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*Safety-Kleen*  
*Albuquerque*



December 1, 1992 RPW 92-320

CERTIFIED MAIL RETURN RECEIPT REQUESTED

Mr. Allyn M. Davis  
Director  
Hazardous Waste Management Division  
USEPA Region 6  
1445 Ross Avenue Suite 1200  
Dallas, Texas 75702-2733

RE: Permit Condition for Safety-Kleen Corp. NMD000804294

Dear Mr. Davis:

In response to the HSWA portion of the above referenced permit, Section V.B. we are submitting the Waste Minimization report for 1992. The signed certification statement will be submitted under a separate cover.

If you have any questions please call me at 303-322-7328.

Sincerely,

*Robert P. Wachsmuth*  
Robert Wachsmuth  
Environmental Engineer  
Denver Region

cc: J. Bard  
7-008-01 File 2020  
NMED- Hazardous and Radioactive Materials Bureau

**SAFETY-KLEEN  
WASTE MINIMIZATION  
PROGRAM FOR  
SERVICE CENTERS**

**DECEMBER 1992**

**Prepared by:**

**Robert Wachsmuth**

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## **SECTION 1.0**

### **INTRODUCTION SAFETY-KLEEN'S WASTE MINIMIZATION PROGRAM**

Safety-Kleen's business is to facilitate the wise use and reuse of resources by providing quality recycling services. As part of our commitment to our customers and the environment, Safety-Kleen has established a Waste Minimization Program.

The goals of the program are to educate Safety-Kleen personnel about waste minimization opportunities, and to facilitate education of Safety-Kleen facility management about ways they can minimize waste generation.

This program has been developed with Environmental Protection Agency (EPA) guidance. It is designed to:

- Help Safety-Kleen personnel identify mechanisms to minimize waste; and
- Provide management with information regarding the company's responsibility to minimize waste.

#### **1.1 A Phased Approach to a Waste Minimization Training Program**

The following summarizes Safety-Kleen's phased approach to a waste minimization training program.

1. Educate employees about waste minimization--What is it and how to achieve it.
2. Train personnel in ways to identify opportunities for waste minimization as it relates to Safety-Kleen facility operations.
3. Train personnel by communicating waste minimization alternatives as it relates to daily facility operations.
4. Provide written waste minimization information to management.

This manual addresses the four phases of the Safety-Kleen program.

## SECTION 2.0

### WHAT IS WASTE MINIMIZATION?

Waste minimization is specifically required by the U.S. Congress in the 1984 Hazardous and Solid Waste Amendments to the Resource and Conservation and Recovery Act (RCRA). Because of the cost of waste disposal and the liability associated with disposal of waste, waste minimization is enjoying a wide acceptance among industries.

Waste minimization (WM) consists of *source reduction and recycling*. Figure 2-1 depicts WM techniques. More specifically, WM is the reduction of the generation and disposal of hazardous waste. WM includes source reduction and recycling which results in either:

- The reduction of total volume or quantity of hazardous waste, or
- The reduction of the toxicity of hazardous waste.

WM results in the minimization of threats to human health and the environment.

#### 2.1 Volume (Source) Reduction

Volume or source reduction is any activity that reduces or eliminates the generation of hazardous waste at the source. Reducing the volume of hazardous waste which is produced is a matter of controlling the sources of waste generation. Consider the following:

***Substituting Materials*** - use materials which do not create a waste, or which can be beneficially reused, recycled or reclaimed. Examples of such are using dirty mineral spirits instead of clean for drum washing, using "corn cob" absorbent instead of clay since it can be fuels blended, and using metal filters on machines instead of the disposable cloth filters.

***Change Technology*** - consider changes in processes, equipment, and operations. An example is the use of the drum washer instead of the "liner bags" for keeping drums clean.

