Click here for
DISCLAIMER

Document starts on next page

Include with Scanned Document. Best Copy Available :
Contact Division Director For More Information

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF WATER

JUL 21 1987

MEMORANDUM

SUBJECT: Guidance for Implementing RCRA Permit-by-Rule Requirements at POTWs

FROM: James R. Elder, Director
Office of Water Enforcement and Permits

TO: Water Management Division Directors
Regions I - X

Addressees

Attached is a copy of our final guidance document for implementing the RCRA permit-by-rule requirements at POTWs. This guidance applies to POTWs that receive hazardous waste by truck, rail, or dedicated pipe. The document will assist you in issuing RCRA permits by rule and in implementing RCRA corrective action requirements at POTWs.

Thank you for your assistance in developing this guidance. Your comments enabled us to produce a comprehensive document describing the procedures for satisfying the RCRA permit-by-rule requirements.

As I noted in my memorandum of May 6, 1987, the next steps for implementing corrective action requirements at POTWs include the following: 1) follow through on the POTWs that did not respond to the survey, (2) finish the process of identifying those POTWs that accept hazardous waste by truck, rail, or dedicated pipe, (3) determine the RCRA permitting status of these POTWs, and (4) begin the corrective action process. This guidance document should assist you in these tasks.

For further information about the guidance, please call Paul Connor of my staff at FTS 475-7718. I hope you find the guidance document useful.

Attachment

Addressees: Permits Branch Chiefs, Regions I - X
Pretreatment Coordinators, Regions I - X
Hazardous Waste Coordinators, Regions I - X

cc: Martha Prothro
Bill Jordan

Guidance for Implementing RCRA Permit-by-Rule Requirements at POTWs

1. Purpose

2. Background and Statutory and Regulatory Requirements

2.1 Distinction Between Waste Covered by the Domestic Sewage Exemption and Waste Subject to the RCRA Permit-by-Rule

2.1.1 Definition of "POTW" for Purposes of the Domestic Sewage Exemption

2.1.2 Applicability of the Domestic Sewage Exemption to Manifested Hazardous Waste Dumped Down a Manhole

2.2 Permit-by-Rule Requirements

2.3 Section 3004(u) Standard

2.3.1 Definition of "Release"

2.3.2 Definition of "Hazardous Waste" and "Hazardous Constituent"

2.3.3 Definition of "Solid Waste Management Unit"

2.3.4 Definition of POTW "Facility" for Purposes of Corrective Action

2.4 Description of Corrective Action Process

2.4.1 RCRA Facility Assessment (Preliminary Review, Visual Site Inspection and Sampling Visit) and RCRA Facility Investigation

2.4.2 Corrective Measures and Clean-Up Beyond the Facility Boundary

2.4.3 Financial Responsibility

2.5 Other RCRA and HSWA Requirements

3. Implementation

3.1 Identification of High Priority POTWs

3.2 Permit-by-Rule Requirements

3.2.1 Identification of When a Permit-by-Rule is Issued/Reissued

GUIDANCE FOR IMPLEMENTING RCRA PERMIT-BY-RULE REQUIREMENTS AT POTWs

Office of Water Enforcement and Permits
U.S. Environmental Protection Agency
401 M Street, S.W.
Washington, D.C. 20460

Appendices

A. Identification of Hazardous Waste

B. Permit-by-Rule Requirements

C. Model RIDER Permit

D. Other HSWA Requirements

E. Example Letter Identifying High Priority POTWs

F. Relevant Guidance

G. EPA Notification Form for RCRA Identification Number

3.2.2 Description of How a POTW Obtains a RCRA EPA Identification Number

3.2.3 Use of Manifest System and Associated Reporting

3.2.4 Operating Record and Biennial Report

3.2.5 Determination of "In Compliance" for Purposes of the Permit-by-Rule

3.2.6 Satisfaction of the Requirement That the Waste Must Meet all Federal, State and Local Pretreatment Requirements

3.2.7 Corrective Action

3.2.7.1 Applicability of Permit-by-Rule Corrective Action Requirements

3.2.7.2 Federal and Authorized State Responsibility

3.3 Implementation of Corrective Action Through Use of "RIDER" Permits

3.3.1 Background and Description of "RIDER" Permits

3.3.2 Establishing Corrective Action Requirements

3.3.2.1 Preliminary Review

3.3.2.2 Visual Site Inspection and Sampling Visit

3.3.2.3 RCRA Facility Investigation

3.3.2.4 Interim Corrective Measures

3.3.2.6 Financial Responsibility

3.3.2.7 Additional Information and RCRA Omnibus Provision

3.3.3 RIDER Permit Issuance and Modification Procedures

3.4. Coordination Procedures for EPA

3.4.1 Regional Waste Management Divisions

3.4.2 State Water Management Authorities

3.4.3 State Waste Management Authorities

DISCLAIMER

This document is intended to assist Regional and State personnel in exercising their discretion in implementing RCRA permit-by-rule requirements at POTWs, especially the requirement to include in any RCRA permit issued after November 8, 1984 corrective action requirements as necessary to protect human health and the environment for releases of hazardous waste or constituents from any solid waste management unit at a treatment, storage or disposal facility. Conformance with this guidance is expected to result in applications of the permit-by-rule that meet the regulatory standard for corrective action as necessary to protect human health and the environment. However, EPA will not in all cases undertake actions that comport with the guidance set forth herein. This document is not a regulation (i.e., it does not establish a standard of conduct which has the force of law) and should not be used as such. Regional and State personnel must exercise their discretion in using this guidance document as well as other relevant information in applying the permit-by-rule requirements to POTWs.

SECTION 1

PURPOSE

This document is intended to provide guidance to Federal and State officials who are responsible for implementing RCRA requirements for POTWs which receive hazardous waste by truck, rail, or dedicated pipe for treatment, storage or disposal. The distinction between POTWs subject to RCRA permit requirements for the treatment, storage or disposal of hazardous waste and POTWs exempt from such requirements due to the domestic sewage exemption, is discussed below. The provisions of the RCRA permit-by-rule, a RCRA regulatory provision for permitting POTWs which receive hazardous waste, is explained and the guidance sets forth the recommended steps to implement permit-by-rule requirements.

The permit-by-rule requirement to undertake corrective action for releases of hazardous wastes or constituents is emphasized in this guidance. The corrective action requirement will be the most resource-intensive activity for both EPA and authorized States implementing, and the POTWs complying with, permit-by-rule requirements.

In response to the corrective action requirement of HSWA, the RCRA permit-by-rule was amended on July 15, 1985, to include compliance with corrective action as another condition of the permit-by-rule, 50 Fed. Reg. 28702. The purpose of the July 15, 1985 rule was to codify a large number of HSWA requirements and

to set forth the Agency's legal interpretation of those requirements. Therefore, in that rulemaking, the Agency did not describe how corrective action would be implemented for POTWs subject to the permit-by-rule. This guidance supplements that rulemaking by setting forth the Agency's recommended approach for implementing corrective action. Generally, specific actions undertaken to meet the corrective action requirement will need to be determined on a site-specific basis. Therefore, this guidance addresses the corrective action requirement on a step-by-step basis and sets forth recommended procedures for implementing each step.

Implementation of corrective action is a process which entails the collection and evaluation of information pertaining to the release or likelihood of a release from a solid waste management unit at a POTW. Site-specific information; e.g., ground-water monitoring data, will need to be gathered and site-specific corrective measures imposed, as necessary. These site-specific requirements will be implemented through mini-RCRA permits: permits which are RCRA Individual Determinations of Explicit Requirements ("RIDER" permits). This guidance explains the RIDER permit process, its relation to each stage of the corrective action process, and the relation of the RIDER permit to the RCRA permit-by-rule.

In addition, the appendices to this guidance contain material which should prove helpful for implementing permit-by-rule requirements. Included are model RIDER permit conditions

for implementing corrective action for POTWs, a discussion of identification of hazardous waste under RCRA, identification of other HSWA requirements which apply as a matter of law, and an annotated version of the RCRA permit-by-rule. Further relevant guidance is identified in Appendix F and should prove helpful for implementing permit-by-rule requirements at POTWs.

SECTION 2

BACKGROUND AND STATUTORY AND REGULATORY REQUIREMENTS

2.1 Distinction Between Waste Covered by the Domestic Sewage Exemption and Waste Subject to the RCRA Permit-by-Rule

Section 3005(a) of the Resource Conservation and Recovery Act (RCRA) requires any person who owns or operates a facility which treats, stores, or disposes of hazardous waste to obtain a RCRA permit. Whether a publicly owned treatment works (POTW) is required to obtain a RCRA permit (and subject to applicable requirements of §3004), therefore, depends upon whether the POTW is treating, storing or disposing of hazardous waste.

The factors for determining whether a material is a "hazardous waste" under RCRA are prescribed by Federal regulations at 40 CFR Part 261. These factors are complex. Generally, in order for a material to be a "hazardous waste" under RCRA, it must first be a "solid waste." Second, it must either exhibit a characteristic of hazardous waste as specified by EPA (i.e., ignitability, corrosivity, reactivity, or EP toxicity), or be specifically listed by EPA as a hazardous waste. (For further discussion of the definition of hazardous waste, see Appendix A.)

However, RCRA excludes certain wastes from the definition of "solid waste". Such wastes are therefore not hazardous wastes, so that facilities which solely treat, store, or dispose of such wastes are effectively excluded from RCRA permitting requirements. One such exclusion is commonly known as the domestic sewage

exemption. This exemption on which EPA's regulations at 40 CFR 261.4(a)(1) elaborate, provides that domestic sewage and any mixture of domestic sewage and other wastes that passes through a sewer system to a POTW are not "solid wastes."

Thus, sewer line influents to POTWs generally fall within the domestic sewage exemption of RCRA.

Waste, however, received at a POTW by truck, rail or by a pipe where the waste does not mix with domestic waste in the pipe before entering the POTW (a dedicated pipe), is not covered by the domestic sewage exemption. If that waste is a listed hazardous waste or exhibits a hazardous waste characteristic, the POTW is required to have a RCRA permit for the treatment, storage or disposal of that hazardous waste.*

For example, wastewater treatment sludges from the chemical conversion coating of aluminum is a listed hazardous waste in the RCRA regulations. If this waste is sent to a POTW via a sewer where the waste mixes with domestic sewage prior to reaching the POTW, then the waste would be covered by the domestic sewage

---

* The domestic sewage exemption only applies to the POTW treatment, storage and disposal of influent covered by the exclusion. It does not apply to sludges or effluents generated by the POTW treatment of the influent. It also does not apply to the treatment of non-domestic sewage exemption waste including, for example, the treatment of a listed hazardous waste (i.e., received by truck, rail or dedicated pipe) which is mixed with exempt domestic sewage as part of the treatment process. The process sludge, or effluent from this mixture would be considered to be a hazardous waste. See Section 3.2.7.1 for a further discussion of mixtures. Thus, if the POTW's sludge is a listed hazardous waste, is derived from a non-exempt hazardous waste, or exhibits a hazardous waste characteristic, the POTW is subject to RCRA generator requirements (40 CFR Part 262). Treatment, storage or disposal of such sludge by the POTW would subject the POTW to RCRA treatment, storage and disposal permitting requirements.

exemption. In this case, the POTW would not be subject to a RCRA permit but the waste would be subject to appropriate categorical pretreatment standards and local limits. If, however, the same waste is trucked directly to the POTW treatment facility; i.e., the waste is not covered by the domestic sewage exemption, then the waste would not only be subject to categorical pretreatment standards and local limits but also would remain a "hazardous waste" and the POTW would be required to have a RCRA permit to accept such waste.

Industrial waste which mixes with sanitary waste from on-site sanitary facilities for the employees does not necessarily fall under the domestic sewage exemption. In order to qualify for the domestic sewage exemption, the industrial waste must also mix in the municipal sewer system with untreated sanitary wastes from non-industrial sources.

POTWs receiving hazardous waste by truck, rail, or dedicated pipeline, however, need not go through a comprehensive permitting process under both NPDES and RCRA. On May 19, 1980, when EPA promulgated the Consolidated Permit Regulations setting forth the permit program for several environmental programs, including RCRA, a RCRA permit-by-rule was established for POTWs which were also covered by NPDES permits. The RCRA permit-by-rule is a regulation which deems certain facilities, which are permitted under other federal environmental statutes, to be covered by a RCRA permit if specified conditions are met. The RCRA permit-by-rule deems a POTW which receives hazardous waste to have a RCRA permit if the POTW:

- has an NPDES permit;
- complies with its NPDES permit;

- meets certain RCRA Part 264 recordkeeping and reporting requirements;
- if the waste meets all Federal, State, and local pretreatment requirements; and
- complies with RCRA corrective action.

The RCRA permit-by-rule requirements are presented in their entirety in Appendix B.

2.1.1 Definition of "POTW" for Purposes of the Domestic Sewage Exemption

In order for influent to a treatment plant to be eligible for the domestic sewage exemption, the waste must enter a publicly-owned treatment works (POTW). By definition, POTWs include devices or systems used in the treatment of municipal sewage or industrial wastes of a liquid nature which are owned by a State or municipality. Privately-owned treatment works and Federal facilities are not POTWs, and wastes entering such facilities through sewers cannot come under the domestic sewage exemption. Whether a facility is a publicly owned treatment works or a privately-owned treatment works under EPA's regulations* depends

---

* "Publicly-owned treatment works" are defined as "any device or system used in the treatment (including recycling and reclamation) of municipal sewage or industrial wastes of a liquid nature which is owned by a "State" or "municipality" (as defined by section 502(4) of the CWA). This definition includes sewers, pipes, or other conveyances only if they convey wastewater to a POTW providing treatment." §260.10. See also §§270.2, 122.2, and 403.3(o).

"Privately-owned treatment works" are defined under the NPDES regulations (the term is not defined in the RCRA regulations) as "any device or system which is (a) used to treat wastes from any facility whose operator is not the operator of the treatment works and (b) not a 'POTW'." §122.2.

Questions regarding the status of treatment works and/or sewer systems which are partially owned by the private sector and partially owned by a State or municipality should be directed to the Office of Water Enforcement and Permits. The limits imposed in the NPDES permits; i.e., whether the permit requires compliance with secondary requirements or BPT, BAT, BCT and/or NSPS requirements under the Clean Water Act will usually be indicative of the facility's status.

solely on the ownership of the treatment plant, not on the nature of the influent (i.e., whether the influent is industrial or domestic). A Federally-owned treatment plant serving a military base, for example, is not a POTW (it is considered a privately-owned treatment works) since it is not owned by a State or municipality, even though the majority of its waste is domestic from residential bunk housing. Since the domestic sewage exemption does not apply to waste entering non-POTWs, any such non-POTW facility is subject to RCRA treatment, storage, disposal and permitting requirements if it receives a waste which is listed as a RCRA hazardous waste or exhibits a RCRA hazardous waste characteristic.

Waste entering a POTW which is not subject to NPDES permitting; e.g., a non-discharging POTW, can nevertheless be covered under the domestic sewage exemption. Coverage under the domestic sewage exemption is based upon whether the waste is a domestic sewage or mixture of domestic sewage and other wastes that passes through a sewer system to a POTW for treatment.*

Not all waste entering a POTW is covered by the domestic sewage exemption. In order for waste entering a POTW to be under the domestic sewage exemption, it must mix with domestic sewage in the sewer system prior to reaching the POTW property boundary;

---

* POTWs without NPDES permits; i.e., non-discharging POTWs, are not eligible for coverage under the RCRA permit-by-rule. Such facilities would require individual RCRA permits if they are treating, storing or disposing of a RCRA listed or characteristic waste which is not covered by the domestic sewage exemption.

i.e., the boundary for the property at which waste treatment, storage or disposal occurs. (Note that property boundaries are a function of State and local law, and the location of property boundaries may vary from State to State. If there are questions or disagreements about the extent of property boundaries, contact the Office of Regional Counsel in the appropriate EPA Regional Office.) If the juncture at which waste from an industrial user mixes with domestic sewage in the sewer system is within the POTW property boundary, then the domestic sewage exemption does not apply. If such industrial waste received by a POTW is a listed RCRA hazardous waste or exhibits a hazardous characteristic, then the POTW is required to have a RCRA permit-by-rule.

The POTW property boundary distinction is based upon the fact that a hazardous waste which has reached the POTW facility (i.e., arrived on the POTW's property) would be considered receipt of hazardous waste by the POTW if the waste has not yet lost its hazardous waste designation. The statutory exemption (§1004(27) of RCRA) is for "solid or dissolved material in domestic sewage." In addition, the regulatory exemption (§261.4(a)(1)(ii)) interpreted the statutory exemption to exclude mixtures of industrial waste with domestic sewage that pass through a sewer system to a POTW. The exemption for domestic sewage cannot be stretched, however, to exempt industrial waste which arrives on a facility's property and has not yet mixed with domestic sewage. The mixture of industrial waste with domestic sewage within the POTW property boundary would thus be considered a hazardous waste as long as it continues to meet the definition of hazardous waste in 40 CFR §261.

2.1.2 Applicability of the Domestic Sewage Exemption to Manifested Hazardous Waste Dumped Down a Manhole

POTWs have reported that hazardous waste or suspected hazardous waste is sometimes trucked to and dumped down a manhole outside of the POTW property boundary. This activity could conceivably occur with the POTW's consent or could involve midnight dumping. The domestic sewage exemption applies to waste dumped down a manhole in the same way that it applies to any other industrial waste sent to the POTW through the sewer. Thus, the domestic sewage exemption applies to the waste as soon as the waste enters the sewer system in which it mixes with domestic sewage prior to reaching the POTW treatment facility property boundary.

Therefore, whether a POTW is deemed to have received hazardous waste will depend upon whether the hazardous waste dumped down the manhole is under the domestic sewage exemption. This, in turn will depend in part on whether the manhole is located inside or outside the POTW property boundary. For example, if hazardous waste is dumped down a manhole outside the property boundary and mixes with domestic sewage in the sewer system prior to reaching the POTW property boundary, the domestic sewage exemption would apply.

Note, however, that the domestic sewage exemption does not apply until after the waste enters the sewer system that will mix it with domestic sewage prior to reaching the POTW property boundary. Thus, the generator of such waste is subject to RCRA generator requirements (40 CFR Part 262) and any treatment

or storage of such waste by the generator prior to the waste entering the sewer system would require the generator to have a RCRA permit (unless otherwise exempt). Likewise, transportation of such waste prior to the waste entering the sewer system would subject the transporter to RCRA transportation requirements (40 CFR Part 263), including manifest requirements.

One of the generator requirements is §262.20 which requires generators of hazardous waste to transport waste only to a "designated facility," which is defined as a facility with a RCRA permit or interim status. (RCRA interim status is a statutorily recognized grandfather clause for facilities existing at the time RCRA first applies to their operations. POTWs receiving a hazardous waste influent do not have interim status). In addition, transporters are required to transport hazardous waste only to designated facilities.

The dumping of hazardous waste down a manhole outside of the POTW facility is thus a violation of RCRA hazardous waste generator and transporter requirements: the generator and transporter could both be liable. Even if the POTW is covered by a RCRA permit-by-rule, hazardous waste cannot be trucked to and dumped down a manhole outside of the POTW property boundary; the manhole is not part of the permitted facility. Likewise, collection systems or pumping stations outside of the POTW property boundary cannot be used by POTWs for the receipt of trucked hazardous waste.

It is unlikely that a POTW which unknowingly receives hazardous waste which had been illegally dumped down a manhole

outside the POTW property boundary (or otherwise enters the collection system) would independently be in violation of RCRA requirements. However, POTWs which knowingly participate in the receipt of trucked hazardous waste outside of the POTW property boundary may be subject to criminal liability under a variety of statutes as an accessory or co-conspirator to generator and transporter violations. For these reasons, POTWs should be encouraged to take such actions as necessary to preclude the entry of trucked hazardous waste to manholes outside the POTW property boundary.

