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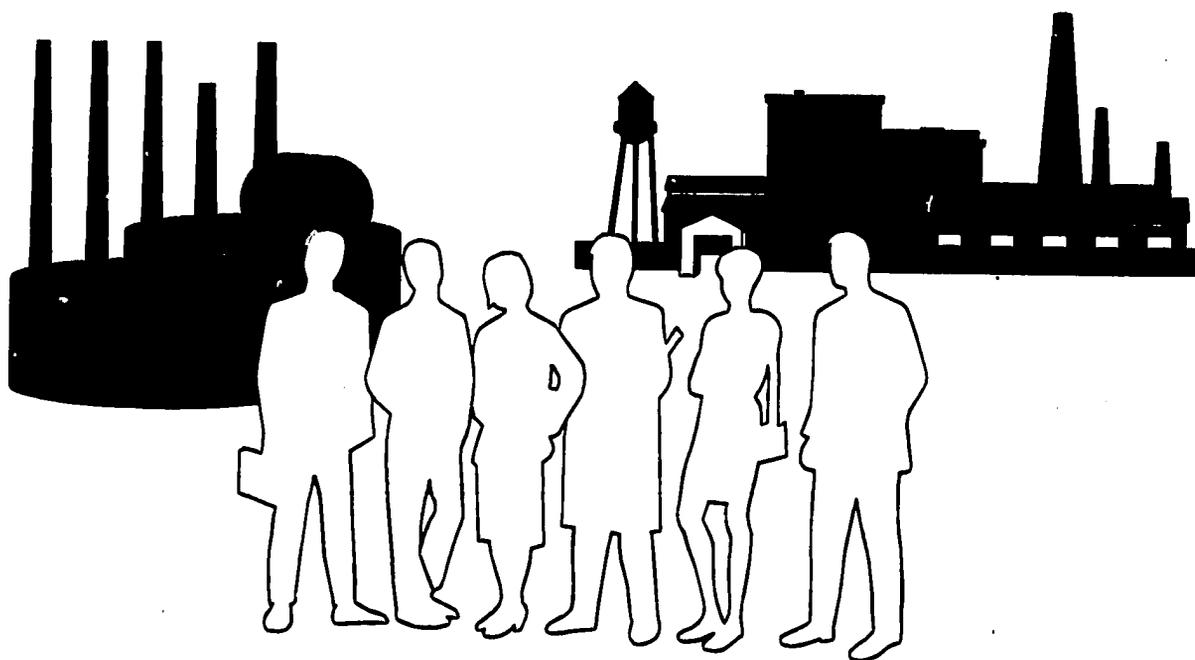
**Jordan Society for the Control of  
Environmental Pollution**

**and**

**World Environment Center**

**present an**

# **ENVIRONMENTAL AUDITING WORKSHOP**



**In Cooperation with the United States Agency  
for International Development**

**Amman, Jordan  
January 31- February 3, 1994**

**WEC gratefully acknowledges the assistance of Mr. Vinay Dighe of Vinay Dighe Company and Mr. Donald Brosky of 3M Company in developing and delivering this Workshop.**

# AGENDA

## Environmental Auditing Workshop

### Day 1

#### Time

#### Topic

8:30am

#### Introductions

- Goals and Objectives
- Workshop Review
- Pollution Prevention
- Administrative

9:00am

#### Overview of Auditing

- Definitions
- Historical Perspective
- Auditing as a Management Tool

10:00am

#### Basic Audit Process

- Pre-Audit Activities
- On-Site Activities
- Post-Audit Activities

10:30am

#### Break

10:45am

#### Pre-Audit Activities

- Administrative
- Information Desired Before the Plant Visit
- Developing Protocols and Questionnaires
- Scope and Responsibilities

**Day 1 (continued)**

<b><u>Time</u></b>	<b><u>Topic</u></b>
<b>12:00</b>	<b>Lunch</b>
<b>1:00pm</b>	<b>Exercise In Developing Protocols and Questionnaires</b>
<b>2:15pm</b>	<b>Interviewing Techniques and Skills</b>
<b>3:30pm</b>	<b>Break</b>
<b>3:45pm</b>	<b>Role Play: Interviewing</b>
<b>5:00pm</b>	<b>Adjourn</b>

## **Day 2**

<b><u>Time</u></b>	<b><u>Topic</u></b>
<b>8:30am</b>	<b>Recap of Day 1 Activities</b>
<b>8:45am</b>	<b>On-Site Activities</b> <ul style="list-style-type: none"><li>● Opening Meeting</li><li>● Plant Tour</li><li>● Exit Meeting</li></ul>
<b>10:30am</b>	<b>Break</b>
<b>10:45am</b>	<b>Role Play: On-Site Activities</b>
<b>12:00</b>	<b>Lunch</b>
<b>1:00pm</b>	<b>Post-Audit Activities</b> <ul style="list-style-type: none"><li>● Working Papers</li><li>● Report Writing</li></ul>
<b>2:15pm</b>	<b>Report Writing</b>
<b>3:30pm</b>	<b>Break</b>
<b>3:45pm</b>	<b>Audit Preparation</b>
<b>5:00pm</b>	<b>Adjourn</b>

### **Day 3 - Facility Tour**

<b><u>Time</u></b>	<b><u>Topic</u></b>
<b>10:00am</b>	<b>Arrive at the Facility</b>
<b>10:15am</b>	<b>Opening Meeting with Facility Personnel</b>
<b>10:30am</b>	<b>Discussion of Facility Operations</b>
<b>11:30-12:30</b>	<b>Lunch</b>
<b>12:30-2:30pm</b>	<b>Plant Tour</b>
<b>2:30-3:30pm</b>	<b>Exit Meeting</b>
<b>3:30-5:00pm</b>	<b>Facility Audit Report</b>



**Day 4**

<u>Time</u>	<u>Topic</u>
8:30am	<b>Audit Preparation and Discussion of Audit Findings</b>
10:30am	<b>Break</b>
10:45am	<b>Auditing - a Different Perspective</b> <ul style="list-style-type: none"><li>● Waste Minimization</li><li>● Property Transfer</li><li>● Due Diligence</li><li>● Liability</li><li>● Risk Assessment</li></ul>
12:00	<b>Lunch</b>
1:00pm	<b>Auditing - a Different Perspective (continued)</b>
2:00pm	<b>Legal Perspective</b> <ul style="list-style-type: none"><li>● Confidentiality</li><li>● Attorney-Client Privilege</li><li>● Disclosure of Audit Reports</li></ul>
2:30pm	<b>Auditing - a Policy Issue</b> <ul style="list-style-type: none"><li>● Government Role</li><li>● Industry Role</li><li>● Citizen's Role</li></ul>
3:30pm	<b>Multinationals' Auditing Programs</b>
4:30pm	<b>Future of Auditing</b>
5:00pm	<b>Wrap-Up, Evaluation and Adjourn</b>

# TABLE OF CONTENTS

<u>Title</u>	<u>Page No.</u>
<b>OVERVIEW OF AUDITING</b>	<b>1</b>
Definitions	
Variety of Terms	
Historical Perspective	
Auditing as a Management Tool	
<b>BASIC AUDIT PROCESS</b>	<b>7</b>
Pre-Audit Activities	
On-site Activities	
Post-Audit Activities	
<b>PRE-AUDIT ACTIVITIES</b>	<b>12</b>
Administrative	
Technical	
Information Desired Before the Plant Visit	
Developing Protocols and Questionnaires	
Scope and Responsibilities	
Pre-Audit Questionnaire	
Sample Protocol	
<b>EXERCISE IN DEVELOPING PROTOCOLS AND QUESTIONNAIRES</b>	<b>22</b>
<b>INTERVIEWING TECHNIQUES AND SKILLS</b>	<b>24</b>
<b>ROLE PLAY: INTERVIEWING</b>	<b>26</b>
Plant Manager's Instructions	
Auditor's Instructions	
Observer's Instructions	



## **TABLE OF CONTENTS (continued)**

<b><u>Title</u></b>	<b><u>Page No.</u></b>
<b>ON-SITE ACTIVITIES</b>	<b>31</b>
Opening Meeting	
Plant Tour	
Exit Meeting	
<b>ROLE PLAY: ON-SITE ACTIVITIES</b>	<b>36</b>
Team Leader's Instructions	
Plant Manager's Instructions	
Team Member's Instructions	
<b>POST-AUDIT ACTIVITIES</b>	<b>41</b>
Working Papers	
Report Writing	
<b>REPORT WRITING</b>	<b>45</b>
Organize and Write	
Organize as You Go	
State the Facts - Just the Facts	
Write in the Present Tense	
Use Appropriate Phrases and Words	
Avoid Generalizations and Vagueness	
Avoid Interpreting Data or Drawing Conclusions	
Avoid Persuasive Statements	
Use Acronyms, Jargon and Abbreviations with Caution	
Avoid Problem Phrases and Words	
Edit and Proofread	
Edit your Work	
Avoid Subject-Verb Disagreement	
Avoid Misplaced Pronouns	
Avoid Confusion Among Commas, Semi-Colons and Colons	
Proofread Carefully	
Summary	

