRA 3010 notification).

Further, rather than design a monitoring program to monitor for the numerous types of hazardous waste (there are over 300 RCRA Appendix VIII hazardous constituents and four hazardous waste characteristics to consider) it is recommended that the POTW consider evaluating wastes hauled from an unknown generator by performing a three tiered analysis.

In the first tier, the POTW should perform a data gathering exercise and desktop analysis to identify potential hazardous waste generators in its service community including types and quantities of waste, as well as current and/or proposed management practices. Section 3.3.1.2 of this document describes aspects of this data gathering exercise by way of example. This exercise involves reviewing data previously submitted by the facilities as a result of CWA or RCRA authorities.

In the second tier, the POTW should use information gathered in the first tier to design a monitoring plan intended to screen hauled waste. This can be accomplished by performing tests on indicator parameters. For example, if industries in the community typically generate caustic or acidic wastes, a simple pH test may be appropriate. Similarly, the presence of spent solvents may be indicated using an OVA/HNU meter. The example waste monitoring plans in Section 3.3.3 of this document provide examples of simple screening tests

that a POTW may choose to employ. The second tier of tests will not definitively identify whether a waste is hazardous or not. However, they may be helpful in identifying wastes of concern. Among the test methods that are described in Table 3-3 are those that fit this "screening" purpose, including biluminescence tests and vapor analysis tests. Potential screening techniques appear in boldfaced print in Table 3.3.

Affirmative results to these screening tests could trigger a third tier of testing. This would involve more extensive analysis, such as EP Toxicity testing or GC/MS analysis, to identify and quantify specific hazardous constituents.

Undertaking the following will assist the POTW operator in developing a waste monitoring strategy:

- Contact State and Federal hazardous waste program officials to determine who the hazardous waste handlers (e.g. generators, transporters, and TSDF's) are in your service area. Ascertain the hazardous waste types and constituents handled by these facilities from State/Federal officials. Appendices A-1, A-2, and A-3 to this document list hazardous wastes and constituents that may be found in selected industries.

- Certain hazardous wastes are widely generated and the constituents associated with these wastes probably should be considered in preparing a waste monitoring plan. Examples of widely generated hazardous wastes include electroplating wastes, spent solvents, and small quantity generator wastes such as dry cleaner wastes. Section 2.3 of this document describes these widely generated hazardous wastes, as well as others, that POTWs may encounter.

- Some wastes will be generated by industries that are particular to the region in which a POTW is located. For example, a POTW operating in a geographical region where numerous wood preserving industries are located should be aware of the potential for receipt of listed bottom sediment sludges from wood preserving wastewater treatment systems.

3.3.1.2 Identification of Hazardous Waste from Known Generators

By imposing specific waste monitoring requirements on known generators, the POTW can increase its knowledge of the nature of waste accepted for treatment. To develop industry-specific monitoring requirments, the POTW can use the following mechanisms:

TABLE 3-3. WASTE EVALUATION PROCEDURES: APPLICABILITY AND CONSTRAINTS

Evaluation Parameter(s)/ Analytical Protocol	Level of Expertise Required	Time Required For Analysis[3]	Equipment Required	Cost	
				Capital	Unit
RCRA Characteristic Analyses					$25-70
Ignitability[1]/1010/1020	BS-level chemist or trained technician under supervision of a BS-level chemist	<2 hrs	Flash point apparatus	$800-1,500	$75-200
Corrosivity[1]/1110/9040		24 hrs	pH meter/general equip.	$300-1,500	$50-200+ [2]
Reactivity[1]/9010/9030 and Section 2.1.3		<1-3 days	general/"Bureau of Explosives" inspec. apparatus[2]	$500	
EP Toxicity[1]/1310, selected "7000 Series" metals protocols, 8080, and 8150	Experienced (2-5 yrs) BS- and/or MS-level chemists and experienced technicians	2+ days	Extractor, compaction tester, membrane filtration apparatus, flame/furnace AAS or ICAP, GC with electron capture detector	>$20,000	$250-650
Toxicity Characteristic Leaching Procedure/Fed. Register, Vol. 51, No. 9; 1/14/86	Under supervison of a Ph.D. or experienced (5+ yrs) MS-level chemist, with BS- and MS-level support staff (chemists and technicians)	4+ days[4]	Agitation apparatus, zero headspace extraction vessel, membrane filtration apparatus, multiple detector GC, ICAP or flame/furnace AAS, and potentially GC/MS	>$30,000 w/o GC/MS >$100,000 w/GC/MS	$100-1500+[4]
Metals: (10-15 analytes)/ "3000" and "7000" series Metals Protocols[1]			Flame/furnace AAS or ICAP and general labware	$15-20,000+ (AAS) $75,000+ (ICAP)	$100-$175 $25-50
All 10-15 analytes/sample	Experienced (2-5 yrs) BS- and/or MS-level chemists and trained technicians	2-3 days for solid matrix by AAS or ICAP			
1-2 analytes/sample		<2 days for solid <4 hrs for water - AAS			

TABLE 3-3. WASTE EVALUATION PROCEDURES: APPLICABILITY AND CONSTRAINTS (Continued)

Evaluation Parameter(s)/ Analytical Protocol	Level of Expertise Required	Time Required For Analysis[3]	Equipment Required	Cost	
				Capital	Unit
CWA Priority Pollutants/ Various[5]					
Entire List	Under supervision and direction of a Ph.D. (2+ years experience) or very experienced (5+ years) MS-level chemists with experienced BS and MS level support staff	1-2 days	GC, GC/MS and AAS, or ICAP	$120,000+	$600-1300 (water) $700-1400 (solid)
Volatiles		2-4 hours	GC or GC/MS	$30,000+ (GC) $80,000+ (GC/MS)	$125-175 (water) $200-300 (solid)
B/N/A Extractables		8 hours	GC/MS	$80,000+	$200-300 (water) $325-450 (solid)
Pesticides/PCBs		8 hours	GC	$25,000+	$150-175 (water) $175-295 (solid)
Metals (13 analytes)		see preceding "Metals" entry	AAS or ICAP	$15,000-20,000+ for AAS $75,000+ ICAP	$175-250 (water) $175-300 (solid)
RCRA Appendix VIII Compds./ Various[6]	Same as above entry	3+ days	GC, GC/MS, and AAS or ICAP	$120,000+	$3,500-4,000 (water)
Entire List[6]					
Subcategories[7]					
Bioluminescence Tests	Experienced BS- or MS-level chemist or microbiologist	<1 hr	Photometer	$15,000	<$100
Organic Vapors	Experienced BS- or MS-level chemist	<1 hr	OVA/HNU	$64,500-10,000[8]	<$100
Chlorinated hydrocarbons, heterocyclics and aromatics, nitrogen compounds					

TABLE 3-3. WASTE EVALUATION PROCEDURES: APPLICABILITY AND CONSTRAINTS (Continued)

Evaluation Parameter(s)/ Analytical Protocol	Level of Expertise Required	Time Required For Analysis(3)	Equipment Required	Cost: Capital	Cost: Unit
TOX Organic chlorides Organic bromides Organic iodides Organic fluorides	Experienced BS- or MS-level chemists	<1 hr	TOX analyzer	$10,000-20,000	$40-70(water) $50-100(solid)

TABLE FOOTNOTES

(1) Referenced analytical protocol is from "Test Methods For Evaluating Solid Waste: Physical/Chemical Methods"; SW-846 2nd Edition; USEPA Office of Solid Waste (1984).

(2) 40 CFR 261 states that one criteria for reactivity is that wastes containing CN^- or sulfides can be subject to very acid or base solutions to determine if toxic fumes are formed as a result of chemical reactions. Consequently, analyses for cyanide and sulfide are frequently the only parameters determined for "reactivity," although the regulations suggest that others may be required. Sulfide and cyanide analyses are often the only "reactivity assessments" that commercial laboratories are willing to perform.

(3) Time requirement data represent an ideal situation, which would only be achievable with a dedicated staff and dedicated equipment, and would not likely be available through contracted commercial laboratory service unless a substantial "rush premium" (typically 2-3 times "normal" prices) were paid.

Analytical requirement (i.e., the specific list of target analysts) is driven to a significant extent by the nature/composition of the waste sample, and how much, or little, is known about its composition.

(4) Difficult to ascertain the level/type of analysis required in this procedure, as basic decisions regarding the number and type of target analytes are driven largely by sample composition and contaminant profile considerations.

(5) EPA-sanctioned protocols for CWA Priority Pollutants include the "600 Series" methods for organics (Fed. Register, 10/84); the "200 Series" for metals (EPA 100/4-79-020); and the "7000 Series" and "8000 Series" for metals and organics, respectively (EPA SW-846).

(6) Data provided for only those compounds contained in the RCRA Appendix VIII list for which valid analytical protocols exist. This modified list includes roughly 250 analytes of the roughly 375 initial entries. The roughly 125 entries removed from the target analyte list represent redundant entries, compounds that are instable in water, compounds requiring HPLC analysis, and compounds for which no known analytical procedures exist. EPA-sanctioned analytical procedures are contained in the SW-846 Manual.

(7) Little data exist on the requirements needed to analyze for the nonpriority pollutant contaminants (actually little readily available cost, etc., data). It is likely that many such analytes would be included in the priority pollutant procedures for oganics, and thus would result in little additional cost impact (i.e., analytes amenable to those extraction/analysis procedures could be concurrently determined).

(8) Higher end of cost scale includes the attachment for identification of pollutants. Lower end of cost spectrum limits identification to total volatile organics.

- As described above, a first step is to contact State and Federal hazardous waste program officials to determine who the hazardous waste handlers (e.g. generators, transporters, and TSDF's) are in your service area. Ascertain the hazardous waste types and constituents handled by these facilities from State/Federal officials.

- Onsite audits or inspections by the POTW of known or suspected hazardous waste generators would assist in determining what types of hazardous wastes are handled at a facility and where wastes are sent for treatment and disposal. These audits or inspections could be performed in conjunction with inspections performed as part of the POTW's pretreatment program. These audits or inspections also could be performed prior to permit issuance, should a POTW choose to permit hazardous waste generators.

- Review Appendix A to this document to determine whether this facility belongs to an industry which is known for generating a listed waste, e.g., listed solvents. Also review the Appendix VII list to target particular hazardous constituents associated with these wastes.

- Industrial waste surveys performed by POTWs during pretreatment program development may provide information that would be useful in determining hazardous waste practices of industrial/commercial facilities in the POTW service area. In some instances, POTWs required specific information regarding hazardous waste types generated at a given facility and then associated waste disposal practices.

Perhaps the most reliable information source that a POTW can use to design a generator-specific waste monitoring plan is the onsite audit described above. However, to be effective, the audit should encompass a review of all wastestreams at the subject facility, not only those wastestreams for which the discharge permit is being sought. Generally, the audit should involve:

- Identification and sampling of all wastestreams to determine concentrations of suspected Appendix VII and VIII hazardous constituents, characteristic tests, and physical characteristics such as specific gravity, pH, and solids content. This can be required of the industry prior to acceptance of wastes by the POTW.

- An explanation of the production processes leading to the generation of these wastestreams, including such information as: types and quantities of raw materials, catalysts, reagants used in the production process; routine variations in process operation; previous history of waste handling methods; practices used to avoid waste mixing, etc.

- A review of the generator's records of hazardous waste identification, including manifest records of wastes routinely sent off-site. If the generator manages wastes onsite, the facility's operating records should be reviewed.

As a result of an audit (and/or a pretreatment review of permit application or industrial waste survey data if an onsite audit is not feasible), the POTW will be in a better position to determine if the potential exists for receiving mixtures of hazardous and nonhazardous wastes. If the facility generates listed hazardous wastes, and the POTW still chooses to receive the nonhazardous facility wastes, the data gathered will provide the POTW with a list of hazardous constituents that may be monitored for during a spot check, or if time and cost allow, more routine basis. In addition, if the hazardous waste is a characteristic waste, the hazardous characteristics that should be considered in the waste monitoring plan will be identified.

In a broader sense, the audit and/or industrial data review will give the POTW the opportunity to consider what is the most appropriate waste monitoring approach in dealing with the subject generator. If the POTW is accepting wastes by truck, rail, or dedicated pipeline from industries subject to categorical standards, the POTW will need to monitor for compliance with categorical standards and local limits. The POTW also will want to monitor these wastes for any parameters that may cause POTW operational problems or worker health and safety hazards (i.e., corrosion, fire/explosion, and toxicity to the biological treatment system). POTWs receiving industrial process wastes, particularly when that industrial facility is a known hazardous waste generator, should monitor for hazardous constituent parameters and characteristics at a more frequent basis than would be conducted for the receipt of septage wastes.

3.3.2 Considerations in Developing a Waste Monitoring Plan

When developing a waste monitoring plan to ensure that hazardous wastes are not being hauled and discharged to their wastewater treatment system, a POTW will have to consider the resources available to implement this plan. Table 3-3 presents information regarding analytical protocols and the approximate resources necessary to monitor various hazardous waste parameters.

The time, cost, and expertise constraints listed in Table 3-3 may limit both the monitoring approach and monitoring frequency selected by a POTW. As Table 3-3 illustrates, there are a variety of options for analyzing for both organics and metals. While only the first four techniques, the characteristic tests, are designed specifically for making hazardous waste determinations, all of the other techniques listed here may be used by POTWs as surrogate measures for making hazardous waste determinations. All of these tests share one disadvantage: none of the tests is a sure-fire approach for determining whether a waste is hazardous. On the other hand, some of the techniques are more advantageous for some reasons (e.g., detection limits), while disadvantageous in other senses (e.g., time and cost).

3.3.2.1 Equipment, Time, and Costs of Monitoring

As suggested in Table 3-3, monitoring just prior to a generator's discharge may not be a reasonable approach based on the time needed for analysis (e.g., Series 7000 metals analysis may take up to 3 days). In these cases, the POTW may choose to conduct monitoring at the generator's facility or, alternatively, employ a holding tank for storage of the hauled wastes prior to discharge to the treatment system. However, a POTW storing hazardous wastes on site would be subject to permit by rule requirements. Thus, this type of monitoring approach may defeat the purpose of the waste monitoring plan. In other cases, the constraining factor may not be the time necessary for analysis, but the cost of that analysis (e.g., GC/MS scans for volatiles may cost 2-3 times the unit costs, up to $900, as shown in the table) if the analysis is to be performed at a commercial laboratory on a "quick turnaround" basis. While the unit costs decline sharply when the POTW owns the equipment, the capital cost of equipment (and the personnel needed to run that equipment) may be cost-prohibitive to most POTWs. In light of these costs, the POTW may limit the analytical frequency, even if the generator is expected to pick up analytical costs.

3.3.2.2 Selection of Parameters for Waste Analysis

Selection of sampling parameters should be based on the POTW's knowledge of potential sources of hauled waste. To develop an efficient, cost-effective

waste analysis strategy, POTWs may conduct a two-phased plan. In the first phase, the POTW can test for specific indicator parameters using simple tests, such as pH, color, and OVA or HNU (for organic vapors). In the second phase, more extensive analysis can be performed if the initial tests indicate a potential problem. The use of specific tests at the point of discharge can be tailored to wastes generated from specific industries or industrial processes.

The RCRA characteristic tests for ignitability, corrosivity, and reactivity are applicable to POTW operational and worker/health and safety concerns. However, as suggested above, time and resource costs may prohibit continuous monitoring for these characteristics. This is particularly true for the reactivity and EP toxicity tests.

A POTW may use Table 3-3 to suggest alternative monitoring methods. For example, the EP toxicity test may be time (2 days or more) and cost ($20K capital, $250-650 unit) prohibitive for a POTW to adopt as part of a regular waste monitoring plan. The operator may choose to monitor for the metals at the EP toxic concentrations as opposed to conducting the more expensive EP toxic test. If a larger concentration is found than that determined to be EP toxic (see Table 2-1), the POTW can refuse to allow the discharge of the waste to the POTW. While this is an especially stringent approach, in that the EP Toxic concentrations represent "leached" concentrations and not waste concentrations, conducting this level of sampling and analysis may be more cost-effective for POTWs than engaging in EP toxicity testing procedures. However, the POTW may choose to require generators/haulers to conduct EP toxicity tests if a total waste analysis reveals high concentrations.

One factor of concern is that hazardous constituents mixed with septage wastes are likely to be bound in a solid matrix. The time and associated cost of analyzing for pollutants in this matrix is greater than that required for analyzing pollutants in the water matrix. Unlike industrial/commercial generators, septage haulers ordinarily do not possess the resources necessary to absorb additional testing costs that the POTW may need to impose.

On the basis of practical time and cost constraints, the POTW may choose to limit the scope and frequency of analysis. Where the POTW views time and cost constraints of analysis prohibitive, it still may choose to take samples of the hauled discharge for deterrence purposes.

3.3.3 Example Waste Monitoring Plans

The following discussions describe two different examples of how a POTW can use the guidance provided throughout this section to develop a waste monitoring plan to preclude the discharge of hazardous wastes by waste or septage haulers.

3.3.3.1 Septage Waste Case Study

In this example, the POTW allows septage haulers to discharge to its wastewater t eatment system. The POTW permits all septage haulers, and allows only the discharge of wastes from domestic sources. Given this scenario, the POTW may not be very concerned about routinely receiving hazardous wastes or monitoring for their presence due to the following:

- The permitting system implemented by the POTW for septage haulers only allows for the discharge of wastes from domestic sources
- Any solid wastes generated in a household are excluded from regulation as a hazardous waste under RCRA.

Hazardous Waste Identification

There are many petroleum refining industries located within and around the POTW service area; therefore, the POTW decides to investigate the possibility that a permitted septage hauler may be collecting hazardous waste from one of these facilities. The first step the POTW takes is to obtain information regarding hazardous waste activities at these refineries. The information is gathered from the following sources:

- Completed industrial waste surveys that were collected during pretreatment program development
- Discussions with State hazardous waste officials regarding the status of the refineries in and around the POTW's service area.

Based on review of the above sources, the POTW discovers that two refineries that were treating hazardous waste onsite no longer do so. According to RCRA program officials, the facilities now are pursuing alternate disposal methods. The POTW is concerned that these facilities may consider use of the POTW as a disposal option and decides to develop and implement a waste monitoring program.

The POTW initiates the development of its waste monitoring plan by identifying the potential waste types and associated constituents (or pollutant parameters) that could be generated at the petroleum refineries. By revieving Appendix A to this document and any other available information, (i.e., pretreatment audits, State inspection reports), the POTW determines that there are five listed hazardous wastes for the petroleum refining industry: K048, K049, K050, K051, and K052. The constituents (or pollutant parameters) associated with these listed wastes (as provided in Appendix VII to 40 CFR 261 and Appendix A-3 to this document) are as follows:

Listed Waste	Hazardous Constituents
K048	Hexavalent Chromium, Lead
K049	Hexavalent Chromium, Lead
K050	Hexavalent Chromium
K051	Hexavalent Chromium, Lead
K052	Lead

Methods Selection and Sampling Frequency

Based on the above list, the POTW then considers monitoring septage haulers for hexavalent chromium and lead on a spot-check basis. After revieving Table 3-3, the POTW decides that the costs associated with analyzing these two pollutants on a random basis are within reason and can be recovered via septage hauler permitting fees (approximately $25-50 per analyte per sample, assuming a contract laboratory with ICAP capabilities was used). The POTW will sample each of the haulers prior to discharge, but only analyze a sample for hexavalent chromium and lead a couple of times a year on a random basis for each hauler or when the POTW is suspicious of illegal discharges from a hauler. Due to the time required for these analyses (about 4 hours, not including delivery time to the laboratory), and the POTW's inability to store hauled wastes onsite, the POTW will allow hauled wastes to be discharged, analyzing the sample for hexavalent chormium and lead after the fact. Should analytical results show high concentrations of either pollutant, then the POTW will follow up, take enforcement action as necessary, and increase monitoring efforts on the hauler of concern.