2.2 Permit-by-Rule Requirements

The permit-by-rule conditions include the requirements that a POTW have an NPDES permit, comply with such permit, comply with specified RCRA recordkeeping and reporting requirements, and that the waste meets all federal, State and local pretreatment requirements. As discussed below in section 3.2.1, some of these conditions must be met as a prior condition to coverage by the permit-by-rule, and some are ongoing operating requirements. Nevertheless, a violation of the RCRA permit-by-rule (or failure to be covered by a permit-by-rule) is subject to RCRA enforcement. Furthermore, a violation of the POTW's NPDES permit could subject a POTW to an enforcement action under the Clean Water Act, or an enforcement action under RCRA for a violation of a RCRA permit-by-rule condition. Similarly, if the trucked in waste violates a pretreatment requirement (e.g., a federal categorical limit, specific or general prohibition or local limit), then the POTW may

also be subject to RCRA liability for a permit-by-rule violation. Among the recordkeeping and reporting requirements incorporated by the permit-by-rule authority are requirements to:

- obtain an EPA identification number as a treatment, storage, or disposal facility;
- comply with the manifest system;
- report manifest discrepencies;
- maintain an operating record; and
- submit biennial reports and unmanifested waste reports.

See Appendix B for an annotated copy of the permit-by-rule, including these and other requirements incorporated by reference. The Hazardous and Solid Waste Amendments of 1984 (HSWA) added §3004(u) to RCRA. Section 3004(u) requires all RCRA permits issued after November 8, 1984 to address corrective action for all releases of hazardous waste or constituents from any solid waste management unit at a treatment, storage, or disposal facility regardless of the time at which waste was placed in such unit. Since the RCRA permit-by-rule is a RCRA permit, this corrective action requirement applies to any RCRA permit-by-rule issued to a POTW after November 8, 1984.

2.3 Section 3004(u) Standard

The standard for implementation of corrective action for POTWs under a RCRA permit-by-rule is the same as for any other RCRA treatment, storage, and disposal facility (TSDF). The corrective action requirement provides:

> (u) Continuing Releases at Permitted Facilities. Standards promulgated under this section shall require, and a permit issued after [November 8, 1984]

> by the Administrator or a State shall require, 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 such unit. Permits issued under 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. (Emphasis added.)

To implement this corrective action requirement at POTWs, the permitting agency should first determine whether there has been a release from any solid waste management unit at the facility for which corrective measures are necessary. After review of the requisite information, if no release(s) is identified by the permitting agency, no further corrective action requirements should be imposed upon the facility except for the continuing obligation to identify and report subsequent releases. If a release(s) is identified, however, then the POTW owner or operator may be required to further identify the nature and extent of such release(s). Corrective measures will subsequently be required as deemed necessary. In the July 15, 1985 rulemaking, EPA interpreted §3004(u) of RCRA as mandating corrective action only where necessary to protect human health and the environment. Thus, whether a particular POTW will be required to undertake corrective measures will depend upon the nature, extent and potential effects of a release originating from the POTW.

RCRA corrective action requirements (and the other permit-by-rule requirements) apply only to POTWs which are treating, storing or disposing of hazardous waste. Although releases from

a POTW that is not treating, storing, or disposing of hazardous waste (i.e., the influent is not a listed or characteristic RCRA hazardous waste or the influent is covered by the domestic sewage exemption) cannot be subject to §3004(u) of RCRA, releases may be subject to other statutory provisions such as CERCLA response authority.*

2.3.1 Definition of "Release"

The term "release," as applied to all TSDFs, including POTWs subject to RCRA, is very broad. Although not defined in RCRA regulations, "release" is at least as broad as the definition of release under CERCLA, 42 U.S.C. 9601 et seq., and includes any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping or disposing into the environment. Certain limitations in CERCLA's definition of release are not part of the RCRA definition of release. RCRA's definition of release, for example, can include releases such as engine exhausts and fertilizer applications. The RCRA term "release" includes releases of hazardous waste or hazardous constituents into all media including air, surface water, ground water and soils. Thus, corrective action authority can be used

---

* The permitting authority should recognize that a release of a hazardous waste or a hazardous constituent that is addressed under §3004(u) may also be a release of a hazardous substance that is subject to CERCLA. Such a release may subject the POTW to reporting requirements and liability under §§103 and 107 respectively of CERCLA. Therefore, it is important to coordinate to the maximum extent possible, the actions of the Water Management Division with the actions of the RCRA and CERCLA staff. For more information on the applicability of CERCLA to POTWs, see appendix F.

to require corrective measures to address, for example, volatilization, leachate or sedimentation problems from POTWs which threaten human health or the environment.

2.3.2 Definition of "Hazardous Waste" and "Hazardous Constituent"

The term "hazardous waste" is defined in 40 CFR Part 261; i.e., any waste that contains a listed hazardous waste (listed in §§261.31, 261.32 or 261.33) or which exhibits a hazardous waste characteristic (i.e., ignitability, corrosivity, reactivity, or EP toxicity) unless otherwise excluded from the regulations. For further discussion of the definition of "hazardous waste", see Appendix A.

The term "hazardous constituent" means those constituents listed in Appendix VIII to 40 CFR Part 261 and includes hazardous constituents released from solid waste and hazardous constituents that are reaction byproducts. The list of hazardous constituents are substances which have been shown in scientific studies to have toxic, carcinogenic, mutagenic, or teratogenic effects on humans or other life forms. Wastes containing hazardous constituents are not automatically hazardous wastes under RCRA. A solid waste that contains a hazardous constituent need not be listed as a hazardous waste if EPA concludes that the waste is not capable of posing a substantial present or potential threat to human health or the environment when improperly treated, stored, transported or disposed of, or otherwise managed.

Thus, the substances covered by the corrective action requirement are greater in number than the substances subject to RCRA permitting requirements. A facility is required to obtain a RCRA

permit if it treats, stores or disposes of hazardous waste. Corrective action, however, will address releases of hazardous waste and solid wastes containing hazardous constituents. Note that a facility which treats, stores or disposes only non-hazardous wastes (which may or may not contain hazardous constituents but the wastes are not listed and do not exhibit a RCRA characteristic) is not subject to RCRA corrective action since it is not subject to a RCRA permit for its activities.

2.3.3 Definition of "Solid Waste Management Unit"

The term "solid waste management unit," as applied to all TSDFs, including POTWs, includes any waste management unit at the facility from which hazardous constituents might migrate, irrespective of whether the units were intended for the management of solid or hazardous wastes. The term "unit" includes containers, tanks, surface impoundments, waste piles, land treatment units, landfills, incinerators, and underground injection wells. Thus, at POTWs, units such as sedimentation tanks, aeration tanks, wastewater treatment ponds, trickling filters, aeration basins, and other units used for treatment, storage or disposal of solid waste would be considered solid waste management units for the purposes of corrective action.

In addition, solid waste management units include areas associated with production processes at facilities which have become contaminated as a result of routine, or systematic releases

of wastes or constituents* (a product may become a waste if it is discarded or abandoned). Other contaminated areas at facilities, such as one-time spills, leakage from product storage, and releases from production areas that are not routine, and systematic are not considered to be solid waste management units. As explained in the preamble to the July 15, 1985 rulemaking, releases of wastes or constituents are considered subject to §3004(u) corrective action only if the release occurred from a solid waste management unit. Likewise, leakage from product storage and other types of releases associated with production processes would not be considered solid waste management units, unless those releases were routine, and systematic.

Solid waste management units are not limited to units which are currently being used to treat, store or dispose of hazardous waste. Units at a POTW which are no longer active are solid waste management units as long as solid waste has been in that unit at some point in its operating history; i.e., waste not covered by the domestic sewage exemption has been in that unit or a sludge has been generated in that unit.

---

* Since the definition of "facility" for purposes of the corrective action requirement of §3004(u) of RCRA is not limited to the wastewater treatment area (see section 2.3.4, infra), production facilities on contiguous property under the control of the municipality or State, as applicable, would also be subject to corrective action. OSW is developing regulations on corrective action which may modify and address in more detail which releases may cause a production area to be considered a solid waste management unit.

Although §3004(u) covers all solid waste management units at a facility, not all releases from these units necessarily require corrective measures. Once releases have been identified from solid waste management units at a facility, only those releases which originated from hazardous or solid waste management units and contain hazardous waste or hazardous constituents are subject to corrective action. Corrective measures will be imposed only where necessary to protect human health and the environment.

2.3.4. Definition of POTW "Facility" for Purposes of Corrective Action

RCRA requires corrective action for releases from solid waste management units at a treatment, storage or disposal facility. For corrective action purposes, the term "facility" as it applies to POTWs is not limited to the property boundary of the POTW itself. The corrective action requirement of §3004(u) of RCRA also applies to contiguous property under the municipality's control. Sewers and pipes within these property boundaries which convey waste to solid waste management units will also be subject to §3004(u) determinations.

This definition is consistent with the definition used for other TSDFs subject to RCRA permits. For example, if the property which adjoins the POTW is used by the same municipality as a landfill, then the landfill would also be a solid waste management unit and subject to the corrective action requirement.

Contiguous property would not include, however, the municipal sewer system which extends beyond the POTW and contiguous property

under the municipality's control. It is not feasible to require POTWs to evaluate whether there have been releases from their sewer systems throughout the city. Such a requirement could require the installation of groundwater monitoring wells throughout a city, a result clearly not envisioned by Congress. Contiguous property, however, on which a municipality's waste management activities involve more than conveyance of such waste; i.e., waste is treated, stored, or disposed of on such property, would be considered part of the POTW "facility" and subject to §3004(u) corrective action.

2.4 Description of Corrective Action Process

This section outlines the recommended steps for identifying releases and potential releases, characterizing them and implementing appropriate response actions. The fact that a facility is subject to the §3004(u) corrective action requirement does not necessarily mean that corrective measures will always be required. Corrective action is a process of identification of the nature and extent of releases, if any, and implementation of corrective measures where necessary to protect human health and the environment.

The identification, characterization and response to releases should be undertaken during three corrective action stages. The first stage, called "RCRA facility assessment" is comprised of three separate steps: preliminary assessment, visual site inspection and sampling visit. The second stage is "RCRA facility investigation." Thirdly, appropriate response actions, known as

"corrective measures" will be required if necessary to address releases of hazardous wastes or hazardous constituents. Determinations reqarding "financial responsibility" must also be made at the corrective measures stage of the process. These three stages are set forth in Figure 1 and discussed in more detail below.

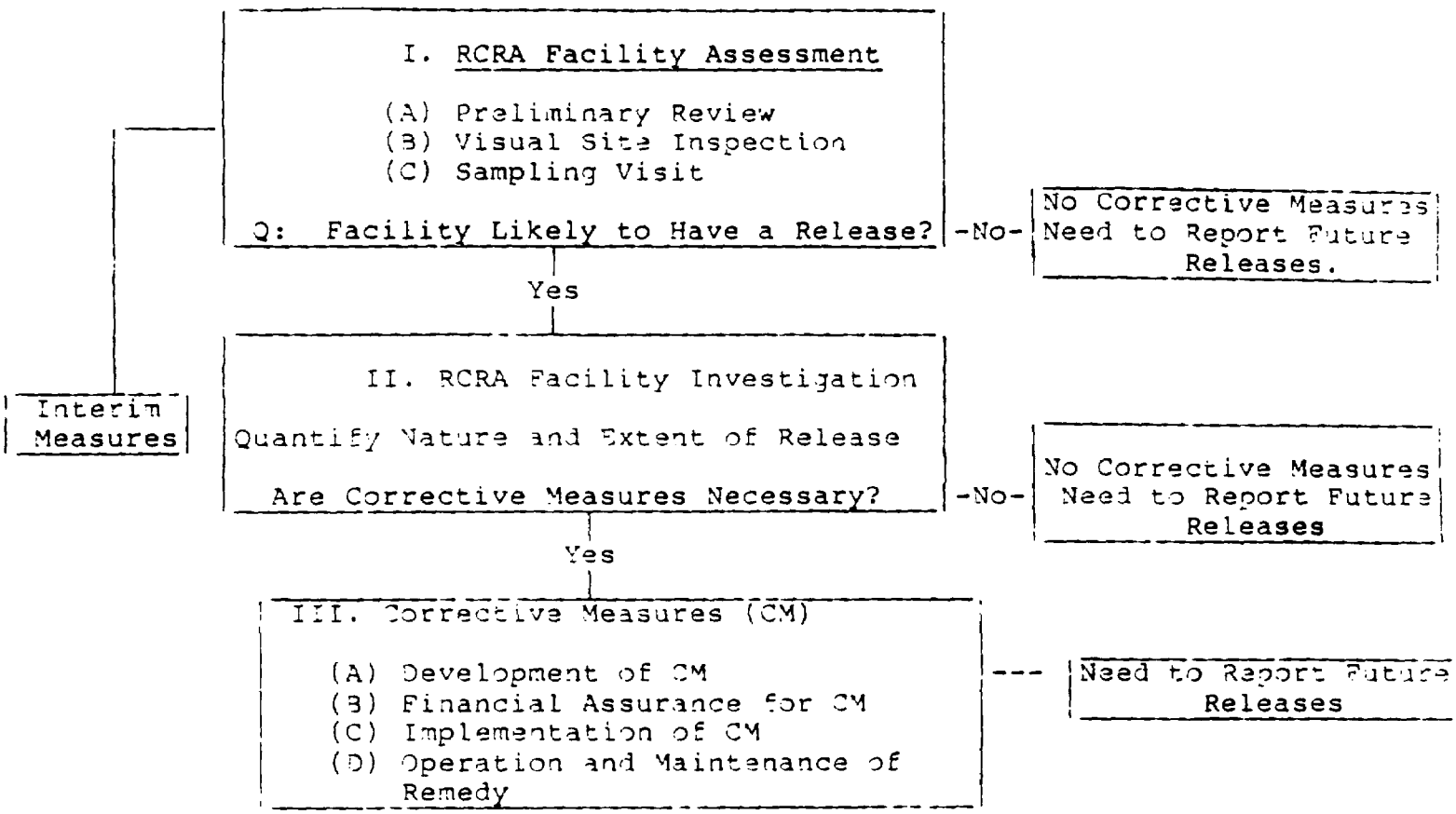
2.4.1 RCRA Facility Assessment (Preliminary Review, Visual Site Inspection and Sampling Visit) and RCRA Facility Investigation

The first stage of the corrective action process, the RCRA facility assessment, is an assessment of the facility to identify actual and potential releases of hazardous waste or hazardous constituents from solid waste management units at the POTW. The objective of the assessment is to gather baseline information and to determine whether the owner or operator of the POTW should be required to undergo the second stage of the process, the RCRA facility investigation. This second stage includes a detailed investigation to characterize the nature, extent and rate of migration of contaminant releases of concern.

To implement the RCRA facility assessment, the POTW owner or operator should be required to submit preliminary information to the permitting agency which identifies the solid waste management units at the facility and describes their potential for releases into the environment.

FIGURE 1

CORRECTIVE ACTION PROCESS



This preliminary review step process serves to gather and evaluate existing information on facilities in order to identify and characterize potential releases, and to focus the activities to be conducted during the next two steps, visual site inspection and sampling visit.

The information which should be submitted during the preliminary review step is intended to describe the operation and construction of solid waste management units, wastes handled, releases, geographic characteristics of the surrounding area, etc.

The information submitted by the POTW should then be reviewed by the permitting authority together with other available information such as NPDES compliance information, permit applications, inspection reports, etc., to help focus subsequent corrective action activities.

The preliminary review step should then be followed by a visual site inspection and sampling visit to provide further information to complete the RCRA facility assessment. Usually, the visual site inspection should be conducted by the permitting agency. The inspection should focus on identification of solid waste management units and the collection of visual evidence of releases at facilities to assist the permitting agency in recommending further steps in the corrective action process. It should entail visually inspecting the entire facility (including contiguous property under the control of the municipality) for evidence that a release of hazardous waste or hazardous constituents has occurred. During the inspection, the permitting agency should identify additional areas of concern, (including any SWMUs not previously identified), fill data gaps identified in the preliminary review, and focus recommendations concerning necessary follow-up action. Follow-up could include any or all of the following: sampling visit, RCRA facility investigation, interim corrective measures, or no further action at the facility except for the ongoing obligation to report releases.

Information obtained during the visual site investigation step should include physical evidence of environmental damage

from releases and runoff (e.g., damaged vegetation, discolored soils), and evidence of apparent lack of physical integrity of treatment or storage units and design characteristics of units indicating the likelihood of a release to groundwater, air, soils or surface water.

The third step of the RCRA facility assessment, the sampling visit, focuses on the collection of additional sampling and analytical information to fill data gaps that remain upon completion of the preliminary review and visual site inspection steps. This data is collected to enable the permitting agency to confirm whether there are or have been releases to any media. By the end of the sampling visit, the permitting agency should be able to identify releases or potential releases at a facility, if any, which may require further investigation.

EPA is preparing detailed technical guidance which describes the RCRA facility assessment in much greater technical detail. This information will be set forth in a document entitled Guidance on the Conduct of RCRA Facility Assessment at POTWs.

At the conclusion of the RCRA facility assessment stage, the agency should use information collected from the preliminary review, visual site inspection and sampling visit steps to determine which of three alternative courses of action to pursue:

1. Interim corrective measures. If a release of hazardous waste has occurred which threatens human health and the environment, interim corrective measures should be required immediately. These interim corrective measures are generally short-term actions responding to immediate threats, such as actual or potential exposure to hazardous wastes or constituents, drinking water contamination, threats of fire and explosion, and other situations posing similar threats.

Long-term corrective measures, if necessary, should usually be based upon information from RCRA facility investigations.

2. Require RCRA facility investigations. If the permitting agency determines as a result of the preliminary review, visual site inspection and sampling visit that a release has occurred, or may have occured, the owner or operator of a POTW may then be required to perform further investigations. These remedial investigations, known as RCRA facility investigations, are the second stage of the corrective action process. They are intended to determine whether or not a release has occurred and to identify the nature and extent of any release. RCRA facility investigations will be site-specific and tailored to the circumstances of each POTW; e.g., location and depth of a groundwater monitoring system and indicator pollutants to be measured for.

3. No further action. The permitting agency could decide that further action is not necessary if no release of hazardous waste or hazardous constituent has occurred. (Reporting of future releases would still be required.)

Separate decisions may be made for different solid waste management units at a facility. For example, the permitting agency may decide that no further action will be required for a sedimentation tank, that additional information (including groundwater monitoring) will be required for a wastewater treatment pond, and that interim corrective measures are necessary to address a continuous release from a landfill at the POTW facility.

2.4.2 Corrective Measures and Clean-up Beyond the Facility Boundary

The RCRA facility assessment (including the preliminary review, visual site investigation, and sampling visit steps) and the RCRA facility investigation stages described above should provide the permitting agency with sufficient information describing the nature and extent of a release and the need for corrective measures.

The scope of the first two stages of the corrective action process described above is very broad, spanning all solid waste management units and all releases to all media. In contrast, the scope of the third and final stage of the corrective action process is narrowed. Corrective measures are only required where necessary to protect human health and the environment.

Depending upon the nature and extent of a release at a solid waste management unit, corrective measures may be a relatively short-term effort in some cases, or may extend over a number of years. Corrective measures may also include any continued monitoring activities that may be necessary to assure that corrective measures have been successfully completed.