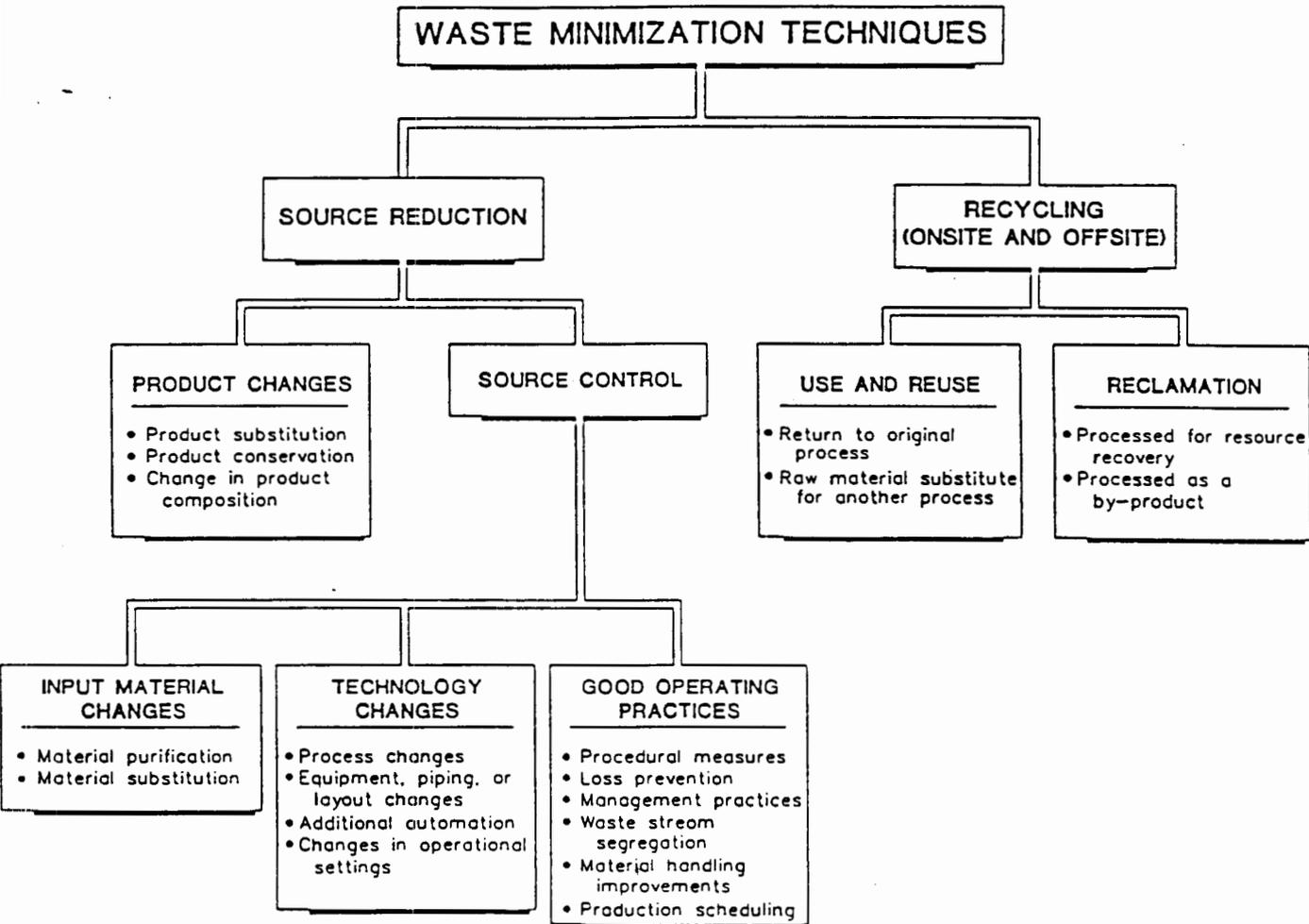
***Operating Practices*** - consider waste stream segregation, material handling procedures, and changes in management practices.