3.3.3.2 Metal Finisher Case Study

In this section, the methodology for developing a waste monitoring plan described throughout Section 3.3 is again applied by way of example. A metal finisher has requested permission to discharge metal finishing wastewaters to the headworks of the POTW via truck.

Hazardous Waste Identification and Associated Auditing

Upon being contacted by the metal finisher, the POTW contacts the State hazardous waste agency to determine if the metal finisher is a hazardous waste handler. State officials verify that the metal finisher is a hazardous waste generator of electroplating wastewater treatment sludges (F006), cyanide plating bath solutions (F007), and cyanide plating bath sludges (F008). The POTW requests this information from the State.

The POTW decides to conduct an onsite audit of the metal finishing facility's production and waste handling procedures. Audit findings ascertain that the metal finisher is in the business of zinc plating and chromating pipe. The production process involves solvent degreasing iron pipe, subjecting the pipe to two consecutive cleanings (one alkaline, one acid), plating the pipe in a zinc cyanide solution, rinsing the product, immersing it in a chromic acid bath for purposes of chromating, and passing the pipeline through a final rinse.

The POTW also notes that two separate sumps are used to collect alkaline and acid dip rinses and discharge to a treatment system just prior to lime and settle. The metal finisher is interested in disposing wastewater from its wastewater treatment system at the POTW. The metal finisher plans to contract with a hauler to deliver and dispose of the waste from the treatment system at the POTW.

While the metal finisher insists that the degreasing procedure is a 100 percent recycle operation, on further questioning the metal finisher acknowledges that spills have occurred in the past. It is also noted that the cyanide plating solutions, the plating bath sludges, and the wastewater treatment sludges are sent to a RCRA treatment, storage, or disposal facility. The POTW verifies this by checking signed copies of hazardous waste manifests available at the metal finisher. The POTW also determines the approximate volume of waste generated by each process by reviewing facility records.

Parameter Selection

Prior to requesting samples, the POTW reviews the results of the audit in light of the hazardous waste identification regulations. By reviewing Appendices B-1, B-2, and B-3 to this document, the POTW finds that EPA has published key pollutants and characteristics displayed by each listed waste. In addition to the F006-F008 listed wastes that the State identified, the POTW finds that the metal finisher's disposal of trichloroethylene qualifies as a listed waste: F001, spent halogenated solvents used in degreasing.

On the basis of checking with the State, the audit, and the in-house review, the POTW could request that the metal finisher provide samples of the following wastes to a laboratory preselected by the POTW (which may be the POTWs own laboratory in the case of larger POTWs): the F006-F008 wastes, and the treated wastewater. A sample of the degreasing agent, the plating bath, and the chromating acid bath also could be requested for analysis. The POTW could request the following analyses by the laboratory: characteristic tests of the treated wastewater; cyanide, zinc, chromium, and solvent concentrations of the listed wastes and the treated wastewater; and specific gravity, and solids content of all wastes.

The POTW selected these analyses to determine whether the wastes to be received from the metal finisher may be hazardous. The POTW recognizes that accepting solid wastes from an industrial facility that is also a hazardous waste generator opens up opportunities for receiving hazardous waste, and is seeking parameters and/or concentrations of parameters that might work to identify whether the metal finisher has surreptitiously mixed hazardous and nonhazardous wastes. The mixture concern is of particular interest with

regard to the listed wastes. However, the POTW is well-aware that the wastewater and the listed wastes share the same basic parameters (i.e., cyanide, chromium, and zinc) and that a waste monitoring plan aimed specifically at these parameters cannot be expected to distinguish listed waste mixtures from nonhazardous wastewater. The fact that these parameters are hazardous constituents does not necessarily mean the waste is a hazardous waste. Continued inspection of the facility, with emphasis toward the segregation of hazardous and nonhazardous wastes and a review of facility hazardous waste manifest records, will be necessary to ensure that the POTW does not receive hazardous wastes.

The POTW selected laboratory provides the following results to the POTW regarding the wastes submitted for analysis:

- The vapor degreaser is pure trichloroethylene with traces of ferrous compounds.
- The cyanide solution is characterized by high concentrations of cyanide and zinc.
- The chromic acid bath is characterized by high concentrations of chrome, with lesser concentrations of zinc.
- The treated wastewaters meet applicable pretreatment limits for pH, chrome, cyanide, zinc, and trichloroethylene. As suspected, the pretreatment of wastewaters ensures that the wastewater does not test corrosive.
- As suspected, the wastewater sludges exhibit higher concentrations of the pollutants above, and a higher solids content than the wastewater. The sludge did not fail the corrosivity test.

Method Selection and Sampling Program Development

As a result of checking with the State, conducting the onsite audit, performing the office review of the audit in light of the hazardous waste identification regulations (explained in Section 2.2 of this document), and revieving the results of the sample analyses, the POTW is prepared to set a two-tiered waste monitoring program. The first tier imposes self-monitoring requirements on the metal finisher. The second tier is a compliance monitoring program that the POTW will use to detect possible violations of the hazardous waste discharge ban.

As part of the self-monitoring requirements, the metal finisher is required to submit results for each of the parameters covered by the categorical standards prior to each discharge event. The metal finisher also is required to submit pH and solids analyses for each load. The pH measurement provides for a determination of whether or not the waste is characteristic, while the solids content may serve as an indicator of mixing wastewater and wastewater sludges.

Knowing that the wastes handled at the metal finisher tend to be corrosive, the POTW also should conduct pH tests on each load as part of the compliance monitoring program. All POTWs should consider sampling for all constituents of concern and preserving the sample for a time sufficient to allow for analysis if the discharge results in plant upset of other operational concerns. These samples should be taken as a precautionary measure, and need not be analyzed. More specific sampling recommendations are provided below for large and small POTWs.

Larger POTWs also may conduct a verification of the metal finisher's analytical results for each of the metals parameters from a subset of discharge events. This can be done most efficiently at the metal finishing facility and will cost approximately $100 if the POTW has the necessary equipment and staff. In addition, larger POTWs may want to subject the metal finishing discharge to a quick scan for organic concentrations, perhaps using vapor analysis techniques, during each discharge event. This will be particularly helpful in determining whether the vapor degreasing agent, trichloroethylene, has been mixed with the wastewater.

Smaller POTWs may choose to conduct sampling of the metals constituents at a lesser fequency as a result of their inability to maintain the necessary analytical equipment and staff onsite. However, low capital cost techniques such as vapor analysis and checks of solids content may be used prior to each discharge event. In this way, smaller POTWs may be able to make a rough determination of any hazardous waste/nonhazardous waste mixing that may have occurred. The vapor analysis, as above, can be used to make an assessment of mixing with degreasing agents. A review of solids and metal content may assist in determining whether the wastewaters were mixed with the listed wastewater sludges. Smaller POTWs may want to return to the generator to collect samples (or have the generator discharge into a holding pond), or have the generator collect the sample of the discharge under POTW supervision, and analyze the results for the constituents of concern, pH, and solids content. Since the turnaround time from a commercial laboratory usually will be greater than the turnaround time from the POTW's laboratory, the laboratory should be given sufficient notice to allow for scheduling. As shown in Table 3-3, analytic costs in a "rush premium" situation will be 2-3 times the cost for analysis at the POTW's laboratory. Therefore, smaller POTWs probably will restrict their use of outside laboratories.

4. RESPONSIBILITIES OF POTWs CHOOSING TO ACCEPT HAZARDOUS WASTES

4.1 INTRODUCTION

POTWs may choose to accept hazardous wastes delivered by truck, rail, or dedicated pipeline. POTWs accepting these wastes are considered to be hazardous waste TSDFs and are subject to applicable RCRA regulations. However, in an effort to streamline the permitting process and to avoid redundancy with respect to the CWA, RCRA exempts POTWs from individual RCRA permits incorporating all of the standards of 40 CFR Part 264. Instead, POTWs are deemed to be subject to RCRA permit by rule provisions which contain the following requirements [40 CFR 270.60(c)]:

- The POTW owner or operator must have a NPDES permit, issued by EPA or a NPDES delegated State
- The POTW must be in compliance with its NPDES permit
- The hazardous waste received must meet all Federal, State, and local pretreatment requirements (e.g., categorical standards, prohibited discharges, and local limits)
- The POTW must comply with the following RCRA provisions:
  - Identification number (40 CFR 264.11)
  - Use of manifest system (40 CFR 264.71)
  - Manifest discrepancy reporting (40 CFR 264.22)
  - Unmanifested waste report (40 CFR 264.76)
  - Operating records [40 CFR 264.73(a) and (b)(1)]
  - Biennial report (40 CFR 264.75)
  - Corrective action if the NPDES permit was issued after November 8, 1984 (40 CFR 264.101) or permit by rule coverage first occurs after November 8, 1984.

Appendix E lists the permit by rule requirements in greater detail. POTWs that do not comply with these requirements may not accept hazardous wastes for treatment, storage, or disposal. Receipt of hazardous wastes by a POTW not in compliance with permit by rule requirements constitutes a violation of the

POTW's permit by rule. The remainder of this chapter explains the permit by rule requirements and POTW obligations under these requirements.

In addition to meeting the statutory and regulatory obligations discussed in this chapter, POTWs choosing to accept hazardous waste by truck, rail, or dedicated pipeline may want to impose additional requirements to protect worker health and plant operations. This chapter does not provide any guidance in this area. However, readers may want to refer to the discussions that appear in Chapter 3 regarding legal, administrative, and technical control measures. Many of these same control measures (e.g., generator audits, regular sampling) are applicable to POTWs choosing to accept hazardous wastes for treatment, storage, or disposal. If a POTW accepts a listed hazardous waste by these transport methods, the POTW's treatment, storage, and disposal of the resulting sludge will be governed by RCRA Subtitle C hazardous waste requirements. POTWs generating such sludges should contact hazardous waste officials to assess their storage, treatment, and disposal options.

POTWs should be aware that the regulatory requirements described herein are minimum requirements for POTWs receiving hazardous wastes by truck, rail, or dedicated pipeline. Other RCRA statutory requirements, e.g. land disposal ban, may also be applicable as a matter of law if a POTW receives hazardous waste. Both Federal and State NPDES and RCRA permitting authorities may impose more stringent requirements on POTWs accepting hazardous wastes for treatment, storage, or disposal. More extensive effluent sampling requirements and additional control parameters (including whole effluent toxicity testing), among other requirements, might be imposed on permit by rule facilities. Each of the various permit by rule requirements is discussed below.

4.2 COMPLIANCE WITH NPDES PERMIT CONDITIONS

4.2.1 Procedure for Determining Compliance

As part of the 40 CFR Part 270.60(c) requirements of a RCRA permit by rule, a POTW must be in compliance with its NPDES permit. Any violation of a NPDES permit is sufficient reason for EPA to take joint CWA/RCRA enforcement

actions. Thus the POTW should make every effort to ensure complete compliance with all terms and conditions of its NPDES permit. EPA will review the severity of the violations, and appropriate responses, by analyzing the nature, cause, and extent of any permit violations. The requirement of "in compliance with an NPDES permit" is an ongoing obligation. Consequently, noncompliance with any NPDES permit condition could result in RCRA 3008(a) enforcement actions for receipt of hazardous wastes in violation of the permit by rule, as well as CWA enforcement actions.

4.3 COMPLIANCE WITH PRETREATMENT PROGRAM REQUIREMENTS

The National Pretreatment Program is designed to protect municipal wastewater treatment plants from the potential adverse effects of industrial discharges. Specific goals of this program are to:

- Prevent interference with POTW operations that could result from the introduction of pollutants that are toxic or inhibitory to the treatment process.
- Prevent the pass through of pollutants to the receiving stream. Pollutants that are incompatible, or otherwise unaffected by the treatment processes, could have an adverse environmental impact on the receiving stream.
- Preserve and improve sludge quality so that the chosen method of sludge disposal can be continued and the possibility of more attractive sludge reuse and recycle options enhanced.

All industrial users discharging to POTWs are subject to National Pretreatment Program requirements and standards, as set forth in the General Pretreatment Regulations (40 CFR Part 403). EPA required many municipalities (POTWs) to develop local pretreatment programs, in pursuit of these goals, to manage and control effectively all nondomestic wastes discharged to, and subsequently treated by, their treatment system. Where POTWs were not required to develop local pretreatment programs, States with delegated pretreatment program authority or EPA Regional offices have the primary responsibility to apply and enforce applicable pretreatment standards and requirements.

As part of the 40 CFR Part 270.60(c) permit conditions of a permit by rule, the hazardous waste received from an industrial user by a POTW must meet all applicable pretreatment standards (i.e., Federal, State, and local). Therefore, it is the responsibility of the POTW to ensure that any hazardous wastes received by truck, rail, or dedicated pipeline also meet applicable pretreatment standards and requirements before discharge is allowed.

Failure of the POTW to ensure compliance with applicable standards and requirements prior to discharge, or acceptance of hazardous wastes that are not in compliance with applicable pretreatment standards, can result in enforcement actions under RCRA Section 3008(a) for violation of the permit by rule. Further, CWA enforcement actions could be taken against the industrial user for failure to comply with applicable standards and/or the POTW for failure to properly implement its approved pretreatment program as required by the POTW's NPDES permit. Enforcement actions could also be taken against the POTW for violation of its RCRA permit by rule.

There are three types of discharge limits that may be applied to industrial discharges: prohibitive discharge standards, local limits, and Federal categorical standards. Hazardous wastes received by a POTW by truck, rail or dedicated pipeline must meet all of these standards before discharge into the POTW can be allowed. Each of the applicable standards is dicussed further below.

- Prohibitive discharge standards -- Prohibitive discharge standards are required under Part 403.5(a) and (b) of the General Pretreatment Regulations. The standards specifically prohibit the discharge of wastes to POTWs that:
  - Create a fire or explosion hazard
  - Have a pH of less than 5.0
  - Contain solid or viscous pollutants that might cause obstructions to the flow in the POTW
  - Have an excessive oxygen demand
  - Could cause the temperature at the influent of the treatment plant to exceed 104°F.

Under these provisions, wastes that are hazardous because of the characteristics of ignitability (40 CFR Part 261.21), corrosivity (40 CFR Part 261.22), or reactivity (40 CFR Part 261.23) may violate these prohibitions, and as such should not be accepted by the Control Authority.

- Local limits -- Local limits are developed by the POTW to protect the POTW treatment plant operations, sludge quality, and receiving stream. Since local limits are enforceable as pretreatment standards, any hazardous wastes discharged to a POTW via truck, rail, or dedicated pipeline also would have to comply with the local limits set by the POTW. POTW officials should determine whether the waste being discharged is a listed hazardous waste and, if so, examine the hazardous constituent upon which the listing was made (see Section 3.3 for guidance on identification of hazardous wastes). This would provide an indication of the pollutants for which the wastes should be analyzed. POTW also should be aware that industrial loading estimates and subsequent allocations used originally to develop local limits may change daily based on when a hauled hazardous waste is discharged. Therefore, POTWs should consider the extreme loading variations that could be expected to be received from waste haulers when allocating allowable headworks loadings.

  Many local sewer use ordinances contain both upper and lower pH boundaries for acceptable wastes. These augment the prohibitive pH standard and may lead to the necessary exclusion of additional corrosive wastes. (Officials should be aware that "P" and "U" listed wastes also can be corrosive.).

- Federal categorical pretreatment standards -- Federal categorical pretreatment standards are specific to each type of regulated industry and contain discharge limitations for wastewaters generated from specific regulated industrial processes.

  Prior to accepting hazardous wastes via truck, rail, or dedicated pipeline, POTWs will need to:

  - Determine whether the generating industry is covered by a categorical standard
  - Determine whether the wastes were generated from a regulated process
  - Identify the appropriate standards that apply to the wastestream
  - Establish the industrial production rate associated with the wastestream (for production-based standards only)
  - Establish the necessary sampling protocol to assess compliance with the categorical standard

- Sample and analyze the hazardous waste, or require the industrial user to perform sampling and analysis, consistent with the established protocol, to ensure compliance with applicable categorical standards.

Information provided by the generating industry may be in the form of an EPA RCRA hazardous waste number and a brief hazardous waste description. In rare instances, this may provide sufficient information; however, POTWs generally can expect problems in determining the applicability of categorical standards based solely upon this information.

Some RCRA listed wastes provide a clear indication that the electroplating or metal finishing regulations could be applicable, such as: wastewater treatment sludges from electroplating operations, spent cyanide plating bath solutions, and spent cleaning and stripping solutions from electroplating processes where cyanide is used in the process. However, in the case of solvents listed under F-001, F-002, and F-003, the generic descriptions lack any information that might indicate the type of industrial processes that generated the wastes. In the case of solvents, this determination is crucial, as solvents are regulated as "total toxic organics" under several categorical standards.

POTWs should be aware of the K-listed wastes, which EPA has provided in groupings according to the generating industry. Once again, the problem in determining the applicability of a categorical standard based on RCRA information alone is the lack of information regarding the specific process that generated the wastestream.

Having properly identified the categorical waste, sampling protocols must consider the possible combination of wastestreams, either at the industry, or for conveyance to the treatment plant. If this is the case, the Combined Wastestream Formula (CWF), as described in 40 CFR 403.6(e), must be applied to account for possible dilution. While dilution may be an acceptable method for treating characteristic properties under RCRA, this cannot be used to achieve compliance with categorical standards. While an industry can be required to monitor its wastestreams and provide the necessary data for use in the CWF,

problems can arise if the transporter combines loads from different industries. POTWs must establish regulations and procedures to ensure that any such occurrence would be predicated upon the sampling and analysis of each contributing wastestream for all pollutants of concern. EPA's Guidance Manual, Use of Production-Based Pretreatment Standards and the Combined Wastestream Formula, (September 1985) provides additional guidance.

4.4 COMPLIANCE WITH RCRA PROCEDURAL REQUIREMENTS

In addition to pretreatment information and reporting requirements, POTWs must comply with the procedural provisions cited in 40 CFR Part 270.60(c) of the RCRA regulations to operate under a permit by rule. These provisions are discussed more thoroughly in the following sections.

4.4.1 EPA Identification Number

All facilities that treat, store, or dispose of hazardous wastes are required to file a notification of activity and receive an EPA identification number (40 CFR Part 264.11). POTWs may obtain this identification number by submitting EPA Form 8700-12. A copy of this form is provided in Appendix F-1. (Mailing addresses are provided in Appendix G).

4.4.2 Manifest System

The RCRA program establishes a "cradle to grave" tracking system that accounts for all hazardous wastes from the point of generation to final treatment, storage, or disposal. Tracking is accomplished through using the Uniform Hazardous Waste Manifest (Appendix F-2) or an equivalent State form. The permit by rule conditions require POTWs to comply with the manifest regulations for TSDFs (40 CFR Part 264.71-264.72). The manifest system is originated by the generator, continued by the transporter, and completed by the POTW. At each step, the appropriate sections of the manifest must be completed with a copy going to all parties involved in the transaction. To complete the circle, the POTW must return a copy of the completed manifest to the generator, while retaining a copy for its records.