A comprehensive regulatory framework for the corrective action program is being developed by the Office of Solid Waste to set forth procedural and substantive requirements including identification of thresholds (i.e., triggers) for requiring corrective measures and identification of appropriate clean-up levels. These regulations will apply to the implementation of corrective action for permit-by-rule POTWs. Until these regulations are promulgated, decisions will need to be made on a case-by-case basis consistent with Agency guidance. See Appendix F for a list of relevant Agency guidance.

Implementation of corrective measures, if necessary, will not be restricted to releases within the POTW facility boundary, nor to the boundaries of contiguous property owned or controlled by the municipality. Section 3004(v) of RCRA requires owners and operators of hazardous waste TSDFs to clean up any contamination

that has migrated beyond the facility boundary unless the owner or operator demonstrates to EPA that, despite the owner or operator's best efforts, he or she is unable to obtain the necessary permission to undertake such action. The RCRA corrective action regulation, §264.101, which is incorporated by reference as a condition of the permit-by-rule, is being amended to reflect the statutory requirement to clean up beyond the facility boundary.

In summary, corrective action is an investigatory process which progressively narrows down the set of releases from solid waste management units at the facility to identify those particular units which must be cleaned up. This process involves:

- Identifying all solid waste management units at the facility;
- Identifying which solid waste management units have had releases;
- Identifying which releases, if any, involve hazardous wastes or hazardous constituents; and
- Identifying which releases of hazardous wastes or hazardous constituents, if any, threaten human health and the environment.

Cleanup is required when the last stage of the process has been reached, unless interim corrective measures are required as described in section 2.4.1.

2.4.3 Financial Responsibility

Section 3004(u) also requires "assurance of financial responsibilities for completing . . . corrective action." On October 24, 1986, EPA proposed to amend the RCRA corrective action regulations

to specifically address how this statutory requirement for financial responsibility for corrective action should be implemented. This regulation for financial assurance for corrective action (FACA) would apply to permit-by-rule POTWs. If corrective measures are deemed necessary by the permitting agency, the facility owner or operator would then be required to develop a proposed program of corrective measures to clean up the release(s) at the facility and off-site. The proposed regulations would require an estimate of the cost of conducting such corrective measures and financial assurance for corrective measures to be submitted at the time corrective action measures are specified in the permit.

Pursuant to the proposed FACA regulations, facilities required to demonstrate RCRA financial responsibility for corrective action could do so by use of trust fund, letter of credit, surety bond, financial test, or State assumption of responsibility. The financial test is a demonstration of financial strength in lieu of providing a secured instrument.

It is anticipated that RCRA financial assurance requirements will be applied to POTWs in a manner which is generally consistent with the manner in which they are applied to all other TSDFs. Until the FACA regulations noted above are finalized, financial assurance for corrective action will need to be determined on a case-by-case basis. Section 3.2.2.6 discusses this further.

SECTION 3

IMPLEMENTATION

3.1 Identification of High Priority POTWs

Implementation of the permit-by-rule requires more than simply going through the Agency's files, identifying POTWs covered under the permit-by-rule, and applying corrective action requirements to those POTWs. The first step for implementation of permit-by-rule requirements is to identify POTWs which have been receiving hazardous waste (i.e., hazardous waste by truck, rail or dedicated pipe since such waste is not excluded by the domestic sewage exemption) or which plan to receive hazardous waste in the future. POTWs planning to receive hazardous waste are required to have a RCRA permit-by-rule prior to receipt of hazardous waste.

In FY 1987, priorities for permit-by-rule implementation for POTWs are as follows:

High Priority POTWs:

(1) POTWs with known releases which threaten human health and the environment;

(2) POTWs which receive or plan to receive manifested hazardous waste;

(3) POTWs which have been identified as receiving or plan to receive hazardous waste by dedicated pipe; and

Low Priority POTWs:

(4) All other POTWs (e.g., POTWs receiving unmanifested hazardous waste by truck or rail).

The high priority POTWs are POTWs which have identified themselves as needing permit-by-rule coverage for their current or future activities, POTWs receiving hazardous waste which are

otherwise known to the permitting agency and POTWs with known releases.

Examples of POTWs in this last cateqory could include facilities with known significant groundwater leachate, volatilization, or other environmental problems. Implementation of permit-by-rule requirements for the high priority POTWs will likely be undertaken through the permitting process. Potentially, some of these POTWs also may be subject to RCRA enforcement liability for past violations.

The low priority POTWs, on the other hand, usually will not be readily known to the permitting agency. Identification of such POTWs will likely require POTW inspections and other investigatory work. Coordination between the permitting office and enforcement office will be essential for identifying such POTWs and for assuring compliance with the permit-by-rule requirements. Once permit-by-rule requirements are implemented for high priority POTWs, the resource-intensive activity of implementing permit-by-rule requirements for low-priority POTWs should be undertaken.

The first RCRA corrective action activity in FY 1987, therefore, is for EPA Regions to identify high priority POTWs in their States that should be covered by the RCRA permit-by-rule requirements. An example §3007 letter for this purpose is presented in Appendix E. EPA regions have already completed a substantial part of this task. Letters have been sent to POTWs in each Region requesting information on whether they have or

plan to receive hazardous wastes. As a result of this effort, a number of POTWs have been tentatively identified as being covered under the permit-by-rule requirements. Further work is required to confirm the status of POTWs that have been initially identified and to follow up on those that have not responded. A key challenge for States and Regions in this identification effort will be to ensure that present information on POTWs be kept current and that any future changes in hazardous waste receiving practices be reported immediately under §3010.

Once the high priority POTWs are identified, Regions and States authorized for HSWA (see discussions in sections 3.2.7.2 and 3.4.3, below) should begin to implement the permit-by-rule requirements, especially the initial stages of the corrective action process, for these identified high-priority facilities. After implementation of permit-by-rule requirements for the high priority POTWs, low priority POTWs for permit-by-rule implementation should be addressed as resources allow.

This guidance does not apply to implementation of RCRA permit-by-rule requirements for (1) federally-owned treatment works, (2) privately-owned treatment works (3) POTWs without an NPDES permit (these facilities are not eligible for a RCRA permit-by-rule since a precondition to the permit is that a POTW have a NPDES permit), and (4) POTWs which generate a hazardous waste sludge and are subject to RCRA requirements for the treatment, storage or disposal of the sludge.

The identification of such treatment works (federal facilities, privately-owned treatment works, non-discharging POTWs without a

NPDES permit which treat, store or dispose of hazardous waste and POTWs which treat, store or dispose of a hazardous waste sludge generated on-site) by the permitting authority is highly encouraged. RCRA requirements apply to their activities. Since, however, the current status of these facilities present some regulatory complexities, State and Federal water management programs should coordinate implementation of RCRA requirements for such treatment works with their respective enforcement and solid waste counterparts. In the case of EPA, specifically, Regions should coordinate with the Office of Water Enforcement and Permits and the Office of Solid Waste.

3.2 Permit-by-Rule Requirements

Section 270.60(c), the permit-by-rule for POTWs, provides:

"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;
  (ii) 40 CFR 264.71, Use of manifest system;
  (iii) 40 CFR 264.72, Manifest discrepancies;
  (iv) 40 CFR 264.73(a) and (b)(1), Operating Record;
  (v) 40 CFR 264.75; Biennial report;
  (vi) 40 CFR 264.76, Unmanifested waste report; and
  (vii) For NPDES permits issued after November 8, 1984 complies with 40 CFR 264.101.

(4) If the waste meets all Federal, State, and local pretreatment requirements which would be applicable to the waste if it were being discharged into the POTW through a sewer, pipe, or similar conveyance."

A fully annotated copy of the RCRA permit-by-rule, including the texts of all the referenced requirements, is presented in Appendix B to this document.

A number of key issues associated with the implementation of the permit-by-rule are described below, including a description of when a permit-by-rule is deemed issued, what is meant by "compli[ance]," the scope of the specific RCRA obligations imposed on POTWs, and other issues.

3.2.1 Identification of When a Permit-by-Rule is Issued/Reissued

Identification of when a RCRA permit-by-rule is deemed to be issued (hereinafter referred to as "issued") is important for two reasons. First, §3004(u) requires any RCRA permit issued after November 8, 1984 to address corrective action. Thus, when a permit-by-rule is issued determines when corrective action applies. If a POTW is covered by the permit-by-rule prior to November 8, 1984 then corrective action does not apply until reissuance of the permit-by-rule. However, if the POTW is first covered by the permit-by-rule after November 8, 1984, then corrective action is applicable at the time the RCRA permit-by-rule is issued.

EPA views the RCRA permit-by-rule to be issued when the facility initially complies with all of the requirements in the permit-by-rule provision which are discrete, one-time events; i.e., the date by which the POTW (1) has an NPDES permit, and (2) has an EPA identification number and (3) is subject to corrective action requirements (if the permit-by-rule is being issued after November 8, 1984).

The other permit-by-rule conditions (i.e., compliance with the NPDES permit and manifesting, recordkeeping, reporting and pretreatment requirements) are continuing operating requirements, as are on-going corrective action requirements, if applicable. Initial compliance with these requirements is not necessary as a precondition to issuance of the POTW permit-by-rule, although initial and continuing compliance with these requirements are necessary for compliance with the permit-by-rule. Failure to comply with these ongoing requirements, therefore, constitutes a violation of the POTW's RCRA permit, rather than a violation of RCRA for failure to have a RCRA permit.

Figure 2 sets forth the prior conditions ("conditions precedent") which must be satisfied in order for the permit-by-rule to be issued and the conditions which must be met as on-going permit-by-rule requirements. As Figure 2 demonstrates, prior to November 8, 1984, a permit-by-rule was initially issued to a POTW if the POTW had an NPDES permit and a RCRA EPA identification number. After November 8, 1984, a permit-by-rule is issued to a POTW if the POTW complies with these same two requirements, plus the additional condition precedent, the corrective action requirement. In order for the corrective action condition precedent to be met, pursuant to §3004(u) of RCRA, a compliance schedule must be imposed in the permit if corrective action cannot be completed prior to permit issuance. As explained in Section 3.3, this schedule must be established in a RIDER permit. Thus, a permit-by-rule is initially issued after November 8, 1984, if the POTW has an NPDES permit, a RCRA EPA identification number <u>and</u> corrective action requirements have been imposed on the POTW.

FIGURE 2

Conditions Precedent for Permit-by-Rule Issuance and On-going Permit-by-Rule Requirements

	Conditions Precedent for Permit-by-Rule Coverage	On-going Permit-By-Rule Requirements
Permit-by-Rule Issuance Prior to HSWA (Nov. 8, 1984)	1. NPDES Permit 2. EPA Identification Number	1. Complies with NPDES Permit 2. Complies with Use of Manifest System Requirements 3. Complies with Manifest Discrepancy Requirements 4. Complies with Operating Record Requirements 5. Complies with Biennial Report Requirements 6. Complies with Unmanifested Waste Report Requirement 7. Hazardous Waste Meets Pretreatment Requirements
Additional Requirements If Permit-By-Rule is Issued After HSWA Nov. 8, 1984	3. Subject to Corrective Action Requirements	8. Complies with Corrective Action Requirements

As Figure 3 below demonstrates, the conditions necessary for reissuance of a permit-by-rule depend upon whether reissuance occurs before or after HSWA (November 8, 1984). If reissuance occurs before HSWA, then reissuance of the RCRA permit-by-rule is triggered by reissuance of the POTW's NPDES permit. If reissuance of the permit-by-rule is after HSWA, then reissuance occurs when the POTW's NPDES permit has been reissued and the POTW is subject to corrective action requirements. In such instances, if the prior

permit-by-rule was issued before HSWA, then reissuance of the permit-by-rule after HSWA would occur when the POTW's NPDES permit is reissued and the POTW is first subject to a corrective action compliance schedule in the RIDER permit.

FIGURE 3

Reissuance of Permit by Rule

Prior Permit-by-Rule	Permit-by-Rule Reissuance Prior to HSWA	Permit-by-Rule Reissuance after HSWA
Permit-by-Rule Issuance Prior to HSWA (Nov. 8, 1984)	1. NPDES permit reissued	1. NPDES permit reissued. 2. Subject to corrective action requirements
Permit-by-Rule Issuance		1. NPDES permit reissued 2. Subject to any new or continuing corrective action requirements*

* If corrective action requirements had been imposed in a prior permits-by-rule, subsequent reissuance of the permit-by-rule will contain (1) a compliance schedule to address corrective action which had been commenced under the prior permit and not yet completed, if applicable, (2) a compliance schedule to address any new releases identified subsequent to the prior corrective action program, if applicable and (3) the requirement to report any future releases.

If the prior permit-by-rule was issued after HSWA, then reissuance of the permit-by-rule would occur when the POTWs' NPDES permit is reissued and the POTW is subject to any new and continuing corrective action requirements in a RIDER permit compliance schedule. At a minimum, the corrective action requirements imposed for such

POTWs would include the requirement to report future releases. In addition, a prior permit-by-rule issued after HSWA may contain corrective action requirements to address past releases which have not yet been completed. Since corrective action can be a long-term process, the reissued permit may need to contain conditions necessary to complete the clean-up determined necessary under the prior permit. Any new releases identified at the time of permit issuance also would have to be addressed.

3.2.2 Description of How a POTW Obtains a RCRA EPA Identification Number

As a precondition to coverage, the permit-by-rule requires a POTW to comply with §264.11, EPA identification number requirement. This regulation requires every RCRA treatment, storage or disposal facility owner or operator to apply to EPA for an identification number using EPA form 8700-12 (see Appendix G). This form requires the facility owner or operator to provide information such as the name, address, location, contact and ownership of the RCRA facility, identification of the hazardous wastes handled, and identification of the type of activity; i.e., generation, transportation, treatment, storage, disposal or underground injection.

About 60 POTWs already have obtained RCRA EPA identification numbers as RCRA treatment, storage and disposal facilities. Many of these facilities may not in fact be subject to RCRA permitting requirements since a number of facilities filed for numbers in 1980 as a precautionary measure. The facilities which have already received a RCRA identification number are identified in the Office of Solid Waste's Hazardous Waste Data Management System (HWDMS) computer base. Any other POTW subject to the

permit-by-rule which has not applied for and obtained a RCRA EPA identification number must obtain one by submitting the form presented in Appendix G.

As discussed in Section 3.2.1, above, a POTW with an EPA identification number and an NPDES permit issued prior to November 8, 1984 is currently covered by a permit by rule.

The corrective action requirement will first apply to such POTW when its NPDES permit is reissued. If a POTW does not have an EPA identification number prior to November 8, 1984, then corrective action will be a condition precedent of the permit by rule (see discussion in section 3.2.7.1, below).

3.2.3 Use of Manifest System and Associated Reporting Requirements

As a continuing operating requirement (as opposed to a precondition for coverage), the RCRA permit by rule requires a POTW owner or operator to comply with the manifest system, to report manifest discrepancies, and to submit unmanifested waste reports. A POTW which receives hazardous waste accompanied by a manifest is required to:

- sign and date a copy of the manifest certifying that the waste covered by the manifest was received;
- note significant discepancies in the manifest; and
- provide the transporter with a copy, send a copy to the generator of the waste, and retain a copy at the facility for three years.

Significant discrepancies are differences between the waste listed on the manifest and the waste received. Significant discrepancies to be noted include (1) discrepancies in quantities (variations greater than 10% in weight for bulk waste, and variations

in piece count for batch waste), and (2) discrepancies in type (obvious differences which can be discovered by inspection or waste analysis, such as waste solvent instead of waste acid). Unreconciled discrepancies must be reported to EPA.

Although the requirement to undertake a waste analysis is not specifically listed as a requirement of the permit by rule, the permit-by-rule requires significant discrepancies to be reported. Thus, under certain circumstances the requirement of a rudimentary waste analysis may be inherent and therefore should be undertaken. Only then could a POTW protect itself from potentially violating the permit by rule by failing to report a significant discrepancy.

A POTW which receives unmanifested hazardous waste from an offsite source must submit an unmanifested waste report, EPA Form 8700-13B, unless the waste is excluded from the manifest requirement by the small quantity generator exception (see §261.5 for further explanation of this exception). Since hazardous waste sent through a dedicated pipe is not required to be manifested by the generator, POTWs should not be encouraged to file unmanifested waste reports for receipt of such waste. Industrial users should also not be encouraged to manifest hazardous waste delivered to a POTW through a dedicated pipe.

The unmanifested waste report requirement also may implicitly require POTWs to undertake a waste analysis of unmanifested shipments of hazardous waste. In addition, POTWs are expected to exercise a reasonable degree of diligence in receiving shipments of hazardous waste. For example, even for shipments of hazardous

waste which are exempt from manifest requirements due to the small quantity generator exemption, the RCRA regulations suggest that the POTW owner or operator should obtain from each generator a certification that the waste qualifies for the exclusion. Alternatively, it is suggested that the POTW owner or operator file an unmanifested waste report.

3.2.4 Operating Record and Biennial Report

Two other continuing operating conditions of the permit-by-rule are the requirements to maintain an operating record and to submit biennial reports. These requirements are established at §§264.73(a) and (b)(1) and 264.75, respectively.

First, an operating record must be kept at the POTW facility. This record must provide a description and EPA hazardous waste number of each hazardous waste received, information on the estimated or manifest-reported weight or volume and density of the waste, and the method(s) and date(s) of treatment, storage or disposal of such hazardous wastes. Second, by March 1 of each even numbered year, a biennial report must be submitted, on EPA Form 8700-13B, identifying each off-site generator from which the POTW received hazardous waste during the year, a description and quantity of each hazardous waste received, and the method of treatment, storage or disposal.

Although the biennial report regulation mentions closure and post-closure cost-estimate requirements, POTW owners or operators do not have to submit such estimates. Closure and post-closure requirements do not apply to permit-by-rule POTWs.

3.2.5 Determination of "In Compliance" for Purposes of the Permit-by-Rule

Another continuing operating condition of the permit-by-rule is "compli[ance]" with the POTW's applicable NPDES permit. Thus, if a POTW violates its NPDES permit, the POTW would also violate its RCRA permit-by-rule. Agency enforcement responses under all statutes are generally based upon the severity of the violation and other appropriate factors, e.g., economic benefit. Enforcement of NPDES permit violations pursuant to Clean Water Act authority should be undertaken consistent with established Agency Clean Water Act enforcement policies including the Agency's Enforcement Management System. Under these policies, significant violations may warrant a formal enforcement response, e.g., notice of violation, administrative order or judicial action, whereas minor violations may not warrant such response. (The lack of a formal response action, however, does not condone any violation.)

A violation of the RCRA permit-by-rule due to a violation of the NPDES permit, or any of the other permit-by-rule requirements, should be treated consistently with EPA's RCRA enforcement policies. The Regions should consider the use of both RCRA and Clean Water Act enforcement authorities whenever bringing an enforcement action for POTW permit-by-rule violations.

The permit-by-rule requirement to "comply" with the corrective action requirement of §264.101 has additional implications. Not only is it a continuing operating condition of the permit-by-rule, it is also a one-time discrete requirement which must be

satisfied in order to be covered by the permit-by-rule. This condition precedent to the permit-by-rule is met by the implementation of corrective action requirements; i.e., a corrective action compliance schedule has been imposed on the POTW through a permit. (For a discussion of the permit process see section 3.3 below.) Following initial compliance with a corrective action compliance schedule, which would secure coverage by the permit-by-rule, subsequent violations of the corrective action requirements would constitute violations of the continuing operating conditions of the permit-by-rule. The POTW would then be subject to the Agency's RCRA enforcement policies for violations of the permit-by-rule, similar to any other RCRA permit-by-rule violation.