α

## TABLE OF CONTENTS (continued)

<u>Title</u>	<u>Page No.</u>
AUDIT PREPARATION	69
AUDIT - A DIFFERENT PERSPECTIVE	70
Waste Minimization	
Property Transfer Audits	
Due Diligence	
Liability	
Risk Assessment	
LEGAL PERSPECTIVE	107
Confidentiality	
Attorney-Client Privilege	
Disclosure of Audit Reports	
LEGAL PERSPECTIVE DISCUSSION	112
AUDITING - A POLICY ISSUE	120
Government's Role	
Industry's Role	
Citizen's Role	
MULTINATIONALS' AUDIT PROGRAMS	151
3M Company	
U.S. Minerals-Based Company	
Atlantic Richfield Company	
General Motors	
Royal Dutch/Shell Group	
FUTURE OF AUDITING	161

# **OVERVIEW OF AUDITING**

# **OVERVIEW OF AUDITING**

- **Definitions**
- **Variety of Terms**
- **Historical Perspective**
- **Auditing as a Management Tool**

# Definitions

- **U.S. EPA Policy Statement on Environmental Auditing, July, 1986**
  - **Any systematic, documented, periodic and objective review by a firm (or a regulated entity) of facility operations and practices related to meeting applicable requirements.**
  
- **Environment Canada, Environmental Protection Act, Enforcement and Compliance Policy, May, 1988**
  - **Internal evaluations by companies and governmental agencies to verify their compliance with legal requirements as well as their own policies and standards.**
  
- **International Chamber of Commerce, Position Paper on Environmental Auditing, adopted November 29, 1988**
  - **A systematic evaluation of performance to ensure compliance with requirements during the operational phase of industrial activity including the following components:**
    - **full management commitment**
    - **audit team objectivity**
    - **professional competence**
    - **well-defined and systematic approach**
    - **written reports**
    - **quality assurance**
    - **follow-up.**
  
- **Generally, auditing can be broadly defined as, a systematic evaluation of a company's operations with regard to environment, safety and health.**

## **Variety of Terms**

- **Audit**
- **Review**
- **Survey**
- **Surveillance**
- **Assessment**
- **Evaluation**
- **Inspection**

## **Historical Perspective**

- **Some U.S. Companies Developed Internal Auditing Programs in the 70's to Respond to Complex Environmental Laws and Increased Company and Personal Liability of Corporate Officers**
- **The SEC Decision on "Love Canal"**
- **Formation of the Environmental Auditing Roundtable in the Early 80's**
- **Development of the Federal EPA Auditing Policy Statement in the Mid-80's**
- **Formation of Environmental Auditing Forum in the Mid-80's**
- **Proliferation of Environmental Assessments, Due Diligence for Property Transfer Activities in the Late 80's**
- **Issuance of a Position Paper on Environmental Auditing in the Late 80's by the International Chamber of Commerce**
- **Development of the California EPA Auditing Policy Statement in the Early 90's**
- **Currently, Auditing is Regarded as a Good Management Tool**

## **Auditing as a Management Tool**

- Assurance to Senior Management
- Assurance to Shareholders
- Ease of Public Disclosure Requirements
- Systematic Evaluations of Company's Environmental Liabilities
- Independent Issue Identification
- Independent Compliance Assurance

# **BASIC AUDIT PROCESS**

## **BASIC AUDIT PROCESS**

- **Pre-Audit Activities**
- **On-Site Activities**
- **Post-Audit Activities**

## **Pre-Audit Activities**

- **Planning**
- **Scheduling**
- **Team Organization**
- **Necessary Approvals**
- **Pre-Visit, if Necessary**
- **Develop Protocols and Questionnaires**

## **On-Site Activities**

- Meeting with Plant Personnel
- Scheduling Interviews
- Review of Documents and Records
- Site Inspection
- Debriefing
- Developing Working Papers
- Developing Findings

## **Post-Audit Activities**

- **Exit Interview with Plant Personnel**
- **Team Coordination**
- **Develop a Report**
- **Obtain Necessary Input**
- **Prepare Final Report**
- **Follow-Up**

## **PRE-AUDIT ACTIVITIES**

## **PRE-AUDIT ACTIVITIES**

- **Administrative**
- **Technical**
- **Information Desired Before the Plant Visit**
- **Developing Protocols and Questionnaires**
- **Scope and Responsibilities**
- **Pre-Audit Questionnaire**
- **Sample Protocol**

## **Administrative**

- **Schedule Audit Dates, Times, etc.**
- **Select Team Members**
- **Confirm Audit Schedule**
- **Make Travel Arrangements**
- **Schedule and Obtain Appropriate Facility Personnel Involvement**

## **Technical**

- **Request and Obtain Background Material about the Facility**
- **Review the Background Material**
- **Develop Plan of Action**
- **Review Safety Requirements for the Facility e.g. Safety Shoes, Safety Glasses, etc.**
- **Collect Pertinent Information to Conduct Audits**

## **Information Desired Before the Plant Visit**

- Plant Layout
- Topography
- Flow Diagram of the Process
- Process Description and Schematic
- Waste Generation Rates, if Available
- Training Records
- Permits and Licenses
- Fines or Penalties Paid or Pending
- Waste Disposal Practices and Records
- Organizational Chart with Names and Responsibilities
- Policies and Procedures
- Operating Manuals and Instructions
- Previous Audit Findings

## **Developing Protocols and Questionnaires**

- **Considered Audit Tools**
- **They Should:**
  - **Include an Abstract of Compliance Requirements in Applicable Areas**
  - **Provide an Opportunity to Verify Internal Company Environmental Management Procedures**
  - **Provide the Auditor Action Steps so that the Auditor is Clear on What Should be Done During an Audit**
- **Protocols Should be Developed for the Following Areas, at a Minimum, if Applicable:**
  - **Wastewater Discharge**
  - **Air Emissions**
  - **Hazardous and Non-Hazardous Waste Management**
  - **Chemical Spill Management**
  - **Oil Spill Management**
  - **Waste Reduction Programs**

## **Scope and Responsibilities**

- **Environmental Audit**
- **Team Leader Responsibilities:**
  - **Organize**
  - **Plan**
  - **Select Team Members**
  - **Assign Responsibilities to Team Members**
  - **Schedule Interviews**
  - **Coordinate with the Facility Management**
  - **Obtain Appropriate Clearances**
  - **Finalize Audit Report**
- **Team Member Responsibilities**
  - **Gather Pertinent Information with Respect to the Auditor Assignment**
  - **Develop Protocols and/or Questionnaires**

## Pre-Audit Questionnaire

**1. General**

- Company Name
- Address:
- Phone Number
- Facility Name:
- Facility Manager:
- Environmental Manager

**2. Site Characteristics**

- Can the area surrounding the facility be described as:
  - a. Commerical
  - b. Industrial
  - c. Residential
  - d. Agricultural

**3. Topography**

- Can the area surrounding the facility be described as:
  - a. Coastal
  - b. Mountainous
  - c. Desert
  - d. Valley
  - e. Flood Plain

**4. Air**

- Do you have an air emissions inventory
- Do you have to register the emission points with agencies
- Do you conduct air quality monitoring
- Do you have air quality monitoring data available
- Do you have air pollution control equipment
- Have there been any complaints from the community regarding air emissions
- Do you quantify emissions

**5. Wastewater**

- Do you produce wastewater
  - Sanitary
  - Process
  - Stormwater Runoff
  - Other

YES	NO	N/A



# Sample Protocol

Does the facility treat or dispose of any hazardous wastes, including containers, by means of incineration?

Yes \_\_\_ No \_\_\_

Section A: RCRA Requirements-40 CFR Parts 264; 265, Subpart O (May 19, 1980)

	Answer			Answer based on			Working Paper Ref.
	YES	NO	N/A	Inq	Obs	Test	
1. Does the facility analyze wastes before burning them for the first time to establish proper operating conditions?	___	___	___	___	___	___	
If yes, does the analysis include at least the following?							
(a) Heating value of the wastes	___	___	___	___	___	___	
(b) Halogen and sulfur content	___	___	___	___	___	___	
(c) Concentrations of lead and mercury in the wastes	___	___	___	___	___	___	
(d) Anything else	___	___	___	___	___	___	
2. Are waste analysis results made part of the operating record of the facility?	___	___	___	___	___	___	
3. Does the facility incinerator have instruments that relate to the following aspects of combustion and emission control?	___	___	___	___	___	___	
(a) Measurement of waste feed rate	___	___	___	___	___	___	
(b) Measurement of auxiliary fuel flow rate	___	___	___	___	___	___	
(c) Measurement of air flow rate	___	___	___	___	___	___	
(d) Measurement of combustion temperature	___	___	___	___	___	___	
(e) Measurement of scrubber flow	___	___	___	___	___	___	
(f) Measurement of Scrubber pH	___	___	___	___	___	___	
(g) Pressure measurements throughout system	___	___	___	___	___	___	
4. Are the above instruments monitored at least every 15 minutes when hazardous wastes are being incinerated?	___	___	___	___	___	___	

**EXERCISE IN DEVELOPING  
PROTOCOLS AND QUESTIONNAIRES**

## **EXERCISE IN DEVELOPING PROTOCOLS AND QUESTIONNAIRES**

### **EXAMPLE:**

You are about to audit a chemical manufacturing plant. This plant is located along the banks of a river. The raw material is brought in with a barge. It is unloaded into silos and conveyed to the site for processing. The plant consists of two boilers with their own stacks. These boilers are fired by fuel oil # 2. Solid and hazardous waste generated on-site are stored temporarily on-site and disposed of off-site. Sanitary wastewater is discharged into the city sewer system and process wastewater is discharged into the river. The plant is surrounded by light industrial and commercial facilities.