The Uniform Hazardous Waste Manifest (EPA Form 8700-22) requires the following information:

- The manifest document number
- The name, address, telephone number, and EPA identification number of the generator
- The name and identification number of each transporter
- The name, address, and EPA identification number of the POTW (including the same information for an alternate TSDF)
- The DOT shipping name, hazard class, and waste identification number
- The total quantity of each waste by weight or volume
- The type and number of containers used in transporting the waste
- A certification that the hazardous waste has been properly classified, described, packaged, marked and labeled, and is in proper condition for transportation
- A waste minimization certification stating that the generator has a program in place to reduce the volume and toxicity of the waste to the degree economically practicable to the generator, and that the proposed method of treatment, storage, or disposal is that practicable method currently available that minimizes the risk to human health and the environment.

Upon receipt of a hazardous waste, the POTW owner or operator must:

- Sign and date the manifest
- Note any significant discrepancies in the manifest on each copy of the manifest (discussed in detail below)
- Immediately give the transporter a copy of the signed manifest
- Send a copy of the manifest to the generator within 30 days after the delivery
- Retain a copy of the manifest at the facility for at least 3 years after the date of receipt.

If the waste is transported by barge or rail, it may be accompanied by a shipping paper in lieu of the manifest. The shipping paper should contain all

of the information required on the manifest except the EPA identification number, the generator's certification, and the signatures of the intermediate transporters. When a shipping paper is used, the generator or initial rail transporter is responsible for sending three copies of the manifest to the POTW. If the manifest is not received by the time the waste is delivered, the POTW must complete the above-mentioned steps using the shipping paper in place of the manifest.

The POTW is required to note any significant manifest discrepancies on each copy of the manifest. Manifest discrepancies are differences between the type and/or amount of hazardous waste designated on the manifest and that received by the facility. A significant discrepancy is defined as:

- A difference in weight of greater than 10 percent for bulk shipments
- Any variation in the piece count for batch deliveries
- Any obvious difference in waste type that can be discovered by inspection or waste analysis.

If a discrepancy is found either prior to or after waste analysis, the owner or operator must attempt to reconcile the discrepancy with the generator or transporter. If the discrepancy is not resolved within 15 days after the date of delivery, the TSDF must send a letter to the Regional Administrator that includes a description of the discrepancy, the attempts to reconcile it, and a copy of the manifest.

Although the permit by rule regulations do not explicity require a POTW to undertake a waste analysis of manifested waste, the regulations do require POTWs to report significant discrepancies. To adequately identify significant discrepancies it is recommended that, at a minimum, a rudimentary waste analysis be undertaken. Only then could a POTW protect itself from violating the permit by rule by failing to report a significant discrepancy.

POTWs subject to a permit by rule are required to file an unmanifested waste report if hazardous waste is accepted from an offsite source that is not accompanied by a manifest or shipping paper and is not excluded from the

manifest requirement by the small quantity generator regulations (see Section 2.3.1. This requirement does not apply to hazardous waste arriving at the POTW by dedicated pipeline). The report must be submitted to the EPA Regional Waste Management Division or the authorized State agency on EPA Form 8700-13B (the Biennial Report Form) within 15 days after receiving the waste. A copy of this form is provided in Appendix F-3. The Unmanifested Waste Report must contain the following information:

- The EPA identification number, name, and address of the facility
- The date the waste was received
- The EPA identification number, name, and address of the generator and the transporter, if available
- A description and the quantity of each unmanifested hazardous waste received
- The method of treatment, storage, and disposal for each waste
- The certification signed by the owner or operator of the POTW or his authorized representative
- A brief explanation of why the waste was unmanifested, if known.

When a facility receives an unmanifested hazardous waste that is purported to be excluded under the small quantity generator requirements, it is recommended that the owner or operator obtain a certification from the generator that the waste qualifies for the exclusion. Otherwise, the owner or operator should file an unmanifested waste report.

4.4.3 Operating Record

Under the permit by rule conditions, the POTW owner or operator is required to maintain operating records (40 CFR Part 264.73 (a)-(b)(1)). The operating record must contain the following information as it becomes available, until the POTW ceases to engage in the treatment, storage, or disposal of hazardous waste:

- A description of the type and quantity of each hazardous waste received

- The method and dates of hazardous waste treatment, storage, or disposal at the facility, as per Appendix I of the RCRA regulations.

Appendix I of Part 264 requires each hazardous waste to be described in the operating record by its common name and, if the waste is listed, by its EPA Hazardous Waste Number(s) (from Part 261, Subpart D). If the waste is not listed, the description must include the production process. The record also must describe the waste's physical form (i.e., liquid, sludge, solid, or contained gas); the estimated or manifest-reported weight, or volume and density, where applicable (specified in Table 1 of the Appendix); and the method(s) of treatment by handling code(s) (specified in Table 2 of the Appendix).

4.4.4 Biennial Report

Under 40 CFR Part 264.75, owners or operators of TSDFs, including POTWs with permits by rule, must submit biennial reports to the EPA Regional Waste Management Division or the appropriate State agency by March 1 of each even-numbered year. The report, to be filled out using EPA Form 8700-13B (Appendix D-3), details the facility's treatment, storage, and disposal activities of the previous odd-numbered year. The following information must be included in the report:

- The EPA identification number, name, and address of the facility
- The calendar year covered by the report
- The EPA identification number for each generator from which hazardous waste was received
- A description and the quantity of each hazardous waste received during the year, listed by the EPA identification number of the generator
- The method of treatment, storage, or disposal for each hazardous waste
- The certification signed by the owner or operator of the facility or his authorized representative.

4.5 CORRECTIVE ACTION

The November 1984 Amendments to RCRA included a provision (RCRA Section 3004(u)) that requires:

> . . . corrective action for all releases of hazardous waste or constituents from any solid waste management unit at a treatment, storage or disposal facility seeking a permit under this subtitle, regardless of the time at which waste was placed in the unit. Permits issued under section 3005 shall 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.

Under this new requirement, permit by rule POTWs with NPDES permits that are issued after November 8, 1984, or that are first covered by a permit by rule after November 8, 1984, are subject to RCRA corrective action requirements ({270.60(c)(3)(7). Unlike the other permit by rule requirements, corrective action requirements may result in a POTW being subject to substantial costs associated with treating, storing, and disposing of hazardous waste. Corrective action, under RCRA, encompasses corrective measures to clean up any release of hazardous waste or hazardous constituents from a solid waste management unit that may result in hazards to human health or the environment. Moreover, the requirement is not triggered by whether or not the facility is in compliance with RCRA and CWA regulations. Potential corrective action activities include: initial investigations of the nature and extent of any releases, (e.g., sinking of monitoring wells and sampling and analysis); interim measures to control the contamination; necessary corrective measures (e.g., ground water pumping); and post-corrective measure monitoring and assessment. Thus, the term corrective action refers not only to actual cleanup measures, but any actions that may need to be taken prior to actual cleanup.

The intensity of corrective action requirements will depend on the severity of any releases of hazardous waste or hazardous constituents (see Section 2.2.2 for a discussion of Appendix VIII hazardous constituents). The scope of the requirement is potentially large in that it would cover not only those units that accepted hazardous waste, but all solid waste management units (e.g., containers, tanks, waste piles, surface impoundments, landfills, and perhaps most significant for POTWs, wastewater treatment units). Moreover, it covers not only hazardous wastes, but hazardous constituents from solid waste management units. For example, EPA could require a POTW to pump

and treat ground water from an aquifer that was contaminated by hazardous constituents emanating from the POTW's surface impoundments. Thus, EPA could mandate cleanup of any solid waste management unit at the POTW that handled solid wastes, irrespective of whether that unit ever handled hazardous wastes.

At the very least, POTWs likely will be asked to provide background information on the number of solid waste management units it operates, the nature of the waste disposed in those units, any evidence of past releases at those units, and information concerning the amount of waste handled, the location of the facility, and unit design information. POTWs also may be directed to conduct more indepth sampling for contamination of soil, ground water, and surface water and air releases. Finally, corrective measures may need to be taken. The corrective action process is more fully described in the Guidance for Implementing RCRA Permit By Rule Requirements at POTWs. The first phase of corrective action, the RCRA Facility Assessments is more fully described in the Guidance for Conducting RCRA Facility Assessments at POTWs.

APPENDIX A

RCRA LISTS

APPENDIX A-1

RCRA LISTED HAZARDOUS WASTES

HAZARDOUS WASTE FROM NONSPECIFIC SOURCES (F LIST)

40 CFR PART 261.31

Industry and EPA Hazardous waste No.	Hazardous waste	Hazard code
General:		
F001	The following spent halogenated solvents used in degreasing: tetrachloroethylene, trichloroethylene, methylene chloride, 1,1,1-trichloroethane, carbon tetrachloride, and chlorinated fluorocarbons; and sludges from the recovery of these solvents in degreasing operations.	(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, and trichlorofluoromethane; and the still bottoms from the recovery of these solvents.	(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; and the still bottoms from the recovery of these solvents.	(I)
F004	The following spent non-halogenated solvents: cresols and cresylic acid, and nitrobenzene; and the still bottoms from the recovery of these solvents.	(T)
F005	The following spent non-halogenated solvents: toluene, methyl ethyl ketone, carbon disulfide, isobutanol, and pyridine; and the still bottoms from the recovery of these solvents.	(I, T)
F006	Wastewater treatment sludges from electroplating operations except from the following processes: (1) sulfuric acid anodizing of aluminum; (2) tin plating on carbon steel; (3) zinc plating (segregated basis) on carbon steel; (4) aluminum or zinc-aluminum plating on carbon steel; (5) cleaning/stripping associated with tin, zinc and aluminum plating on carbon steel; and (6) chemical etching and milling of aluminum.	(T)
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 sludges 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 wastewater treatment sludges from metal heat treating operations where cyanides are used in the process.	(T)
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 dessicants, wastewater, wastewater treatment sludges, spent catalysts, and wastes listed in §261.32).	(T)
F025	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 condreons.	(H)
F027	Discarded unused formulations containing tri-, tetra- or pentachlorophenol or discarded unused formulation containing compounds derived from these chlorophenols. (This listing does not include formulations containing Hexachlorophene synthesized 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)

[261.31 amended by 46 FR 47833, July 16, 1980, revised by 45 FR 74880, November 12, 1980 46 FR 4617, January 16, 1981, 46 FR 27476, May 20, 1981, 49 FR 5312, February 10, 1984; 50 FR 661, January 4, 1985, 50 FR 1999, January 14, 1985]

HAZARDOUS WASTE FROM SPECIFIC SOURCES (K LIST)

40 CFR PART 261.32

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
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
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 diethylphosphorodithoic 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
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
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 from steel finishing operations	C
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

[261.32 amended by 45 FR 47833, July 16, 1980; 45 FR 72039, October 30, 1980; revised by 45 FR 74980, November 12, 1980; 46 FR 4617, January 16, 1981; 46 FR 27476, May 20, 1981]

Hazardous waste No.	Substance
P023	Acetaldehyde, chloro-
P002	Acetamide, N-(aminothioxomethyl)-
P057	Acetamide, 2-fluoro-
P058	Acetic acid, fluoro-, sodium salt
P188	Acetamide acid, N-[(methylamino)carbonyl]oxy]-, methyl ester
P001	3-(alpha-Acetonylbenzyl)-4-hydroxycoumarin and salts, when present at concentrations greater than 0.3%
P002	1-Acetyl-2-thiourea
P003	Acrolein
P070	Aldicarb
P004	Aldrin
P005	Allyl alcohol
P006	Aluminum phosphide
P007	5-(Aminomethyl)-3-isoxazolol
P008	4-Aminopyridine
P009	Ammonium picrate (R)
P119	Ammonium vanadate
P010	Arsenic acid
P012	Arsenic (III) oxide
P011	Arsenic (V) oxide
P012	Arsenic pentoxide
P038	Arsenic trioxide
P054	Aziridine
P013	Barium cyanide
P024	Benzenamine, 4-chloro-
P077	Benzenamine, 4-nitro-
P028	Benzene, (chloromethyl)-
P042	1,2-Benzenediol, 4-[1-hydroxy-2-(methylamino)]-
P014	Benzenethiol
P028	Benzyl chloride
P015	Beryllium dust
P016	Bis(chloromethyl) ether
P017	Bromoacetone
P018	Brucine
P021	Calcium cyanide
P123	Camphene, octachloro-
P103	Carbamimidothioic acid
P022	Carbon bisulfide
P022	Carbon disulfide
P095	Carbonyl chloride
P033	Chlorine cyanide
P023	Chloroacetaldehyde
P024	p-Chloroaniline
P026	1-(o-Chlorophenyl)thiourea
P027	3-Chloropropionitrile
P029	Copper cyanides
P030	Cyanides (soluble cyanide salts), not otherwise specified
P031	Cyanogen
P033	Cyanogen chloride
P036	Dichlorophenylarsine
P037	Dieldrin
P038	Diethylarsine
P039	O,O-Diethyl S-[2-(ethylthio)ethyl] phosphorodithioate
P041	Diethyl-p-nitrophenyl phosphate
P040	O,O-Diethyl O-pyrazinyl phosphorothioate
P043	Diisopropyl fluorophosphate
P044	Dimethoate
P046	2,3-Dimethyl-1-(methylthio)-2-butanone, O-[(methylamino)carbonyl] oxime
P071	O,O-Dimethyl O-p-nitrophenyl phosphorothioate
P082	Dimethylnitrosamine
P046	alpha, alpha-Dimethylphenethylamine
P047	4,6-Dinitro-o-cresol and salts
P034	4,6-Dinitro-o-cyclohexylphenol
P048	2,4-Dinitrophenol
P020	Dinoseb
P085	Diphosphoramide, octamethyl-
P039	Disulfoton
P049	2,4-Dithiobiuret
P108	Dithiopyrophosphoric acid, tetraethyl ester
P050	Endosulfan
P088	Endothall
P051	Endrin
P042	Epinephrine
P046	Ethanamine, 1,1-dimethyl-2-phenyl-
P084	Ethanamine, N-methyl-N-nitroso-
P101	Ethyl cyanide
P054	Ethyleneimine
P097	Famphur
P056	Fluorine
P057	Fluoroacetamide
P058	Fluoroacetic acid, sodium salt
P065	Fulminic acid, mercury(II) salt (R,T)
P059	Heptachlor
P051	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
P037	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

Hazardous waste No.	Substance
P060	1,2,3,4,10,10-Hexachloro-1,4,4a,5,8,8a-hexahydro-1,4:5,8-endo, endo-dimeth- anonaphthalene
P004	1,2,3,4,10,10-Hexachloro-1,4,4a,5,8,8a-hexahydro-1,4:5,8-endo,exo-dimethanonaphthalene
P060	Hexachlorohexahydro-exo,exo-dimethanonaphthalene
P062	Hexaethyl tetraphosphate
P116	Hydrazinecarbothioamide
P068	Hydrazine, methyl-
P063	Hydrocyanic acid
P063	Hydrogen cyanide
P096	Hydrogen phosphide
P064	Isocyanic acid, methyl ester
P007	3(2H)-Isoxazolone, 5-(aminomethyl)-
P092	Mercury, (acetato-O)phenyl-
P065	Mercury fulminate (R,T)
P016	Methane, oxybis[chloro-
P112	Methane, tetranitro- (R)
P118	Methanethiol, trichloro-
P059	4,7-Methano-1H-indene, 1,4,5,6,7,8,8-heptachloro-3a,4,7,7a-tetrahydro-
P066	Methomyl
P067	2-Methyaziridine
P068	Methyl hydrazine
P064	Methyl isocyanate
P069	2-Methyllactonitrile
P071	Methyl parathion
P072	alpha-Naphthylthiourea
P073	Nickel carbonyl
P074	Nickel cyanide
P074	Nickel(II) cyanide
P073	Nickel tetracarbonyl
P075	Nicotine and salts
P076	Nitric oxide
P077	p-Nitroaniline
P078	Nitrogen dioxide
P076	Nitrogen(II) oxide
P078	Nitrogen(IV) oxide
P081	Nitroglycerine (R)
P082	N-Nitrosodimethylamine
P084	N-Nitrosomethylvinylamine
P050	5-Norbornene-2,3-dimethanol, 1,4,5,6,7,7-hexachloro, cyclic sulfite
P085	Octamethylpyrophosphoramide
P087	Osmium oxide
P087	Osmium tetroxide
P088	7-Oxabicyclo[2.2.1]heptane-2,3-dicarboxylic acid
P089	Parathion
P034	Phenol, 2-cyclohexyl-4,6-dinitro-
P048	Phenol, 2,4-dinitro-
P047	Phenol, 2,4-dinitro-6-methyl-
P020	Phenol, 2,4-dinitro-6-(1-methylpropyl)-
P009	Phenol, 2,4,6-trinitro-, ammonium salt (R)
P036	Phenyl dichloroarsine
P092	Phenylmercuric acetate
P093	N-Phenylthiourea
P094	Phorate
P095	Phosgene
P096	Phosphine
P041	Phosphoric acid, diethyl p-nitrophenyl ester
P044	Phosphorodithioic acid, O,O-dimethyl S-[2-(methylamino)-2-oxoethyl] ester
P043	Phosphorofluoridic acid, bis(1-methylethyl)-ester
P094	Phosphorothioic acid, O,O-diethyl (ethylthio)methyl ester
P089	Phosphorothioic acid, O,O-diethyl O-(p-nitrophenyl) ester
P040	Phosphorothioic acid, O,O-diethyl O- pyrazinyl ester
P097	Phosphorothioic acid, O,O-dimethyl O-[p-[(dimethylamino)-sulfonyl]phenyl] ester
P110	Plumbane, tetraethyl-
P098	Potassium cyanide
P099	Potassium silver cyanide
P070	Propanal, 2-methyl-2-(methylthio)-, [(methylamino)carbonyl] oxime
P101	Propanenitrile
P027	Propanenitrile, 3-chloro-
P069	Propanenitrile, 2-hydroxy-2-methyl-
P081	1,2,3-Propanetriol, trinitrate- (R)
P017	2-Propanone, 1-bromo-
P102	Propargyl alcohol
P003	2-Propenal
P005	2-Propen-1-ol
P067	1,2-Propylenimine
P102	2-Propyn-1-ol
P008	4-Pyridinamine

Hazardous waste No.	Substance
P078	Pyridine, (S)-3-(1-methyl-2-pyrrolidinyl)-, and salts
P111	Pyrophosphoric acid, tetraethyl ester
P103	Selenourea
P104	Silver cyanide
P105	Sodium azide
P106	Sodium cyanide
P107	Strontium sulfide
P108	Strychnidin-10-one, and salts
P018	Strychnidin-10-one, 2,3-dimethoxy-
P108	Strychnine and salts
P115	Sulfuric acid, thallium(I) salt
P109	Tetraethyldithiopyrophosphate
P110	Tetraethyl lead
P111	Tetraethylpyrophosphate
P112	Tetranitromethane (R)
P062	Tetraphosphoric acid, hexaethyl ester
P113	Thallic oxide
P113	Thallium(III) oxide
P114	Thallium(I) selenite
P115	Thallium(I) sulfate
P045	Thiofanox
P049	Thioimidodicarbonic diamide
P014	Thiophenol
P116	Thiosemicarbazide
P026	Thiourea, (2-chlorophenyl)-
P072	Thiourea, 1-naphthalenyl-
P093	Thiourea, phenyl-
P123	Toxaphene
P118	Trichloromethanethiol
P119	Vanadic acid, ammonium salt
P120	Vanadium pentoxide
P120	Vanadium(V) oxide
P001	Warfarin, when present at concentrations greater than 0.3%
P121	Zinc cyanide
P122	Zinc phosphide (R,T)
P122	Zinc phosphide, when present at concentrations greater than 10%