3.2.6 Satisfaction of the Requirement that the Waste Must Meet all Federal, State and Local Pretreatment Requirements

Another continuing operating condition of the permit-by-rule is that the waste must meet 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. This permit-by-rule pretreatment requirement applies solely to hazardous waste which is delivered to the POTW by truck, rail, or dedicated pipe. Thus, a violation of a categorical pretreatment standard for a hazardous waste would also be a POTW violation of the permit-by-rule whereas violation of a categorical pretreatment standard of a non-hazardous waste would not also be a permit-by-rule violation. Note, however, that any violation of a NPDES permit is also a violation of the RCRA permit-by-rule.

The permit-by-rule pretreatment condition is not limited to numerical discharge limits and specific and general prohibitions which apply to a hazardous waste. It also includes reporting, monitoring, and any other requirements related to indirect discharges of the hazardous wastes. Thus, failure of an industrial user to provide the requisite baseline monitoring information for a hazardous waste could also subject the POTW to RCRA permit-by-rule liability.

POTWs should be made aware that this condition of the permit-by-rule holds them accountable for compliance by their industrial users with pretreatment requirements applicable to hazardous waste sent to the POTW via truck, rail, or dedicated pipeline (since any waste delivered by these means must comply with all pretreatment requirements which would apply if the waste were discharged to a sewer instead). POTWs should be encouraged to increase compliance monitoring and enforcement of industrial users which send waste to the POTW via truck, rail, or dedicated pipe in order to prevent the POTWs from incurring RCRA permit-by-rule liability.

3.2.7 Corrective Action

3.2.7.1 Applicability of Permit-by-Rule Corrective Action Requirements

POTWs currently required to comply with the corrective action requirement in order to be covered by the permit-by-rule are those POTWs which:

(1) have an NPDES permit;

(2) have received hazardous waste by truck, rail or dedicated pipe and are currently treating, storing or disposing of hazardous waste; and

(3) (A) have been covered by a permit by rule prior to November 8, 1984 and the POTW's NPDES permit has been reissued since such date or;

(B) are being covered for the first time by the permit-by-rule after November 8, 1984.

These conditions are discussed below.

First, as described in detail in section 3.1, above, POTWs without NPDES permits; (e.g., non-discharging POTWs) and non-POTW wastewater treatment facilities are not eligible for a RCRA permit-by-rule since a precondition of the permit-by-rule is that a POTW have an NPDES permit.

Secondly, a POTW must have received and currently be treating, storing or disposing of hazardous waste to require permit-by-rule coverage. POTWs which in the past had treated, stored or disposed of hazardous waste; (i.e., waste received by truck, rail or dedicated pipe) but no longer are treating, storing, or disposing of such waste do not need a RCRA permit (permit-by-rule) for their current activities.

Note, however, that the mere cessation of the receipt of hazardous waste by truck, rail or dedicated pipe does not mean that the POTW is no longer treating, storing or disposing of hazardous waste. Hazardous waste may remain at the facility. This is compounded by the likely mixture of RCRA hazardous waste with waste received under the domestic sewage exemption

(a nonsolid waste under RCRA).* Therefore, in order to cease activities which require a RCRA permit, a POTW which has received hazardous waste in the past would have to take such actions which assure that the waste, mixtures and residues thereof are no longer hazardous, or are no longer being treated, stored or disposed of at the facility. If there are questions about whether a POTW continues to treat, store, or dispose of hazardous waste, contact the appropriate EPA Regional or Headquarters offices.

A POTW covered by a permit-by-rule imposing corrective action requirements; (i.e., a compliance schedule imposing corrective action requirements has been issued to the POTW pursuant to a permit) cannot avoid subsequent stages of the corrective action process by the cessation of treatment, storage and disposal practices. Once a POTW is covered by a permit-by-rule which imposes corrective action requirements, it is required to comply with all requirements necessary to complete the corrective action process. For some facilities, this may mean only the submission of enough information or testing data to determine that there have been no releases and therefore further action is not required. For other facilities, corrective measures may be necessary if releases which threaten human health and the environment are identified.

---

* If the RCRA hazardous waste mixed with domestic sewage exemption waste is a characteristic hazardous waste, then the mixture is a hazardous waste if it exhibits one of the RCRA characteristics. If the RCRA hazardous waste mixed with domestic sewage exemption waste is a listed hazardous waste, then the mixture is a hazardous waste unless the hazardous constituents are removed from the mixture or the mixture is delisted pursuant to §260.22.

The third condition for imposing corrective action requirements on a permit-by-rule POTW is that (A) the POTW was covered by a permit-by-rule issued prior to November 8, 1984 and the POTW's NPDES permit has been reissued after such date, or (B) the POTW is covered for the first time by a permit-by-rule issued after November 8, 1984.

In the first situation, NPDES permit reissuance triggers the corrective action permit-by-rule requirement. As described in more detail in section 3.2.1, permit-by-rule reissuance will occur once the discrete one-time conditions are met: the POTW has an NPDES permit, a RCRA EPA identification number and corrective action requirements have been imposed on the POTW. Accordingly, a POTW covered by a permit-by-rule prior to November 8, 1984 will not be subject to the corrective action requirement until its NPDES permit is reissued after such date. This first situation is specifically addressed in the July 15, 1985 amendment to the permit-by-rule which added the corrective action requirements.

Alternatively, in the second situation described above, a POTW which is first being covered by the permit-by-rule after November 8, 1984 is also subject to corrective action requirements. Such POTWs include those which first receive hazardous waste after November 8, 1984, and those which have been treating, storing or disposing of hazardous waste without a RCRA permit prior to such date; i.e., POTWs which did not have RCRA EPA identification numbers or NPDES permits. Many POTWs subject to the permit-by-rule should fall into this category.

Section 3004(u) of RCRA requires all RCRA permits issued after November 8, 1984 to include corrective action requirements. For POTWs which have not been covered by the permit-by-rule prior to November 8, 1984, it is irrelevant whether their NPDES permits have been reissued. Compliance with corrective action is required because the POTW is being issued a RCRA permit; (i.e., the permit-by-rule) after November 8, 1984.

After the permitting authority identifies POTWs subject to the permit-by-rule requirement, the permitting authority should determine whether each POTW had fulfilled the conditions necessary for permit-by-rule coverage. The timing of corrective action requirements for each POTW will depend upon its permit-by-rule status and, potentially, upon when its NPDES permit is reissued.

A summary of the applicability of the permit-by-rule corrective action requirements is set forth in Figure 4.

FIGURE 4

Applicability of Permit-by-Rule Corrective Action to POTWs

Eligible for Permit-by-Rule AND	Treating, Storing or Disposing of Hazardous Waste AND	Permit-by-Rule Is Issued After HSWA
1. Must be a POTW	1. Must currently be treating, storing, or disposing of hazardous waste.	1. POTW covered by a pre-HSWA permit-by-rule and its NPDES permit is reissued after November 8, 1984.
Must have an NPDES permit.	2. Cessation of receipt of hazardous waste is not enough.	2. POTW is first covered by a permit-by-rule after November 8, 1984.

3.2.7.2 Federal and Authorized State Responsibility

Although issuance of an NPDES permit after November 8, 1984 can trigger the permit-by-rule corrective action requirement,

implementation of corrective action cannot be accomplished merely by the NPDES permitting authority adding a RCRA corrective action requirement to the NPDES permit. Section 3006(g) of HSWA requires EPA to implement the HSWA requirements until a State receives RCRA authorization to implement those requirements. Therefore, even though there are 38 approved NPDES States and issuance of NPDES permits by these States can trigger the RCRA corrective action requirement, such States cannot implement corrective action for POTWs through the State permit process until they receive specific RCRA authorization to implement the new HSWA requirements. As of May 15, 1987, only the state of Georgia is authorized to implement the HSWA requirements in lieu of EPA.

In addition, a number of States have received RCRA authorization to implement pre-HSWA permitting requirements for treatment, storage and disposal facilities. Such States still have the responsibility for implementation of the non-corrective action permit-by-rule requirements (and any other more stringent State requirements). Until such States receive specific RCRA authorization to implement the §3004(u) corrective action requirement, EPA must implement the corrective action component of a valid RCRA permit-by-rule. In States which do not have any RCRA permitting authorization for treatment, storage, and disposal facilities, EPA has the responsibility for implementing all RCRA permit-by-rule requirements.

EPA Regional Water Management Divisions should check with the Regional Waste Management Divisions to determine whether

any of their States are approved to implement corrective action or any of the permit-by-rule requirements in lieu of EPA.

3.3 Implementation of Corrective Action Through Use of "RIDER" Permits

Generally, the RCRA permit-by-rule implements RCRA-related provisions that are not site-specific and which do not need to be particularized in an individual permit. Corrective action, however, for the most part needs to be implemented on a site-specific basis. The permit-by-rule requires compliance with the corrective action regulation, §264.101, but a POTW will not know the specific actions required unless a site-specific permit is issued setting forth RCRA individual determinations of explicit requirements ("RIDER" permits). This section explains the RIDER permit process and its relation to the various stages of the corrective action process.

3.3.1 Background and Description of "RIDER" Permits

The RCRA permit-by-rule was amended on July 15, 1985 to establish corrective action as another condition of the permit-by-rule if the POTW's NPDES permit was issued after November 8, 1984. The trigger date for the corrective action requirement was tied to the NPDES permit for two reasons. First, the NPDES permit is the underlying permit upon which the POTW permit-by-rule is based, and second, issuance or reissuance of a POTW's NPDES permit could result in issuance or reissuance of the permit-by-rule for the POTW (see discussion in section 3.2.1, above). At the time the permit-by-rule amendment was promulgated, EPA anticipated that the RCRA corrective action requirements would be implemented

through the NPDES permitting process, especially since the specific provisions of the permit-by-rule are tied to the NPDES permit issued to the POTW.

But even in States where EPA is the NPDES permitting authority, implementation of corrective action through the NPDES permit process entails more than merely adding a RCRA corrective action condition to the NPDES permit. Since corrective action is a requirement of RCRA, corrective action permit requirements must be issued in accordance with RCRA authority and procedures, not Clean Water Act authority and procedures. Corrective action thus cannot be issued as part of the NPDES permit. Rather, corrective action requirements must be established as a separate RCRA permit. Such a corrective action permit (RIDER permit), however, can be issued along with the NPDES permit using a consolidated permit approach (see §124.4) as long as the applicable RCRA and NPDES permit issuance procedures are complied with.

The RIDER permit should be issued concurrently with the NPDES permit, whenever possible. Ideally, these permits will be issued by EPA or an authorized RCRA State at the same time as the NPDES permits are issued, which is another reason the term "RIDER" permits was chosen. Specific issuance procedures are discussed in Section 3.3.3 below.

Note, however, that it will not always be possible to coordinate RCRA corrective action with NPDES permit issuance. Permit-by-rule issuance may not coincide with the expiration and reissuance of the NPDES permit. As discussed in section 3.2.7, above, NPDES reissuance only triggers the corrective

action requirement for POTWs which have been covered by the permit-by-rule prior to November 8, 1984. For the other POTWs, those first being covered by the permit-by-rule after November 8, 1984, concurrent NPDES and RIDER permit issuance procedures would be coincidental.

A RIDER permit is a mini-RCRA permit which addresses corrective action and which is issued in accordance with RCRA authority and procedures. RIDER permits, however, need not be restricted to the corrective action requirement. They can also include other RCRA conditions consistent with the authority of §3005(c)(3) of RCRA; i.e., any terms and conditions as may be necessary to protect human health and the environment.

A RIDER permit, by itself, does not authorize a facility to treat, store or dispose of waste. It simply fulfills one of the preconditions for a POTW to be covered by a complete RCRA permit, which in this case is the RCRA permit-by-rule. Further, as described in section 3.2.1, above, the corrective action requirements in a RIDER permit also constitute continuing operating conditions of the permit-by-rule. POTWs must also comply with the other RCRA permit-by-rule preconditions (NPDES permit and EPA identification number) in order to be covered by the RCRA permit-by-rule.

3.3.2 Establishing Corrective Action Requirements

Section 2.5, above, describes the various stages of the corrective action process recommended by this guidance: RCRA facility assessment (preliminary review, visual site inspection, sampling visit), RCRA facility investigation, corrective measures

(including clean-up beyond the facility boundary) and financial responsibility. Generally, implementation of specific corrective action requirements for a POTW through a RIDER permit should start with the preliminary review requirements.

Preliminary review requirements for POTWs, as a policy matter, should be implemented through issuance of RIDER permits. Although the information could be obtained through other means; e.g., §3007 of RCRA, only if corrective action is imposed through a permit (and a POTW has met the other two permit-by-rule preconditions; i.e., the POTW has an NPDES permit and a RCRA EPA identification number) would the POTW be covered by the RCRA permit-by-rule. Other information gathering tools are not sufficient to meet the §3004(u) requirement that the permit contain schedules of compliance if corrective action cannot be completed prior to permit issuance.

In addition to specific preliminary review requirements, the initial RIDER permit issued to a POTW should include permit conditions addressing later stages of the corrrective action process. Following are examples of types of permit conditions that should be included in the initial RIDER permit:

- Reopener conditions for any subsequent stage of the corrective action process. These conditions should establish the agency's intent that compliance with the permit-by-rule corrective action requirement will entail additional requirements if necessary. Such permit conditions would set forth the Agency's authority to modify the RIDER permit once information from the prior stage; e.g., preliminary review stage, is received.

- Specific implementing permit requirements to address those stages of the corrective action process which the permitting authority is ready to implement at the time of RIDER permit issuance. For example, the permitting

authority may include specific visual site inspection and sampling visit requirements in addition to preliminary review requirements.

- A process for implementing subsequent stages of the corrective action process. For example, a POTW could be required to submit an approvable plan for a remedial investigation and to comply with such plan once approved. Such permit conditions should be as specific as possible and would need to set forth a standard for approving the plan and specific factors to be addressed in the plan. If the RIDER permit includes such conditions, modification of the permit may not be required to address later stages of the corrective action process to the extent that these later stages are referenced in the RIDER permit. Actions carried out pursuant to such conditions, however, would be subject to public comment when EPA subsequently public notices a RIDER permit modification (e.g., public notices the corrective measures to be required or the alternative that corrective measures will not be required).

The type of permit condition to be used to address subsequent stages of the corrective action process depends upon the particular circumstances of the case. The choice will often depend upon the amount of information available at the time the RIDER permit is initially issued.

A model RIDER permit is presented in Appendix C. Specific preliminary review implementation requirements are set forth in the model permit, although case-by-case variation will usually be necessary. A boilerplate permit condition requiring the POTW to identify any future releases to EPA upon becoming aware of such releases is included. Model reopener conditions and conditions establishing a process as described above are also presented in the model permit.

3.3.2.1 Preliminary Review Requirements

As described in Section 2.4.1., above, the preliminary review step of the corrective action process is generally a "desk-top" review of available informationon the POTW. The RIDER permit

should require the submission of specific preliminary review information from the POTW. The information to be submitted by POTWs at this step should normally be limited to readily available information.

Preliminary review information to be required from POTWs, as a starting point, should be the same preliminary information as required from other RCRA TSDFs. On March 28, 1986, EPA proposed corrective action permit application requirements for TSDFs which are not subject to the RCRA permit-by-rule. (See proposed §270.14 (d)(1) and (d)(2), 51 F.R. 10722. The regulatory language is set forth in the permit-by-rule in Appendix B to this guidance document) The preliminary review information requirements proposed in the March 28, 1986 regulations include requirements for the submission of descriptive information on solid waste management units; (i.e., location, type of unit, dimensions, dates operated, and wastes handled) and the submission of all available information pertaining to any release from the unit; (e.g. data from laboratory analyses from past soil, air, surface water and ground water samples). The model RIDER permit presented in Appendix C contains preliminary review requirements consistent with the March 28th proposed regulation. Note, however, that specific preliminary review requirements for POTWs should be modified in the future to be consistent with any changes which may appear in the final regulation for other TSDFs.

Unlike other RCRA facilities, POTWs are not required to submit RCRA permit applications or other RCRA information which would otherwise be useful during the preliminary review step of the

corrective action process. Therefore, in addition to information requirements consistent with the proposed regulation described above, the RIDER permit should require other pertinent information from POTWs. Some information should be required from all POTWs subject to the corrective action requirement;(e.g., topographic map) and other information should be required only to the extent that such information is available to the POTW owner or operator (e.g., aerial photographs).

Among the information which all RCRA POTWs should be required to submit as part of the preliminary review stage are:

- o A topographic map (consistent with §270.14(b)(19) of the RCRA Part B permit application requirement);
- o A description of each solid waste managment unit's function, material of construction and ancillary systems; and
- o Identification of any citizen complaints and judicial and administrative actions against the municipality related to alleged environmental or public health effects caused by the POTWs operations.

In addition, POTWs should be required to submit the following information if available:

- o Identification of the wastes managed in each solid waste management unit;
- o Identification of drinking water wells and drinking water intakes listed in public records or otherwise known to the permittee;
- o Identification of the uppermost aquifer; and
- o Aerial photographs of the POTW.

This latter set of information will be helpful, although not absolutely necessary in all cases, in undertaking the preliminary review stages of the corrective action process of POTWs. All

whether the POTW owner or operator should undertake additional investigations to characterize the nature, extent and rate of migration of contaminant releases of concern. This condition should prove adequate for obtaining additional information subsequently determined to be necessary.

In addition to the information to be submitted by the POTW, the permitting authority should also identify other sources of information which could help provide evidence of a release or the potential of a release from a POTW. The permit writer should plan each preliminary review to ensure that all relevant sources of information pertaining to the POTW are examined. Relevant information sources include NPDES permit applications, inspection reports, compliance history, citizen complaints on file, and first-hand reports from personnel from State and other EPA program offices with specific historical knowledge about the POTW's operations.

The Office of Water Enforcement and Permits is currently developing technical guidance to assist the permitting authority in conducting preliminary reviews of POTWs. This and other available guidance is described in Appendix F.

3.3.2.2 Visual Site Inspection and Sampling Visit

In addition to the preliminary review, the RCRA facility assessment stage of the corrective action process includes a visual site inspection and sampling visit. Visual site inspections and sampling visits should be undertaken at all POTWs except in the unlikely situation in which the permit

POTWs, therefore, should not be required to generate this information at this point in the corrective action process if the information is not readily producible or available.

It is unlikely that POTWs will be able to provide some of the detailed historic information, such as the identification of wastes managed in each solid waste management unit (including solid waste management units which have been abandoned for many years). The RIDER permit, however, should require the submission of such information if it is readily available. The submission of such information would prove to be valuable for the corrective action process and may thereby avoid more costly means of information gathering (such as ground water monitoring) to determine whether a release from a solid waste management unit was a hazardous waste or hazardous constituent.

As a general rule, at the preliminary review step, the permitting authority should limit information requirements in addition to those listed above to information which is absolutely necessary at this step or to pertinent information which is readily available to the POTW owner or operator. Later stages of the corrective action process; (e.g., visual site investigation, sampling visit, and RCRA facility investigation) will allow for the collection of additional information, including some information which was not provided during the preliminary review step because it was not readily available to the POTW owner or operator.

The model RIDER permit in Appendix C contains a condition setting forth the Regional Administrator's discretionary authority to require such additional information as necessary to determine

writer can clearly determine from the preliminary review that there is already sufficient evidence of a potential release or absence of a release such that information to be derived from a visual site investigation and/or sampling visit would provide little additional evidence or otherwise assist in the development of specific corrective measures.

Sampling visit and visual site inspection activities should be undertaken by the permitting agency (EPA or an approved HSWA State) or a nonapproved HSWA State which informally agrees with EPA to assist in these activities. Only in the most extenuating circumstances, should the visual site inspection be omitted or be undertaken by the POTW operator. For example, if resource constraints prevent EPA or the State from visiting a site, and if a POTW operator is willing and likely to provide reliable information, then sampling activities undertaken by the POTW operator may be appropriate.