Reduce the amount of spills which occur by more careful material handling. Reduce the amount of waste generated from the cleanup of a spill by paving areas where releases are more likely to occur. Segregate recyclable materials from "trash". Segregate sludges

from contaminated burnable materials (labels, gloves, etc) and non-burnables (metal pieces, glass, rocks, etc.). Keep containment areas clean so that accumulated rainwater does not become contaminated.

More detail on volume reduction techniques will be provided in Section 3.0.

**FIGURE 2-1  
WASTE MINIMIZATION TECHNIQUES**



## 2.2 Toxicity Reduction

Safety-kleen can reduce the volume and types of waste generated by reducing the toxicity of the waste. In some instances, we can change a process to limit or exclude contamination of waste with toxic components. More often, a waste can be treated, either on or off-site, to remove toxic contaminants.

Safety-Kleen provides many services which remove hazardous/toxic components from a waste in order to return the cleaned material to beneficial use. For example, Safety-Kleen removes oil and water in addition to hazardous waste constituents of lead and perchloroethylene from ethylene glycol. The "cleaned up" ethylene glycol can then be marketed to ethylene glycol buyers.

## 2.3 Recycling

Recycling includes using, reusing, or reclaiming a material. Recycling can occur either on the site of generation or at a separate, off-site facility. Additional details on recycling are provided in Section 3.0

## 2.4 Elements of a WM Program

As discussed earlier, RCRA requires generators to establish WM at their facilities. In order to do this cost effectively, the program should have the following elements:

- **Management Commitment** - The facility as a whole must understand why WM is important. Management must support and reward employees for developing and implementing WM.
- **A WM Assessment** - The facility should carefully evaluate ways to reduce and eliminate waste. This assessment requires a careful analysis of what materials are used, what materials can be substituted, how mixing of waste can be avoided, and whether alternate technologies are available for reducing waste. Safety-Kleen encourages mixing only where it facilitates the beneficial reclamation/reuse of BOTH waste streams. Such an example is the mixing of hazardous and non-hazardous waste glycol. Since it is not economically feasible to ship these streams to the reclamation facility without mixing, it has been decided in order to facilitate increased reclamation of these wastes, that mixing is in the overall best interests of the environment.

However, mixing of solvents and other wastes with waste oil decreases the feasibility of reclaiming the used oil for any purpose other than fuels blending and therefore is strongly discouraged.

## SECTION 3.0 ACHIEVING WASTE MINIMIZATION

There are a number of ways to achieve WM. The following briefly discusses options for Safety-Kleen facilities.

### 3.1 Source Reduction through Good Operating Practices

Management practices include those practices which facilitate reduction of waste at the source. These practices include:

- **Waste Segregation** - Encourage employees to use specific waste receptacles. For example, paper waste can be divided into recyclable "white" waste and non-recyclable trash. Used petroleum products should not be mixed with solvent waste. Solvent waste such as antifreeze should be segregated from other solvents. This minimizes the quantities of waste generated which require special handling.
- **Material Handling and Inventory Practices** - Management can ensure that hazardous materials are properly stored to avoid spillage or damage resulting in cleanup of waste material. In addition, certain materials may have a limited "shelf-life;" proper inventory management ensures that materials aren't discarded due to age. Similarly, hazardous materials should be ordered in quantities sufficient for operation. Larger quantities stored can result in improper storage, exceedance of shelf life and spills, or accidents involving crowded storage areas.
- **Loss Prevention** - Materials can become wastes when equipment leaks or spills occur. In addition, using too much of a material results in waste generation (for example, using too much solvent creates more waste). Safety-Kleen managers can remind employees to properly maintain equipment and to avoid mishaps such as spills of solvents.
- **Cost Accounting Procedures** - For our facilities, cost accounting of waste disposal costs can encourage significant WM. When specific departments are held accountable for their own waste disposal cost, they are often more waste conscientious. Management should periodically review each facility's performance in waste generation and management.
- **Production Schedules** - Can the DCs better schedule their work to reduce the need for frequent equipment cleaning which results in waste generation? For example, using one color scheme rather than changing color schemes

reduces the need for cleaning and the amount of waste generated

### **3.2 Source Reduction through Process Modifications**

Reducing waste generation using process modifications is very industry specific. Safety-Kleen management can consider the following options:

- Changes in how the product is produced;
- Changes in equipment; and
- Changes in operating conditions such as:
  - ▶ flow rates;
  - ▶ temperature;
  - ▶ pressure; and
  - ▶ residence time.

### **3.3 Source Reduction through Product Changes**

Safety-Kleen may wish to consider opportunities to perform WM by changing their products. Changes might include:

- Substituting products--such as using Safety-Kleen's Immersion Cleaner 699 instead of chlorinated cleaners;
- Conserving products; and
- Changing the composition of the product.

### **3.4 WM through Material Recycling and Recovery**

#### ***Recycling: Use or Reuse***

Recycling may be achieved through use or reuse of a waste material. Essentially the waste material is returned to a process to replace a certain amount of new material. The process may be the same process from which the waste came, or an entirely new process.

An example of recycling use or reuse might be reuse of paint wastes in a painting process which does not require a specific color, or the use of sludges as a fuel.

#### ***Recovery: Reclamation***

Reclamation involves recovering a valuable material from a hazardous waste. Generally, a reclaimed material is not used at

the same facility where it was generated. Reclaiming fuel oil from waste oil is an example of reclamation. Recovering silver from a film processing wastewater equipment is another.

### ***Safety-Kleen Recycling and Recovery Services***

Safety-Kleen provides many services to its which can help meet WM responsibilities through recycling and recovery. Several of these services are discussed below.

*Option 1:* Safety-Kleen collects mineral spirits, perchloroethylene, and organic solvents and distills these to remove solids and contaminants. The waste material then becomes reusable for Safety-Kleen customers.

*Option 2:* Safety-Kleen collects used ethylene glycol and removes oil and water as well as the lead and perchloroethylene which makes the used material a hazardous waste. The "cleaned up" ethylene glycol is then sold to ethylene glycol buyers who use the materials. Thus, Safety-Kleen takes waste material from its customers and converts the waste into a usable, non-waste product.

*Option 3:* Safety-Kleen also recycles waste cleanup material, such as cleanup from hazardous waste spills, and uses this as an alternate product. Safety-Kleen collects organic based absorbent material, sludges from storage tank removals, etc., and provides these materials to fuel blenders who operate permitted facilities that mix these wastes with fuel for energy generation.

There are as many recycling/recovery options as there are waste materials that Safety-Kleen collects.

## SECTION 5.0 UNDERSTANDING THE COSTS/BENEFITS OF WASTE MINIMIZATION

Safety-Kleen managers need to understand that WM is required and there are costs associated with WM. However, there are also very significant benefits.

### 5.1 Cost

Generally, the facility which undertakes WM must evaluate their business and the alternatives available to them. The time spent performing this evaluation has a cost.

In addition, if the facility substitutes materials or uses additional recycling services, there is some cost associated with this.

### 5.2 Benefits of WM

There are many benefits when WM is practiced. Safety-Kleen management should emphasize these benefits as discussed below.

#### *Economic Benefits*

**Disposal Cost Reduction** - The cost of landfilling or incinerating hazardous waste is on the rise. Disposal options will become more costly and limited over time.

**Costly Alternative Treatments** - Certain waste streams will become more and more difficult to treat as disposal options become limited. Alternate technology to treat waste is **expensive**. Better to avoid generating the waste in the first place!

**Savings in Materials Cost** - When facilities practice WM, they use fewer materials. This reduces the cost of operating their business.