DISCARDED COMMERCIAL CHEMICAL PRODUCTS, OFF-SPECIFICATION SPECIES, CONTAINER RESIDUES, AND SPILL RESIDUES IDENTIFIED AS TOXIC WASTES (U LIST) 40 CFR PART 261.33(f)

Hazardous Waste No.	Substance
U005	Acetamide, N-[4-(acetyloxy)-2-m-
U112	Acetic acid, ethyl ester (I)
U144	Acetic acid, lead salt
U214	Acetic acid, thallium(I) salt
U002	Acetone (I)
U003	Acetonitrile (I,T)
U004	Acetophenone
U005	2-Acetylaminofluorene
U006	Acetyl chloride (C,R,T)
U007	Acrylamide
U008	Acrylic acid (I)
U009	Acrylonitrile
U150	Alanine, 3-[p-bis(2-chloroethyl)amino] phenyl-, L-
U011	Amitrole
U012	Aniline (I,T)
U248	3-(alpha-Acetonylbenzyl)-4-hydroxy-coumarin and salts, when present at concentrations of 0.3% or less.
U014	Auramine
U015	Azaserine
U010	Azirino[2',3':3,4]pyrrolo[1,2-a]indole-4,7-dione, 6-amino-8-[[(aminocarbonyl) oxy]methyl]-1,1a,2,8,8a,8b-hexahydro-8a-methoxy-5-methyl-
U157	Benz[j]aceanthrylene, 1,2-dihydro-3-methyl-
U016	Benz[c]acridine
U016	3,4-Benzacridine
U017	Benzal chloride
U018	Benz[a]anthracene
U018	1,2-Benzanthracene
U094	1,2-Benzanthracene, 7,12-dimethyl-
U012	Benzenamine (I,T)
U014	Benzenamine, 4,4'-carbonimidoylbis[N,N-dimethyl-
U049	Benzenamine, 4-chloro-2-methyl-
U093	Benzenamine, N,N'-dimethyl-4-phenylazo-
U158	Benzenamine, 4,4'-methylenebis[2-chloro-
U222	Benzenamine, 2-methyl-, hydrochloride
U181	Benzenamine, 2-methyl-5-nitro-
U019	Benzene (I,T)
U038	Benzeneacetic acid, 4-chloro-alpha-(4-chlorophenyl)-alpha-hydroxy-, ethyl ester
U030	Benzene, 1-bromo-4-phenoxy-
U037	Benzene, chloro-
U190	1,2-Benzenedicarboxylic acid anhydride
U069	1,2-Benzenedicarboxylic acid, [bis(2-ethylhexyl)] ester
U069	1,2-Benzenedicarboxylic acid, dibutyl ester
U102	1,2-Benzenedicarboxylic acid, dimethyl ester
U107	1,2-Benzenedicarboxylic acid, di-n-octyl ester
U070	Benzene, 1,2-dichloro-
U071	Benzene, 1,3-dichloro-
U072	Benzene, 1,4-dichloro-
U017	Benzene, (dichloromethyl)-
U223	Benzene, 1,3-diisocyanatomethyl- (R,T)
U239	Benzene, dimethyl- (I,T)
U201	1,3-Benzenediol
U127	Benzene, hexachloro-
U056	Benzene, hexahydro- (I)
U188	Benzene, hydroxy-
U220	Benzene, methyl-
U105	Benzene, 1-methyl-2,4-dinitro-
U106	Benzene, 1-methyl-2,6-dinitro-
U203	Benzene, 1,2-methylenedioxy-4-allyl-
U141	Benzene, 1,2-methylenedioxy-4-propenyl-
U090	Benzene, 1,2-methylenedioxy-4-propyl-
U055	Benzene, (1-methylethyl)- (I)
U169	Benzene, nitro- (I,T)
U183	Benzene, pentachloro-
U185	Benzene, pentachloronitro-
U020	Benzenesulfonic acid chloride (C,R)
U020	Benzenesulfonyl chloride (C,R)
U207	Benzene, 1,2,4,5-tetrachloro-
U023	Benzene, (trichloromethyl)- (C,R,T)
D034	Benzene, 1,3,5-trinitro- (R,T)
U021	Benzidine
U202	1,2-Benzisothiazol-3-one, 1,1-dioxide
U120	Benzo[j,k]fluorene
U022	Benzo[a]pyrene
U022	3,4-Benzopyrene
U197	p-Benzoquinone
U023	Benzotrichloride (C,R,T)
U050	1,2-Benzophenanthrene
U085	2,2'-Bioxirane (I,T)
U021	[1,1'-Biphenyl]-4,4'-diamine
U073	[1,1'-Biphenyl]-4,4'-diamine, 3,3'-dichloro-
U091	[1,1'-Biphenyl]-4,4'-diamine, 3,3'-dimethoxy-
U095	[1,1'-Biphenyl]-4,4'-diamine, 3,3'-dimethyl-
U024	Bis(2-chloroethoxy) methane
U027	Bis(2-chloroisopropyl) ether
U244	Bis(dimethylthiocarbamoyl) disulfide
U028	Bis(2-ethylhexyl) phthalate
U246	Bromine cyanide
U225	Bromoform
U030	4-Bromophenyl phenyl ether
U129	1,3-Butadiene, 1,1,2,3,4,4-hexachloro-
U172	1-Butanamine, N-butyl-N-nitroso-
U035	Butanoic acid, 4-[bis(2-chloroethyl)amino] benzene-
U031	1-Butanol (I)
U159	2-Butanone (I,T)
U160	2-Butanone peroxide (R,T)
U053	2-Butenal
U074	2-Butene, 1,4-dichloro- (I,T)
U031	n-Butyl alcohol (I)
U136	Cacodylic acid
U032	Calcium chromate
U238	Carbamic acid, ethyl ester
U178	Carbamic acid, methylnitroso-, ethyl ester
U176	Carbamide, N-ethyl-N-nitroso-
U177	Carbamide, N-methyl-N-nitroso-
U219	Carbamide, thio-
U097	Carbamoyl chloride, dimethyl-
U215	Carbonic acid, dithallium(I) salt
U156	Carbonochloridic acid, methyl ester (I,T)
U033	Carbon oxyfluoride (R,T)
U211	Carbon tetrachloride
U033	Carbonyl fluoride (R,T)
U034	Chloral
U035	Chlorambucil
U036	Chlordane, technical
U026	Chlornaphazine
U037	Chlorobenzene
U038	4-Chloro-a,a-diacetanilide
U041	1-Chloro-2,3-epoxypropane
U042	2-Chloroethyl vinyl ether
U044	Chloroform
U046	Chloromethyl methyl ether
U047	beta-Chloronaphthalene
U048	o-Chlorophenol
U039	4-Chloro-a-phenyl-, hydrochloride
U032	Chromic acid, calcium salt
U050	Chrysene
U051	Creosote
U052	Cresol
U052	Cresol and
U053	Crotonaldehyde
U055	Cumene (I)
U246	Cyanogen bromide
U197	1,4-Cyclohexadienedione
U056	Cyclohexane (I)
U057	Cyclohexanone (I)
U130	1,3-Cyclopentadiene, 1,2,3,4,5,5-hexa- chloro-
U058	Cyclophosphamide
U240	2,4-D, salts and esters
U059	Daunomycin
U060	DDD
U061	DDT
U142	Decachlorooctahydro-1,3,4-metheno-2H-cyclobuta[c,d]-pentalen-2-one
U062	Diallate
U133	Diamine (R,T)
U221	Diaminotoluene
U063	Dibenz[a,h]anthracene
U063	1,2:5,6-Dibenzanthracene
U064	1,2:7,8-Dibenzopyrene -
U064	Dibenz[a,i]pyrene
U066	1,2-Dibromo-3-chloropropane
U069	Dibutyl phthalate
U062	S-(2,3-Dichloroallyl) diisopropylthiocarbamate
U070	o-Dichlorobenzene
U071	m-Dichlorobenzene
U072	p-Dichlorobenzene
U073	3,3'-Dichlorobenzidine
U074	1,4-Dichloro-2-butene (I,T)
U075	Dichlorodifluoromethane
U192	3,5-Dichloro-N-(1,1-dimethyl-2-propynyl) benzamide
U060	Dichloro diphenyl dichloroethane
U061	Dichloro diphenyl trichloroethane
U078	1,1-Dichloroethylene
U079	1,2-Dichloroethylene
U025	Dichloroethyl ether
U081	2,4-Dichlorophenol
U082	2,6-Dichlorophenol
U240	2,4-Dichlorophenoxyacetic acid, salts and esters
U083	1,2-Dichloropropane
U084	1,3-Dichloropropene
U085	2,3:4,6-Diepoxybutane (I,T)
U108	1,4-Diethylene oxide
U086	N,N-Diethylhydrazine
U087	O,O-Diethyl-S-methyl-dithiophosphate
U088	Diethyl phthalate
U089	Diethylstilbestrol
U148	1,2-Dihydro-3,6-pyridazinedione
U090	Dihydrosafrole
U091	3,3'-Dimethoxybenzidine
U092	Dimethylamine (I)
U093	4-Dimethylaminoazobenzene
U094	7,12-Dimethylbenz[a]anthracene
U096	alpha,alpha-Dimethylbenzyl hydroperoxide (R)
U097	Dimethylcarbamoyl chloride
U098	1,1-Dimethylhydrazine
U099	1,2-Dimethylhydrazine
U101	2,4-Dimethylphenol
U102	Dimethyl phthalate
U103	Dimethyl sulfate
U105	2,4-Dinitrotoluene
U106	2,6-Dinitrotoluene
U107	Di-n-octyl phthalate
U108	1,4-Dioxane
U109	1,2-Diphenylhydrazine
U110	Dipropylamine (I)
U111	Di-n-propylnitrosamine
U041	1,2-Epoxy-3-chloropropane
U001	Ethanal (I)
U174	Ethanamine, N-ethyl-N-nitroso-
U112	Ethyl acetate (I)
U113	Ethyl acrylate (I)
U238	Ethyl carbamate (urethane)
U114	Ethylenebis(dithiocarbamic acid)
U067	Ethylene dibromide
U077	Ethylene dichloride
U115	Ethylene oxide (I,T)
U116	Ethylenethiourea
U117	Ethyl ether (I)
U118	Ethyl methacrylate
U119	Ethyl methanesulfonate
U120	Fluoranthene
U122	Formaldehyde
U123	Formic acid (C,T)
U124	Furan (I)
U125	Furfural (I)
U147	2,5-Furandione
U213	Furan, tetrahydro- (I)
U124	1,3-Isobenzofurandione
U126	Glycidylaldehyde
U163	Guanidine, N-methyl-N'-nitro-N-nitroso-
U127	Hexachlorobenzene
U128	Hexachlorobutadiene
U130	Hexachlorocyclopentadiene
U131	Hexachloroethane
U132	Hexachlorophene
U243	Hexachloropropene
U133	Hydrazine (R,T)
U086	Hydrazine, 1,2-diethyl-
U098	Hydrazine, 1,1-dimethyl-
U099	Hydrazine, 1,2-dimethyl-
U109	Hydrazine, 1,2-diphenyl-
U134	Hydrofluoric acid
U134	Hydrogen fluoride
U135	Hydrogen sulfide
U096	alpha,alpha-Dimethylbenzyl hydroperoxide (R)
U116	2-Imidazolidinethione
U137	Indeno[1,2,3-cd]pyrene
U139	Iron dextran
U140	Isobutyl alcohol (I)
U141	Isosafrole
U142	Kepone
U143	Lasiocarpine
U144	Lead acetate
U145	Lead phosphate
U146	Lead subacetate
U129	Lindane
U163	MNNG
U147	Maleic anhydride
U148	Maleic hydrazide
U149	Malononitrile
U150	Melphalan
U151	Mercury
U152	Methacrylonitrile (I,T)
U092	Methamine, N-methyl- (I)
U029	Methane, bromo-
U045	Methane, chloro- (I,T)
U046	Methane, chloromethoxy-
U068	Methane, dibromo-
U080	Methane, dichloro-
U075	Methane, dichlorodifluoro-
U138	Methane, iodo-
U119	Methanesulfonic acid, ethyl ester
U211	Methane, tetrachloro-
U121	Methane, trichlorofluoro-
U036	4,7-Methano-1H-indene, 1,2,4,5,6,7,8,8-octachloro-2,3,3a,4,7,7a-hexahydro-
U154	Methanol (I)
U155	Methapyrilene
U247	Methoxychlor
U154	Methyl alcohol (I)
U029	Methyl bromide
U045	Methyl chloride (I,T)
U156	Methyl chlorocarbonate (I,T)
U226	Methyl chloroform
U157	3-Methylcholanthrene
U158	4,4'-Methylenebis(2-chloroaniline)
U068	Methylene bromide
U080	Methylene chloride
U159	Methyl ethyl ketone (I,T)
U160	Methyl ethyl ketone peroxide (R,T)
U138	Methyl iodide
U161	Methyl isobutyl ketone (I)
U162	Methyl methacrylate (I,T)
U161	4-Methyl-2-pentanone (I)
U164	Methylthiouracil
U010	Mitomycin C
U059	5,12-Naphthacenedione, 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)-
U165	Naphthalene
U047	2-Naphthalenamine, N,N-bis(2-chloroethyl)-
U026	Naphthalenamine, N,N'-bis(2-chloroethyl)-
U166	1,4-Naphthalenedione
U236	2,7-Naphthalenedisulfonic acid, 3,3'-[(3,3'-dimethyl[1,1'-biphenyl]-4,4'-diyl)bis(azo)]bis(5-amino-4-hydroxy)-, tetrasodium salt
U167	1-Naphthalenamine
U168	2-Naphthalenamine
U026	Naphthalenamine, N,N'-bis(2-chloroethyl)-
U165	Naphthalene, 1,2,3,4-tetrachloro-
U166	1,4-Naphthoquinone
U167	1-Naphthylamine
U168	2-Naphthylamine
U169	Nitrobenzene (I,T)
U170	4-Nitrophenol
U171	2-Nitropropane (I)
U172	N-Nitroso-di-n-butylamine
U173	N-Nitroso-diethanolamine
U174	N-Nitroso-diethylamine
U176	N-Nitroso-N-ethylurea
U177	N-Nitroso-N-methylurea
U178	N-Nitroso-N-methylurethane
U179	N-Nitrosopiperidine
U180	N-Nitrosopyrrolidine
U181	5-Nitro-o-toluidine
U193	1,2-Oxathiolane, 2,2-dioxide
U058	2H-1,3,2-Oxazaphosphorin-2-amine, N,N-bis(2-chloroethyl)tetrahydro-, 2-oxide
U115	Oxirane (I,T)
U041	Oxirane, 2-(chloromethyl)-
U182	Paraldehyde
U183	Pentachlorobenzene
U184	Pentachloroethane
U185	Pentachloronitrobenzene
U186	1,3-Pentadiene (I)
U187	Phenacetin
U188	Phenol
U048	Phenol, 2-chloro-
U039	Phenol, 4-chloro-, hydrochloride
U081	Phenol, 2,4-dichloro-
U082	Phenol, 2,6-dichloro-
U089	Phenol, 4,4'-(1,2-diethyl-1,2-ethenediyl)bis-, (E)-
U101	Phenol, 2,4-dimethyl-
U052	Phenol, methyl-
U132	Phenol, 2,2'-methylenebis[3,4,6-trichloro-
U137	Phenol, 2,2'-methylenebis[4-chloro-
U170	Phenol, 4-nitro-
U242	Phenol, pentachloro-
U081	Phenol, 2,4,5-trichloro-
U230	Phenol, 2,4,6-trichloro-
U150	L-Phenylalanine, 4-[bis(2-chloroethyl)amino]-
U145	Phosphoric acid, lead salt
U087	Phosphorodithioic acid, O,O-diethyl S-methyl ester
U189	Phosphorus sulfide (R)
U190	Phthalic anhydride
U191	2-Picoline
U179	Piperidine, 1-nitroso-
U192	Pronamide
U194	1-Propanamine (I,T)
U110	1-Propanamine, N-propyl- (I)
U066	Propane, 1,2-dibromo-3-chloro-
U083	Propanoic acid, 2-(2,4-dichlorophenoxy)-
U171	Propane, 2-nitro- (I)
U027	Propane, 2,2'-oxybis[2-chloro-
U193	1,3-Propane sultone
U235	1-Propanol, 2,3-dibromo-, phosphate (3:1)
U140	1-Propanol, 2-methyl- (I)
U002	2-Propanone (I)
U007	2-Propenamide
U084	1-Propene, 1,3-dichloro-
U243	1-Propene, 1,1,2,3,3,3-hexachloro-
U009	2-Propenenitrile
U152	2-Propenenitrile, 2-methyl- (I,T)
U008	2-Propenoic acid (I)
U113	2-Propenoic acid, ethyl ester (I)
U118	2-Propenoic acid, 2-methyl-, ethyl ester
U162	2-Propenoic acid, 2-methyl-, methyl ester (I,T)
U373	Propham
U411	Propoxur
U387	Prosulfocarb
U194	n-Propylamine (I,T)
U083	Propylene dichloride
U148	Pyridazine-3,6-dione, 1,2-dihydro-
U196	Pyridine
U179	Pyridine, hexahydro-N-nitroso-
U191	Pyridine, 2-methyl-
U237	2,4(1H,3H)-Pyrimidinedione, 5-[bis(2-chloroethyl)amino]-
U164	4(1H)-Pyrimidinone, 2,3-dihydro-6-methyl-2-thioxo-
U180	Pyrrolidine, 1-nitroso-
U200	Reserpine
U201	Resorcinol
U202	Saccharin and salts
U203	Safrole
U204	Selenious acid
U205	Selenium disulfide (R,T)
U015	L-Serine, diazoacetate (ester)
U206	Streptozotocin
U207	1,2,4,5-Tetrachlorobenzene
U208	1,1,1,2-Tetrachloroethane
U209	1,1,2,2-Tetrachloroethane
U210	Tetrachloroethylene
U213	Tetrahydrofuran (I)
U214	Thallium(I) acetate
U215	Thallium(I) carbonate
U216	Thallium(I) chloride
U217	Thallium(I) nitrate
U218	Thioacetamide
U153	Thiomethanol (I,T)
U219	Thiourea
U244	Thiram
U220	Toluene
U221	Toluenediamine
U223	Toluene diisocyanate (R,T)
U328	o-Toluidine
U353	p-Toluidine
U222	o-Toluidine hydrochloride
U011	1H-1,2,4-Triazol-3-amine
U227	1,1,2-Trichloroethane
U228	Trichloroethylene
U121	Trichloromonofluoromethane
U404	Triethylamine
U234	1,3,5-Trinitrobenzene (R,T)
U182	1,3,5-Trioxane, 2,4,6-trimethyl-
U235	Tris(2,3-dibromopropyl) phosphate
U236	Trypan blue
U237	Uracil mustard
U043	Vinyl chloride
U248	Warfarin, when present at concentrations of 0.3% or less
U239	Xylene (I)
U200	Yohimban-16-carboxylic acid, 11,17-dimethoxy-18-[(3,4,5-trimethoxybenzoyl)oxy]-, methyl ester, (3beta,16beta,17alpha,18beta,20alpha)-
U249	Zinc phosphide (R,T)
U121	Zinc, tetrachlorodifluorodi-