If sampling is conducted by the POTW operator, EPA should specify in advance the following: (1) specific activities to be undertaken;(e.g., sampling parameters, locations, etc.), (2) a time frame for conducting such activities, and (3) identification of the information to be submitted.

As stated above, the sampling visit and visual site inspection steps should usually be conducted by the permitting authority. If the owner or operator of the POTW will be undertaking any of the visual site inspection or sampling visit activities, however,

then such requirements can be addressed in the RIDER permit in one of three ways. First, if the permit writer is able to specify the activities to be undertaken by the POTW at the time that the RIDER permit is issued, then specific conditions should be included in the RIDER permit.

Second, as is most likely, if the specific activities are unknown at the time the RIDER permit is issued;(i.e., prior to receiving preliminary review information), then the RIDER permit could establish a process for establishing such conditions. In these cases, the POTW owner or operator should be required to submit a plan for approval when notified by the permitting authority. The plan should identify the specific activities to be undertaken by the owner or operator, the information to be provided to the permitting authority, and a schedule of compliance for such activities. Failure to submit approvable plans within the time frames set forth in the notification or to carry out the activities described in such plans once approved, would be a violation of the permit-by-rule and would therefore be cause for a RCRA enforcement action. Subsequent public notice of such permit would allow for public comment on the plan, itself, and whether additional conditions might be appropriate.

Third, if the specific activities are unknown at the time of RIDER permit issuance, the permit could merely contain a reopener clause. In such case, the RIDER permit would address specific preliminary review information requirements and subsequently would need to be modified to address the specific visual site

inspection and sampling visit activities to be undertaken at a later date.

If the permitting authority will be undertaking any of the visual site inspection and sampling visit activities, then a permit condition should be included in the RIDER permit to assure access to the POTW for inspection and sampling activities.

The RCRA facility assessment guidance, as described in Appendix F, is currently being developed to assist permitting authorities in developing and conducting visual site inspections and sampling visits.

3.3.2.3 RCRA Facility Investigation

The purpose of a RCRA facility investigation is to gather data sufficient to fully characterize the nature, extent and rate of migration of contaminant releases identified in previous steps of the corrective action process. Of paramount importance to the RCRA facility investigation is that it provide sufficient data to determine appropriate response actions; (i.e., appropriate corrective measures or document that no action is needed). The RCRA facility investigation should be performed by the POTW owner/operator pursuant to specific conditions contained in the RIDER permit or an approved plan. The permitting authority (EPA or an authorized State) should oversee this activity.

When the permitting authority initially issues a RIDER permit, specific RCRA facility investigation requirements can be addressed by (1) a reopener clause or (2) requirements establishing a process for the POTW owner or operator to submit an

approvable RCRA facility investigation plan upon notification from EPA.

Generally, facility investigation requirements should address the following items:

- All solid waste management units which the permitting authority has identified as requiring facility investigation information;
- Detailed plans of the type, frequency, location and duration of monitoring that will be undertaken;
- Identification of the soil and sediment sampling and analysis which will be undertaken;
- Description of the sampling analyses and statistical comparison procedures to be utilized in evaluating monitoring data;
- A list of indicator parameters, waste constituents, or reaction products that can provide a reliable indication of the presence of hazardous wastes or hazardous constituents;
- The analytical method(s) to be used for determining the source or cause of contamination, including use of any previously gathered information pertaining to ground water, surface water, air and soil quality;
- A schedule, which is as expeditious as practicable, upon which remedial activities will be undertaken and the date for submission of the remedial investigation information;
- Identification of populated areas on a map which shows population density per square mile and land uses (residential, commercial, agricultural, recreational, etc.) within the vicinity of the facility;
- Identification of general climatological features of the areas;
- Identification of geologic and hydrologic characteristics including surface water flow information;
- Identification of the potential health effects and significant environmental effects of hazardous wastes and hazardous constituents from each solid waste management unit (toxicity, carcinogenicity, teratogenicity, mutagenicity, and reproductive effects); and

- Identification of other actions the POTW owner or operator will undertake to determine the rate, extent and potential human health and environmental impacts from the migration of hazardous wastes or hazardous constituents.

The POTWs facility investigation plan can be required to address any other factor which quantifies the nature and extent of a release.

3.3.2.4 Interim Corrective Measures

Prior to completion of the RCRA facility investigation, a release may have been identified which warrants immediate attention. For example, during the visual site investigation, a release or potential release may have been identified which could lead to exposure to hazardous wastes or constituents, drinking water contamination, fire or explosion. In such instances, the permit writer need not wait for the corrective measures stage before imposing corrective measures--interim corrective measures can be taken at any point in the corrective action process.

Interim corrective measures are generally short-term actions responding to immediate threats. They can be quite effective in abating immediate problems and in keeping existing problems from worsening while studies and investigations are being completed. Interim corrective measures can be implemented by modifying the RIDER permit to include specific clean-up requirements. If the threat posed is of such a nature that interim corrective measures cannot await the RIDER permit modification process, other appropriate authority, such as the imminent and substantial endangerment authority of §7003 of RCRA, should be used to impose immediate corrective measures.

3.3.2.5 Corrective Measures

When the permit authority initially issues the RIDER permit, preliminary review and other appropriate requirements will be addressed as described above. At the time of initial RIDER permit issuance, the corrective measures stage of the corrective action process can be addressed using a combination of reopener permit conditions and permit conditions establishing a process, as described below.

Once the RCRA facility investigation is completed, the POTW owner or operator should be required to identify the appropriate corrective measures, if any, and recommend them to the permitting authority. The permitting authority will then review the recommendation, issue a draft permit (modification), provide the public an opportunity to review and comment on a proposed amendment to the RIDER permit, select the final measures, and modify the permit. Specific corrective measure requirements or a decision not to require corrective measures must be public noticed and processed in accordance with RCRA public participation procedures, as described in section 3.3.3 below.

In order to assure that the POTWs recommended remedies will be effective in correcting each threat posed by releases from each solid waste management unit, the POTW should be required to analyze more than one alternative to determine the appropriate response measure; (e.g., analyze off-site and on-site alternatives). Depending on specific circumstances of each case, this study may include analyses of alternatives to control the source of the

contamination (by preventing or mitigating the continued migration of contamination, by removing, stabilizing or containing the contaminants) and/or alternatives to abate problems posed by the migration of substances from their original source into the environment.

The corrective measures study should demonstrate that the proposed response action will effectively abate the threats to human health and the environment posed by the releases. Thus, the POTW should analyze the alternative(s) in sufficient detail to make such demonstration. To do so, the POTW should be required to assess the alternative(s) in terms of its technical feasibility (including reliability and requirements for long term operation and maintenance), its ability to meet public health requirements, its ability to protect the environment and any adverse environmental effects of the measures. The owner or operator also should consider any institutional constraints to implementation of the measures, such as off-site capacity problems and potential public opposition.

The permitting authority will evaluate the owner or operator's recommendation and approve or disapprove it. The views of the public on the proposed measures must be considered in making these decisions. After the permitting authority selects the remedy, the POTW owner or operator should be required to design and construct the selected response action. The financial assurance demonstration will also be reviewed at this time. After construction the owner or operator should also be required to operate, maintain and monitor the remedy.

All of these above activities should be required through the RIDER permit. At the time of initial RIDER permit issuance, the design, implementation, operation and maintenance of the selected remedies, including a compliance schedule for such activities, should be addressed by a reopener condition setting forth the agency's authority to modify the permit to require corrective measures as necessary to protect human health and the environment. The requirements to undertake a corrective measures study, however, can be addressed by a permit condition setting forth the process for the POTW to submit a corrective measures study, to be triggered by notificaton from the permitting authority. In such instance, the permit condition should be very specific in setting forth the information to be included in the corrective measures study. An example is provided in the model RIDER permit contained in Appendix C to this guidance.

The Agency has not yet developed a specified standard or technical guidance regarding the clean-up levels which must be achieved to assure protection of human health and the environment. Future regulation and guidance will address this crucial issue of the corrective measures stage.

3.2.2.6 Financial Responsibility

POTWs required to undertake corrective measures must also be required to demonstrate RCRA financial responsibility. EPA proposed regulations on March 24, 1986, setting forth the financial instruments and the content of such instruments to be used for providing financial assurance for corrective action (FACA).

The FACA proposed regulations would allow the use of a trust fund, letter of credit, surety bond, State assumption of responsibility, or financial test. The finanial test is a demonstration of financial strength in lieu of providing a secured instrument. Therefore, a POTW would be required to provide a trust fund, letter of credit or a surety bond unless the State is willing to assume liability for the corrective action costs.

Until the FACA regulations are finalized, financial assurance for corrective action should be determined on a case-by-case, best professional judgment basis. The promulgated Part 264, Subpart H, financial responsibility regulations for closure and post-closure costs and the proposed FACA regulations should provide the permit writer with a basic understanding of the issues involved and the nature of the various financial instruments. The permitting authority should coordinate in advance with the Office of Water Enforcement and Permits and the Office of Solid Waste in making all case-by-case financial assurance determinatons for permit-by-rule POTWs.

It should be noted that the proposed financial test is generally designed for private sector firms rather than municipalities. The proposed test requires a firm to submit certain financial information such as net worth and cash flow, which is consistent with the information required by the Security and Exchange Commission's Form 10K. Fee-based POTWs often have recordkeeping and accounting practices which are amenable to the proposed financial test. Tax-based POTWs, on the other hand,

often use recordkeeping and accounting practices which would not normally be compatible with the proposed financial test. Such tax-based POTWs, therefore, may as a practical matter be precluded from using the financial test once promulgated. In such case, tax-based POTWs would be required to provide one of the other more costly options of financial assurance.

In 1980, when EPA developed a similar financial test for the closure and post-closure costs of TSDFs, the Agency proposed an alternative financial test for tax-based municipalities [see 45 F.R. 33268, 33273 (May 19, 1980)]. EPA subsequently decided not to promulgate the proposed test and further concluded that due to the great variability in accounting and reporting procedures of municipalities, a broadly-applicable financial test based upon the quantification of assets and tangible net worth would not be appropriate.

Until the proposed FACA regulations are finalized, the permitting authority is not restricted to the recordkeeping and reporting practices contained in the proposed financial test in making a best professional judgment as to whether a POTW has the requisite degree of financial strength in lieu of a secured instrument;(i.e., a case-by-case financial test). A financial test can be developed based upon the particular recordkeeping and reporting practices of the POTW. Any case-by-case financial test demonstration should provide adequate assurances that the municipality will be able to allocate the necessary funds for corrective action. For example, such assurances could include a determination

that legislative processes or voter approval of new taxes would not be required in the future in order to allocate the funds for the necessary corrective measures.

Since the FACA regulations, when finalized, will apply to permit by rule POTWs, the applicability of the financial test to tax-based municipalities will be determined in that (or a separate) rulemaking.

3.3.2.7 Additional Information and RCRA Omnibus Provision

Permit authorities should include a specific condition in all RCRA RIDER permits which requires the submission of any information which the permitting authority decides is necessary for making determinations of the extent of any corrective measures to be imposed. The fact that the permitting authority has requested a visual site inspection plan should not preclude the authority from subsequently requiring a sampling visit plan or a remedial investigation plan. Furthermore, even after implementation of the visual site inspection, sampling visit, or facility investigation stage, the permitting authority should be able to require the POTW owner or operator to supplement information already submitted if the authority determines that a potential release was not adequately addressed by the initial plans.

For example, new investigations may be unexpectedly required based upon information developed during the execution of an approved remedial investigation plan.

In addition, permitting authorities should include a RIDER permit condition which imposes a continuing obligation upon the

POTW owner or operator to submit any additional information concerning the release of hazardous waste or hazardous constituents from any solid waste management unit at the facility within 15 days of becoming aware of such information. This condition is intended to provide the permitting authority with any pertinent information the owner or operator may become aware of after submission of the preliminary review information. Furthermore, information regarding releases generated or discovered after the preliminary review stage should also be required to be submitted, thus assuring a comprehensive corrective action program.

Section 3005(c) of RCRA, an omnibus permitting authority, states that:

> "Each [RCRA] permit issued . . . shall contain such terms and conditions as the Administrator (or the State) determines necessary to protect human health and the environment."

Permit conditions pursuant to §3005(c)(3) authority can be included in a RCRA RIDER permit. All RIDER permits should include a condition requiring the submission of information the permitting authority deems necessary for implementing requirements pursuant to the omnibus authority. An example requirement is included in the model RIDER permit presented in Appendix C. Other permit conditions established pursuant to this authority should be coordinated with the Office of Water Enforcement and Permits.

3.3.3 RIDER Permits Issuance and Modification Procedures

A RIDER permit is not, in and of itself, a complete RCRA permit which meets the permit requirements of §3005 of RCRA. The

RIDER permit implements the permit-by-rule corrective action requirement in two ways. First, it implements one of the conditions precedent for permit by rule coverage. Second, it defines on-going operating requirements (in a schedule of compliance) necessary to remain in compliance with the permit-by-rule corrective action requirements.

Compliance with RCRA permit issuance procedures, however, must be followed when issuing RIDER permits. The RCRA permit issuance procedures are established at 40 CFR Part 124. Public opportunity to participate in corrective action decisions for POTWs should be no less than that provided by the RCRA permit issuance procedures.

RCRA permit issuance procedures are similar to NPDES procedures, also found in Part 124. The main difference between RCRA and NPDES permit procedures is that the RCRA procedure requires that a notice of draft permits must be published in major local newspapers of general circulation and broadcast over local radio stations; the public notice must provide 45 days (not 30) for public comment; a hearing must be held if the Agency receives a request for a hearing and written opposition to the Agency's intention to issue the permit; and any hearing must be scheduled, whenever possible, at a location convenient to the nearest population center. RCRA procedures for appeal of RCRA permit conditions also differ from NPDES procedures, although the RCRA procedures are less formal than those for NPDES permits.

To the exent possible, the permitting authority should coordinate the issuance of a RIDER permit with the issuance of an NPDES permit. Coordination of the permitting processes can include consolidation of the statement of basis or fact sheet, public notice, public comment period, public hearings and administrative records. The NPDES permit and the RIDER permit should be issued simultaneously unless joint processing would result in an unreasonable delay in the issuance of one of the permits.

In addition, RIDER permits can be issued for a period of up to ten years (as opposed to the five-year term of the NPDES permit). However, the permitting authority should issue each RIDER permit for a five-year term so that expiration and reissuance will coincide with the expiration and reissuance of the POTWs NPDES permit.

Modification of RIDER permits also should be undertaken pursuant to permit modification procedures for RCRA permits, §§270.41 (major modifications) and 270.42 (minor modifications). Final determinations about the need for corrective measures should be treated as major permit modifications under §270.41.

3.4 <u>Coordination Procedures for EPA</u>

Implementation of RCRA requirements for POTWs are new responsibilities for the EPA Regional Water Management Divisions. In developing the expertise to deal with these new and challenging issues, the Water Management Divisions are encouraged to take advantage of the experiences and expertise in other EPA and State offices.

Implementation of RCRA permit-by-rule requirements, including corrective action, should be consistent with overall Agency policy for implementing RCRA permitting requirements for all TSDFs. Unless otherwise provided in regulations or guidance, the Water program should not diverge from the national RCRA program. Regional Water Management Divisions should, therefore, work closely with the Regional Waste Management Divisions and State offices.

3.4.1 Regional Waste Management Divisions

The Water Management Division should coordinate significant corrective action decisions with the Waste Management Division to ensure that the decisions are technically sound and are consistent with overall interests of the Waste Management Division. Water Management Divisions should make their expertise available to the Waste Management Divisions to help address significant corrective action decisions for all TSDFs which involve releases to surface water which are or can be regulated by the NPDES program. In addition, the Water Management Division should assure that it is kept apprised of the status of State RCRA programs which are approved by the Region to implement HSWA requirements. Coordination of the two divisions on such issues will help assure that Agency resources are used efficiently.

A memorandum of understanding may be helpful to address the specific cross-media responsibilities of each Division and to establish procedures for the decision-making process. The memorandum of understanding could address the procedures and information to be included in a request for review from one Division to another,

time frame for response, procedures for coordinating enforcement actions pursuant to Clean Water Act and/or RCRA authority.

Water Management Divisions should also provide the Waste Management Division with a list of any POTWs which have been identified as subject to RCRA permit requirements but which are outside of the scope of the permit-by-rule or present regulatory complexities. Such POTWs include those which do not have an NPDES permit or whose hazardous waste treatment, storage, and disposal activities include hazardous waste sludge generated on-site.

3.4.2 State Water Management Authorities

As described in Section 3.2.7.2, above, implementation of corrective action is a federal responsibility until a State is approved to implement such requirement pursuant to §3006 of RCRA. States, however, often have valuable information pertaining to their POTWs. Close coordination with State Water Management authorities, therefore, is highly recommended for identifying POTWs subject to RCRA permitting requirements and for implementing corrective action requirements for POTWs.

In addition, States which are not approved for RCRA corrective action may assist EPA to undertake or oversee visual site inspections, sampling visits, remedial investigations and corrective measures. Unapproved States may also assist EPA to write draft permit conditions. Until States are approved to implement corrective action pursuant to §3006 of RCRA all permit conditions must be issued by EPA and determined by EPA to be appropriate. EPA

cannot delegate those responsibilities to the State outside of the RCRA State program approval process.

3.4.3. State Waste Management Authorities

State RCRA programs may be more stringent than the Federal program. Thus, approved RCRA States or unapproved RCRA States may impose requirements on POTWs treating, storing, or disposing of hazardous waste which are more stringent than the Federal RCRA permit-by-rule requirements. Regional Water Management Divisions should familiarize themselves with the State RCRA programs. These State programs also may prove to be a valuable resource for identifying POTWs subject to RCRA permit requirements and for implementing corrective action.

Note that once a State is approved pursuant to RCRA to implement HSWA corrective action requirements, the Regional role for POTW permit-by-rule implementation will be limited to oversight of State implementation of RCRA permit-by-rule requirements or other more stringent State requirements.

APPENDIX A

Identification of Hazardous Waste

IDENTIFICATION OF HAZARDOUS WASTE

Whether a POTW receiving industrial waste not covered by the domestic sewage exemption is required to have a RCRA permit (permit-by-rule) depends upon whether such waste is considered "hazardous waste" under RCRA. The term "hazardous waste" is a term of art, and identification of wastes as hazardous is complicated. In general, the definitions are included in 40 CFR Part 261 and explained in numerous guidance documents, including some identified in Appendix F of this document.

Hazardous waste is defined in §1004(5) of RCRA as 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."

Since RCRA defines hazardous wastes in terms of properties of a "solid waste," a waste which is not a solid waste cannot be a hazardous waste. By definition , however, "solid waste" can be in any physical form: solid, liquid, or contained gas.

The domestic sewage exemption is an example of waste which, by definition, is not a "solid waste" and, therefore, is not a "hazardous waste." There are also wastes which are "solid wastes" but which cannot be "hazardous wastes," by definition, under RCRA. A significant example relevant to POTW operations is the exclusion for household waste (§261.4(b)(1)). The exclusion for household wastes includes any waste material (including garbage, trash, and

sanitary wastes in septic tanks) derived from households (including single and multiple residences, hotels, and motels, bunkhouses, ranger stations, crew quarters, campgrounds, picnic grounds, and day-use recreation areas). Thus, waste which would otherwise be treated as hazardous under RCRA is exempt from hazardous waste requirements if it is under the household waste exclusion. POTW receipt of such waste by truck, rail or dedicated pipe would not subject the POTW to RCRA requirements.