# **INTERVIEWING TECHNIQUES AND SKILLS**

# **INTERVIEWING TECHNIQUES AND SKILLS**

- **Role of Interviewing in Auditing**
  
- **Approach to Interviewing**
  - **Scheduling an Interview**
  - **Conducting of Interview**
  - **Closing an Interview**
  
- **Situations to Avoid during an Interview**
  - **Arguments**
  - **Debates**
  - **Political Questions**
  - **Coming Across as a "Know-it-All"**
  - **Coming Across as "Arrogant"**
  - **Using a Tape Recorder**
  
- **Difficult Interview Situations**
  - **The Interviewee Digresses**
  - **The Interviewee is Argumentative**
  - **The Interviewee has "Yes" or "No" Answers**
  - **The Interviewee is Hostile**
  - **The Interviewee is Non-Cooperative**

## **ROLE PLAY: INTERVIEWING**

## **ROLE PLAY: INTERVIEWING**

**There are three parties in this role play - the plant manager, the auditor and the observer.**

**The role, approach and attitude of each of the parties is provided below.**

**The purpose of this exercise is to understand the air quality management system in existence at the plant.**

## **Plant Manager's Instructions**

**Your role in this exercise is to act as a plant manager responsible for the operation and maintenance of the plant.**

**You are skeptical about the audit. You do not believe in this process because you have been doing an outstanding job of plant maintenance for the past 10 years. The local city and community leaders have appreciated your performance in an area Chamber of Commerce meeting by presenting you with a plaque for your performance.**

**You may want to share your skepticism regarding the audit with the auditor.**

**You recently (within the last year) conducted an emissions inventory and identified various emission points. You installed air quality control equipment (scrubbers, baghouse, etc.) at certain emission points. This resulted in the reduction of odor and particulates. You occasionally monitor the stack gases and calibrate the monitoring equipment. Your air quality person is a mechanical engineer by training. In addition to air quality responsibilities, he has a number of other duties related to plant maintenance. He has been working in the plant for six years. He is assisted by a technician who has been working in the plant for the past six months. For some reason, the technicians do not seem to stay on the job for a long time.**

**Air quality monitoring records are kept at the plant engineer's office.**

## **Auditor's Instructions**

**Your role in this exercise is to ask the right questions to understand the air quality management system at the plant.**

**A typical approach may include understanding the:**

- **local requirements such as licenses, permits, if any**
- **thoroughness of the emission inventory**
- **method of quantifying the emission inventory**
- **training of personnel**
- **frequency of monitoring**
- **calibration of equipment.**

## **Observer's Instructions**

**Your role in this exercise is to observe the interview being conducted and to assess whether the objective of the exercise (i.e. understanding of the air quality management system) has been met. You are also to observe whether proper interviewing techniques have been used in this interview.**

## **ON-SITE ACTIVITIES**

## **ON-SITE ACTIVITIES**

- Opening Meeting
- Plant Tour
- Exit Meeting

## **Opening Meeting**

- **Presentation of the Scope and Objective of the Audit by the Audit Team Leader**
- **Presentation of the Approach to the Audit**
- **Introduction of Team Members - State and Show their Credentials**
- **Presentation by Plant Management Personnel Regarding Facility Operations**
- **Introductions of Appropriate Plant Personnel**
- **Scheduling of Plant Tour**
- **Scheduling of Interviews with Plant Personnel**
- **Review of the Approach to Audit Findings**
- **Scheduling of Meetings for Discussion of Audit Findings**

## **Plant Tour**

- Interviews During Plant Tour
- Observations
- Working Papers

## **Exit Meeting**

- Discussion of Findings
- Resolution of Facts
- Schedule of Reports to the Facility
- Report Distribution and Ultimate Disposition of the Report
- Follow-Up Activities Discussion

## **ROLE PLAY: ON-SITE ACTIVITIES**

## **ROLE PLAY: ON-SITE ACTIVITIES**

**You are about to conduct an audit of a cement plant. The audit is scheduled to begin next Monday at 10 A.M. You are supposed to meet with the plant personnel at 10 A.M. You have all the necessary information to conduct the audit.**

**The audit scope includes review of air, wastewater and hazardous waste management activities at the plant. You are complying with the mandate of the company that all company operations should be carried-out in an environmentally sound manner. This audit is being conducted as per the instruction of the company attorney at the direct suggestion of the president of the company. The audit report, once completed, will be reviewed by plant personnel for factual information and the company attorney for proper language in the report. The report will contain target dates of completion of action plans as agreed to by the auditors and the plant manager at the exit meeting.**

**Your team consists of an expert in air quality, wastewater and hazardous waste management.**

## **Team Leader's Instructions**

**Your role in this exercise is to introduce yourself and your team members to plant personnel, and explain to them the scope and objective of the audit and the overall audit process - from the on-site tour, to the exit meeting, to the finalization of the report.**

## **Plant Manager's Instructions**

**Your role in this exercise is to explain the facility operations, introduce plant personnel and answer the questions presented to you by the audit team members.**

## **Team Member's Instructions**

**Your role in this exercise is to ask the facility management the pertinent questions to help you conduct the audit in your area effectively and efficiently.**

## **POST-AUDIT ACTIVITIES**

## **POST-AUDIT ACTIVITIES**

- Working Papers
- Report Writing

## Working Papers

- Purpose
- Format
- Disposition

## **Report Writing**

- Importance in Auditing
- Format
- Distribution of Copies
- Record Retention
- Importance of Presenting Facts and Not Opinions

# **REPORT WRITING**

# **REPORT WRITING**

- **Organize and Write**
- **Organize as You Go**
- **State the Facts - Just the Facts**
- **Write in the Present Tense**
- **Use Appropriate Phrases and Words**
- **Avoid Generalizations and Vagueness**
- **Avoid Interpreting Data or Drawing Conclusions**
- **Avoid Persuasive Statements**
- **Use Acronyms, Jargon and Abbreviations with Caution**
- **Avoid Using Names of Individuals**
- **Avoid Problem Phrases and Words**
- **Edit and Proofread**
- **Edit your Work**
- **Avoid Subject-Verb Disagreement**
- **Avoid Misplaced Pronouns**
- **Avoid Confusion Among Commas, Semi-Colons and Colons**
- **Proofread Carefully**
- **Summary**

# Organize and Write

## Use the Four-Step Writing Process

Using the following four-step process will help increase the efficiency and quality of your writing:

### Step 1: Plan

- Review your recipients and purpose for writing
- Conduct investigation and take clear, precise notes
- Select topic headings; organize notes under headings

### Step 2: Draft

- Use topic headings to organize information
- Write in plain, direct language, in the present tense
- Make no revisions as you draft
- Try to complete your draft in one sitting

### Step 3: Cool

- Put your draft away, even if for only an hour or two

### Step 4: Revise

- Edit your draft, checking organization, language and grammar
- Proofread

## Organize as You Go

As you conduct your investigation in the Plan phase of the writing process, sort the data you gather into topics. This will save time and effort later. The Assessment Protocol provides topic heading you may use.

Here is the outline from which you are to use:

1. Topic
  - 1.1 Subtopics
  - 1.2 Subtopics
  
2.
  - 2.1
  - 2.2
  
3.
  - 3.1
  - 3.2

Your final document should present your findings in outline form, rather than in rambling descriptions. The following example shows the difference:

### Poor

The waste treatment are below the plating floor has an indirect exit way. Workers on the treatment floor may be cut off from this exit. This area has not been evaluated to determine whether it is within the definition of confined space (is not "designed for human occupancy and from which escape may be restricted"). Although entry procedures do exist for this task, they do not address all aspects of confined space entry, including permit-based communication between the maintenance, waste treatment and plating operations so that all operators are knowledgeable of the tasks to be performed, duration of the task, and scope or special requirements necessary.

## Organize as You Go (continued)

### Better

#### 1. Occupational Health and Safety

##### 1.1 Waste Treatment Area

The waste treatment area below the plating floor has an indirect exit. No evaluation has been made to determine whether this area is a "confined space" according to definition. Entry procedures do exist for this area, but these procedures are not complete if the area is indeed a "confined space".

## **State the Facts - Just the Facts**

The statements in your Assessment Findings should be **purely factual, with enough detail to make the problem perfectly clear to the reader.** The following is an example of a well-written factual statement with an appropriate amount of detail:

### **6. Occupational Safety**

#### **6.1 Portable Fire Extinguisher**

**There is no system to ensure that all portable fire extinguishers are inspected monthly and annually. There is no documentation that portable fire extinguishers are visually inspected monthly.**

## **Write in the Present Tense**

Statement in your findings should be **written in the present tense wherever possible**, not in past or future tenses. You are documenting negative findings as you observe them, and writing in the present tense correctly conveys this sense of immediacy to your recipients. Here is an example:

### **Poor**

The Corporate Incident Reports for illness and accident reporting were incomplete. No system was in place for internal audits of the records.