Hazardous Waste No.	Substance
U095	3,3'-Dimethylbenzidine
U096	alpha,alpha-Dimethylbenzylhydroperoxide (R)
U097	Dimethylcarbamoyl chloride
U098	1,1-Dimethylhydrazine
U099	1,2-Dimethylhydrazine
U101	2,4-Dimethylphenol
U102	Dimethyl phthalate
U103	Dimethyl sulfate
U105	2,4-Dinitrotoluene
U106	2,6-Dinitrotoluene
U107	Di-n-octyl phthalate
U108	1,4-Dioxane
U109	1,2-Diphenylhydrazine
U110	Dipropylamine (I)
U111	Di-n-propylnitrosamine
U001	Ethanal (I)
U174	Ethanamine, N-ethyl-N-nitroso-
U067	Ethane, 1,2-dibromo-
U076	Ethane, 1,1-dichloro-
U077	Ethane, 1,2-dichloro-
U114	1,2-Ethanediylbiscarbamodithioic acid
U131	Ethane, 1,1,1,2,2,2-hexachloro-
U024	Ethane, 1,1'-[methylenebis(oxy)]bis[2-chloro-
U006	Ethanenitrile (I, T)
U117	Ethane,1,1'-oxybis- (I)
U025	Ethane, 1,1'-oxybis[2-chloro-
U184	Ethane, pentachloro-
U208	Ethane, 1,1,1,2-tetrachloro-
U209	Ethane, 1,1,2,2-tetrachloro-
U218	Ethanethioamide
U247	Ethane, 1,1,1,-trichloro-2,2-bis(p-methoxyphenyl)-
U227	Ethane, 1,1,2-trichloro-
U043	Ethene, chloro-
U042	Ethene, 2-chloroethoxy-
U078	Ethene, 1,1-dichloro-
U079	Ethene, trans-1,2-dichloro-
U210	Ethene, 1,1,2,2-tetrachloro-
U173	Ethanol, 2,2'-(nitrosoimino)bis-
U004	Ethanone, 1-phenyl-
U006	Ethanoyl chloride (C,R,T)
U112	Ethyl acetate (I)
U113	Ethyl acrylate (I)
U238	Ethyl carbamate (urethane)
U038	Ethyl 4,4'-dichlorobenzilate
U114	Ethylenebis(dithiocarbamic acid)
U067	Ethylene dibromide
U077	Ethylene dichloride
U115	Ethylene oxide (I,T)
U116	Ethylene thiourea
U117	Ethyl ether (I)
U076	Ethylidene dichloride
U118	Ethylmethacrylate
U119	Ethyl methanesulfonate
U139	Ferric dextran
U120	Fluoranthene
U122	Formaldehyde
U123	Formic acid (C,T)
U124	Furan (I)
U125	2-Furancarboxaldehyde (I)
U147	2,5-Furandione
U213	Furan, tetrahydro- (I)
U125	Furfural (I)
U124	Furfuran (I)
U206	D-Glucopyranose, 2-deoxy-2(3-methyl-3-nitrosoureido)-
U126	Glycidylaldehyde
U163	Guanidine, N-nitroso-N-methyl-N'-nitro-
U127	Hexachlorobenzene
U128	Hexachlorobutadiene
U129	Hexachlorocyclohexane (gamma isomer)
U130	Hexachlorocyclopentadiene
U131	Hexachloroethane
U132	Hexachlorophene
U243	Hexachloropropene
U133	Hydrazine (R,T)
U086	Hydrazine, 1,2-diethyl-
U098	Hydrazine, 1,1-dimethyl-
U099	Hydrazine, 1,2-dimethyl-
U109	Hydrazine, 1,2-diphenyl-
U134	Hydrofluoric acid (C,T)
U134	Hydrogen fluoride (C,T)
U135	Hydrogen sulfide
U096	Hydroperoxide, 1-methyl-1-phenylethyl- (R)
U116	Hydroxydimethylarsine oxide
U137	Indeno(1,2,3-cd)pyrene
U139	Iron dextran
U140	Isobutyl alcohol (I,T)
U141	Isosafrole
U142	Kepone
U143	Lasiocarpine
U144	Lead acetate
U145	Lead phosphate
U146	Lead subacetate
U129	Lindane
U147	Maleic anhydride
U148	Maleic hydrazide
U149	Malononitrile
U150	Melphalan
U151	Mercury
U152	Methacrylonitrile (I, T)
U092	Methanamine, N-methyl- (I)
U029	Methane, bromo-
U045	Methane, chloro- (I, T)
U046	Methane, chloromethoxy-
U068	Methane, dibromo-
U080	Methane, dichloro-
U075	Methane, dichlorodifluoro-
U138	Methane, iodo-
U119	Methanesulfonic acid, ethyl ester
U211	Methane, tetrachloro-
U121	Methane, trichlorofluoro-
U153	Methanethiol (I, T)
U225	Methane, tribromo-
U044	Methane, trichloro-
U121	Methane, trichlorofluoro-
U123	Methanoic acid (C,T)
U036	4,7-Methanoindan, 1,2,4,5,6,7,8,8-octachloro-3a,4,7,7a-tetrahydro-
U154	Methanol (I)
U155	Methapyrilene
U247	Methoxychlor
U154	Methyl alcohol (I)
U029	Methyl bromide
U186	1-Methylbutadiene (I)
U045	Methyl chloride (I,T)
U156	Methyl chlorocarbonate (I,T)
U226	Methylchloroform
U157	3-Methylcholanthrene
U158	4,4'-Methylenebis(2-chloroaniline)
U132	2,2'-Methylenebis(3,4,6-trichlorophenol)
U068	Methylene bromide
U080	Methylene chloride
U122	Methylene oxide
U159	Methyl ethyl ketone (I,T)
U160	Methyl ethyl ketone peroxide (R,T)
U138	Methyl iodide
U161	Methyl isobutyl ketone (I)
U162	Methyl methacrylate (I,T)
U163	N-Methyl-N'-nitro-N-nitrosoguanidine
U161	4-Methyl-2-pentanone (I)
U164	Methylthiouracil
U010	Mitomycin C
U059	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-
U165	Naphthalene
U047	Naphthalene, 2-chloro-
U166	1,4-Naphthalenedione
U236	2,7-Naphthalenedisulfonic acid, 3,3'-[(3,3'-dimethyl[1,1'-biphenyl]-4,4'-diyl)bis(azo)]bis(5-amino-4-hydroxy)-, tetrasodium salt
[illegible]	1,4-Naphthoquinone
[illegible]	1-Naphthylamine
[illegible]	2-Naphthylamine
[illegible]	alpha-Naphthylamine
[illegible]	beta-Naphthylamine
[illegible]	2-Naphthylamine, N,N'-bis(2-chloroethyl)-
[illegible]	Nitrobenzene (I,T)
[illegible]	p-Nitrophenol
[illegible]	2-Nitropropane (I,T)
[illegible]	N-Nitrosodi-n-butylamine
U173	N-Nitrosodiethanolamine
U174	N-Nitrosodiethylamine
U111	N-Nitroso-N-propylamine
U176	N-Nitroso-N-ethylurea
U177	N-Nitroso-N-methylurea
U178	N-Nitroso-N-methylurethane
U179	N-Nitrosopiperidine
U180	N-Nitrosopyrrolidine
U181	5-Nitro-o-toluidine
U193	1,2-Oxathiolane, 2,2-dioxide
U058	2H-1,3,2-Oxazaphosphorine, 2-[bis(2-chloroethyl)amino]tetrahydro-, 2-oxide, 2-
U115	Oxirane (I,T)
U041	Oxirane, 2-(chloromethyl)-
U182	Paraldehyde
U183	Pentachlorobenzene
U184	Pentachloroethane
U185	Pentachloronitrobenzene
See FO27	Pentachlorophenol
U186	1,3-Pentadiene (I)
U187	Phenacetin
U188	Phenol
U048	Phenol, 2-chloro-
U039	Phenol, 4-chloro-3-methyl-
U081	Phenol, 2,4-dichloro-
U082	Phenol, 2,6-dichloro-
U101	Phenol, 2,4-dimethyl-
U170	Phenol, 4-nitro-
See FO27	Phenol, pentachloro-
Do	Phenol, 2,3,4,6-tetrachloro-
Do	Phenol, 2,4,5-trichloro-
Do	Phenol, 2,4,6-trichloro-
U137	1,10-(1,2-Phenylene)pyrene
U145	Phosphoric acid, lead salt
U087	Phosphorodithioic acid, O,O-diethyl S-methyl ester
U189	Phosphorous sulfide (R)
U190	Phthalic anhydride
U191	2-Picoline
U192	Pronamide
U194	1-Propanamine (I,T)
U110	1-Propanamine, N-propyl- (I)
U066	Propane, 1,2-dibromo-3-chloro-
U149	Propanedinitrile
U171	Propane, 2-nitro- (I)
U027	Propane, 2,2'-oxybis[2-chloro-
U193	1,3-Propane sultone
U235	1-Propanol, 2,3-dibromo-, phosphate (3:1)
U126	1-Propanol, 2,3-epoxy-
U140	1-Propanol, 2-methyl- (I,T)
U002	2-Propanone (I)
U007	2-Propenamide
U084	Propene, 1,3-dichloro-
U243	1-Propene, 1,1,2,3,3,3-hexachloro-
U009	2-Propenenitrile
U152	2-Propenenitrile, 2-methyl- (I,T)
U008	2-Propenoic acid (I)
U113	2-Propenoic acid, ethyl ester (I)
U118	2-Propenoic acid, 2-methyl-, ethyl ester
U162	2-Propenoic acid, 2-methyl-, methyl ester (I,T)
See FO27	Propionic acid, 2-(2,4,5-trichlorophenoxy)-
U194	n-Propylamine (I,T)
U083	Propylene dichloride
U196	Pyridine
U191	Pyridine, 2-(1-(2-methylpyrrolidinyl))-3-methyl-
U179	Pyridine, tetrahydro-N-nitroso-
U191	Pyridine, 2-methyl-
U164	4(1H)-Pyrimidinone, 2,3-dihydro-6-methyl-2-thioxo-
U180	Pyrrole, tetrahydro-N-nitroso-
U200	Reserpine
U201	Resorcinol
U202	Saccharin and salts
U203	Safrole
U204	Selenious acid
U204	Selenium dioxide
U205	Selenium sulfide (R,T)
U015	L-Serine, diazoacetate (ester)
See FO27	Silvex
U089	4,4'-Stilbenediol, alpha,alpha'-diethyl-
U206	Streptozotocin
U135	Sulfur hydride
U103	Sulfuric acid, dimethyl ester
U189	Sulfur phosphide (R)
U205	Sulfur selenide (R,T)
See FO27	2,4,5-T
U207	1,2,4,5-Tetrachlorobenzene
U208	1,1,1,2-Tetrachloroethane
U209	1,1,2,2-Tetrachloroethane
U210	Tetrachloroethylene
See FO27	2,3,4,6-Tetrachlorophenol
U213	Tetrahydrofuran (I)
U214	Thallium(I) acetate
U215	Thallium(I) carbonate
U216	Thallium(I) chloride
U217	Thallium(I) nitrate
U218	Thioacetamide
U153	Thiomethanol (I,T)
U219	Thiourea
U244	Thiram
U220	Toluene
U221	Toluenediamine
U223	Toluene diisocyanate (R,T)
U222	o-Toluidine hydrochloride
U011	1H-1,2,4-Triazol-3-amine
U226	1,1,1-Trichloroethane
U227	1,1,2-Trichloroethane
U228	Trichloroethene
U228	Trichloroethylene
U121	Trichloromonofluoromethane
See FO27	2,4,5-Trichlorophenol
Do	2,4,6-Trichlorophenol
Do	2,4,5-Trichlorophenoxyacetic acid
U234	sym-Trinitrobenzene (R,T)
U182	1,3,5-Trioxane, 2,4,6-trimethyl-
U236	Trypan blue
U237	Uracil, 5[bis(2-chloroethyl)amino]-
U237	Uracil mustard
U043	Vinyl chloride
U248	Warfarin, when present at concentrations of 0.3% or less.
	[U248 added by 49 FR 19923, May 10, 1984]
U239	Xylene (I)
U200	Yohimban-16-carboxylic acid, 11,17-dimethoxy-18-[(3,4,5-trimethoxybenzoyl)oxy]-, methyl ester
U249	Zinc phosphide, when present at concentrations of 10% or less.
	[U249 added by 49 FR 19923, May 10, 1984]

APPENDIX A-2

40 CFR PART 261, APPENDIX VIII
LIST OF HAZARDOUS CONSTITUENTS

Appendix VIII—Hazardous Constituents

Acetonitrile (Ethanenitrile)
Acetophenone (Ethanone, 1-phenyl)
3-(alpha-Acetonylbenzyl)-4-hydroxycoumarin and salts (Warfarin)
2-Acetylaminofluorene (Acetamide, N-(9H-fluoren-2-yl)-)
Acetyl chloride (Ethanoyl chloride)
1-Acetyl-2-thiourea (Acetamide, N-(aminothioxomethyl)-)
Acrolein (2-Propenal)
Acrylamide (2-Propenamide)
Acrylonitrile (2-Propenenitrile)
Aflatoxins
Aldrin (1,2,3,4,10,10-Hexachloro-1,4,4a,5,8,8a,8b-hexahydro-endo,exo-1,4:5,8-Dimethanonaphthalene)
Allyl alcohol (2-Propen-1-ol)
Aluminum phosphide
4-Aminobiphenyl ([1,1'-Biphenyl]-4-amine)
6-Amino-1,1a,2,8,8a,8b-hexahydro-8-(hydroxymethyl)-8a-methoxy-5-methyl-carbamate azirino(2',3':3,4)pyrrolo(1,2-a)indole-4,7-dione, (ester) (Mitomycin C) (Azirino[2'3':3,4]pyrrolo(1,2-a)indole-4,7-dione, 6-amino-8-[((amino-carbonyl)oxy)methyl]-1,1a,2,8,8a,8b-hexahydro-8amethoxy-5-methy-)
5-(Aminomethyl)-3-isoxazolol (3(2H)-Isoxazolone, 5-(aminomethyl)-) 4-Aminopyridine (4-Pyridinamine)
Amitrole (1H-1,2,4-Triazol-3-amine)
Aniline (Benzenamine)
Antimony and compounds, N.O.S.*
Aramite (Sulfurous acid, 2-chloroethyl-, 2-[4-(1,1-dimethylethyl)phenoxy]-1-methylethyl ester)
Arsenic and compounds, N.O.S.*
Arsenic acid (Orthoarsenic acid)
Arsenic pentoxide (Arsenic (V) oxide)
Arsenic trioxide (Arsenic (III) oxide)
Auramine (Benzenamine, 4,4'-carbonimidoylbis[N,N-Dimethyl-, monohydrochloride)
Azaserine (L-Serine, diazoacetate (ester))
Barium and compounds, N.O.S.*
Barium cyanide
Benz[c]acridine (3,4-Benzacridine)
Benz[a]anthracene (1,2-Benzanthracene)
Benzene (Cyclohexatriene)
Benzenearsonic acid (Arsonic acid, phenyl-)
Benzene, dichloromethyl- (Benzal chloride)
Benzenethiol (Thiophenol)
Benzidine ([1,1'-Biphenyl]-4,4'diamine)
Benzo[b]fluoranthene (2,3-Benzofluoranthene)
Benzo[j]fluoranthene (7,8-Benzofluoranthene)
Benzo[a]pyrene (3,4-Benzopyrene)
p-Benzoquinone (1,4-Cyclohexadienedione)
Benzotrichloride (Benzene, trichloromethyl-)
Benzyl chloride (Benzene, (chloromethyl)-)
Beryllium and compounds, N.O.S.*
Bis(2-chloroethoxy)methane (Ethane, 1,1'-[methylenebis(oxy)]bis[2-chloro-])
Bis(2-chloroethyl) ether (Ethane, 1,1'-oxybis[2-chloro-])
N,N-Bis(2-chloroethyl)-2-naphthylamine (Chlornaphazine)
Bis(2-chloroisopropyl) ether (Propane, 2,2'-oxybis[2-chloro-])
Bis(chloromethyl) ether (Methane, oxybis[chloro-])
Bis(2-ethylhexyl) phthalate (1,2-Benzenedicarboxylic acid, bis(2-ethylhexyl) ester)
Bromoacetone (2-Propanone, 1-bromo-)
Bromomethane (Methyl bromide)
4-Bromophenyl phenyl ether (Benzene, 1-bromo-4-phenoxy-)
Brucine (Strychnidin-10-one, 2,3-dimethoxy-)
2-Butanone peroxide (Methyl ethyl ketone, peroxide)
Butyl benzyl phthalate (1,2-Benzenedicarboxylic acid, butyl phenylmethyl ester)
2-sec-Butyl-4,6-dinitrophenol (DNBP) (Phenol, 2,4-dinitro-6-(1-methylpropyl)-)
Cadmium and compounds, N.O.S.*
Calcium chromate (Chromic acid, calcium salt)
Calcium cyanide
Carbon disulfide (Carbon bisulfide)
Carbon oxyfluoride (Carbonyl fluoride)
Chloral (Acetaldehyde, trichloro-)
Chlorambucil (Butanoic acid, 4-[bis(2-chloroethyl)amino]benzene-)
Chlordane (alpha and gamma isomers) (4,7-Methanoindan, 1,2,4,5,6,7,8,8-octachloro-3,4,7,7a-tetrahydro-) (alpha and gamma isomers)
Chlorinated benzenes, N.O.S.*
Chlorinated ethane, N.O.S.*
Chlorinated fluorocarbons, N.O.S.*
Chlorinated naphthalene, N.O.S.*
Chlorinated phenol, N.O.S.*
Chloroacetaldehyde (Acetaldehyde, chloro-)
Chloroalkyl ethers, N.O.S.*
p-Chloroaniline (Benzenamine, 4-chloro-)
Chlorobenzene (Benzene, chloro-)
Chlorobenzilate (Benzeneacetic acid, 4-chloro-alpha-(4-chlorophenyl)-alpha-hydroxy-, ethyl ester)
2-Chloro-1, 3-butadiene (chloroprene)
p-Chloro-m-cresol (Phenol, 4-chloro-3-methyl)
1-Chloro-2,3-epoxypropane (Oxirane, 2-(chloromethyl)-)
2-Chloroethyl vinyl ether (Ethene, (2-chloroethoxy)-)
Chloroform (Methane, trichloro-)
Chloromethane (Methyl chloride)
Chloromethyl methyl ether (Methane, chloromethoxy-)
2-Chloronaphthalene (Naphthalene, beta-chloro-)
2-Chlorophenol (Phenol, o-chloro-)
1-(o-Chlorophenyl)thiourea (Thiourea, (2-chlorophenyl)-)
3-Chloropropene (allyl chloride)
3-Chloropropionitrile (Propanenitrile, 3-chloro-)
Chromium and compounds, N.O.S.*
Chrysene (1,2-Benzphenanthrene)
Citrus red No. 2 (2-Naphthol, 1-[(2,5-dimethoxyphenyl)azo]-)
Coal tars
Copper cyanide
Creosote (Creosote, wood)
Cresols (Cresylic acid) (Phenol, methyl-)
Crotonaldehyde (2-Butenal)
Cyanides (soluble salts and complexes), N.O.S.*
Cyanogen (Ethanedinitrile)
Cyanogen bromide (Bromine cyanide)
Cyanogen chloride (Chlorine cyanide)
Cycasin (beta-D-Glucopyranoside, (methyl-ONN-azoxy)methyl-)
2-Cyclohexyl-4,6-dinitrophenol (Phenol, 2-cyclohexyl-4,6-dinitro-)
Cyclophosphamide (2H-1,3,2,-Oxazaphosphorine, [bis(2-chloroethyl)amino]-tetrahydro-, 2-oxide)
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-)

* The abbreviation N.O.S. (not otherwise specified) signifies those members of the general class not specifically listed by name in this appendix.