Section 3001 of RCRA required EPA to develop the regulatory framework to identify those solid wastes that must be managed as hazardous wastes under Subtitle C. This framework (40 CFR Part 261), specifies that a solid waste is hazardous if it is not excluded from regulation as a solid waste or hazardous waste and it meets one of four conditions:

(1) Exhibits, on analysis, any of the characteristics of a hazardous waste;

(2) has been named as a hazardous waste and listed;

(3) is generated from the treatment, storage, or disposal of a listed hazardous waste; or

(4) is a mixture containing a listed hazardous waste and a non-hazardous solid waste (although there are some exceptions).

EPA has identified four characteristics of hazardous waste in Subpart C of Part 261. The characteristics were established on the basis that a solid waste exhibiting the characteristic may pose a present or potential threat to human health or the environment when handled or cause or contribute to an increase in mortality or serious illness and the characteristic can be detected by application of the generator's knowledge or an available test method (see §261.10).

Any solid waste that exhibits one or more characteristics is classsified as hazardous under RCRA. The four characteristics are ignitability, corrosivity, reactivity, and EP toxicity.

To determine if a solid waste exhibits a characteristic, the generator may obtain a representative sample of the waste using a sampling method specified in Part 261, Appendix I, or an equivalent method. The representative sample is then either tested according to the methods specified in §§261.21-261.24 or evaluated by applying knowledge of the waste in light of all characteristics. (Note that although the generator is required to determine whether its waste is hazardous and no explicit testing requirement is imposed on a POTW receiving waste, RCRA is a strict liability statute and a POTW may be liable for receiving hazardous waste even if the waste was not identified as hazardous by the generator.)

EPA's reason for including ignitability as a characteristic was to identify wastes that could cause fires during transport, storage, or disposal. The ignitability characteristic includes:

- a liquid except aqueous solutions containing less than 24 percent alcohol, that has a flash point less than 60° C (140°F),
- a non-liquid capable, under normal conditions, of spontaneous and sustained combustion,
- an ignitable compressed gas per Department of Transportation (DOT) regulation, and
- an oxidizer per DOT regulation.

The corrosivity characterisic includes:

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

EPA chose pH as an indicator of corrosivity because wastes with high or low pH can react dangerously with other wastes or cause toxic contaminants to migrate from certain wastes. Steel corrosion was chosen because wastes capable of corroding steel can escape from their containers and liberate other wastes.

The reactivity characteristic refers to unstable wastes that can pose a problem at any stage of the waste management cycle; e.g., an explosion. Reactivity is demonstrated if the waste is:

- normally unstable and reacts violently without detonating,
- reacts violently with water,
- forms an explosive mixture with water,
- generates toxic gases, vapors, or fumes when mixed with water,
- contains cyanide or sulfide and generates toxic gases, vapor, or fumes at a pH of 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, and/or
- listed by DOT as Class A or B explosive.

The EP toxicity characteristic utilizes a test set forth in Appendix II of Part 261 called the extraction procedure (EP). It is designed to identify wastes likely to leach hazardous concentrations of particular toxic constituents into the ground water as a result of improper management. During the procedure, constituents are extracted from the waste in a manner designed to simulate the leaching actions that occur in landfills. The extract is then analyzed to determine if it possesses any of the toxic contaminants listed below. If the concentrations of the toxic constituent exceed the levels listed below, the waste is classified as hazardous.

EP TOXICITY

CONSTITUENT	CONCENTRATION (mg/)
arsenic	5.0
barium	100.0
cadmium	1.0
chromium	5.0
lead	5.0
mercury	0.2
selenium	1.0
silver	5.0
endrin	0.02
lindane	0.4
methoxychlor	10.0
toxaphene	0.5
2,4-D	10.0
2,4,5-TP	1.0

The Hazardous and Solid Waste Amendments of 1984 (HSWA) require EPA to examine the deficiencies of the EP toxicity test as a predictor of the leachability of wastes and to modify the test as needed. The modified procedure is called the "Toxicity Characteristic Leaching Procedure", (TCLP), and was proposed in the June 13, 1986 Federal Register, (51 FR 21,648). The proposed TCLP would expand the characteristics of toxicity to encompass 38 organic constituents and set threshold levels which would not pose a hazard to human health.

As testing protocols become generally acceptable and EPA's confidence in setting minimum thresholds increases, more characteristics will be added. Thus, identification of what is a characteristic "hazardous waste" under RCRA is a moving target and requires an updated understanding of EPA's regulatory framework.

In addition to a solid waste being a hazardous waste because of a hazardous waste characteristic, a solid waste is also a hazardous waste if it is named on one of the lists developed by EPA. A solid waste is listed as hazardous pursuant to §261.11 if

the waste exhibits a Subpart C characteristic (i.e., ignitable, corrosive, reactive, EP toxic); the waste is fatal to humans in low doses or contributes to serious illness in man; the waste is toxic to animals at certain levels based on LD 50 values; or the waste contains a toxic constituent listed in Part 261, Appendix VIII (the Administrator, however, may choose not to list such waste based on 11 factors in §261.11(a)(3)). Based upon this criteria for listing wastes, EPA developed three lists of hazardous wastes: (1) hazardous wates from non-specific sources (§261.31), (2) hazardous wastes from specific sources (§261.32) and (3) discarded commercial chemical products, off-specification species, container residues, and spill residues thereof (§261.33). The basis for listing each waste is indicated in the regulations by one of the following hazard codes: (I) for ignitability, (C) for corrosive, (R) for reactive, (E) for EP toxic, (H) for acutely hazardous, and (T) for Toxic.

The constituents which caused EPA to list EP toxic wastes (E) and toxic wastes (T) in the §§261.31 and 261.32 lists are identified in Appendix VII of Part 261. The distinction between these two bases and the acutely hazardous basis for listing hazardous waste should be kept clear. Waste is EP toxic if it contains certain concentrations of heavy metals or pesticides after performing the Extraction Procedure (EP) test prescribed in §261.4. Toxic (T) wastes, on the other hand, are listed because they contain a toxic constituent from Appendix VIII and pose a substantial or potential threat to human health and the environment after consideration of

multiple factors listed in §261.11(a)(3). Appendix VIII constituents have been shown to have toxic, carcinogenic, mutagenic or teratogenic effects on humans or other life forms. 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. This group of wastes includes explosives which are acutely hazardous to handle as well as wastes which are acutely toxic.

Hazardous waste from non-specific sources (listed in §261.31) are generic wastes, commonly produced by manufacturing and industrial processes. Examples from this list include spent halogenated solvents used in degreasing, and wastewater treatment sludge from electroplating processes. Wastes on this list are the "F" wastes (identified by the EPA hazardous waste numbers F001-F028) and basically include three major groups: solvents, electroplating, and heat treating, and the dioxin wastes.

Hazardous wastes from specific sources (listed in §261.32) consist of wastes from specifically identified industries such as wood preserving, petroleum refining and organic chemical manufacturing. These wastes typically include sludges, still bottoms, wastewaters, spent catalysts, and residues; e.g., wastewater treatment sludge from the production of pigments. Wastes on this list are the "K" wastes (identified by the EPA hazardous waste numbers K001-K106) and are listed due to toxic (T) constituents and/or because they exhibit a characteristic (e.g., reactivity (R)).

Hazardous wastes from discarded commercial products (listed in §261.33) cover unused chemicals which consist of the commercially pure grade of the chemical, the technical grade of the chemical, any formulation in which the listed chemical is the sole active ingredient, off-specifiation chemicals and formulations, spill residues, and container residues in non-empty containers. These chemicals are only wastes when intended for discard, burning for heat recovery if the chemical is not a fuel, or for application to the land if that is not its intended use. Wastes on this list are the "P" wastes (identified by the EPA hazardous waste numbers P001-P123) which are mostly acutely hazardous (H) and "U" wastes (identified by the EPA hazardous waste numbers U001-U249) which are mostly toxic (T).

Likely characteristic wastes, wastes listed as hazardous are subject to change by subsequent Agency rulemaking. Any person may petition EPA pursuant to §260.20 to modify or amend the lists of hazardous wastes. In addition, §260.22 sets forth a "delisting" procedure to exclude waste at a particular waste generating facility. 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. An exclusion under §260.22 will only apply to the waste generated at the individual facility covered by the demonstration and will not apply to waste from any other facility.

In addition to wastes subject to regulation under the federal hazardous waste regulations, some States apply a broader definition to wastes subject to State hazardous waste requirements. A POTW

which solely receives waste which is not hazardous waste under the federal regulations but is hazardous under state law, would not be required to be covered by a federal RCRA permit (permit-by-rule). Such POTWs, however, may be subject to independent State permitting requirements.

For additional discussion on the definition of hazardous waste, see 40 CFR Part 261 and the materials identified in Appendix F of this document.

APPENDIX B

Permit-by-Rule Requirements

§ 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	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	K/C

Single digit symbols are used here for data processing purposes.

(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 28702, July 5, 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.

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.

Storage

S01 Container (barrel, drum, etc.)
S02 Tank
S03 Waste pile
S04 Surface impoundment
S05 Other (specify)

2 *Treatment*

(a) Thermal Treatment

T06 Liquid injection incinerator
T07 Rotary kiln incinerator
T08 Fluidized bed incinerator
T09 Multiple hearth incinerator
T10 Infrared furnace incinerator
T11 Molten salt destructor
T12 Pyrolysis
T13 Wet Air oxidation
T14 Calcination
T15 Microwave discharge
T16 Cement kiln
T17 Lime kiln
T18 Other (specify)

(b) Chemical Treatment

T19 Absorption mound
T20 Absorption field
T21 Chemical fixation
T22 Chemical oxidation
T23 Chemical precipitation
T24 Chemical reduction
T25 Chlorination
T26 Chlorinolysis
T27 Cyanide destruction
T28 Degradation
T29 Detoxification
T30 Ion exchange
T31 Neutralization
T32 Ozonation
T33 Photolysis
T34 Other (specify)

(c) Physical Treatment

(1) Separation of components

T35 Centrifugation
T36 Clarification
T37 Coagulation
T38 Decanting
T39 Encapsulation
T40 Filtration
T41 Flocculation
T42 Flotation
T43 Foaming
T44 Sedimentation
T45 Thickening
T46 Ultrafiltration
T47 Other (specify)

(2) Removal of Specific Components

T48 Absorption-molecular sieve
T49 Activated carbon
T50 Blending
T51 Catalysis
T52 Crystallization
T53 Dialysis
T54 Distillation
T55 Electrodialysis
T56 Electrolysis
T57 Evaporation
T58 High gradient magnetic separation
T59 Leaching
T60 Liquid ion exchange
T61 Liquid-liquid extraction
T62 Reverse osmosis
T63 Solvent recovery
T64 Stripping
T65 Sand filter
T66 Other (specify)

(d) Biological Treatment

T67 Activated sludge
T68 Aerobic lagoon
T69 Aerobic tank
T70 Anaerobic lagoon
T71 Composting
T72 Septic tank
T73 Spray irrigation
T74 Thickening filter
T75 Tricking filter
T76 Waste stabilization pond
T77 Other (specify)
T78-79 (Reserved)

. 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;

PROPOSED REGULATIONS

264.101(c)

Proposed - 5/28/86

(c) The owner or operator must implement corrective actions beyond the facility property boundary, where necessary to protect human health and the environment, unless the owner or operator demonstrates to the satisfaction of the Regional Administrator that, despite the owner or operator's best efforts, the owner or operator was unable to obtain the necessary permission to undertake such actions. Assurances of financial responsibility for such corrective action must be provided.

§ 270.14 Contents of Part B: General requirements.

* * * * *

(c) Additional information requirements. The following additional information regarding protection of ground water is required from owners or operators of hazardous waste facilities containing a regulated unit except as provided in § 264.90(b) of this chapter:

* * * * *

(d) Information requirements for solid waste management units.

(1) The following information is required for each solid waste management unit at a facility seeking a permit:

(i) The location of the unit on the topographic map required under paragraph (b)(19) of this section.

(ii) Designation of type of unit.

(iii) General dimensions of the unit.

(iv) When the unit was operated.

(v) Specification of all wastes that have been managed at the unit, if available.

(2) The owner or operator of any facility containing one or more solid waste management units must submit all available information pertaining to any release of hazardous wastes or constituents from such unit or units.

(3) The owner/operator must conduct sampling and analysis of ground water, land surface, and subsurface strata, surface water, or air, which may include the installation of wells, where the Director ascertains it is necessary to complete a preliminary site investigation that will determine if a more complete investigation is necessary.

APPENDIX C

MODEL PERMIT

RCRA Individual Determinations of Explicit Requirements (RIDER PERMIT)

MODEL RIDER PERMIT

Pursuant to the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act of 1976, as amended (42 USC §6901 et seq., commonly known as RCRA) and regulations promulgated thereunder by the U.S. Environmental Protection Agency (EPA) under Title 40 of the Code of Federal Regulations

(Name of POTW) (hereinafter "Permittee")

is authorized to treat, store and dispose of hazardous waste received by truck, rail, or dedicated pipe at its facility located at

(insert address) _____

in accordance with the conditions set forth in this RIDER Permit and either the permit-by-rule conditions set forth in 40 CFR §270.60(c) or the applicable requirements of a State program authorized pursuant to §3006 of RCRA, 42 USC §6926, to implement the requirements of Title 40, Part 270 in lieu of EPA. This authorization to treat, store and dispose of hazardous waste applies only if the Permittee has a RCRA EPA identification number pursuant to 40 CFR §264.11 and is operating pursuant to a permit issued under the Federal Water Pollution Control Act, as amended (33 USC §1251 et seq., hereinafter the "Clean Water Act"), by EPA pursuant to §402 of the Clean Water Act, 33 USC 1342, or issued by a State approved pursuant to §402(b) of the Clean Water Act, 33 USC 1342(b).

This permit requires the Permittee to determine whether there has been any release of hazardous waste or hazardous constituents from any solid waste management unit at the facility regardless of the time at which waste was placed in such unit and to develop appropriate corrective action for any such releases.

All references to Title 40 of the Code of Federal Regulations are to regulations that are in effect on the effective date of this permit. Unless otherwise specified herein, all terms are defined as provided in the applicable regulations in Title 40 of the Code of Federal Regulations. The Permittee should be aware that certain requirements of the Hazardous and Solid Waste Amendments of 1984 apply as a matter of law even though they are not specifically noted in this permit. These requirements; (e.g., the land disposal restrictions and minimum technology requirements) are self-implementing and the Permittee must comply with these requirements even if there are contrary permit conditions.

This permit shall become effective on (insert date). This permit and the authorization to discharge shall expire at midnight on date of expiration of NPDES number _____.

_____ Date

_____ Director

PART I - PRELIMINARY REVIEW

1. The permittee shall submit the following preliminary review information to [EPA, Water Management Division Director, or authorized State permitting authority] insert address within 90 days after the effective date of this permit:

   (i) A topographic map showing a distance of 1000 feet around the facility at a scale of 2.5 centimeters (1 inch) equal to not more than 61.0 meters (200 feet). The contour interval must be sufficient to clearly show the pattern of surface water flow in the vicinity of and from each operational unit of the facility. For example, contours with an interval of 1.5 meters (5 feet), if relief is greater than 6.1 meters (20 feet), or an interval of 0.6 meters (2 feet), if relief is less than 6.1 meters (20 feet). Owners and operators of POTWs located in mountainous areas should use large contour intervals to adequately show topographic profiles of facilities. The map shall clearly show the following:

   A) map scale and date,

   B) 100-year floodplain area,

   C) surface waters including intermittent streams,

   D) surrounding land uses (residential, commercial, agricultural, recreational),

   E) a wind rose (i.e., prevailing windspeed and direction),

   F) orientation of the map (north arrow),

   G) legal boundaries of the POTW facility site,

   H) access control (fences, gates),

   I) injection and withdrawal wells both on-site and off-site,

   J) buildings; treatment, storage, or disposal operations; or other structure (recreation areas, runoff control systems, access and internal roads, storm, sanitary, and process sewerage systems, loading and unloading areas, fire control facilities, etc.),

   K) barriers for drainage or flood control,

   L) location of operational units within the POTW facility, site, where hazardous waste is (or will be) treated, stored, or disposed (include equipment cleanup areas), and

M) location of each solid waste management unit (as defined in permit condition I(2)).

(ii) To the extent the information is readily available to the Permittee, identification of drinking water wells and drinking water intakes listed in public records or otherwise known to the Permittee, within three miles of the POTW facility;

(iii) If the facility includes any surface impoundments, waste piles, land treatment units, or landfills, to the extent the information is readily available to the Permittee:

A) identification of the uppermost aquifer and aquifers hydraulically interconnected beneath the facility property, including ground water flow direction and rate, and the basis for such identification (i.e., the information obtained from hydrogeologic investigations of the facility area).

B) a description of any plume of contamination that has entered the ground water from a unit that delineates the extent of the plume on the topographic map required under permit condition I(1)(i) and identifies the concentration of each constituent identified in Appendix VIII OF 40 CFR, Part 261, throughout the plume or identifies the maximum concentrations of each Appendix VIII constituent in the plume.

(iv) for each solid waste management unit at the facility:

A) designation of type of unit,

B) general dimensions of the unit,

C) when the unit was operated,

D) specification of all wastes that have been managed at the unit, if available, and

E) description of the unit's functions, material of construction, and ancillary systems (piping, etc.). Include a description of all containment and leak detection systems including systems for the control of run-on, run-off, and wind dispersal of particulates. If available, provide engineering drawings of the units and their foundations.

(v) The owner or operator of any facility containing one or more solid waste management units must submit all available information pertaining to any release of hazardous waste or constituents from such unit or units.

(vi) Aerial photographs of the POTW facility or portion thereof, if available; and

(vii) identification and description of any Federal, State, local, or private judicial actions or administrative actions against the municipality related to environmental or health effects allegedly caused by the POTW.

2. For the purposes of this permit, the following definitions apply to the following terms:

"Facility" is defined as the area circumscribed by the POTW property boundary including structures, other appurtenances, and improvements on the land which are used or designed to provide treatment, storage, or disposal of municipal or industrial waste and contiguous property owned or operated by the municipality. It includes sewers, pipes, and other conveyances which convey wastewater to the POTW plant prior to treatment, storage, or disposal of such wastewater by that plant only to the extent such conveyances are located upon or under the property described above. Contiguous property would not include, however, the municipal sewer system which extends beyond the boundaries of the property described above.

"POTW facility" is defined as the area circumscribed by the POTW property boundary including structures, other appurtenances and improvements on the land which are used or designed to provide treatment, storage, or disposal of municipal or industrial waste. The POTW facility does not include contiguous property owned or operated by the municipality.

"Release" includes any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping or disposing into the environment. It includes releases that are authorized or otherwise permitted under other environmental statutes.

"Solid waste management unit" means any discernible waste management unit at the facility at which solid wastes have been placed at any time, irrespective of whether the units were intended for the management of solid and/or hazardous waste. Such units include any area at a facility at which hazardous waste or constituents have been routinely, or systematically released.

"Unit" includes containers, tanks, surface impoundments, waste piles, land treatment units, landfills, incinerators, and underground injection wells.

3. If at any time after the submission of information pursuant to permit condition (I)(1), the Permittee becomes aware of any information concerning a release of hazardous waste or hazardous constituents from any solid waste management unit at the facility, including past releases which had not yet been identified pursuant to this permit, the Permittee shall report the information as required by paragraph (I)(1) of this permit to [EPA, Water Management Division Director, or authorized State permitting authority] within 14 days of becoming aware of such release.

PART II - VISUAL SITE INSPECTION AND SAMPLING VISIT

A. PERMIT CONDITIONS

(Note: The following condition should be added regardless of whether EPA or the authorized State plans to participate in the visual site inspection and sampling visit.)