### **Better**

The Corporate Incident Reports for illness and accident reporting are incomplete. No system exists for internal audits of the records.

## **Use Appropriate Phrases and Words**

In writing your Assessment Findings, it may be helpful to know phrases and words you can use to avoid the "pitfalls" described in detail below.

These phrases work well in statements describing exceptions:

- There is no written record of . . .
- The system has not been evaluated . . .
- A protocol does not exist for . . .
- A strategy is lacking for . . .
- The (describe item) does not operate . . .
- The written records are not complete
- No procedure is in place for . . .

## **Avoid Generalizations and Vagueness**

Giving an adequate amount of detail is important to fully communicate the nature and magnitude of the exception. Be sure to **avoid generalizations and vague statements**. The following example shows the difference:

### **Poor**

The hearing conservation program is incomplete.

### **Better**

The hearing conservation program lacks the following components: baseline testing of employees; annual training; recordkeeping.

## **Avoid Interpreting Data or Drawing Conclusions**

In addition to avoiding vague statements, **avoid statements that interpret data or draw conclusions.** Allow the recipients to draw their own inferences from the facts. For example:

### **Poor**

The Storm sewer drain is sampled every 20 minutes, producing a composite sample for each day. The samples are picked up and tested Monday through Friday. If a problem occurs on Friday after the sample has been picked up, it may be 72 hours before a release is detected.

### **Better**

The Storm sewer drain is sampled every 20 minutes, producing a composite sample for each day. The samples are picked up and tested Monday through Friday. There is no provisions for retrieving and testing samples on Saturday and Sunday.

## **Avoid Persuasive Statements**

**Statements which attempt to persuade must be avoided** as well. Here are some examples:

### **Poor**

It is very important that Management make audits and inspections of facilities, operations, and personnel.

### **Better**

There are no records of audits or inspections of facilities, operations, or personnel.

### **Poor**

Management must start enforcing operator procedures.

### **Better**

No system exists for enforcing operator procedures. No records exist indicating management has enforced operator procedures.

## **Use Acronyms, Jargon and Abbreviations with Caution**

In writing your findings, **provide complete names** of departments, divisions, chemicals, etc. **the first time** they appear in a paragraph, followed by the acronym or abbreviation in parentheses. This way your recipients will know with certainty what you are describing. After you have given the complete name once in a paragraph, you may use the acronym or abbreviation. In addition, **use common terminology** rather than departmental or Health, Safety and Environmental Jargon **whenever possible**.

### **Poor**

There is no procedure in place which requires a determination of the TSCA inventory status of purchased materials which are not regulated by the FDA.

### **Better**

There is no procedure in place which requires a determination of the Toxic Substances Control Act (TSCA) inventory status of purchased materials which are not regulated by the Food and Drug Administration (FDA).

## **Avoid Using Names of Individuals**

**Use job titles or group names** rather than names of individuals in your findings.

### **Poor**

The on-site nurses, Jane Doe and Sue Roe, lack training in the cleaning and maintenance of respirators.

### **Better**

On-site medical personnel lack training in the cleaning and maintenance of respirators.

## **Avoid Problem Phrases and Words**

Some words imply judgement, carry emotion, or are extreme, and these should be replaced by **words that are non-judgmental** or are used as "neutral" terms in the industry. Words that must be eliminated or replaced include:

- danger (eliminate or replace with hazard)
- suspected, alleged
- ineffective
- escape (use exit)
- careless
- terrible
- intentional
- reckless
- severe
- incompetent

Here is an example of how a problematic statement can be rewritten using judgment-free language:

### **Poor**

The existence of a suspected acetone tank in the area of the methanol tanks has not been verified. From discussions with site personnel a tank has been installed but never has been used for storage of acetone.

### **Better**

Site personnel stated an acetone storage tank has been installed in the methanol tank area, but never has been used to store acetone. During the assessment, no acetone tank was found in the methanol tank area.

## **Avoid Problem Phrases and Words (continued)**

Some phrases and words are **legally problematic** -- they may imply that some legal duty has been neglected, or some legal liability exists. These include:

- There is a risk of . . .
- There is a failure of . . .
- The system is not in compliance . . .
- The system is in violation . . .

Here is an example of how a legally-problematic statement can be written into an acceptable one:

### **Poor**

The drains in the basement of Building XYZ lead to Sunshine Lake. Organic solvents and acids are used in the basement. Basement drains are not sealed, in violation of federal and state regulations.

### **Better**

Organic solvents and acids are used in the basement of Building XYZ. Drains in this basement are unsealed, and lead to Sunshine Lake.

## **Edit and Proofread**

**After you have finished your draft, then let the draft "cool" for a period of time, until you are ready to edit and proofread your document.**

## **Edit Your Work**

**Edit your draft, checking organization, language, and grammar. This checklist will help you edit:**

- Have I met the needs of my recipients?
- Is my purpose evident?
- Have I organized the information in outline form?
- Have I avoided interpretation, summary, persuasion?
- Have I used non-judgmental statements?
- Have I avoided emotion-carrying adjectives, legally-problematic words or phrases?
- Have I been clear and concise?
- Have I cited the appropriate regulation, policy or good management statement?

## Edit your Work (continued)

Check your work to be sure you haven't made any of these common grammar or punctuation errors:

### Sentence fragments

**Rule:** Every sentence must contain a subject and a verb.

**Poor:** Not enforcing operator procedures.

**Better:** Responsible personnel are not enforcing operator procedures.

**Rule:** Every sentence must make sense by itself.

**Poor:** System to upgrade air permits.

**Better:** There is no system for upgrading air permits.

### Run-on or fused sentences

**Rule:** Two independent thoughts must be joined with a conjunction or with a punctuation mark.

**Poor:** The facility does not have an emergency action plan to ensure employee safety in case of fire does not have a plan to address on-site accidents involving hazardous material spills.

**Better:** The facility does not have an emergency action plan to ensure employee safety in case of fire and does not have a plan to address on-site accidents involving hazardous material spills.

## Avoid Subject-Verb Disagreement

**Rule:** The subject and verb should agree in number

**Poor:** The entry procedures does not address all aspects of confined space entry.

**Better:** The entry procedures do not address all aspects of confined space entry.

## Avoid Misplaced Pronouns

**Rule:** A pronoun must refer unmistakably to only one word.

**Poor:** When site personnel consulted management, they were certain the repair would be completed by noon.

**Better:** Site personnel were certain, after consulting management, that the repair would be completed by noon.

**Rule:** A pronoun should be used to refer only to a word that precedes it in writing.

**Poor:** The lasers were placed into service without a safety review, but site personnel were not able to explain it.

**Better:** The lasers were placed into service without a safety review, but site personnel were not able to explain how this occurred.

## Avoid Confusion among Commas, Semi-Colons and Colons

**Rule:** Use commas to separate items in a series. Items may be words, phrases, or clauses.

**Poor:** There is no formal system for evaluating new and modified equipment and processes prior to design installation and start-up.

**Better:** There is no formal system for evaluating new and modified equipment and processes prior to design, installation, and start-up.

**Rule:** Use semi-colons to separate the main clauses of a compound sentence.

**Poor:** There is no procedure outlining the schedule for training new operators, training documentation is not complete.

**Better:** There is no procedure outlining the schedule for training new operators; training documentation is not complete.

**Rule:** Use colons after introductions that suggest a list of items is going to follow.

**Poor:** The following elements are lacking, a site waste minimization plan, inspection schedules and logs for waste accumulation areas, names and phone numbers of emergency hazardous waste coordinators.

**Better:** The following elements are lacking: (1) a site waste minimization plan, (2) inspection schedules and logs for waste accumulation areas, (3) names and phone numbers of emergency waste coordinators.

## **Proofread Carefully**

Proofreading your work is important, since **readers will attribute mistakes they find to you**, even if someone else typed your report. In addition, errors can raise suspicions about the writer's care and attention to detail.

There are various techniques you can use to make sure your final report is free from spelling, punctuation and grammar errors. These methods force you to really see every word so you can discover any errors in your work.

- Isolate each line from the lines above and below. Use note cards or pieces of paper to do this.
- Read the document aloud.
- Read lines of text from right-to-left rather than from left-to-right.
- Read lines of text from bottom-to-top.

**A word of caution: proofreading lines or words in isolation has one drawback – you may not notice words seemingly spelled right, but incorrect when read in context. After you finish final proofreading, be sure you read your work one final time for meaning.**

## Summary

As you write your Assessment Findings, keep in mind the following important points:

- Focus on your purpose and on the recipients of your work.
- Use the four step process to write more effectively and efficiently. (Plan, Draft, Cool, Revise.)
- Organize as you go, by sorting the data you collect into topics. In your final document, present your findings in outline form.
- State the facts only, with enough detail to make the problem perfectly clear.
- Write in the present tense whenever possible.
- Avoid general or vague statements. Give detail.
- Avoid interpreting data or drawing conclusions.
- Avoid persuasive statements. State the facts only.
- Use acronyms and abbreviations only after you have given the full name first.
- Use common terminology rather than jargon whenever possible.
- Use job titles or group names rather than individual names whenever possible.
- Use non-judgmental words rather than words that imply judgment, carry emotion, or are extreme.