DDD (Dichlorodiphenyldichloroethane) (Ethane, 1,1-dichloro-2,2-bis(p-chlorophenyl)-)
DDE (Ethylene, 1,1-dichloro-2,2-bis(4-chlorophenyl)-)
DDT (Dichlorodiphenyltrichloroethane) (Ethane, 1,1,1-trichloro-2,2-bis(p-chlorophenyl)-)
Diallate (S-(2,3-dichloroallyl) diisopropylthiocarbamate)
Dibenz[a,h]acridine (1,2,5,6-Dibenzacridine)
Dibenz[a,j]acridine (1,2,7,8-Dibenzacridine)
Dibenz[a,h]anthracene (1,2,5,6-Dibenzanthracene)
7H-Dibenzo[c,g]carbazole (3,4,5,6-Dibenzcarbazole)
Dibenzo[a,e]pyrene (1,2,4,5-Dibenzpyrene)
Dibenzo[a,h]pyrene (1,2,5,6-Dibenzpyrene)
Dibenzo[a,i]pyrene (1,2,7,8-Dibenzpyrene)
1,2-Dibromo-3-chloropropane (Propane, 1,2-dibromo-3-chloro-)
1,2-Dibromoethane (Ethylene dibromide)
Dibromomethane (Methylene bromide)
Di-n-butyl phthalate (1,2-Benzenedicarboxylic acid, dibutyl ester)
o-Dichlorobenzene (Benzene, 1,2-dichloro-)
m-Dichlorobenzene (Benzene, 1,3-dichloro-)
p-Dichlorobenzene (Benzene, 1,4-dichloro-)
Dichlorobenzene, N.O.S.* (Benzene, dichloro-, N.O.S.*)
3,3'-Dichlorobenzidine ([1,1'-Biphenyl]-4,4'-diamine, 3,3'-dichloro-)
1,4-Dichloro-2-butene (2-Butene, 1,4-dichloro-)
Dichlorodifluoromethane (Methane, dichlorodifluoro-)
1,1-Dichloroethane (Ethylidene dichloride)
1,2-Dichloroethane (Ethylene dichloride)
trans-1,2-Dichloroethene (1,2-Dichloroethylene)
Dichloroethylene, N.O.S.* (Ethene, dichloro-, N.O.S.*)
1,1-Dichloroethylene (Ethene, 1,1-dichloro-)
Dichloromethane (Methylene chloride)
2,4-Dichlorophenol (Phenol, 2,4-dichloro-)
2,6-Dichlorophenol (Phenol, 2,6-dichloro-)
2,4-Dichlorophenoxyacetic acid (2,4-D), salts and esters (Acetic acid, 2,4-dichlorophenoxy-, salts and esters)
Dichlorophenylarsine (Phenyl dichloroarsine)
Dichloropropane, N.O.S.* (Propane, dichloro-, N.O.S.*)
1,2-Dichloropropane (Propylene dichloride)
Dichloropropanol, N.O.S.* (Propanol, dichloro-, N.O.S.*)
Dichloropropene, N.O.S.* (Propene, dichloro-, N.O.S.*)
1,3-Dichloropropene (1-Propene, 1,3-dichloro-)
Dieldrin (1,2,3,4,10,10-hexachloro-6,7-epoxy-1,4,4a,5,6,7,8,8a-octa-hydro-endo,exo-1,4:5,8-Dimethanonaphthalene)
1,2:3,4-Diepoxybutane (2,2'-Bioxirane)
Diethylarsine (Arsine, diethyl-)
N,N-Diethylhydrazine (Hydrazine, 1,2-diethyl)
O,O-Diethyl S-methyl ester of phosphorodithioic acid (Phosphorodithioic acid, O,O-diethyl S-methyl ester
O,O-Diethylphosphoric acid, O-p-nitrophenyl ester (Phosphoric acid, diethyl p-nitrophenyl ester)
Diethyl phthalate (1,2-Benzenedicarboxylic acid, diethyl ester)
O,O-Diethyl O-2-pyrazinyl phosphorothioate (Phosphorothioic acid, O,O-diethyl O-pyrazinyl ester
Diethylstilbesterol (4,4'-Stilbenediol, alpha,alpha-diethyl, bis(dihydrogen phosphate, (E)-)
Dihydrosafrole (Benzene, 1,2-methylenedioxy-4-propyl-)
3,4-Dihydroxy-alpha-(methylamino)methyl benzyl alcohol (1,2-Benzenediol, 4-(1-hydroxy-2-(methylamino)ethyl)-)
Diisopropylfluorophosphate (DFP) (Phosphorofluoridic acid, bis(1-methylethyl) ester)
Dimethoate (Phosphorodithioic acid, O,O-dimethyl S-[2-(methylamino)-2-oxoethyl] ester
3,3'-Dimethoxybenzidine ([1,1'-Biphenyl]-4,4'diamine, 3-3'-dimethoxy-)
p-Dimethylaminoazobenzene (Benzenamine, N,N-dimethyl-4-(phenylazo)-)
7,12-Dimethylbenz[a]anthracene (1,2-Benzanthracene, 7,12-dimethyl-)
3,3'-Dimethylbenzidine ([1,1'-Biphenyl]-4,4'-diamine, 3,3'-dimethyl-)
Dimethylcarbamoyl chloride (Carbamoyl chloride, dimethyl-)
1,1-Dimethylhydrazine (Hydrazine, 1,1-dimethyl-)
1,2-Dimethylhydrazine (Hydrazine, 1,2-dimethyl-)
3,3-Dimethyl-1-(methylthio)-2-butanone, O-[(methylamino) carbonyl]oxime (Thiofanox)
alpha,alpha-Dimethylphenethylamine (Ethanamine, 1,1-dimethyl-2-phenyl-)
2,4-Dimethylphenol (Phenol, 2,4-dimethyl-)
Dimethyl phthalate (1,2-Benzenedicarboxylic acid, dimethyl ester)
Dimethyl sulfate (Sulfuric acid, dimethyl ester)
Dinitrobenzene, N.O.S.* (Benzene, dinitro-, N.O.S.*)
4,6-Dinitro-o-cresol and salts (Phenol, 2,4-dinitro-6-methyl-, and salts)
2,4-Dinitrophenol (Phenol, 2,4-dinitro-)
2,4-Dinitrotoluene (Benzene, 1-methyl-2,4-dinitro-)
2,6-Dinitrotoluene (Benzene, 1-methyl-2,6-dinitro-)
Di-n-octyl phthalate (1,2-Benzenedicarboxylic acid, dioctyl ester)
1,4-Dioxane (1,4-Diethylene oxide)
Diphenylamine (Benzenamine, N-phenyl-)
1,2-Diphenylhydrazine (Hydrazine, 1,2-diphenyl-)
Di-n-propylnitrosamine (N-Nitroso-di-n-propylamine)
Disulfoton (O,O-diethyl S-[2-(ethylthio)ethyl] phosphorodithioate)
2,4-Dithiobiuret (Thioimidodicarbonic diamide)
Endosulfan (5-Norbornene, 2,3-dimethanol, 1,4,5,6,7,7-hexachloro-, cyclic sulfite)
Endrin and metabolites (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, and metabolites)
Ethyl carbamate (Urethan) (Carbamic acid, ethyl ester)
Ethyl cyanide (propanenitrile)
Ethylenebisdithiocarbamic acid, salts and esters (1,2-Ethanediylbiscarbamodithioic acid, salts and esters
Ethyleneimine (Aziridine)
Ethylene oxide (Oxirane)
Ethylenethiourea (2-Imidazolidinethione)
Ethyl methacrylate (2-Propenoic acid, 2-methyl-, ethyl ester)
Ethyl methanesulfonate (Methanesulfonic acid, ethyl ester)
Fluoranthene (Benzo[j,k]fluorene)
Fluorine

2-Fluoroacetamide (Acetamide, 2-fluoro-)
Fluoroacetic acid, sodium salt (Acetic acid, fluoro-, sodium salt)
Formaldehyde (Methylene oxide)
Formic acid (Methanoic acid)
Glycidylaldehyde (1-Propanol-2,3-epoxy)
Halomethane, N.O.S.*
Heptachlor (4,7-Methano-1H-indene, 1,4,5,6,7,8,8-heptachloro-3a,4,7,7a-tetrahydro-)
Heptachlor epoxide (alpha, beta, and gamma isomers) (4,7-Methano-1H-indene, 1,4,5,6,7,8,8-heptachloro-2,3-epoxy-3a,4,7,7-tetrahydro-, alpha, beta, and gamma isomers)
Hexachlorobenzene (Benzene, hexachloro-)
Hexachlorobutadiene (1,3-Butadiene, 1,1,2,3,4,4-hexachloro-)
Hexachlorocyclohexane (all isomers) (Lindane and isomers)
Hexachlorocyclopentadiene (1,3-Cyclopentadiene, 1,2,3,4,5,5-hexachloro-)
Hexachlorodibenzo-p-dioxins
Hexachlorodibenzofurans
Hexachloroethane (Ethane, 1,1,1,2,2,2-hexachloro-)
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)
Hexachlorophene (2,2'-Methylenebis(3,4,6-trichlorophenol))
Hexachloropropene (1-Propene, 1,1,2,3,3,3-hexachloro-)
Hexaethyl tetraphosphate (Tetraphosphoric acid, hexaethyl ester)
Hydrazine (Diamine)
Hydrocyanic acid (Hydrogen cyanide)
Hydrofluoric acid (Hydrogen fluoride)
Hydrogen sulfide (Sulfur hydride)
Hydroxydimethylarsine oxide (Cacodylic acid)
Indeno(1,2,3-cd)pyrene (1,10-(1,2-phenylene)pyrene)
Iodomethane (Methyl iodide)
Iron dextran (Ferric dextran)
Isocyanic acid, methyl ester (Methyl isocyanate)
Isobutyl alcohol (1-Propanol, 2-methyl-)
Isosafrole (Benzene, 1,2-methylenedioxy-4-allyl-)
Kepone (Decachlorooctahydro-1,3,4-Methano-2H-cyclobuta[cd]pentalen-2-one)
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)
Lead and compounds, N.O.S.*
Lead acetate (Acetic acid, lead salt)
Lead phosphate (Phosphoric acid, lead salt)
Lead subacetate (Lead, bis(acetato-O)tetrahydroxytri-)
Maleic anhydride (2,5-Furandione)
Maleic hydrazide (1,2-Dihydro-3,6-pyridazinedione)
Malononitrile (Propanedinitrile)
Melphalan (Alanine, 3-(p-bis(2-chloroethyl)amino)phenyl-, L-)
Mercury fulminate (Fulminic acid, mercury salt)
Mercury and compounds, N.O.S.*
Methacrylonitrile (2-Propenenitrile, 2-methyl-)
Methanethiol (Thiomethanol)
Methapyrilene (Pyridine, 2-[(2-dimethylamino)ethyl]-2-thenylamino-)
Metholmyl (Acetimidic acid, N-[(methylcarbamoyl)oxy]thio-, methyl ester
Methoxychlor (Ethane, 1,1,1-trichloro-2,2-bis(p-methoxyphenyl)-)
2-Methylaziridine (1,2-Propylenimine)
3-Methylcholanthrene (Benz[j]aceanthrylene, 1,2-dihydro-3-methyl-)
Methyl chlorocarbonate (Carbonochloridic acid, methyl ester)
4,4'-Methylene bis(2-chloroaniline) (Benzenamine, 4,4'-methylenebis(2-chloro-)
Methyl ethyl ketone (MEK) (2-Butanone)
Methyl hydrazine (Hydrazine, methyl-)
2-Methyllactonitrile (Propanenitrile, 2-hydroxy-2-methyl-)
Methyl methacrylate (2-Propenoic acid, 2-methyl-, methyl ester)
Methyl methanesulfonate (Methanesulfonic acid, methyl ester)
2-Methyl-2-(methylthio)propionaldehyde-o-(methylcarbonyl) oxime (Propanal, 2-methyl-2-(methylthio)-, O-[(methylamino)carbonyl]oxime)
N-Methyl-N'-nitro-N-nitrosoguanidine (Guanidine, N-nitroso-N-methyl-N'-nitro-)
Methyl parathion (O,O-dimethyl O-(4-nitrophenyl) phosphorothioate)
Methylthiouracil (4-1H-Pyrimidinone, 2,3-dihydro-6-methyl-2-thioxo-)
Mustard gas (Sulfide, bis(2-chloroethyl)-)
Naphthalene
1,4-Naphthoquinone (1,4-Naphthalenedione)
1-Naphthylamine (alpha-Naphthylamine)
2-Naphthylamine (beta-Naphthylamine)
1-Naphthyl-2-thiourea (Thiourea, 1-naphthalenyl-)
Nickel and compounds, N.O.S.*
Nickel carbonyl (Nickel tetracarbonyl)
Nickel cyanide (Nickel (II) cyanide)
Nicotine and salts (Pyridine, (S)-3-(1-methyl-2-pyrrolidinyl)-, and salts)
Nitric oxide (Nitrogen (II) oxide)
p-Nitroaniline (Benzenamine, 4-nitro-)
Nitrobenzine (Benzene, nitro-)
Nitrogen dioxide (Nitrogen (IV) oxide)
Nitrogen mustard and hydrochloride salt (Ethanamine, 2-chloro-, N-(2-chloroethyl)-N-methyl-, and hydrochloride salt)
Nitrogen mustard N-Oxide and hydrochloride salt (Ethanamine, 2-chloro-, N-(2-chloroethyl)-N-methyl-, and hydrochloride salt)
Nitroglycerine (1,2,3-Propanetriol, trinitrate)
4-Nitrophenol (Phenol, 4-nitro-)
4-Nitroquinoline-1-oxide (Quinoline, 4-nitro-1-oxide-)
Nitrosamine, N.O.S.*
N-Nitrosodi-n-butylamine (1-Butanamine, N-butyl-N-nitroso-)
N-Nitrosodiethanolamine (Ethanol, 2,2'-(nitrosoimino)bis-)
N-Nitrosodiethylamine (Ethanamine, N-ethyl-N-nitroso-)
N-Nitrosodimethylamine (Dimethylnitrosamine)
N-Nitroso-N-ethylurea (Carbamide, N-ethyl-N-nitroso-)
N-Nitrosomethylethylamine (Ethanamine, N-methyl-N-nitroso-)
N-Nitroso-N-methylurea (Carbamide, N-methyl-N-nitroso-)
N-Nitroso-N-methylurethane (Carbamic acid, methylnitroso-, ethyl ester)
N-Nitrosomethylvinylamine (Ethenamine, N-methyl-N-nitroso-)
N-Nitrosomorpholine (Morpholine, N-nitroso-)
N-Nitrosonornicotine (Nornicotine, N-nitroso-)
N-Nitrosopiperidine (Pyridine, hexahydro-, N-nitroso-)
Nitrosopyrrolidine (Pyrrole, tetrahydro-, N-nitroso-)
N-Nitrososarcosine (Sarcosine, N-nitroso-)
5-Nitro-o-toluidine (Benzenamine, 2-methyl-5-nitro-)
Octamethylpyrophosphoramide (Diphosphoramide, octamethyl-)
Osmium tetroxide (Osmium (VIII) oxide)
7-Oxabicyclo[2.2.1]heptane-2,3-dicarboxylic acid (Endothal)

Paraldehyde (1,3,5-Trioxane, 2,4,6-trimethyl-)
Parathion (Phosphorothioic acid, O,O-diethyl O-(p-nitrophenyl) ester
Pentachlorobenzene (Benzene, pentachloro-

Pentachlorodibenzo-p-dioxins
Pentachlorodibenzofurans
Pentachloroethane (Ethane, pentachloro-)
Pentachloronitrobenzene (PCNB) (Benzene, pentachloronitro-)
Pentachlorophenol (Phenol, pentachloro-)
Phenacetin (Acetamide, N-(4-ethoxyphenyl)-)
Phenol (Benzene, hydroxy-)
Phenylenediamine (Benzenediamine)
Phenylmercury acetate (Mercury, acetatophenyl-)
N-Phenylthiourea (Thiourea, phenyl-)
Phosgene (Carbonyl chloride)
Phosphine (Hydrogen phosphide)
Phosphorodithioic acid, O,O-diethyl S-[(ethylthio)methyl] ester (Phorate)
Phosphorothioic acid, O,O-dimethyl O-(p-((dimethylamino)sulfonyl)phenyl] ester (Famphur)
Phthalic acid esters, N.O.S.* (Benzene, 1,2-dicarboxylic acid, esters, N.O.S.*)
Phthalic anhydride (1,2-Benzenedicarboxylic acid anhydride)
2-Picoline (Pyridine, 2-methyl-)
Polychlorinated biphenyl, N.O.S.*
Potassium cyanide
Potassium silver cyanide (Argentate(1-), dicyano-, potassium)
Pronamide (3,5-Dichloro-N-(1,1-dimethyl-2-propynyl)benzamide)
1,3-Propane sultone (1,2-Oxathiolane, 2,2-dioxide)
n-Propylamine (1-Propanamine)
Propylthiouracil (Undecamethylenediamine, N,N'-bis(2-chlorobenzyl)-, dihydrochloride)
2-Propyn-1-ol (Propargyl alcohol)
Pyridine
Reserpine (Yohimban-16-carboxylic acid, 11,17-dimethoxy-18-[(3,4,5-trimethoxybenzoyl)oxy]-, methyl ester)
Resorcinol (1,3-Benzenediol)
Saccharin and salts (1,2-Benzoisothiazolin-3-one, 1,1-dioxide, and salts)
Safrole (Benzene, 1,2-methylenedioxy-4-allyl-)
Selenious acid (Selenium dioxide)
Selenium and compounds, N.O.S.*
Selenium sulfide (Sulfur selenide)
Selenourea (Carbamimidoselenoic acid)
Silver and compounds, N.O.S.*
Silver cyanide
Sodium cyanide
Streptozotocin (D-Glucopyranose, 2-deoxy-2-(3-methyl-3-nitrosoureido)-)
Strontium sulfide
Strychnine and salts (Strychnidin-10-one, and salts)
1,2,4,5-Tetrachlorobenzene (Benzene, 1,2,4,5-tetrachloro-)
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD) (Dibenzo-p-dioxin, 2,3,7,8-tetrachloro-)
Tetrachlorodibenzo-p-dioxins
Tetrachlorodibenzofurans
Tetrachloroethane, N.O.S.* (Ethane, tetrachloro-, N.O.S.*)
1,1,1,2-Tetrachloroethane (Ethane, 1,1,1,2-tetrachloro-)
1,1,2,2-Tetrachloroethane (Ethane, 1,1,2,2-tetrachloro-)
Tetrachloroethane (Ethene, 1,1,2,2-tetrachloro-)
Tetrachloromethane (Carbon tetrachloride)
2,3,4,6-Tetrachlorophenol (Phenol, 2,3,4,6-tetrachloro-)
Tetraethyldithiopyrophosphate (Dithiopyrophosphoric acid, tetraethyl-ester)
Tetraethyl lead (Plumbane, tetraethyl-)
Tetraethylpyrophosphate (Pyrophosphoric acid, tetraethyl ester)
Tetranitromethane (Methane, tetranitro-)
Thallium and compounds, N.O.S.*
Thallic oxide (Thallium (III) oxide)
Thallium (I) acetate (Acetic acid, thallium (I) salt)
Thallium (I) carbonate (Carbonic acid, dithallium (I) salt)
Thallium (I) chloride
Thallium (I) nitrate (Nitric acid, thallium (I) salt)
Thallium selenite
Thallium (I) sulfate (Sulfuric acid, thallium (I) salt)
Thioacetamide (Ethanethioamide)
Thiosemicarbazide (Hydrazinecarbothioamide)
Thiourea (Carbamide thio-)
Thiuram (Bis(dimethylthiocarbamoyl) disulfide)
Toluene (Benzene, methyl-)
Toluenediamine (Diaminotoluene)
o-Toluidine hydrochloride (Benzenamine, 2-methyl-, hydrochloride)
Tolylene diisocyanate (Benzene, 1,3-diisocyanatomethyl-)
Toxaphene (Camphene, octachloro-)
Tribromomethane (Bromoform)
1,2,4-Trichlorobenzene (Benzene, 1,2,4-trichloro-)
1,1,1-Trichloroethane (Methyl chloroform)
1,1,2-Trichloroethane (Ethane, 1,1,2-trichloro-)
Trichloroethene (Trichloroethylene)
Trichloromethanethiol (Methanethiol, trichloro-)
Trichloromonofluoromethane (Methane, trichlorofluoro-)
2,4,5-Trichlorophenol (Phenol, 2,4,5-trichloro-)
2,4,6-Trichlorophenol (Phenol, 2,4,6-trichloro-)
2,4,5-Trichlorophenoxyacetic acid (2,4,5-T) (Acetic acid, 2,4,5-trichlorophenoxy-)
2,4,5-Trichlorophenoxypropionic acid (2,4,5-TP) (Silvex) (Propionoic acid, 2-(2,4,5-trichlorophenoxy)-)
Trichloropropane, N.O.S.* (Propane, trichloro-, N.O.S.*)
1,2,3-Trichloropropane (Propane, 1,2,3-trichloro-)
O,O,O-Triethyl phosphorothioate (Phosphorothioic acid, O,O,O-triethyl ester)
sym-Trinitrobenzene (Benzene, 1,3,5-trinitro-)
Tris(1-azridinyl) phosphine sulfide (Phosphine sulfide, tris(1-aziridinyl-)
Tris(2,3-dibromopropyl) phosphate (1-Propanol, 2,3-dibromo-, phosphate)
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)
Uracil mustard (Uracil 5-[bis(2-chloroethyl)amino]-)
Vanadic acid, ammonium salt (ammonium vanadate)
Vanadium pentoxide (Vanadium (V) oxide)
Vinyl chloride (Ethene, chloro-)
Zinc cyanide
Zinc phosphide