1. The Permittee shall allow an [EPA or State] employee, or an authorized representative, upon the presentation of credentials and other documents as may be required by law to:

   (i) Enter at reasonable times upon the Permittee's premises where a solid waste management unit is located or where waste management activities are conducted, or where records are kept;

   (ii) Have access to and copy, at reasonable times, any records that must be kept or made available to [EPA or State] under the conditions of this permit;

   (iii) Inspect at reasonable times any facilities, equipment (including monitoring equipment and control equipment), practices or operations regulated or required under this permit; and

   (iv) Sample or monitor at reasonable times any substances or parameters at any location for the purposes of implementing corrective action requirements, assuring permit compliance or as otherwise authorized by RCRA.

(Note: The following are example permit conditions if the Permittee is to undertake the visual site inspection or sampling visit.)

2. If so notified by EPA, the Permittee shall undertake visual inspection and sampling activities as identified by the notification to provide information for determining whether there has been a release from solid waste management units from the facility. Within insert number days of the notification from [EPA or the State], the Permittee shall submit a plan to the [Water Management Director or State Permitting Authority] for approval describing the specific activities the Permittee will undertake. Such a plan shall be consistent with the procedures and requirements of the OWEP RFA Guidance document, incorporated herein by reference. The plan shall include a schedule of milestones and corresponding dates for completing the activities in the plan. Once approved, the Permittee shall comply with the requirements set forth in the plan.

3. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.

4. Records for monitoring and site inspection information shall include:

   (A) The date, exact place, and time of sampling, measurements or inspection;

   (B) The individual(s) who performed the sampling, measurements or inspection;

   (C) The date(s) analyses were performed;

   (D) The individual(s) who performed the analyses;

   (E) The analytical techniques or methods used;

   (F) The results of such analyses; and

   (G) For site inspections, a record of any observations which would lead a person familiar with the operations of the facility to suspect that there may have been a release of hazardous waste or hazardous constituents from a solid waste management unit at the facility.

B. <u>REOPENER CONDITION</u>

5. This permit may be modified by [EPA or Delegated State Permitting Authority] to include additional <u>visual site inspection and sampling visit requirements</u>, as necessary, to provide information for determining whether there has been a release of hazardous waste or hazardous constituents from the facility. Modification of this permit for this purpose is based upon new information under 40 CFR 270.41 and 270.42. This permit may also be modified, pursuant to 40 CFR 270.41, if EPA or an authorized State makes a final determination about the need for corrective measures.

PART III - RCRA FACILITY INVESTIGATION (RFI)

A. PERMIT CONDITIONS

(Note: The following permit condition should be included even if a permit condition is included to address the RCRA facility investigation.)

1. [EPA or authorized State permitting authority] may require the Permittee to submit further information and perform further studies, sampling and analyses (including the installation of ground water monitoring wells) to further characterize solid waste management units and other facility characteristics, and to establish the nature and extent (or verify the absence) of a release of hazardous waste or hazardous constituents from a solid waste management unit.

(Note: The following are example permit conditions for establishing remedial investigation requirements upon permittees. Example site-specific conditions are contained in Attachment A.)

2. If so notified by [EPA or Delegated State Permitting Authority], the Permittee shall prepare a RCRA facility investigation (RFI) plan which addresses the units identified in EPA's notification as subject to the RFI, sets forth a schedule for implementation and completion of the RFI, and describes the activities to be undertaken by the Permittee to determine the nature and extent of releases and the potential pathways of contaminant releases to the air, land, surface water, and ground water. Within insert number days of the notification from [EPA or Delegated State Permitting Authority], the Permittee shall submit the RFI plan to the [Water Management Director or authorized State permitting authority] for approval. The RFI plan shall include a schedule of milestones and corresponding dates for accomplishing the activities in the RFI plan.

3. The RCRA facility investigation plan shall meet the requirements of Attachment A. The RFI shall be conducted in accordance with the approved RFI Plan and Attachment A.

4. Any changes to the RFI plan must be approved by [EPA, Water Management Division or Delegated State Permitting Authority].

5. The Permittee shall provide EPA, Water Management Division Director or authorized State permitting authority], with signed, quarterly progress reports at ninety-(90) day intervals beginning ninety days (90) from implementation of the approved plan containing:

   (i) A description of the portion of the RFI completed;

   (ii) Summaries of findings;

(iii) Summaries of all problems or potential problems encountered during the reporting period;

(iv) Projected work for the next reporting period; and

(v) Copies of daily reports, inspection reports, laboratory and monitoring data, etc.

6. The Permittee shall prepare a draft RCRA Facility Investigation Report in accordance with permit condition III(A)(7). The draft RCRA Facility Investigation Report must be submitted to [EPA, Water Management Division or authorized State Permitting Authority], for review within insert number days of completion of the RFI. The Permittee shall submit a final RFI report to [EPA, Water Management Division or authorized State permitting authority], within thirty (30) days of receipt of [EPA or authorized State permitting authority] comments on the draft RFI Report.

7. The RFI Report shall include an analysis and summary of all facility investigations of solid waste management units and their results. The summary shall include a report on the type and extent of contamination at the facility, including sources and migration pathways, and a description of actual or potential receptors. The report shall also describe the extent of contamination (qualitative and quantitative) in relation to background levels indicative for the area. The objective of this task shall be to ensure that the investigation data are sufficient in quality (e.g., quality assurance procedures are followed) and quantity to describe the nature and extent of contamination, potential threat to human health and/or the environment, and to support a Corrective Measures Study, if necessary.

B. REOPENER CONDITION

This permit may be modified by [EPA or authorized State permitting authority] to include RCRA facility investigation requirements, as necessary, to further characterize solid waste management units and other facility characteristics, and to establish the nature and extent (or verify the absence) of a release of hazardous waste or hazardous constituents from a solid waste management unit. Modification of this permit for this purpose is based upon new information under 40 CFR 270.41 and 270.42. This permit may also be modified, pursuant to 40 CFR 270.41, if EPA or an authorized State makes a final determination about the need for corrective measures.

PART IV - CORRECTIVE MEASURES

A. PERMIT CONDITIONS

1. Within insert number days of notification from [EPA or authorized State permitting authority] informing the Permittee of EPA's determination that corrective measures are needed, if any, the Permittee shall submit to [EPA, Water Management Division or authorized State permitting authority], a corrective measures study (CMS) that identifies corrective measures alternative(s) which would be effective in abating the threats to human health and environment posed by the release from units identified in [EPA's or authorized State permitting authority] notification. The corrective measures study must address the objectives and factors identified in Attachment B and set forth a schedule of implementation and completion for each option.

2. The Permittee shall provide [EPA, Water Management Division Director or authorized State permitting authority,] with signed, quarterly progress reports at ninety-(90) day intervals beginning ninety (90) days from implementation of the approved plan containing:

   (i) A description of the corrective measures completed;

   (ii) Summaries of all problems or potential problems encountered implementing corrective measures;

   (iii) Summaries of any additional information identified while implementing corrective measures which further identifies the nature and extent of releases from solid waste management units at the facility;

   (iv) Projected work for the next reporting period; and

   (v) Copies of any daily reports, inspection reports, laboratory and monitoring data, etc.

3. Within _____ days of notification from EPA or an authorized State informing the Permittee that corrective measures are necessary, the Permittee shall submit a cost estimate and financial assurance for corrective measures to be undertaken by the Permittee.

B. REOPENER CONDITION

4. This permit may be modified by [EPA or authorized State permitting authority] to require such corrective measures as necessary to protect human health and the environment from a release of hazardous waste or hazardous constituents from the facility. Modification of this permit for this purpose is based upon new information under 40 CFR 270.41 and 270.42.

5. Corrective measures may be required beyond the facility boundary unless the Permittee cannot obtain approval from the appropriate adjoining property owner to undertake corrective measures on such property.

Facility Submission Summary

A summary of the planned reporting requirements contained in the RIDER Permit for implementation of corrective action.

Facility Submission Requirements	Due Date
Preliminary Review Information	90 days after effective date of permit
Visual Site Inspection/Sampling Visit	
A. [EPA or State] Implementation	A. No time restrictions
B. Permittee Implementation	B. Case-by-case time frame to be set for plan submission
RCRA Facility Investigation Plan	Case-by-case time frame triggered by EPA notification
Progress Reports on RFI	Quarterly, beginning 90 days from implementation of RFI Plan
Draft RFI Report	Case-by-case time frame, after RFI completion
Final RFI Report	30 days after receipt of [EPA or State] draft RFI comments
Corrective Measures Study	Case-by-case time frame triggered by EPA notification
Corrective Measures Implementation	Schedule of compliance and periodic progress reports as required by EPA or authorized State

PART V - CONDITIONS AS NECESSARY TO PROTECT HUMAN HEALTH AND THE ENVIRONMENT

A. SPECIFIC PERMIT CONDITIONS - To be included.

B. REOPENER CONDITION

1. This permit may be modified by EPA to include such conditions as necessary to protect human health and the environment. Modification of this permit for this purpose is based upon new information under 40 CFR 270.41 and 270.42.

I. RFI WORKPLAN REQUIREMENTS

The Permittee shall prepare a RCRA Facility Investigation (RFI) Workplan that meets the requirements of Part II of this document. This workplan shall also include the development of the following plans, which shall be prepared concurrently:

A. Project Management Plan

The Permittee shall prepare a Project Management Plan which will include a discussion of the technical approach, schedules, and personnel. The Project Management Plan will also include a description of qualifications of personnel performing or directing the RFI, including contractor personnel. This plan shall also document the overall management approach to the RCRA Facility Investigation.

B. Sampling and Analysis Plan

The Permittee shall prepare a plan to document all monitoring procedures: sampling, field measures and sample analysis performed during the investigation to characterize the environmental setting, source, and releases of hazardous constituents, so as to ensure that all information and data are valid and properly documented.

1. Sampling/Field Measurements

The sampling section of the Sampling and Analysis Plan shall be in accordance with Characterization of Hazardous Waste Sites A Method Manual: Volume II. Available Sampling Methods, EPA-600/4-83-040, and at a minimum discuss:

a. Selecting appropriate sampling locations, depth, etc.;

b. Obtaining all necessary ancillary data;

c. Determining conditions under which sampling should be conducted;

d. Determining which media are to be sampled; (e.g., groundwater, air, soil, sediment, etc.);

e. Determining which parameters are to be measured and where;

f. Selecting the frequency of sampling and length of sampling period;

g. Selecting the types of samples (e.g., composites vs. grabs) and number of samples to be collected;

h. Documenting field sampling operations and procedures, including:

i) RCRA corrective action requirements (and the other permit documentation of procedures for preparation of reagents or supplies which become an integral part of the sample; (e.g., filters, preservatives, and absorbing reagents);

ii) Procedures and forms for recording the exact location and specific considerations associated with sample acquisition;

iii) Documentation of specific sample preservation method;

iv) Submission of field-based blanks, where appropriate;

iii) Construction materials and techniques, associated with monitoring wells and piezometers;

ix) Field equipment listing and sampling containers;

x) Sampling order; and

xi) Decontamination procedures.

i. Selecting appropriate sample containers;

j. Sampling preservation; and

k. Chain-of-custody, including:

i) Standard field tracking forms to establish sample custody in the field prior to shipment; and

ii) Pre-prepared sample labels containing all information necessary for effective sample tracking.

2. Sample Analysis

Sample Analysis shall be conducted in accordance with SW-846: "Test Methods for Evaluating Solid Waste - Physical/Chemical Methods"

The sample analysis section of the Sampling and Analysis Plan shall specify the following:

a. Chain-of-custody procedures, including:

i) Identification of a responsible party to act as sampling custodian at the laboratory facility authorized to sign for incoming field samples, obtain documents of shipment, and verify the data entered onto the sample custody records;

ii) Provision for a laboratory sample custody log consisting of serially numbered standard lab-tracking report sheets; and

iii) Specification of laboratory sample custody procedures for sample handling, storage, and dispersement for analysis.

b. Sample storage;

c. Sample preparation methods;

d. Analytical procedures, including:

i) Scope and application of the procedure;

ii) Sample matrix;

iii) Potential interference;

iv) Precision and accuracy of the methodology; and

v) Method detection limits.

e. Calibration procedures and frequency;

f. Data reduction, validation and reporting;

g. Internal quality control checks, laboratory performance and systems audits and frequency, including:

i) Method blank(s);

ii) Laboratory control sample(s);

iii) Calibration check sample(s);

iv) Replicate sample(s);

v) Matrix-spiked sample(s);

vii) Control charts;

viii) Surrogate samples;

ix) Zero and span gases; and

x) Reagent quality control checks.

h. Preventive maintenance procedures and schedule;

i. Corrective action (for laboratory problems); and

j. Turnaround time.

C. Data Management Plan

The Permittee shall develop and initiate a Data Management Plan to document and track investigation data and results. This plan shall identify and set up data documentation materials and procedures, project file requirements, and project-related progress reporting procedures and documents. The plan shall also provide the format to be used to present the raw data and conclusions of the investigation.

1. Data Record

The data record shall include the following:

a. Unique sample or field measurement code;

b. Sampling or field measurement location and sample or measurement type;

c. Sampling or field measurement raw data;

d. Laboratory analysis ID number;

e. Property or component measured; and

f. Result of analysis; (e.g., concentration).

2. Tabular Displays

The following data shall be presented in tabular displays:

a. Unsorted (raw) data;

b. Results for each medium, or for each constituent monitored;

c. Data reduction for statistical analysis, as appropriate;

d. Sorting of data by potential stratification factors (e.g., location, soil layer, topography); and

e. Summary data.

3. Graphical Displays

The following data shall be presented in graphical formats; (e.g., bar graphs, line graphs, area or plan maps, isopleth plots, cross-sectional plots or transects, three dimensional graphs, etc.):

a. Display sampling location and sampling grid:

b. Indicate boundaries of sampling area, and area where more data are required;

c. Display geographical extent of contamination;

d. Illustrate changes in concentration in relation to distance from the source, time, depth or other parameters; and

e. Indicate features affecting intramedia transport and show potential receptors.

II. RCRA Facility Investigation (RFI) Requirements

RCRA Facility Investigation

The Permittee shall conduct those investigations necessary to: characterize the facility (Environmental Setting); define the source (Source Characterization); define the degree and extent of release of hazardous constituents (Contamination Characterization); and identify actual or potential receptors.

The investigation should result in data of adequate technical content and quality to support the development and evaluation of the corrective action plan if necessary. The information contained in a RCRA Part B permit application and/or RCRA Section 3019 Exposure Information Report may be referenced as appropriate.

All sampling and analyses shall be conducted in accordance with the Sampling and Analysis Plan. All sampling locations shall be documented in a log and identified on a detailed site map.

A. Environmental Setting

The Permittee shall collect information to supplement and/or verify Part B information on the environmental setting at the facility. The Permittee shall characterize the following as they relate to identified sources, pathways and areas of releases of hazardous constitutents from Solid Waste Management Units.

1. Hydrogeology

The Permittee shall conduct a program to evauate hydrogeologic conditions at the facility. This program shall provide the following information:

a. A description of the regional and facility specific geologic and hydrogeologic characteristics affecting ground water flow beneath the facility, including:

i) Regional and facility specific stratigraphy: description of strata including strike and dip, identification of stratigraphic contacts:

ii) Structural geology: description of local and regional structural features (e.g., folding, faulting, tilting, jointing, etc.);

iv) Regional and facility specific ground water flow patterns; and

v) Identification and characterization of areas and amounts of recharge and discharge.

b. An analysis of any topographic features that might influence the ground water flow system.

c. Based on field data, tests, and cores, a representative and accurate classification of the hydrogeologic units which may be part of the migration pathways at the facility (i.e., the aquifers and any intervening saturated and unsaturated units), including:

i) Hydraulic conductivity and porosity (total and effective);

ii) Lithology, grain size, sorting, degree of cementation;

iii) An interpretation of hydraulic interconnections between saturated zones; and

iv) The attention capacity and mechanisms of the natural earth materials (e.g., ion exchange capacity, organic carbon content, mineral content etc.).

e. Based on data obtained from ground water monitoring wells and piezometers installed upgradient and downgradient of the potential contaminant source, a representative description of water level or fluid pressure monitoring including:

i) Water-level contour and/or potentiometric maps;

ii) Hydrologic cross sections showing vertical gradients;

iii) The flow system, including the vertical and horizontal components of flow; and

iv) Any temporal changes in hydraulic gradients, for example, due to tidal or seasonal influences.

f. A description of man-made influences that may affect the hydrology of the site, identifying:

   i) Local water supply and production wells with an approriate schedule of pumping; and

   ii) Man-made hydraulic structures (pipelines, french drains, ditches, etc.).

2. Soils

The Permittee shall conduct a program to characterize the soil and rock units above the water table in the vicinity of contaminant release(s). Such characterization may include, but not be limited to, the following types of information, as appropriate:

a. Surface soil distribution;
b. Soil profile, including ASTM classification of soils;
c. Transects of soil stratigraphy;
d. Hydraulic conductivity (saturated and unsaturated);
e. Relative permeability;
f. Bulk density;
g. Porosity;
h. Soil sorptive capacity;
i. Cation exchange capacity (CEC);
j. Soil organic content;
k. Soil PH:
l. Particle size distribution;
m. Depth of water table;
n. Moisture content;
o. Effect of stratification on unsaturated flow;
p. Infiltration
q. Evapotranspiration;
r. Storage capacity;
s. Vertical flow rate; and
t. Mineral content.

3. Surface Water and Sediment

The Permittee shall conduct a program to characterize the surface water bodies in the vicinity of the facility. Such characterization may include, but not be limited to, the following activities and information:

a. Description of the temporal and permanent surface water bodies including:

   i) For lakes and estuaries: location, elevation, surface area, inflow, outflow, depth, temperature stratification, and volume;

ii) For impoundments: location, elevation, surface area, depth, volume, freeboard, and construction and purpose;

iii) For streams, ditches, and channels: location, elevation, flow, velocity, depth, width, seasonal fluctuations, flooding tendencies (i.e., 100-year event), discharge point(s), and general contents.

iv) Drainage patterns; and

v) Evapotranspiration.

b. Description of the chemistry of the natural surface water and sediments. This includes determining the PH, total dissolved solids, total suspended solids, biological oxygen demand, alkalinity, conductivity, dissolved oxygen profiles, nutrients (fill-in), chemical oxygen demand, total organic carbon, specific contaminant concentrations, etc.

c. Description of sediment characteristics including:

i) Deposition area;

ii) Thickness profile; and

iii) physical and chemical parameters (e.g., grain size, density, organic carbon content, ion exchange capacity, PH, etc.).

4. <u>Air</u>

The Permittee shall provide information characterizing the climate in the vicinity of the facility. Such information may include, but not be limited to:

a. A description of the following parameters;

i) Annual and monthly rainfall average;

ii) Monthly temperature average and extremes;

iii) Wind speed and direction;

iv) Relative humidity/dew point;

v) Atmospheric pressure;

vi) Evaporation data;

vii) Development of inversions; and

viii) Climate extremes that have been known to occur in the vicinity of the facility, including frequency of occurrence (i.e., Hurricane).

b. A description of topographic and man-made features which affect air flow and emission patterns, including:

i) Ridges, hills or mountain areas;

ii) Canyons, or valleys;

iii) Surface water bodies (e.g., rivers, lakes, bays, etc.); and

iv) Buildings.

B. Source Characterization

For those sources from which releases of hazardous constituents have been detected the Permittee shall collect analytic data to completely characterize the wastes and the areas where wastes have been placed, to the degree that is possible without undue safety risks, including: type, quantity; physical form; disposition (containment or nature of deposits); and facility characteristics affecting release (e.g., facility security, and engineering barriers). This shall include quantification of the following specific characteristics, at each source area:

1. Unit/Disposal Area Characteristics:

a. Location of unit/disposal area;
b. Type of unit/disposal area;
c. Design features;
d. Operating practices (past and present);
e. Period of operation;
f. Age of unit/disposal area;
g. General physical conditions; and
h. Method used to close the unit/disposal area.