## **Summary (continued)**

- **Avoid words that imply some legal duty has been neglected or some legal liability exists.**
- **Cite the appropriate regulation, corporate policy, or good management statement below your findings.**
- **Edit your work, checking organization, language and grammar.**
- **Proofread your work carefully to make sure your document is free from spelling, punctuation and grammar errors.**

# **AUDIT PREPARATION**

## **AUDITING - A DIFFERENT PERSPECTIVE**

# **AUDITING - A DIFFERENT PERSPECTIVE**

- Waste Minimization
- Property Transfer Audits
- Due Diligence
- Liability
- Risk Assessment

# **Waste Minimization**

## **Definition:**

**Waste minimization or pollution prevention means minimizing or preventing the generation or release of wastes and pollutants to the extent technically and economically feasible, throughout the life cycle of the product, including its design, production, packaging and ultimate fate in the environment.**

## **What is Pollution Prevention?**

**"There are significant opportunities for industry to reduce or prevent pollution at the source through cost-effective changes in production, operations, and raw materials use. Such changes offer industry substantial savings in reduced raw material, pollution control, and liability costs as well as help protect the environment and reduce risks to worker health and safety."**

**- The Pollution Prevention Act of 1990**

**Faced with the increasing costs and liabilities associated with end-of-pipe waste management practices, many waste generators are turning to pollution prevention as a cleaner, safer, and more cost-effective alternative. Pollution prevention (also known as source reduction) is defined as:**

**Any practice which reduces the amount of any hazardous substance, pollutant, or contaminant entering the waste stream or otherwise released to the environment (including fugitive emissions) prior to recycling, treatment, or disposal; and reduces the hazards to public health and the environment associated with the release of such substances, pollutants, or contaminants.**

**Pollution prevention includes such techniques as toxics use reduction, raw material substitution, process or equipment modification, product redesign, training, improved inventory control, production planning and sequencing, and better management practices.**

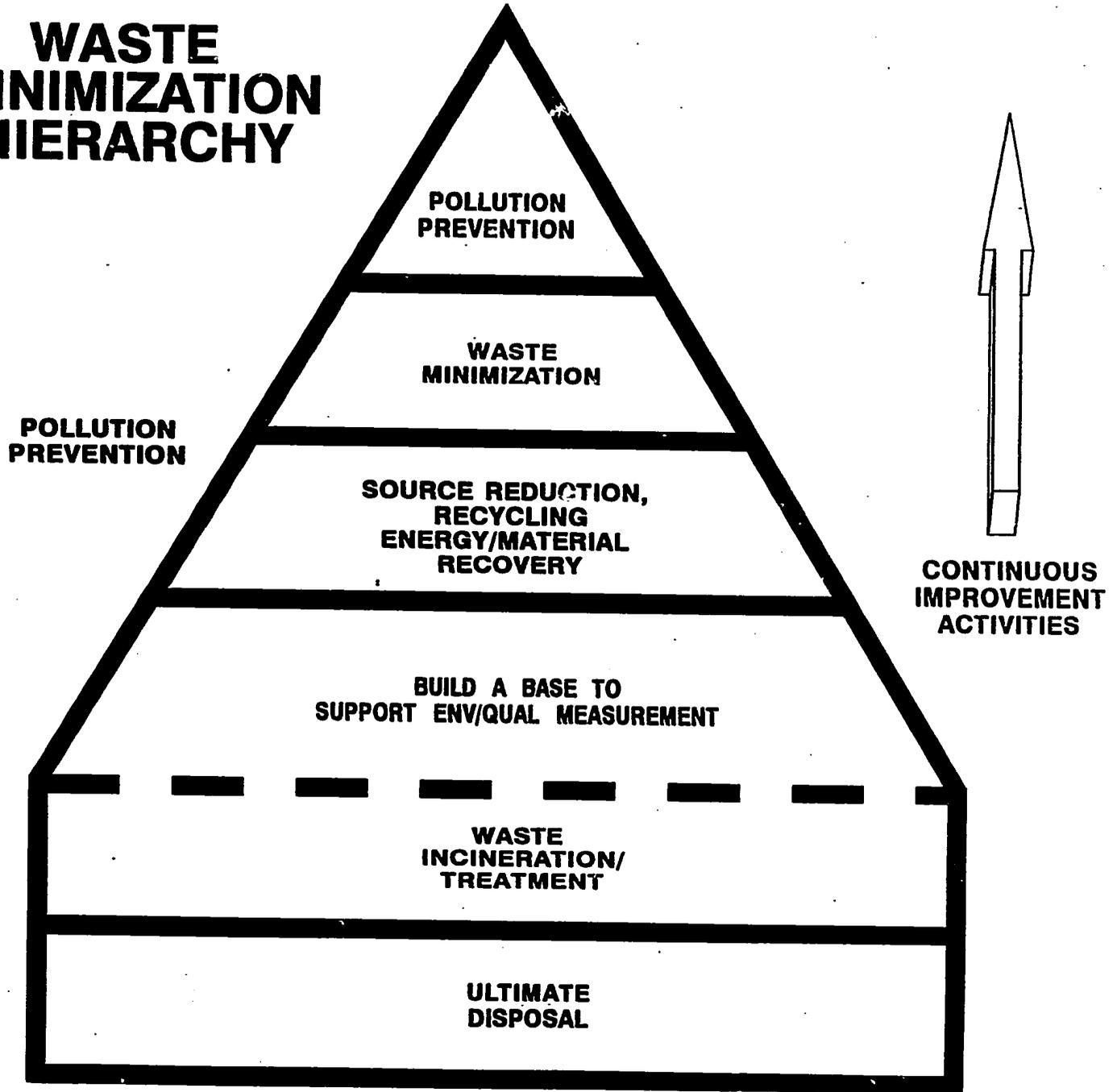
## **Waste Minimization (continued)**

- **Purpose**
  - **To minimize waste and pollutants during the life cycle of the product as it goes through the process.**
- **Historical Perspective**
  - **Various Laws in the U.S.**
  - **Economics**

## **Waste Minimization (continued)**

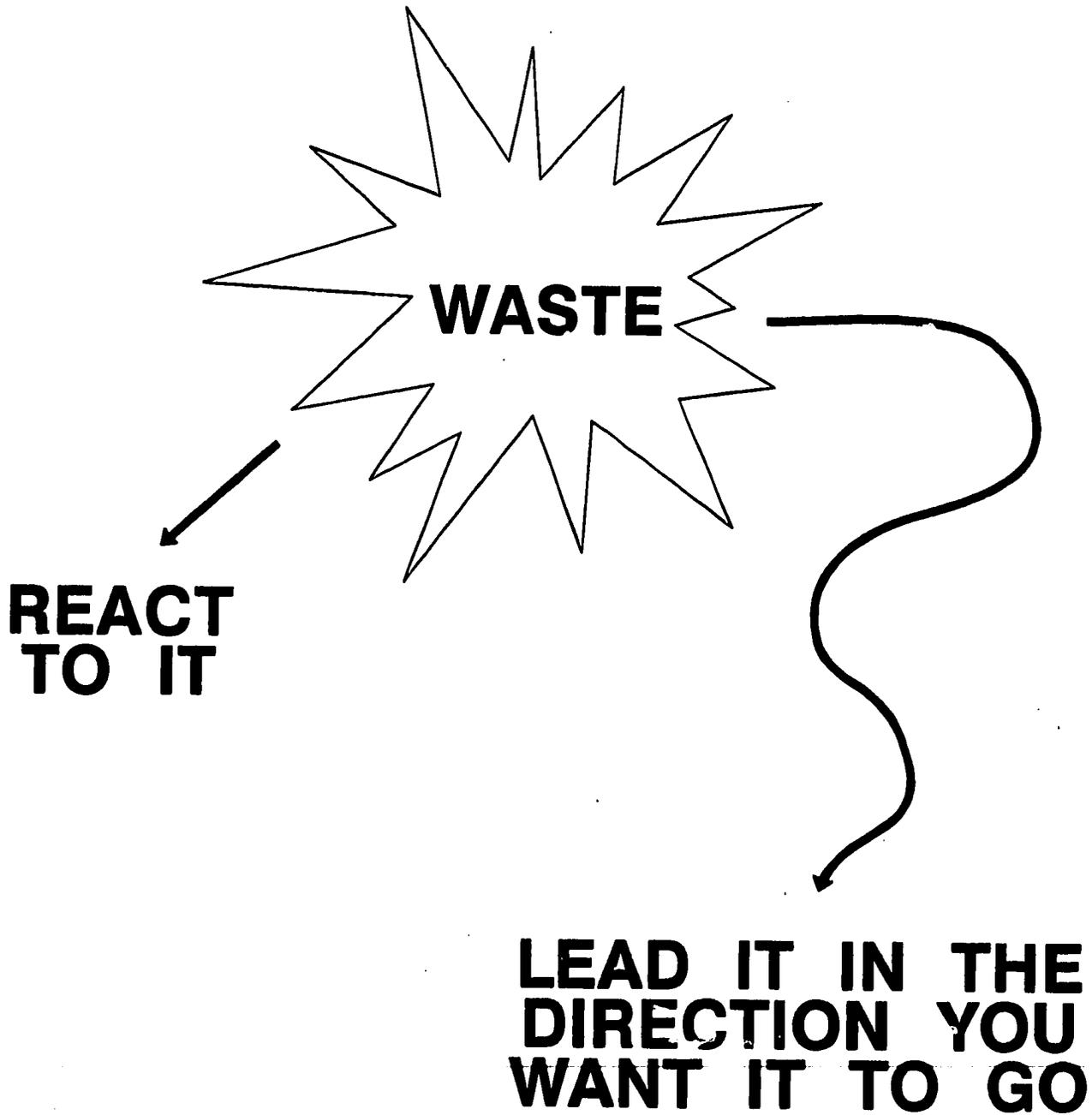
- **Waste Minimization Hierarchy**
  - **Pollution Prevention**
  - **Source Reduction**
  - **Recycling**
  - **Treatment and Disposal**