APPENDIX A-3

40 CFR PART 261, APPENDIX VII
BASIS FOR LISTING HAZARDOUS WASTES

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, chlorobenzene, 1,1,2-trichloro-1,2,2-trifluoroethane, ortho-dichlorobenzene, trichlorofluoromethane.
F003	N.A.
F004	Cresols and cresylic acid, nitrobenzene.
F005	Toluene, methyl ethyl ketone, carbon disulfide, isobutanol, pyridine.
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 pentachlorodibenzofurans; 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.
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-tetrachloroethane, 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, chlorobenzene, 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, creosotes, chrysene, naphthalene, fluoranthene, benzo(b)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, benz(a)anthracene, dibenz(a)anthracene, acenaphthalene.

EPA hazardous waste No.	Hazardous constituents for which listed
K002	Hexavalent chromium, lead.
K003	Hexavalent chromium, lead.
K004	Hexavalent chromium.
K006	Hexavalent chromium, lead.
K008	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) ether], 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.

EPA hazardous waste No.	Hazardous constituents for which listed
K048	Hexavalent chromium, lead.
K050	Hexavalent chromium.
K051	Hexavalent chromium, lead.
K052	Lead.
K060	Cyanide, naphthalene, phenolic compounds, arsenic.
K061	Hexavalent chromium, lead, cadmium.
K062	Hexavalent chromium, lead.
K069	Hexavalent chromium, lead, cadmium.
K071	Mercury.
K073	Chloroform, carbon tetrachloride, hexachloroethane, 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.
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.
K106	Benzene, monochlorobenzene, dichlorobenzenes, 2,4,6-trichlorophenol.
K106	Mercury.

N.A.—Waste is hazardous because it fails the test for the characteristic of ignitability, corrosivity, or reactivity.

APPENDIX B

EXAMPLE POTW SEWER USE ORDINANCE LANGUAGE

POTWs may wish to consider the following alternatives for sewer use ordinance language to prohibit the discharge of hazardous wastes to POTW headworks from a truck, rail, or dedicated pipeline. Three different examples are provided which address the three major degrees of regulatory control that may be considered by a POTW: (1) prohibiting the discharge of all hauled wastes; (2) prohibiting the discharge of wastes from industrial sites; (3) prohibiting the discharge of wastes containing industrial process waste; and (4) prohibiting the discharge of hazardous wastes to the POTWs headworks. For POTWs that choose to permit haulers or generators, additional language is provided which is applicable to the last three sample ordinances.

1. Example Sewer Use Ordinance Language for Prohibiting All Waste Discharged to a POTW by Truck, Rail, or Dedicated Pipeline

"No wastes, including any liquid, solid or septic wastes which are generated at residential, commercial or industrial facilities, shall be discharged to the sanitary sewer system by means other than a permanent sewer connection to the public sewer system and in accordance with the regulations contained in Section ___ of this ordinance. This includes wastes which are transported via truck, rail, or any other transportation means. Further the discharge of hazardous wastes (as defined in Section 1004 of the Resource Conservation and Recovery Act) into a pipeline connected to the public sewer, which is dedicated to only the discharge of hazardous waste, is prohibited."

2. Example Sewer Use Ordinance Language for Prohibiting Wastes from Industrial Sites Discharged to a POTW by Truck, Rail, or Dedicated Pipeline

"Haulers of septic wastes removed from residential customers are subject to the terms and conditions for discharge as contained in Section ___ of this ordinance. Only septic wastes from residential sewage disposal systems (i.e., septic tank waste, cesspool waste) may be discharged into the public sewer system by waste haulers at the discharge point specified by the (City, County, Superintendent, etc.). Any wastes, including septic wastes, removed by a hauler from nonresidential, industrial, or commercial customers are specifically prohibited, and may not be discharged to the public sewer system. Discharge of such nonresidential wastes into the public sewer system will constitute a violation, and will subject the hauler to the penalties provided for in Section ___ of this ordinance."

3. Example Sewer Use Ordinance Language for Prohibiting Wastes from Industrial Processes Discharged to a POTW by Truck, Rail, or Dedicated Pipeline

"Haulers of septic wastes (i.e., septic wastes, cesspool waste, portable toilet waste) removed from residential, commercial, and industrial customers are subject to the terms and conditions for discharge as contained in Section ___ of this ordinance. Waste haulers must discharge hauled wastes at the discharge point specified by the (City, County, Superintendent). Wastes from industrial or commercial sources are prohibited and may not be discharged by a hauler to the public sewer system. Discharge of such nonseptic wastes into the public sewer system will constitute a violation of this ordinance, and will subject the hauler to the penalties provided for in Section of this ordinance."

4. Example Sewer Use Ordinance Language for Prohibiting Hazardous Wastes Discharged to a POTW's Headworks

"The discharge of hazardous wastes (as defined in Section 1004 of the Resource Conservation and Recovery Act) into a pipeline connected to the public sewer, which is dedicated to only the discharge of hazardous waste is prohibited. The discharge of hazardous wastes to the headworks of the plant by truck or rail is also prohibited.

5. Example Sewer User Ordinance Language for Requiring a Permit to Discharge Hauled Wastes

"Any person engaged in the hauling of septage wastes to the public sewer system shall be permitted to do so. A hauler shall obtain a permit from the (office, department, etc.). Permitted haulers shall be responsible for complying with all the terms and conditions contained in the permit, in addition to Section ___ of this ordinance. Any person discharging to the public sewer system without a permit will be subject to the penalties provided for in Section ___ of this ordinance."

APPENDIX C
EXAMPLE WASTE HAULER PERMIT

EXAMPLE WASTE HAULER PERMIT

I. AUTHORIZATION

(Waste Hauler Name) _____
Located at: (Waste Hauler Address) _____

Is hereby granted this waste hauler permit in accordance with the application filed on _____, 19__, in the office of __(POTW)__, located at _____POTW Address_____ And, in compliance with the provisions of the Federal Water Pollution Control Act as amended and provisions of ordinances of the City of _____ and in conformity with plans, specifications, and other data submitted to the administrator in support of the application, all of which are filed with and considered as part of this permit under the following conditions and requirements:

II. DISCHARGE REQUIREMENTS

Designated Disposal Point(s)

The waste hauler must discharge all wastes at the following designated area: _____. Discharge may not occur without prior notice to the plant operator and without supervision by plant personnel.

Use of Waste Tracking System

The waste hauler must use the POTW waste tracking form to record every load that is pumped and delivered to the POTW. Failure to accurately record every load, falsification of data, or failure to transmit the form to the plant operator prior to discharge may result in revocation of this permit or a fine of up to $_____ per offense.

POTW Authorization for Hauling Industrial Waste

Any waste which may be identified as a commercial waste or waste from an industry identified by a SIC number must be presampled prior to pumping, and the results of that sampling approved; and/or reviewed and determined by the Administrator of the program to be safe for disposal to the POTW. POTW

authorization must be presented to the septage hauler by the industry prior to having waste pumped and hauled. Any industrial waste that is incompatible with the POTW operations or that violates Federal, State, or local restrictions may not be hauled to the POTW.

Sampling of Waste

Prior to discharge of hauled waste the waste hauler shall allow the POTW operator or a designated representative to sample the waste to ensure compliance with discharge limits and requirements. The hauler may be required to suspend the discharging of waste until the analysis is complete. The POTW reserves the right to refuse permission to dump any load that is suspected of being incompatible or is so determined through sampling and analysis.

Compliance with Categorical Pretreatment Standards

Any waste transported from a industry subject to categorical pretreatment standards must meet the applicable Federal categorical standards. The generator must provide proof to the POTW of such compliance, and the POTW must authorize the hauling of categorical industrial waste, prior to pumping by the permittee.

Prohibitive Discharge Standards

The permittee is prohibited from discharging wastes with the following characteristics [as dictated by 40 CFR 403.5(b)];

- Pollutants that will create a fire or explosion hazard
- Pollutants that will cause corrosive structural damage, but in no case discharges with a pH lower than 5.0
- Solid or viscous pollutants in amounts that will cause obstruction to flow
- Oxygen demanding pollutants discharged at a concentration or volume that will cause interference
- Heat in amounts that will inhibit biological activity; in no case should discharges cause the POTW influent to exceed 104°F

- Any other type of waste that may not be treatable by the POTW, or will interfere with the operation of the POTW (i.e., oil and grease, radioactive wastes, or toxic and hazardous wastes).

Local Discharge Limitations

The permittee is prohibited from discharging wastes which exceed the following limitations:

Arsenic	_____	mg/l
Cadmium	_____	mg/l
Chromium	_____	mg/l
Copper	_____	mg/l
Cyanide	_____	mg/l
Lead	_____	mg/l
Mercury	_____	mg/l
Nickel	_____	mg/l
Silver	_____	mg/l
Zinc	_____	mg/l
Selenium	_____	mg/l
Grease and oil	_____	mg/l
pH	_____	maximum
pH	_____	minimum

III. RESPONSIBILITIES AND LIMITATIONS

The permittee is responsible for protecting the domestic wastewater treatment works from any contributing discharges which would inhibit, interfere, or otherwise be incompatible with the operation or maintenance of the collection system or treatment plant including the use or disposal of municipal sludge.

Liability Insurance

The permittee must carry liability insurance in such amount and in such form as shall be determined by the POTW. Such insurance shall afford bodily injury limits of liability of _____ for each person injured and _____ for each occurrence. Evidence of such insurance coverage shall

be provided to the POTW. Nothing herein shall in any manner preclude the permittee from obtaining such additional insurance coverage as may be deemed necessary for his or her own protection.

Notification of Change

The permittee must notify the Administrator of any new introductions or contributions or any substantial change in pollutants being discharged. Such notification must include the source of the waste, identification of the waste being discharged, the nature and concentration of pollutants in the discharge, time, date, and cause of the change.

Nontransferability

In the event of any change in control or ownership, the permittee shall notify the POTW. Also, the new owner shall be notified of this permit and its limitations to afford the new owner an opportunity to apply for a new permit without interruption of business or production.

IV. ACTIONS FOR VIOLATION

Failure of the permittee to comply with any terms or conditions of this permit will subject the permittee to the following actions:

Cease and Desist

Upon notification of permit revocation the permittee shall cease and desist from discharging until a revised permit has been issued or the matter has been resolved by court action.

Remedies

If any person violates any order of the administrator, a hearing board or officer, or otherwise fails to comply with any provisions of this permit, or discharges sewage, industrial wastes, or other wastes, into the POTW contrary to the provisions of this permit, Federal or State pretreatment requirements, or contrary to any order of the City or [POTW Name], the City or [POTW name] may commence an action in a court of record for appropriate legal and equitable relief. In such action, the City or [POTW name] may recover from the

defendant reasonable attorney fees, court costs, deposition and discovery costs, expert witness fees and other expenses of investigation, enforcement action, administrative hearings and litigation, if the City or [POTW name] prevails in the action or settles at the request of the defendant. Any person who violates any of the provisions of this permit shall become liable to the City or [POTW name] for any expense, loss, damages to the City, or to the POTW occasioned by such violation. In addition, upon proof of willful or intentional meter bypassing, meter tampering or unauthorized metering, the City shall be entitled to recover as damages three (3) times the amount of actual damage.

Misdemeanor

Any person who violates or fails to comply with any provision of this permit and permit conditions issued hereunder, shall be guilty of misdemeanor. The penalty for such misdemeanor shall be a fine not to exceed _____ or by imprisonment not to exceed _____, or both. Each day in which any such violation occurs or persists shall be deemed a separate and distinct offense.

Penalty for False Statement and Tampering

Any person who knowingly makes, authorizes, solicits, aids or attempts to make any false statement, representation or certification in any permit application, record report, plan or other document filed or required to be maintained pursuant to this permit, or who falsifies, tampers with, bypasses or knowingly renders inaccurate any monitoring device, testing method or testing samples required under this permit shall be guilty of a misdemeanor, and upon conviction thereof shall be punished by a fine not to exceed _____ or by imprisonment, not to exceed _____ or both.

Remedies Cumulative

The remedies provided for in this permit, including recovery of costs, administrative fines and damages shall be cumulative and in addition to any other penalties, sanctions, fines and remedies that may be imposed.

Permit Revocation

Revocation will be determined at the discretion of the program Administrator.

Signed by:

Authorized POTW Representative: _____

Permittee: _____

APPENDIX D
EXAMPLE WASTE TRACKING FORM

EXAMPLE WASTE TRACKING FORM

Time _____
Date _____

WASTE HAULER INFORMATION

Company Name _____ Hauler I.D.# or Permit # _____
Address _____
Telephone Number _____
Truck Make and Model _____
Truck Capacity _____ Truck License _____
Other permits: Authority: _____ Number: _____
_____ _____

SOURCE(S) OF WASTE

1) Name of Company/Residence _____
Name of Owner/Contact _____
Address _____
Telephone Number _____
Type of Establishment (e.g., Home, Restaurant, Industry) _____
If industry, list applicable SIC code(s) _____
Has waste been sampled? Yes _____ No _____
If yes, attach results.
If no, list suspected waste constituents?

_____ _____ _____
_____ _____ _____
_____ _____ _____

Is the waste a RCRA hazardous waste according to the criteria listed in 40 CFR 261? _____
Have additives been mixed with waste (e.g., solvents, enzymes, etc.)? ____
If yes, please list. _____
Total quantity hauled from source _____ gal.
Time waste was pumped? _____ Date _____

2) Name of Company/Residence _____

Name of Owner/Contact _____

Address _____

Telephone Number _____

Type of Establishment (e.g., Home, Restaurant, Industry) _____

If industry, list applicable SIC code(s) _____

Has waste been sampled? Yes _____ No _____

If yes, attach results.

If no, list suspected waste constituents?

_____ _____ _____

_____ _____ _____

_____ _____ _____

Is the waste a RCRA hazardous waste according to the criteria listed in 40 CFR 261? _____

Have additives been mixed with waste (e.g., solvents, enzymes, etc.)?_____

If yes, please list. _____

Total quantity hauled from source _____ gal.

Time waste was pumped? _____ Date _____

3) Name of Company/Residence _____

Name of Owner/Contact _____

Address _____

Telephone Number _____

Type of Establishment (e.g., Home, Restaurant, Industry) _____

If industry, list applicable SIC code(s) _____

Has waste been sampled? Yes _____ No _____

If yes, attach results.

If no, list suspected waste constituents?

_____ _____ _____

_____ _____ _____

_____ _____ _____

Is the waste a RCRA hazardous waste according to the criteria listed in 40 CFR 261? _____

Have additives been mixed with waste (e.g., solvents, enzymes, etc.)?_____

If yes, please list. _____

Total quantity hauled from source _____ gal.

Time waste was pumped? _____ Date _____

I hereby certify that the information listed above is true and accurate.

_____ (Waste Hauler)

Verified by: _____ (POTW Operator)

APPENDIX E

PERMIT BY RULE REQUIREMENTS EXPANDED TO INCLUDE SECTIONS INCORPORATED BY REFERENCE

§ 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:

(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:

§ 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).

(ii) 40 CFR 264.71. Use of manifest system:

§ 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:

[264.71(b)(1)—(5) amended by 45 FR 86973, December 31, 1980]

(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.]

(iii) 40 CFR 264.72. Manifest discrepancies:

§ 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.

(iv) 40 CFR 264.73(a) and (b)(1), Operating record:

§ 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:

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:

(3) The method(s) (by handling code(s) as specified in Table 2) and date(s) of treatment, storage, or disposal.

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.

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 Trickling 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)

(v) 40 CFR 264.75. Biennial report.

§ 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:

[264.75 amended by 48 FR 3981, January 28, 1983]

(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) The certification signed by the owner or operator of the facility or his authorized representative.

(vi) 40 CFR 264.76, Unmanifested waste report; and

§ 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:

[264.76 amended by 48 FR 3981, January 28, 1983]

(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.]

(vii) for NPDES permits issued after November 8, 1984, 40 CFR 264.101.

§264.101 Corrective action for solid waste management units.

[264.101 added by 50 FR 28742, July 15, 1985]

(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.

(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.

APPENDIX F
FORMS

APPENDIX F-1

NOTIFICATION OF HAZARDOUS WASTE ACTIVITY
(~~EPA~~ FORM 8700-12)

Form Approved OMB No 2050-0028 Expires 9-30-88

Please print or type with ELITE (12 characters per inch) type within the boxes only

United States Environmental Protection Agency
Washington DC 20460

EPA Notification of Hazardous Waste Activity

Please refer to the instructions for Filing Notification before completing this form. The information requested is required by law. Section 3010 of the Resource Conservation and Recovery Act.