2. Waste Characteristics:

a. Type of wastes placed in the unit:

i) Hazardous classification (e.g., flammable, reactive, corrosive, oxidizing or reducing agent);

ii) Quantity; and

iii) Chemical composition.

b. Physical form (solid, liquid, gas):

i) Physical form (solid, liquid, gas);

ii) Physical description (e.g., powder, oily sludge);

iii) Temperature;

iv) PH;

v) General chemical class (e.g., acid, base, solvent);

vi) Molecular weight;

vii) Density;

viii) Boiling point;

ix) Viscosity;

x) Solubility in water;

xi) Cohesiveness of the waste; and

xii) Vapor pressure.

c. Migration and dispersal characteristics of the waste such as:

i) Sorption capability

ii) Biodegradability, bioconcentration, biotransformation;

iii) Photodegradation rates;

iv) Hydrolysis rates; and

v) Chemical transformations.

The Permittee shall document the procedures used in making the above determinations.

C. <u>Characterization of Releases of Hazardous Constituents</u>

The Permittee shall collect analytical data on ground water, soils, surface water, sediment, and subsurface gas contamination in the vicinity of the facility in accordance with the sampling and analysis plan as required above. These data shall be sufficient to define the extent, origin, direction,

and rate of movement of contamination. Data shall include time and location of sampling, media sampled, identity of the individuals performing the sampling and anaylsis. The Permittee shall address the following types of contamination at the facility:

1. Ground Water Contamination

The Permittee shall conduct a ground water investigation to characterize any plumes of contaminaton detected at the facility. This investigation shall at a minimum provide the following information:

a. A description of the horizontal and vertical extent of any plume(s) of hazardous constituents originating from the facility;

b. The horizontal and vertical direction of contamination movement;

c. The velocity of contamination movement;

d. The horizontal and vertical concentration profiles of hazardous constituents in the plume(s);

e. An evaluation of factors influencing the plume movement; and

f. An extrapolation of future contaminant movement.

The Permittee shall document the procedures used in making the above determinations (e.g., well design, well construction, geophysics, modeling, etc.).

2. Soil Contamination

The Permittee shall conduct an investigation to characterize the contamination of the soil and rock units above the saturated zone in the vicinity of any contaminant release. The investigation may include the following information:

a. A description of the vertical and horizontal extent of contamination;

b. A description of appropriate contaminant and soil chemical properties within the contaminant source area and plume. This may include contaminant solubility, speciation, adsorption, leachability, exchange capacity, biodegradability, hydrolysis, photolysis, oxidation and other factors that might affect contaminant migration and transformation;

c. Specific contaminant concentrations;

d. The velocity and direction of contamination movement; and

e. An extrapolation of future contaminant movement.

The Permittee shall document the procedures used in making the above determinations.

3. Surface Water and Sediment Contamination

The Permittee shall conduct a surface water investigation to characterize contamination in surface water bodies resulting from releases of hazardous constituents at the facility.

The investigation may include, but not be limited to, the following information:

a. A description of the horizontal and vertical extent of any plume(s) originating from the facility, and the extent of contamination in underlying sediments;

b. The horizontal and vertical direction of contaminant movement;

c. The contaminant velocity;

d. An evaluation of the physical, biological and chemical factors influencing contaminant movement;

e. An extrapolation of future contaminant movement; and

f. A description of the chemistry of the contaminated surface waters and sediments. This includes determining the PH, total dissolved solids, specific contaminant concentrations, etc.

4. Air Contamination

The Permittee shall conduct an investigation to characterize gaseous releases of hazardous constituents into the atmosphere or any structures or buildings. This investigation may provide the following information:

a. A description of the horizontal and vertical direction and velocity of contaminant movement;

b. The rate and amount of the releases; and

c. The chemical and physical composition of the contaminant(s) released, including horizontal and vertical concentration profiles.

D. Potential Receptor

The Permittee shall collect data describing the human populations and environmental systems that are susceptible to contaminant exposure from the facility. Chemical analysis of biological samples and/or data on observable effects in ecosystems may also be obtained as appropriate. The following characteristics shall be identified:

1. Current local uses and planned future uses of ground water:

   a. Type of use (e.g., drinking water source: municipal or residential, agricultural, domestic/non-potable, and industrial); and

   b. Location of groundwater users, to include withdrawal and discharge wells, within one mile of the impacted area.

   The above information should also indicate the aquifer or hydrogeologic unit used and/or impacted for each item.

2. Current local uses and planned future uses of surface waters directly impacted by the facility:

   a. Domestic and municipal (e.g., potable and lawn/gardening watering);
   b. Recreational (e.g., swimming, fishing);
   c. Agricultural;
   d. Industrial; and
   e. Environmental (e.g., fish and wildlife propagation).

3. Human use of or access to the facility and adjacent lands, including, but not limited to:

   a. Recreation;
   b. Hunting;
   c. Residential;
   d. Commercial; and
   e. Relationship between population locations and prevailing wind direction.

4. A general description of the biota in surface water bodies on, adjacent to, or affected by the facility.

5. A general description of the ecology within and adjacent to the facility.

6. A general demographic profile of the people who use or have access to the facility and adjacent land, including, but not limited to: age; sex; and sensitive subgroups.

7. A description of any known or documented endangered or threatened species near the facility.

ATTACHMENT B

CORRECTIVE MEASURES STUDY REQUIREMENTS

I. The Permittee shall submit to EPA a Corrective Measure Study (CMS) that identifies corrective measures alternative(s) and evaluates how well these corrective measures can achieve the following objectives based on limitations imposed by the character of the site or the wastes released or by limitations in technology:

- o Compliance with the media protection standard (MPS) set by EPA;
- o Maximum reliability of operation and maintenance;
- o Expeditious time period for achieving compliance with the MPS;
- o Minimal health and safety threat to the public during corrective measures implementation; and
- o Minimal adverse impacts to the environment during corrective measures implementation.

At a minimum, the Permittee shall provide the following information:

A. Technical

The Permittee shall submit an evaluation of each corrective measure based on its performance, reliability, ease of implementation and safety.

1. The Permittee shall evaluate performance based on the effectiveness and useful life of the corrective measure:

a. Effectiveness shall be evaluated in terms of the ability to perform intended functions, such as containment, diversion, removal, destruction, and/or treatment. The effectiveness of each corrective measure shall be determined either through design specifications or by performance evaluation. Any specific waste or site characteristics which could potentially impede effectiveness shall be considered. The evaluation shall also include discussion of the effectiveness of combinations of technologies; and

b. For purposes of compliance with this Permit Condition, useful life is defined as the length of time compliance with the MPS can be maintained. The Permittee shall evaluate each corrective measure in terms of the projected service lives of its component technologies. Resource availability in the future life of the technology, as well as appropriateness of the technologies, shall be considered in estimating the useful life of the corrective measure.

2. The Permittee shall evaluate the reliability of each corrective measure including its operation and maintenance requirements and its demonstrated reliability:

a. Operation and maintenance requirements shall be evaluated in terms of the frequency and complexity of necessary operation and maintenance. Technologies requiring frequent or complex operation and maintenance activities shall be regarded as less reliable than technologies requiring little or straightforward operation and maintenance. The availability of labor and materials to meet these requirements shall also be considered; and

b. Demonstrated and expected reliability shall be evaluated based on whether the technologies have been used effectively under analogous conditions; whether the combination of technologies have been used together effectively; whether failure of any one technology has an immediate impact on receptors; and whether the corrective measure has the flexibility to deal with uncontrollable changes at the site. Additionally, the Permittee shall evaluate whether a pilot study is required.

3. The Permittee shall evaluate ease of installation based on the relative ease of installation and the time required for the corrective measure to comply with the MPS:

a. Ease of installation shall be evaluated through a discussion of conditions both internal and external to the facility such as location of underground utilities, depth to water table, heterogeneity of subsurface materials, and location of the facility (i.e., remote location vs. a congested urban area). The Permittee shall evaluate what measure can be taken to facilitate construction under these conditions. External factors which affect implementation include the need for

regulations, guidance, advisories, ordinances, or community relations on the design, operation, and timing of each corrective measure alternative.

E. Cost Estimate

The Permittee shall include an estimate of the cost of each corrective measure alternative (and for each phase or segment of the alternative). The cost estimate shall include both capital and operation and maintenance costs.

F. Recommendation

The Permittee shall conclude the CMS Report with recommendations of which corrective measures alternatives should be pursued to meet the media protection standards. The Permittee shall have the burden of justifying these recommendations based on technical, human health, and environmental criteria.

special permits or agreements, equipment availability, and the location of suitable off-site treatment or disposal facilities; and

b. The time required for the corrective measure to comply with the MPS shall be evaluated in terms of the time it takes to install the corrective measure and the time it takes for the corrective measure to achieve compliance with the MPS.

4. The Permittee shall evaluate each corrective measure alternative with regard to safety. This evaluation shall include a discussion of threats to the safety of nearby communities and environments as well as those to workers during implementation. Factors to be considered include the probability of fire, explosion and exposure to hazardous substances.

B. Environmental

The Permittee shall assess the environmental impacts of each corrective measure. The assessment shall focus on the facility conditions and pathways of contamination actually addressed by each corrective measure. For each corrective measure, the short- and long-term beneficial and adverse effects shall be assessed. Also included shall be an analysis of any potentially adverse effects on environmentally sensitive areas; and measures to mitigate such adverse effects. The assessment shall address potential cross media impacts (e.g., whether the alternative removes ground water contamination, but creates air problems, or requires off-site disposal).

C. Human Health

The Permittee shall assess each corrective measure in terms of the extent to which it mitigates short- and long-term potential exposure to any residual contamination and protects human health both during and after implementation of the corrective measure. The assessment shall describe the levels and characterizations of contaminants on-site, potential exposure routes, and potentially affected population. Each corrective measure shall be evaluated to determine the level of exposure to contaminants and the reduction over time. For management of mitigation measures, the relative reduction of impact shall be determined by comparing residual levels of each alternative with existing criteria, standards, or guidelines acceptable to EPA.

D. Institutional

The Permittee shall assess relevant institutional needs for each corrective measure including a discussion of the effects of federal, state and local environmental and public health standards,

APPENDIX D

Examples of Other Potentially Applicable RCRA Requirements

The RCRA permit-by-rule incorporates specific RCRA requirements as permit conditions for POTWs treating, storing, or disposing of hazardous waste. Other RCRA requirements, however, may apply, as a matter of law, to POTWs' hazardous waste management activities, even though the requirement is not referenced by the permit-by-rule. The following list is a non-inclusive list of RCRA hazardous waste treatment, storage or disposal requirements which may apply to a POTW as a matter of law:

- §3004(c)(1) - Ban on liquids in landfills.
- §3004(c)(3) - Ban on non-hazardous liquids in landfills.
- §3004(d), (e), and (g) - Ban on land disposal of hazardous waste in specified situations.
- §3004(f) - Ban of deep-well injection of hazardous waste in specified situations.
- §3004(o)(1) - Requires new, replacement, or laterally expanded landfills and surface impoundments to meet requirements for double liners, leachate collection system and ground water monitoring.
- §3005(c)(3) - Ten-year maximum permit term and the requirement for review of the permit within five years.

In addition, there are RCRA hazardous waste requirements which may apply as a matter of law, to a POTW which is a generator or transporter of hazardous waste. These requirements may include:

- §3002(b) - Waste minimization certification requirement for waste trucked off-site.
- Compliance with all requirements set forth in 40 CFR Part 262 for generators of hazardous waste, including the requirement to comply with the manifest system.
- Compliance with all requirements set forth in 40 CFR Part 263 for transporters of hazardous waste off-site.

In addition, certain RCRA requirements other than Subtitle C may apply as a matter of law to the activities of a POTW. Examples of these requirements are:

- RCRA Subtitle D requirements for disposal of solid waste including the prohibition set forth in §§4004 and 4005 prohibiting the establishment of open dumps.

- RCRA Subtitle I requirements for underground storage tanks including the requirement set forth in §9002(a) to notify the state/local authorities of new and existing underground storage tanks containing "regulated substances" and the interim prohibition in §9003(g) against installation of new underground storage tanks unless specified requirements are met.

APPENDIX E

Example Letter Identifying High Priority POTWs

[ADR]

ATTN: Legal Department or Operator of POTW

RE: [RCRA EPA. I.D. # (if applicable)]

Dear Sir/Madam:

The Resource Conservation and Recovery Act (RCRA) imposes requirements upon facilities which treat, store, or dispose of hazardous waste. POTWs which receive hazardous waste by truck, rail, or dedicated pipeline, where the waste does not mix with domestic sewage in the sewer system before reaching the POTW property boundary, are subject to RCRA permit requirements.

Generally, POTWs which receive hazardous waste by truck, rail or dedicated pipeline are eligible for a simplified permitting process under RCRA. Individually-issued RCRA permits are not normally required for such POTWs; rather, the RCRA regulations provide that a POTW is deemed to have a RCRA "permit-by-rule" if it complies with certain conditions. These conditions include compliance with its NPDES permit, compliance with certain reporting and record-keeping RCRA (40 CFR Part 264) requirements, and compliance with Federal, State, and local pretreatment requirements (i.e., the waste received by truck, rail or dedicated pipeline meets all pretreatment limits and monitoring and reporting requirements). On November 8, 1984, the Hazardous and Solid Waste Amendments to RCRA went into effect. One impact on POTWs is a new requirement that permitted RCRA facilities address continuing releases. This requirement, known as the "corrective action" provision, involves determining whether any releases of hazardous waste from the facility have occurred and, if there have been releases, establishing any necessary cleanup actions to protect human health and the environment.

In order to effectively implement RCRA permit-by-rule requirements for publicly owned treatment works, the Environmental Protection Agency is required to determine whether your facility has been engaged or plans to engage in certain activities. Therefore, pursuant to the authorities of §§3007 and 3018(d) of the Resource Conservation and Recovery Act and §308 of the Clean Water Act, you must respond to the questions in Attachment A to the best of your knowledge based on all information and documents in your possession, your control, or the possession, custody, or control of your employees, agents, servants or attorneys. You must respond within 30 days of the date of this letter.

All information you submit must be certified in accordance with the certification on Attachment A and mailed to:

Name, Water Management Division Director
Region __
Address

The certification must be signed by a principal executive officer, ranking elected official or an authorized representative of your installation. An "authorized representative" is a person responsible for the overall operation of the facility (i.e., a plant manager or superintendent, or a person of equal responsibility).

Under the provisions of the both the Clean Water Act and the Resource Conservation and Recovery Act, failure to comply with this request may result in substantial penalties.

If you have any questions, please contact _____ of my staff. Your prompt attention to this matter is appreciated.

Sincerely,

Water Management Division Director
U.S. EPA, Region ___
Address

ATTACHMENT A

Answer the following questions and mail within thirty days to:

Name, Water Management Division Director
Region __
Address __

(1) Have you received hazardous waste (as identified in 40 CFR Part 261) accompanied by a "Uniform Hazardous Waste Manifest" as shown in Attachment B?
_____ YES, _____ NO

If you answered "yes," was or is this hazardous waste delivered ___ inside or ____ outside of the POTW property boundary?

(2) Do you plan to receive hazardous waste (as identified in 40 CFR Part 261) accompanied by a "Uniform Hazardous Waste Manifest" as shown in Attachment B?
_____ YES, _____ NO

If you answered "yes," will this hazardous waste be delivered _____ inside or _____ outside of the POTW property boundary?

(3) Have you received hazardous waste (as identified in 40 CFR Part 261) by dedicated pipe where the waste does not mix with domestic sewage (i.e., sanitary waste) in the sewer system before reaching the POTW property boundary?
_____ YES, _____ NO

(4) Do you plan to receive hazardous waste (as identified in 40 CFR Part 261) by dedicated pipe where the waste does not mix with domestic sewage (i.e., sanitary waste) in the sewer system before reaching the POTW property boundary?
_____ YES, _____ NO

CERTIFICATION - I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

_____
Signature of principal executive officer, ranking elected official or authorized representative

Form designed for use on elite 12 pitch typewriter

Form Approved. OMB No. 2050-0039. Expires

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. | Manifest Document No. | 2. Page 1 of | Information in the shaded areas is not required by Federal law

3. Generator's Name and Mailing Address

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 Year

GENERATOR

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name | Signature | Month Day Year

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name | Signature | Month Day Year

TRANSPORTER

19. Discrepancy Indication Space

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in item 19

Printed/Typed Name | Signature | Month Day Year

FACILITY

EPA Form 8700-22 (Rev. 4-88) Previous edition is obsolete

APPENDIX F

Relevant Guidance

The following documents, existing or currently being developed, should prove useful to the permit writer implementing RCRA permit-by-rule requirements for POTWs.

A. Identification of Hazardous Waste

1. 40 CFR Part 261 and associated preamble discussions.

2. Identification of Hazardous Waste Received by Truck, Rail or Dedicated pipeline, Document being prepared by the Office of Water Enforcement and Permits, expected by July 1987. (Will also address the development of monitoring and sampling programs to prevent hazardous waste from unknowingly entering a POTW.)

3. RCRA Information on Hazardous Waste for Publicly Owned Treatment Works, September 1985, Office of Water Enforcement and Permits.

4. RCRA Orientation Manual, January 1986, pp. II-7 thru II-21, Office of Solid Waste.

5. Report to Congress on the Discharge of Hazardous Wastes to Publicly Owned Treatment Works, February 1986, pp. 2-1 thru 2-4, Office of Water Regulations and Standards.

B. Overview of the RCRA Corrective Action Process

1. RCRA Codification Rule, 50 F.R. 28702, July 15, 1985.

2. RCRA Proposed Codification Rule, 51 F.R. 10706, March 28, 1986.

3. Agency Interpretation of §3004(u): Corrective Action for Continuing Releases; draft Regulatory Statutory Interpretation #3 issued January 30, 1986.

C. RCRA Facility Assessment

1. Guidance on the Conduct of RCRA Facility Assessment at POTWs, Document being prepared by the Office of Water Enforcement and Permits, expected by September 1987.

2. RCRA Facility Assessment Guidance, October 1986, Office of Solid Waste.

3. Implementation of RCRA Facility Assessments, signed by J. Winston Porter on August 21, 1986.

D. RCRA Facility Investigation

1. RCRA Facility Investigation Guidance, being prepared by the Office of Solid Waste, expected by August 1987.

2. Interim Final Corrective Action Plan, signed by Gene Lucero and Marcia Williams on November 14, 1986.

E. Corrective Measures

1. Corrective Measures Guidance, being prepared by the Office of Solid Waste, draft expected by March 1988.

2. Interim Corrective Measures Guidance, being prepared by the Office of Waste Programs Enforcement, expected by July 1987.

3. Guidance on Alternative Concentration Limits, available from the Office of Solid Waste.

4. Interim Final Corrective Action Plan, signed by Gene Lucero and Marcia Williams on November 14, 1986.

F. Financial Assurance for Corrective Action

1. Proposed at 51 F.R. 37854, October 24, 1986.

G. Applicability of CERCLA to POTWs

1. Draft Guidance, Developing Requirements for Direct and Indirect Discharges of CERCLA Wastewater, March 31, 1987 (Final expected by October 1987.)

2. Memo dated April 15, 1986, signed by Henry Longest, Rebecca Hanmer, and Gene Lucero, on the discharge of CERCLA waste to POTWs.

APPENDIX G

EPA Notification Form for RCRA Identification Number

EPA Notification of Hazardous Waste Activity

For Official Use Only

Comments

Transporter's EPA ID Number	Acknowledged	Date Received (yr mo day)

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

ID — For Official Use Only

C

N

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 *(D004)*

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