# WASTE MINIMIZATION HIERARCHY



7/6

Waste Management



## **Waste Minimization (continued)**

Source reduction refers to any practice that reduces the generation of waste or the toxicity of the waste at the source. Source reduction can be achieved through:

- Procedural changes such as:
  - Good Operating Practices
    - Material Handling and Storage Improvement
    - Inventory Control
    - Scheduling Improvement
    - Spill and Leak Prevention
    - Preventive Maintenance
    - Operational Adjustment
  - Waste Stream Segregation
  - Training and Awareness
- Technology Modification such as:
  - Process Modification
  - Equipment Modifications
  - Water and Energy Conservation
  - Recycling and Reuse
- Raw Material Substitution
- Product Alterations/Reformulations

Recycling is any process that uses or reuses any potential emissions of waste as an effective substitute for a commercial product. It can be on-site or off-site. On-site recycling, however, is preferable because of increased control over the process.

## **Waste Minimization (continued)**

- **Establishment of a Waste Minimization Program**
  - **Management Commitment**
  - **Establish Goals**
  - **Measure Quantities and Determine Dollar-Value of Wastes Generated in Order to Establish a Baseline Relative to which Future Improvements can be Measured**
  - **Establish Waste Minimization Committees**
  - **Develop Training Programs**
  - **Establish Plant Level and/or Individual Level Awards Programs**
  - **Establish Procedures to Track Progress**

## **Waste Minimization (continued)**

- **Waste Minimization Audits**
  - **Compiling an Inventory of Waste Streams and Generation of Waste**
  - **Formulating a Range of Potential Solutions to Eliminate their Generation**
  - **Prioritizing the Projects for Implementation**
  - **Screening the Feasibility of the Various Alternatives Based on Economics and Technical Criteria**
  - **Making Recommendations to the Management**

## **Waste Minimization (continued)**

- **Compiling Inventory**
  - **Material Safety Data Sheets, if Available**
  - **Chemical Purchasing Records**
  - **Process Flow Diagram and Facility Layout**
  - **Production Records**
  - **Internal Waste Tracking Reports, if any**
  - **Interview Plant Personnel**
  - **Plant Tour**
  
- **Formulating Options**
  - **Improved Housekeeping**
  - **Material Substitution**
  - **Process Modification**
  - **Recycling and Reuse**
  - **Equipment Redesign**
  
- **Prioritization**
  - **Potential Criteria**
    - **Volume, Toxicity and/or Mobility Considerations**
    - **Waste Management and Disposal Costs**
    - **Safety/Health Risks**
    - **Ease of Implementation**
    - **Estimated Cost**
    - **Technical Feasibility**

## **Waste Minimization (continued)**

### **Screening of Options - Technical and Economic**

- **Technical Considerations include:**
  - **Effect on Product and Production**
  - **Space and Utility Requirements**
  - **Reliability, Maintainability and Availability**
- **Economic Considerations include:**
  - **Capital and Operating Expenses**
  - **Return on Investment**
  - **Reduction in Waste Disposal Costs**
  - **Reduction in Raw Material Purchase cost**
  - **Reduction in Production and Operation costs**
  - **Quality Improvements**

## **Examples of Relatively Low-Cost Pollution Prevention Projects**

### **Training and Preventive Maintenance Opportunities**

- 1. Increase awareness among plant employees that "pollution prevention" is an important issue and that poor maintenance is often the cause of waste. A heightened awareness is a vital prerequisite to changing old waste generating practices.**
- 2. Improve housekeeping practices, as well as operator and maintenance personnel training. Such actions often translate into reduced waste production, fewer leaks and therefore reduced fugitive emissions from equipment and improved performance in waste and emission generating systems (e.g., incinerators, stacks, waste water treatment systems). Such efforts often improve product quality as well as reduced costs.**
- 3. Review frequency of equipment inspections and preventive maintenance procedures to assure minimization of leaks and spills.**
- 4. Review operating instructions for coverage of pollution prevention measures. This should be coupled with regular observation of the utilization of the correct procedures by all line personnel.**
- 5. Regularly check process yields and compare them with theoretical or expected yields to determine if losses are occurring and the efficiency of raw material usage. Unaccounted for losses should be investigated to determine the source and development of preventive measures.**
- 6. Inspect curbing, diking and any other spill containment and loss prevention measures to maximize recovery of spilled materials to prevent ground contamination.**

## **Examples of Relatively Low-Cost Pollution Prevention Projects (continued)**

### **Degreasing, Cleaning and Plating Operation Opportunities**

1. Evaluate opportunities to switch from solvent-based cleaning/degreasing systems to either steam cleaning or alkaline-based systems in order to reduce hazardous waste generation, eliminate toxic air emission, and reduce system exposure to the chemicals.
2. Evaluate the use of water-based lubricants so that a non-solvent based cleaning system can be employed.
3. Use counter-current washing systems to minimize water usage and produce less waste-water and minimize water usage.

### **Painting/Stripping Opportunities**

1. Change from solvent based paint strippers to abrasive blasting.
2. Convert where possible to the use of water-based or powder-based paints to reduce emission of Volatile Organic Compounds (VOC).
3. Convert to electrostatic paint spraying to minimize paint usage by over spraying.

### **Machining**

1. Switch to the use of water soluble oil for machining needs, which in turn allows the use of an aqueous-based cleaner rather than a solvent degreasing system.
2. Where petroleum based oil is necessary, use as feasible, one that does not leave a residue which will require degreasing.
3. Equip all machines utilizing unenclosed lubricants with drainable drip pans for the collection of drips and recovery of spills.

# **POLLUTION PREVENTION RESPONSES BY U.S. CHEMICAL INDUSTRY**

- **IS WIDELY PRACTICED BY U.S. INDUSTRY**
- **PROVIDES ENVIRONMENTAL AND ECONOMIC BENEFITS**
- **SOURCE REDUCTION IS KEY TO ECONOMIC COMPETITIVENESS**

**3M COMPANY (1975-1993) ▶ 3P PROGRAM SAVED \$580 MILLION AND ELIMINATED 700,000 TONS POLLUTANTS**

**AMOCO (1983-1988) ▶ SAVED ABOUT \$50 MILLION AND REDUCED ITS HAZARDOUS WASTE BY 80%**

**CHEVRON (1987-1990) ▶ SAVED ABOUT \$30 MILLION AND REDUCED ITS HAZARDOUS WASTE BY 60%**

- ▶ **Many companies have volunteered to reduce by 50% their generation of 17 specific chemical wastes by 1995**

## ***INFORM STUDY OF 29 CHEMICAL PLANTS (1980-1989)***

- **FROM 1980-1985 IN 29 PLANTS, APPROXIMATELY 60 MM KGS WASTE REDUCED PER YEAR; 5 PLANTS REDUCED WASTE BY MORE THAN 450,000 KGS PER YEAR**
- **COST OF IMPLEMENTATION WAS LOW (48 SRA'S)\***
  - ▶ **NO CAPITAL INVESTMENT (12 SRA'S)**
  - ▶ **LESS THAN \$100,000 (24 SRA'S)**
- **ECONOMIC BENEFITS**
  - ▶ **TWO-THIRDS OF THE PLANTS RECOUPED THEIR CAPITAL INVESTMENTS IN 6 MONTHS OR LESS (38 SRA'S)**
  - ▶ **15% OF PLANTS SAVED MORE THAN \$ 1 MILLION/YEAR AND 50% BETWEEN \$45,000 TO \$1 M/YEAR (62 SRA'S)**
  - ▶ **PRODUCT YIELDS INCREASED**

\* Source Reduction Activities

**EXAMPLES OF MULTINATIONALS'  
POLLUTION PREVENTION PROGRAMS**

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# Case Study:

## How 3M Makes Pollution Prevention Pay Big Dividends

Thomas W. Zosel

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**Company:**

3M

**Location:**

St. Paul, MN, headquarters;  
facilities in fifty-two countries

**Number of Employees:**

87,500

**Business:**

Research, manufacture, and  
marketing of home and  
business products including  
pressure-sensitive tapes,  
photographic films, recording  
tapes, coated abrasives, and  
insulating materials

**Objective:**

Prevent pollution at the  
source in products and  
manufacturing processes,  
rather than deal with  
end-of-pipe waste

**Program:**

"Pollution Prevention Pays," a  
companywide, worldwide  
program based on employee  
involvement and recognition

**Bottom Line:**

\$500 million saved since  
1975, 50-percent reduction in  
pollution per unit of  
production

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3M IS ONE of the nation's leading "blue chip" companies. It is an integrated enterprise characterized by substantial interdivision and intersector cooperation in research, manufacturing, and marketing of products incorporating similar component materials manufactured at common sources. Its business has developed from its research and technology in coating and bonding for coated abrasives, the process of applying one material to another. Today 3M markets more than 60,000 products, including pressure-sensitive tapes, coated abrasives, roofing granules, photographic film and lithographic plates, magnetic recording tape, reflective sheeting, electrical insulating materials, and repositionable notes.