#### *Regulatory Benefits*

**Specific WM Requirements** - First and foremost, all generators of hazardous waste are required to minimize the waste they generate. Generators must demonstrate WM when they sign a waste manifest, when they submit a biennial report under RCRA, or when applying for facility permits.

#### *Land Ban*

Second, some waste is banned from land disposal. WM avoids this regulatory limitation.

## ***Liability Benefits***

**Generator Liability** - Remember, RCRA established cradle-to-grave liability. For our facilities, this means that once a waste is generated, the Safety-Kleen is responsible for managing that waste while it is stored on-site, in transit, and when disposed of. Therefore, even if Safety-Kleen has the best intentions when it comes to waste management, poorly disposed of waste can come back to haunt us. For example, a generator sent his waste to a permitted landfill, but contamination resulted at the landfill. The generator now becomes a potentially responsible party (PRP) to the cleanup of the contamination.

Therefore, encourage your employees to avoid liability by minimizing waste generation.

**Potential Worker Safety** - The Federal Environmental Protection Agency (EPA) and the Occupational Safety and Health Administration (OSHA) are becoming more aggressive in evaluating whether facilities are properly protecting their employees from hazardous materials and wastes found in the workplace. Help your managers minimize potential employee exposure to hazardous waste by encouraging WM.

**Public Image Benefits** - The company that represents itself as environmentally aware and conscientious has a **competitive** edge over their competition. Safety-Kleen's ability in convincing our customers that we operate responsibly helps us obtain our customers' confidence. This is especially important when Safety-Kleen wishes to show **community members** that their business is a safe and productive addition to the community. After all, who would you want to use, a business that conserves resources and manages waste safely (reducing their costs and the costs of their services/products) or a company which doesn't (increasing their costs, the cost of their services/products, and the potential for environmental harm)? ***The choice is clear!***

SECTION 6.0  
IDENTIFYING OTHER INFORMATIONAL SOURCES

Inform your employees about other sources for information.

6.1 Federal Government

EPA can provide businesses with assistance in waste minimization. For additional information your customers can call the EPA RCRA/Superfund Hotline at (800) 424-9346.

In addition, EPA publishes a number of guides for the pollution prevention and waste minimization. These guides can be obtained through EPA or the U.S. Government Printing Office ((202) 783-3238).

6.2 State and Local Assistance

The New Mexico Environment Department Hazardous and Radioactive Materials Bureau can provide your employees with guidance on WM and preferred waste management techniques. Contact NMED at (505) 827-2850.

In addition to the state, consider local agencies. In general, contact "environmental agencies" or "health units" for reference to local agencies which deal with hazardous waste issues.

**SECTION 7.0**  
**EMPLOYEE INVOLVEMENT IN WASTE MINIMIZATION**

The form in Attachment 7-1 can be used for employee suggestions for waste minimization at your facilities. This form should be signed by the employee and reviewed by his manager before being turned in to the Regional Manager. A copy of the form is to be filed in EHS 2010 "Waste Minimization".

Wherever possible, include cost justifications/savings which would result from implementation of the idea.

The Regional Manager will review the ideas submitted and refer them to upper management for implementation if appropriate.

**WASTE MINIMIZATION CERTIFICATION**  
**Albuquerque Nm. SERVICE CENTER 1992**

I hereby certify under penalty of law that personnel under my direction and supervision at this facility are undertaking specific steps in accordance with a program in place to minimize the amount and toxicity of hazardous wastes generated at this facility to a degree economically practicable and that the method utilized for the treatment storage or disposal of hazardous wastes is the practicable method currently available to this facility which minimizes the present and future threat to human health and the environment. I am aware that there are significant penalties for false certification, including the possibility of fine and imprisonment for flagrant falsifications.

\_\_\_\_\_  
Signature

Mr. Scott E. Fore  
Name

Vice President/Environment, Health Safety  
Title

\_\_\_\_\_  
Date