For Official Use Only

Comments

Installation's EPA ID Number	Approved	Date Received (yr mo day)
T A C		

I. Name of Installation

II. Installation Mailing Address

Street or P.O. Box

City or Town | State | ZIP Code

III. Location of Installation

Street or Route Number

City or Town | State | ZIP Code

IV. Installation Contact

Name and Title (last, first, and job title) | Phone Number (area code and number)

V. Ownership

A. Name of Installation's Legal Owner | B. Type of Ownership (enter code)

VI. Type of Regulated Waste Activity (Mark 'X' in the appropriate boxes. Refer to instructions.)

A. Hazardous Waste Activity

- ☐ 1a. Generator ☐ 1b. Less than 1,000 kg/mo
- ☐ 2. Transporter
- ☐ 3. Treater/Storer/Disposer
- ☐ 4. Underground Injection
- ☐ 5. Market or Burn Hazardous Waste Fuel (enter 'X' and mark appropriate boxes below)
  - ☐ a. Generator Marketing to Burner
  - ☐ b. Other Marketer
  - ☐ c. Burner

B. Used Oil Fuel Activities

- ☐ 6. Off-Specification Used Oil Fuel (enter 'X' and mark appropriate boxes below)
  - ☐ a. Generator Marketing to Burner
  - ☐ b. Other Marketer
  - ☐ c. Burner
- ☐ 7. Specification Used Oil Fuel Marketer (Or On-Site Burner) Who First Claims the Oil Meets the Specification.

VII. Waste Fuel Burning: Type of Combustion Device (enter 'X' in all appropriate boxes to indicate type of combustion device(s) in which hazardous waste fuel or off-specification used oil fuel is burned. See instructions for definitions of combustion devices.)

☐ A. Utility Boiler ☐ B. Industrial Boiler ☐ C. Industrial Furnace

VIII. Mode of Transportation (transporters only — enter 'X' in the appropriate box(es))

☐ A. Air ☐ B. Rail ☐ C. Highway ☐ D. Water ☐ E. Other (specify)

IX. First or Subsequent Notification

Mark 'X' in the appropriate box to indicate whether this is your installation's first notification of hazardous waste activity or a subsequent notification. If this is not your first notification enter your installation's EPA ID Number in the space provided below.

☐ A. First Notification ☐ B. Subsequent Notification (complete item C)

C. Installation's EPA ID Number

EPA Form 8700-12 (Rev. 11-85) Previous edition is obsolete

Continue on reverse

ID — For Official Use Only														
C													T	A	C
W															

IX. Description of Hazardous Wastes *(continued from front)*

A. Hazardous Wastes from Nonspecific Sources. Enter the four-digit number from 40 *CFR* Part 261.31 for each listed hazardous waste from nonspecific sources your installation handles. Use additional sheets if necessary.

1	2	3	4	5	6
7	**8**	**9**	**10**	**11**	**12**

B. Hazardous Wastes from Specific Sources. Enter the four-digit number from 40 *CFR* Part 261.32 for each listed hazardous waste from specific sources your installation handles. Use additional sheets if necessary.

13	14	15	16	17	18
19	**20**	**21**	**22**	**23**	**24**
25	**26**	**27**	**28**	**29**	**30**

C. Commercial Chemical Product Hazardous Wastes. Enter the four-digit number from 40 *CFR* Part 261.33 for each chemical substance your installation handles which may be a hazardous waste. Use additional sheets if necessary.

31	32	33	34	35	36
37	**38**	**39**	**40**	**41**	**42**
43	**44**	**45**	**46**	**47**	**48**

D. Listed Infectious Wastes. Enter the four-digit number from 40 *CFR* Part 261.34 for each hazardous waste from hospitals, veterinary hospitals, or medical and research laboratories your installation handles. Use additional sheets if necessary.

49	50	51	52	53	54

E. Characteristics of Nonlisted Hazardous Wastes. Mark 'X' in the boxes corresponding to the characteristics of nonlisted hazardous wastes your installation handles *(See 40 CFR Parts 261.21 — 261.24)*

☐ 1. Ignitable *(D001)* ☐ 2. Corrosive *(D002)* ☐ 3. Reactive *(D003)* ☐ 4. Toxic *(D000)*

X. Certification

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Signature	Name and Official Title *(type or print)*	Date Signed

EPA Form 8700-12 (Rev. 11-88) Reverse

APPENDIX F-2

UNIFORM HAZARDOUS WASTE MANIFEST
(EPA FORM 8700-22)

Please print or type (Form designed for use on elite (12-pitch) typewriter.) Form Approved. OMB No. 2000-0404 Expires 7-31-

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

GENERATOR

3. Generator's Name and Mailing Address

4. Generator's Phone ( )

A. State Manifest Document Number

B. State Generator's ID

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

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.

Unless I am a small quantity generator who has been exempted by statute or regulation from the duty to make a waste minimization certification under Section 3002(b) of RCRA, I also 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 I have selected the method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment.

Printed/Typed Name | Signature | Month Day Y

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name | Signature | Month Day Y

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name | Signature | Month Day Y

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 Y

EPA Form 8700-22 (Rev. 4-85) Previous edition is obsolete.

APPENDIX F-3

BIENNIAL HAZARDOUS WASTE REPOR'
(EPA FORM 8700-13B)

Type or make entries in shaded areas

OMB No. 2050-0024 Expires 12-31-86

ENVIRONMENTAL PROTECTION AGENCY

FACILITY BIENNIAL HAZARDOUS WASTE REPORT FOR 1983

This report is for the calendar year ending December 31, 1983.
Read All Instructions Carefully Before Making Any Entries on Form

I. NON-REGULATED STATUS

See instructions before completing this section.

This facility did not treat, store, or dispose of regulated quantities of hazardous waste at any time during 1983. . . . . ☐

Explain your non-regulated status in the space below.

Please print/type with elite type (12 characters per inch)

II. FACILITY EPA I.D. NUMBER

T A C

F | | | | | | | | | | | | 1

1 2 13 14 15

This Facility's Non-Regulated Status is Expected to Apply:

☐ For 1983 Only ☐ Permanently

☐ Other (explain in comment section)

C303 ENTRY (OFFICIAL USE ONLY): ☐

III. NAME OF FACILITY

30 69

IV. FACILITY MAILING ADDRESS

3 15 16 45

Street or P.O. Box

4 15 16 41 42 47 51

City or Town State Zip Code

Tear out here

V. LOCATION OF FACILITY (if different than section IV above)

5 15 16 45

Street or Route number

6 15 16 41 42 47 51

City or Town State Zip Code

VI. FACILITY CONTACT

7 15 16 45

Name (last and first)

46 55

Phone No. (area code & no.)

VII. COST ESTIMATES FOR FACILITIES

$ 16 19 22

A. Cost Estimate for Facility Closure

$ 25 28 31

B. Cost Estimate for Post Closure Monitoring and Maintenance (disposal facilities only)

VIII. CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Print/Type Name | Title | Signature of Authorized Representative | Date Signed

APPENDIX G

STATE HAZARDOUS WASTE CONTACTS

Alphabetized State Listing Of Hazardous Waste Contacts

Alabama

Land Division
Alabama Department of Environmental Management
State Capitol
Montgomery, AL 36130

(205) 271-7730

Alaska

EPA Region X
Waste Management Branch
MS-530
1200 Sixth Avenue
Seattle, WA 98101

(206) 442-2777

American Samoa

To Obtain Information or Forms Contact

American Samoa Government
Department of Public Works
Pago Pago, American Samoa 96799

(Commercial Call 633-4116)

Mail Your Completed Forms To

U S EPA Region IX
Toxics and Waste Management Division
215 Fremont Street
San Francisco, CA 94105

Arizona

To Obtain Information or Forms Contact

Arizona Department of Health Services
2005 N Central, Room 301
Phoenix, AZ 85005

(602) 257-0022

Mail Your Completed Forms To

U S EPA Region IX
Toxics and Waste Management Division
215 Fremont Street
San Francisco, CA 94105

Arkansas

Arkansas Department of Pollution Control
Solid and Hazardous Materials
P O Box 9583
Little Rock, AR 72219

(501) 562-7444

California

To Obtain Information or Forms Contact

California Department of Health Services
Toxic Substances Control Division
714 P Street
Sacramento, CA 95814

(916) 324-1781

Mail Your Completed Forms To

U S EPA Region IX
Toxics and Waste Management Division
215 Fremont Street
San Francisco, CA 94105

Colorado

Colorado Department of Health
Waste Management Division
4210 E 11th Ave.
Denver, CO 80220

(303) 320-8333

Commonwealth of North Mariana Islands

To Obtain Information or Forms Contact

Department of Public Health and Environmental Services
Division of Environmental Quality
Saipan Mariana Islands 96950

Overseas Operator 6984
Cable address GOV NMI Saipan

Mail Your Completed Forms To

U S EPA Region IX
Toxics and Waste Management Division
215 Fremont Street
San Francisco, CA 94105

Connecticut

Connecticut Department of Environmental Protection
Hazardous Materials Management Unit
State Office Building
165 Capitol Ave
Hartford, CT 06106

(203) 566-5712

Delaware

Delaware Department of Natural Resources and Environment
Solid Waste Management Branch
P O Box 1401
Dover DE 19901

(302) 736-4781

District Of Columbia

Department of Environmental Services
Pesticides and Hazardous Materials Division
5000 Overlook Ave , S W
Washington, DC 20032

(202) 767-8422

Florida

Solid Waste Section
Florida Department of Environmental Regulation
Twin Towers Office Bldg Rm 421
2600 Blair Stone Road
Tallahassee FL 32301

(904) 488-0300

Georgia

Land Protection Branch
Environmental Protection Division
Georgia Department of Natural Resources
270 Washington St , S W
Room 824
Atlanta, GA 30334

(404) 656-2833

Guam

To Obtain Information or Forms Contact

Jim Branch, Administrator
Guam EPA
P O Box 2999
Agana, GU 96910

(Overseas Operator) 646-8863

Mail Your Completed Forms To

U S EPA Region IX
Toxics and Waste Management Division
215 Fremont Street
San Francisco, CA 94105

Hawaii

To Obtain Information or Forms Contact:

Hawaii Department of Health
Environmental Protection and Health Services Division
Noise and Radiation Branch
P O. Box 3378
Honolulu, HI 96801

(808) 548-3075

Mail Your Completed Forms To:

U.S. EPA Region IX
Toxics and Waste Management Division
215 Fremont Street
San Francisco, CA 94105

Idaho

EPA Region X
Waste Management Branch
MS 530
1200 Sixth Avenue
Seattle, WA 98101

(206) 442-2777

Illinois

To Obtain Information or Forms Contact:

Illinois Environmental Protection Agency
Division of Land Pollution Control
2200 Churchill Road
Springfield, IL 62706

(217) 782-6761

Mail Your Completed Forms To:

RCRA Activities
U.S.EPA Region V
Waste Management Division
P O. Box A3587
Chicago, IL 60690

Indiana

RCRA Activities
U.S. EPA Region V
Waste Management Division
P O. Box A3587
Chicago, IL 60690

(312) 886-6148

Iowa

U.S. EPA Region VII
RCRA Branch
726 Minnesota Avenue
Kansas City, KS 66101

(816) 374-6534

Kansas

Kansas Department of Health and Environment
Bureau of Waste Management
Forbes Field, Bldg. 321
Topeka, KS 66620

(913) 862-9360

Kentucky

Division of Waste Management
Kentucky Department for Environmental Protection
Fort Boone Plaza, Building No. 2
18 Reilly Road
Frankfort, KY 40601

(502) 564-6716

Louisiana*

Louisiana Department of Environmental Quality
Solid Waste Management Division
P O Box 94307
Baton Rouge, LA 70804

(504) 342-1227

**If you dispose of RCRA listed or characteristic waste in Louisiana you must have an EPA ID Number*

Maine

Maine Department of Environmental Protection
Bureau of Oil and Hazardous Materials Control
Division of Licensing and Enforcement
State House—Station 17
Augusta, ME 04333

(207) 289-2651

Maryland

Maryland Department of Health and Mental Hygiene
Waste Management Administration
201 West Preston St.,
Baltimore, MD 21201

(301) 383-5740

Massachusetts

Massachusetts Department of Environmental Quality
Division of Solid and Hazardous Waste
One Winter Street
Boston, MA 02108

(617) 292-5851

Michigan

RCRA Activities
U.S. EPA Region V
Waste Management Division
P O. Box A3587
Chicago, IL 60690

(312) 886-6148

Minnesota

To Obtain Information or Forms Contact:

Minnesota Pollution Control Agency
Solid and Hazardous Waste Division
1935 West County Rd., B-2
Roseville, MN 55113

(612) 297-1779

Mail Your Completed Forms To:

RCRA Activities
U S. EPA Region V
Waste Management Division
P O. Box A3587
Chicago, IL 60690

Mississippi

Division of Solid and Hazardous Waste Management
Mississippi Department of Natural Resources
P O Box 10385
Jackson, MS 39209

(601) 961-5078

Missouri

Missouri Department of Natural Resources
Waste Management Program
P O Box 1368
Jefferson City, MO 65102

(314) 751-3241

Montana

Montana Department of Health and Environmental Science:
Solid and Hazardous Waste Bureau
Cogswell Building, Room B201
Helena, MT 59620

(406) 444-2821

Nebraska

Nebraska Department of Environmental Control
Hazardous Waste Management Section
P O Box 94877
Lincoln, NE 68509

(402) 471-2186

Nevada

To Obtain Information Or Forms Contact:

Nevada Department of Conservation and Natural Resources
Division of Environmental Protection
Capitol Complex
Carson City, NV 89701

(702) 885-4670

Mail Your Completed Forms To:

U.S. EPA Region IX
Toxics and Waste Management Division
215 Fremont Street
San Francisco, CA 94105

New Hampshire

New Hampshire Department of Health and Welfare
Office of Waste Management
Health and Welfare Building
Hazen Drive
Concord, NH 03301

(603) 271-4608

New Jersey

To Obtain Information or Forms Contact:

New Jersey Department of Environmental Protection
Division of Waste Management
Hazardous Waste Advisory Program
32 E. Hanover Street
P.O. Box CN028
Trenton, NJ 08625

(609) 292-8341

Mail Your Completed Forms To:

U.S. EPA Region II
Air and Waste Management Division
26 Federal Plaza
New York, NY 10278

New Mexico

Hazardous Waste Section
New Mexico Environmental Improvement Division
P.O. Box 968
Santa Fe, NM 87504-0968

(505) 984-0020 Ext. 340

New York

To Obtain Information or Forms Contact:

New York Department of Environmental Conservation
Division of Solid and Hazardous Waste
Manifest Section
50 Wolf Rd., Room 208
Albany, NY 12233-0001

(518) 457-0530

Mail Your Completed Forms To:

U.S. EPA Region II
Air and Waste Management Division
26 Federal Plaza
New York, NY 10278

North Carolina

Solid and Hazardous Waste Management Branch
Environmental Health Section
Department of Human Resources
Division of Health Services
306 North Wilmington Street
P.O. Box 2091
Raleigh, NC 27602-2091

(919) 733-2178

North Dakota

North Dakota Department of Health
Division of Hazardous Waste
Management and Special Studies
1200 Missouri Ave., Room 302
Bismarck, ND 58501

(701) 224-2366

Ohio

RCRA Activities
U.S. EPA Region V
Waste Management Division
P.O. Box A3587
Chicago, IL 60690

(312) 886-6148

Oklahoma

U.S. EPA Region VI
Air and Hazardous Materials Division
1201 Elm Street
Inter-First Two Building
Dallas, TX 75270

(214) 767-9885

Oregon

EPA, Region X
Waste Management Branch
MS 530
1200 Sixth Avenue
Seattle, WA 98101

(206) 442-2777

For Information On State Requirements:

Oregon Department of Environmental Quality
Hazardous and Solid Waste Management Division
P.O. Box 1760
Portland, OR 97207

(503) 229-5913

Pennsylvania

U.S. EPA Region III
Waste Management Branch
MS 3HW 34
841 Chestnut Street
Philadelphia, PA 19107

(215) 597-7354

Puerto Rico

To Obtain Information Or Forms Contact:

Environmental Quality Board
Land Pollution Control Area
P.O. Box 11488
Santurce, PR 00910-1488

(809) 722-0439

Mail Your Completed Forms To:

U.S. EPA Region II
Air and Waste Management Division
26 Federal Plaza
New York, NY 10278

Rhode Island

Rhode Island Department of Environmental Management
Division of Air and Hazardous Materials
204 Cannon Bldg.
75 Davis Street
Providence, RI 02908

(401) 277-2797

South Carolina

Bureau of Solid and Hazardous Waste Management
South Carolina Department of Health and Environmental Control
2600 Bull Street
Columbia, SC 29201

(803) 758-5681

South Dakota

South Dakota Department of Water and Natural Resources
Office of Air Quality and Solid Waste
Joe Foss Building
Pierre, SD 57501

(605) 773-3329

Tennessee

Division of Solid Waste Management
Tennessee Department of Health and Environment
Customs House, 4th Floor
701 Broadway
Nashville, TN 37203

(615) 741-3424, 2877, 3959

Texas

Commercial, Municipal, Federal, State, Handlers Contact:

Texas Department of Health
Bureau of Solid Waste Management
1100 West 49th Street, T-602
Austin, TX 78756

(512) 458-7271

Industrial Handlers Contact:

Texas Department of Water Resources
Industrial Solid Waste Section
P.O. Box 13087
Capital Station
Austin, TX 78711

(512) 475-2014

Utah

Utah Department of Health
Bureau of Solid and Hazardous Waste
State Office Building, Room 4231
P.O. Box 45500
Salt Lake City, UT 84145-0500

(801) 533-4146

Vermont

Vermont Agency of Environmental Conservation
Air and Solid Waste Programs
State Office Building
79 River Street
Montpelier, VT 05602

(802) 828-3395

Virgin Islands

To Obtain Information Or Forms Contact:

Division of Natural Resources Management
Hazardous Waste Program
Department of Conservation and Cultural Affairs
P.O. Box 4340
Charlotte Amalie
St. Thomas, VI 00801

(809) 774-3320

Mail Your Completed Forms To:

U.S. EPA Region II
Air and Waste Management Division
26 Federal Plaza
New York, NY 10278

Virginia

Virginia Department of Health
Division of Solid and Hazardous Waste Management
Madison Building
109 Governor Street
Richmond, VA 23219

(804) 786-5271

Washington

U.S. EPA Region X
Waste Management Branch
MS 530
1200 Sixth Avenue
Seattle, WA 98101

(206) 442-2777

For Information on State Requirements

Washington Department of Ecology
Hazardous Waste Section
Olympia, WA 98504

(206) 459-6300

West Virginia

West Virginia Department of Natural Resources
Division of Water Resources
1201 Greenbrier Street
East Charleston, WV 25311

(304) 384-6836

Wisconsin

To Obtain Information or Forms Contact

Wisconsin Department of Natural Resources
Bureau of Solid Waste Management
P.O. Box 7921
Madison, WI 53707

(608) 266-2111

Mail Your Completed Forms to:

RCRA Activities
U.S. EPA Region V
Waste Management Division
P.O. Box A3587
Chicago, IL 60690

Wyoming

EPA Region VIII
Waste Management Division (8HWM-ON)
One Denver Place
Suite 1300
999 18th Street
Denver, CO 80202-2413

(303) 293-1602

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