3M employs some 87,500 men and women in fifty-two nations, all of whom are encouraged to explore new ideas and share what they learn with fellow employees. This philosophy carries over to environmental responsibility and is the basis of the internationally known 3M Pollution Prevention Pays (3P) Program.

### The 3P Program Philosophy—

#### Pollution Prevention, Not Waste Removal

The 3P Program, begun in 1975, has been recognized the world over for its achievements in waste minimization and preventing pollution at the source. It has been copied by many companies and has received numerous environmental achievement awards.

The 3P idea is to prevent pollution at the source in products and manufacturing processes, rather than remove pollution after it is created. Although the idea itself is not new, the concept of applying pollution prevention on a companywide worldwide basis, *and* recording the results, had not been done before 3M's initiative.

In the beginning, the 3P Program was established because of the recognition that prevention is more environmentally effective, technically sound, and less costly than conventional control procedures. Natural resources, energy, manpower, and money are all used in

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Thomas W. Zosel is Manager, Pollution Prevention Programs for the 3M Company.

building conventional pollution control facilities, and more resources are consumed to operate them. Furthermore, at best, conventional pollution removal facilities only constrain a problem temporarily; they do not eliminate the problem, which is the objective of Pollution Prevention Pays.

This prevention approach to pollution abatement has become standard practice at 3M. The company is engaged in a continuing effort to eliminate pollution at the source through product reformulation, process modification, equipment redesign, recycling, and the recovery of waste materials for resale.

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*3M is engaged in a continuing effort to eliminate pollution at the source through product reformulation, process modification, equipment redesign, recycling, and the recovery of waste materials for resale.*

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### **How the 3P Program Works**

The Pollution Prevention Pays Program is conducted by and for the 3M operating divisions. It is run by a 3P Coordinating Committee composed of representatives from 3M's engineering, manufacturing, and laboratory organizations and from the corporate Environmental Engineering and Pollution Control (EE&PC) organization.

EE&PC provides a manager to carry out the Coordinating Committee plans and to administer the program. The Coordinating Committee establishes criteria for 3P participation.

One of the most important functions of the manager is to encourage participation in the program by 3M technical employees. These employees in 3M laboratories and manufacturing facilities are the people who initiate most individual 3P projects. Encouragement in the past has come primarily from awards and recognition. More recently 3M has set goals for its more than fifty operating divisions, which in turn have passed goals on through their organizations.

Typically 3P projects are initiated when employees recognize a specific pollution or waste problem and a possible solution. An employee team is then developed to analyze the problem and develop solutions. Such a team might consist of employees from several disciplines including engineering, research, marketing, and legal. A proposal is then submitted to the affected operating division and a decision is made on whether to commit funds, time, and other resources to it.

### **Awards and Recognition**

Projects that are developed under the 3P Program are eligible for recognition by management. In order to qualify for an award, a 3P project must fulfill certain established criteria. These are based on four distinct payoffs that 3M identified as goals before initiating its 3P Program: (1) a better environment, (2) conserved resources, (3) improved technologies, and (4) reduced costs. Thus, to receive formal recognition under the 3P Program, a project must meet the following guidelines:

- It must, through process change, product reformulation, or other preventive means, eliminate or reduce a pollutant that currently is a problem or has the potential to become a 3M

48

problem in the future.

- It should exhibit, in addition to reduced pollution, environmental benefit through reduction in energy consumption, more efficient use of raw materials, or improvement in the use of other natural resources.
- It should involve a technical accomplishment, innovative approach, or unique design in meeting its objective.
- It must have some monetary benefit to 3M. This may be through reduced or deferred pollution control or manufacturing costs, increased sales of an existing or new product, or other reduction in capital or expenses.

Award suggestions usually are initiated by the more than fifty 3M operating divisions. The Coordinating Committee then determines what projects will receive awards. If a project is recommended for an award, the division is contacted for information concerning who should be cited. Only persons who have made a direct, personal, and measurable contribution are eligible. Members of the EE&PC staff are not eligible, nor are winning project supervisors or managers, unless they meet the criteria for a "hands-on" contribution to the effort.

Division management staff members present the awards, frequently at a meeting of the unit's management committee. The award consists of a certificate signed by the chairman of the board and the vice president for Environmental Engineering and Pollution Control. These awards are considered a significant honor and can influence decisions on pay increases and promotions.

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*3P projects have succeeded in eliminating a variety of pollutants at the source, including hydrocarbons (which contribute to ozone and smog), odor, water, dissolved solids, sulfur, zinc, alcohol, and incinerated scrap.*

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### **A Record of Success**

To date, since 1975 there have been 2,511 recognized 3P projects throughout the company. Of these, 785 have been in the United States and 1,726 have been from 3M operations in Argentina, Australia, Belgium, Brazil, Canada, France, Germany, Italy, Japan, Mexico, New Zealand, the Philippines, South Africa, Spain, Sweden, Switzerland, Thailand, United Kingdom, and Venezuela.

3P projects have succeeded in eliminating a variety of pollutants at the source, including hydrocarbons (which contribute to ozone and smog), odor, water, dissolved solids, sulfur, zinc, alcohol, and incinerated scrap. For example, a 3P project at a 3M facility in Alabama recycled cooling water that previously had been collected for disposal with wastewater. Reusing the cooling water allowed 3M to scale down the capacity of a planned wastewater treatment facility from 2,100 gallons a minute to 1,000 gallons a minute. The recycling facility cost \$480,000, but 3M saved \$800,000 on the construction cost alone of the wastewater treatment plant.

Another project involved the redesign of a resin spray booth that had been producing some 500,000 pounds of overspray a year that required special incineration disposal. New equipment was installed

89

to eliminate excessive overspray. Efficiency was increased to provide a net reduction in the total amount of resin used, saving more than \$125,000 annually, on a \$45,000 equipment investment.

International 3P projects have ranged from improved control of coating weight at a 3M facility in Gorseinon, Wales, and recycling of wastewater at Hilden, West Germany, to a variety of combustion control and heat recovery processes in Japan.

### The Bottom Line: \$500 Million Saved

The results of the 3P Program have been dramatic. In the fourteen years the program has been in existence (1975-1989), the pollution prevented has resulted in a savings of \$500 million for 3M (\$426 million from U.S. operations and \$74 million from international operations).

Equally dramatic are the reductions in pollution as a result of the program. Table 1 shows the 3P results for the first year alone. Projected over a period of several years, these figures become significant indeed. In fact, since 1975, through the 3P Program 3M has reduced pollution by an estimated 50 percent.

**Table 1. Reductions in Pollutants:  
First Year of 3P Program**

<i>Pollutant</i>	<i>U.S.</i>	<i>International</i>
Air pollutants	112,000 tons	11,000 tons
Water pollutants	15,300 tons	1,100 tons
Wastewater	1 billion gallons	600 million gallons
Sludge/solid waste	397,000 tons	12,000 tons

### Looking to the Future

Achieving environmental benefit and some cost savings through pollution prevention is better than no savings and no benefits. But 3M believes its task is to reach as high a percentage of pollution elimination and pollution minimization as possible, and, as successful as 3P has been, 3M top management decided that the company should be doing even more. In June 1989, 3M announced challenging new goals intended to spur the development of new and environmentally better ways to manufacture our products.

3M intends to cut all hazardous and nonhazardous releases to the air, land, and water by 90 percent and to reduce the generation of all waste 50 percent by the year 2000. This is from the base year of 1987. We also have an ultimate goal of achieving as close to zero emissions as technically possible.

These goals will take 3M from a position of complying with governmental regulations to being substantially under the limitations established by the environmental regulations. What we believe is

extremely important to note is that this significant commitment is an entirely voluntary effort.

3M will achieve its goals primarily through an updated 3P Program called 3P Plus. 3P Plus involves both a commitment to substantially reduce emissions through whatever means are available and longer-term scientific research to reduce sources of pollution in our manufacturing processes—the classic pollution prevention approach.

Air pollution is a particular challenge to 3M because of the kinds of products we make. Coating processes used to manufacture such products as pressure-sensitive tapes, sandpaper, and videotape have in the past required the use of petroleum-based solvents, similar to paint thinners, which evaporate and become air emissions.

3M scientists, as part of the 3P Program, have found ways to reduce or eliminate the use of solvents in making a number of products. But as solventless processes that work well for some products will not necessarily work for others, research is an important part of 3M's effort to achieve our goals. We expect to find ways to make more of our products with low- or no-solvent processes and to substantially reduce our generation of waste and pollution.

As an intermediate step, to help us reach our goals more quickly 3M has initiated a \$150 million program to achieve Best Available Control Technology (BACT) at our plants worldwide by 1993 (1992 in the U.S.). Pollution control devices will be installed on all existing facilities emitting more than 100 tons a year and all new facilities emitting more than forty tons a year, even though strict reductions are not required by government regulations.

3M has already completed emission-control projects in New Jersey (1,000 tons a year reduced) and Los Angeles (1,050 pounds a day reduced). We are currently in the process of developing similar returns in Illinois, Pennsylvania, and Ventura County, California.

Along with this commitment to substantially reduce emissions, 3M's top management has decided that the Emission Reduction Credits that are created by the 3P Plus efforts will not be sold to other companies. Any credits that are not needed for future 3M expansions will be donated back to the state or local agency for improvement in air quality. In addition, we have made a commitment not to use the techniques available through the Emission Trading Policy, namely bubbling and netting, to avoid the installation of pollution control equipment.

Despite this \$150 million commitment to emission control technology, the most important part of our effort will continue to focus on source reduction. 3P Plus, like 3P before it, will require a commitment from management and employees throughout the company.

But 3P Plus will be a more structured effort than the voluntary 3P Program. Waste minimization teams are being formally established in every operating division to identify source reduction and recycling opportunities and develop plans to address them. These teams are interdisciplinary groups consisting of representatives of

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*Waste minimization teams are being formally established in every operating division to identify source reduction and recycling opportunities and develop plans to address them.*

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91

manufacturing, laboratories, engineering, marketing, packaging engineering, and other units needed to ensure as broad a perspective as possible.

A pollution prevention staff within the corporate environmental organization has also been established to facilitate the program. Among its responsibilities, the pollution prevention staff will monitor the program and report to management on problems, technical breakthroughs, and the overall progress. Regular quarterly reports will be made showing gains from the 1990 baseline year.

The pollution prevention staff will also encourage the sharing of good ideas and technical breakthroughs among the many divisions. And it will monitor legislative and regulatory activity that might affect our program and goals.

Finally, and perhaps most importantly, the pollution prevention staff will encourage the pollution prevention concept by continuing recognition programs for successful projects and by establishing a new award program for divisions and plants that meet their goals.

Although 3P Plus primarily involves mobilizing internal sources to achieve our goals, outside sources will also participate. Suppliers of materials to 3M will be asked to improve their products to ensure that they cause a minimum of hazardous waste.

As we enter the decade of the nineties, 3M intends to continue its corporate dedication to pollution prevention. ♦

92

## Environmental Manager Advisory Board

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## Feature

# Chevron Gets SMART On Waste Reduction

Chevron Corporation's Walter G. Scott is not a man easily satisfied. Take his company's waste reduction program:

"After three years, yes, we have a 60-percent reduction in hazardous waste—but that's not to say that 'we're there.' We're on our way, and we want to show continual improvement. After six or seven years, we will have a database that we really feel comfortable with."

The San Francisco company's hazardous waste minimization program, called SMART (Save Money And Reduce Toxics), initiated in 1987, has nonetheless shown some tangible achievements.

### LANDFILL COSTS SLASHED

In the first year, Chevron cut the quantity of hazardous waste disposed to landfills by 44 percent (from 135,000 tons to 76,000 tons), and hazardous waste generation dropped 53 percent. In 1988, the company achieved a 60-percent hazardous waste reduction compared with 1986, the baseline year. The results from 1989 are still being tallied.

Although the company has a hard time putting a precise figure on savings, it claims \$3.8 million in savings in disposal costs the first year alone. Expenses—including installation of new equipment, rerouting process streams, and "brainstorming" sessions at local facilities—cost more than \$1.2 million. Both figures are dated at this point—savings and expenses are much higher, says Scott, the company's coordinator for waste programs. "This is a huge effort," he says.

### GOAL: 'CONTINUOUS IMPROVEMENT'

The company has almost achieved its stated goal of a 65-percent reduction

in hazardous waste generation by 1992. But Scott doesn't intend to rest on that achievement, i.e., meet the company's five-year corporate goal, "and then wipe our hands and move on to something else. The name of the game is to show continuous improvement.

"The easy stuff will have been done in the first five years," says Scott, much of it achieved by mechanical processes, such as centrifuging or mechanical pressing.

Still ahead is the task of developing a better database, so the company isn't comparing apples and oranges. After all, how much of the 60-percent reduction figure is real—from source reduction, say—and how much is simply the result of fewer plant shutdowns (when a plant is shut down, it generates an enormous amount of waste)? Until a better database is devised, the company won't really know, although Scott believes the 60-percent reduction figure is basically accurate. Further complicating the issue, the company will soon be adding nonhazardous waste to the program.

### RECYCLING GLASS VIALS

Nonetheless, the company is able to document numerous case studies of waste reduction successes. Take the 10,000 oil samples the company produces each month. These are contained in small glass vials, the size of one's finger. Because even a trace of oil from the used samples renders them a hazardous waste, the used sample vials had been packed with absorbent material in 55-gallon drums and sent to hazardous waste landfills. The cost of disposal: about \$5,000 a month.

In June 1988, however, the company installed a vial crusher, a

(Continued on page 4)

## Hazardous Waste Stays Close to Home

Most hazardous wastes end up being disposed within the borders of the state where they are generated, according to a recently issued EPA report. Large volumes of hazardous wastes seldom get shipped cross-country in the U.S. Even when shipped out of state, wastes usually end up going no further than across the state line.

The EPA report, ("U.S. EPA's 1985 National Report of Hazardous Waste Generators and Treatment Storage and Disposal Facilities Regulated Under RCRA, Volume II Methodology and Data") states that only 1 percent of the hazardous waste handled in 1985 was shipped to out-of-state facilities.

Of the 237 million tons of hazardous waste handled by the 4,900 Resource Conservation and Recovery Act (RCRA) permitted facilities in the nation, the EPA said only three million tons were shipped out-of-state. For example, Texas RCRA facilities managed more than 41 million tons of hazardous waste in 1985. Less than 200,000 tons of this was sent out-of-state.

The report also revealed that on the occasions when hazardous wastes were shipped out-of-state, the facilities selected were in adjacent or neighboring states 80 percent of the time. (This accounted for 2.4 million tons in 1985).

Thirty-eight states, plus the District of Columbia, sent more than 50 percent of their exported hazardous waste to neighboring states. Twenty-one of these states shipped more than 80 percent of their exported hazardous waste to neighbors.

Only twelve states—Alaska, California, Colorado, Connecticut, Hawaii, Maine, Nebraska, New Mexico, North Dakota, South Carolina, Utah, and Wisconsin—moved less than 50 percent of their exported waste to neighbors. In total,

(Continued on page 5)

## Chevron Gets SMART

(Continued from page 3)

device that breaks vials and gathers their contents. The oil could be collected in a drum and recycled, and the glass, too, collected for separate disposal. The equipment cost \$20,000. It paid for itself before the year was out.

Tank bottoms were another major source of waste. For years, the company simply landfilled the slop oil emulsion (a listed hazardous waste) that formed in its giant tanks between the oil and water left over from the plant's waste water system.

### CENTRIFUGING SLUDGE

Now a mobile centrifuge unit rapidly spins the sludge, separating oil and water into two distinct streams—as well as producing a small amount of solid cake. The recovered oil is used as plant feedstock, the water is further treated in the plant's wastewater system, and the cake, still a hazardous waste, is landfilled. But it represents less than 5 percent of the original sludge. This puts the company in good stead for the 1990s, when the RCRA land ban is expected to send the cost of landfilling slop oil emulsion skyrocketing.

The company has also been able to turn parts of its waste stream into direct profits. About twice a month, for instance, Chevron's Warren Petroleum Company sends spent caustic to nearby pulp and paper manufacturers who use the corrosive liquid as a buffer solution in their treatment of wood products. The company was able to find these buyers by adding the chemical by-product to a list published monthly for subscribers by the Houston Chamber of Commerce Industry Surplus Chemical Inventory Program.

### FIGURING COSTS

While these savings are significant, Scott, to be fair, says that he is still trying to get a handle on the costs. For example, contractors, maintenance workers, and compliance people are all involved in the tank sludge recycling process. These are "costs that are not typically assigned

to disposal costs." Chevron has to figure out a way to incorporate these costs into its waste reduction formula.

Further, source reduction, the preferred waste minimization strategy, is not always feasible. With tank bottoms, it's difficult to figure out how *not* to generate the waste to begin with. Sediment settles in crude oil tanks. It could be filtered "upstream," but this would entail an enormous amount of filtering. One could put mixers in the tanks, perhaps. But these aren't 5,000-gallon tanks where such a step might be practical—but one-million-gallon tanks.

### SWAPPING IDEAS

Where does the company get its waste minimization ideas? The field, mostly. A twenty-eight-member coordinating committee, consisting of environmental specialists and middle-level managers from the operating companies, has been formed to "swap ideas, brainstorm, and estimate future waste disposal costs." It was this committee that also established the initial baseline and the five-year overall corporate goal.

Scott, who before October 1989 held an operations management position in one of the company's refineries, believes that turning over ideas with the operating companies is "the most important part of the program."

Recently, a meeting was held with managers from the operating companies to reassess the SMART program. What was working? What wasn't? What were the goals of the program—as seen from the field? What role should corporate staff play? etc. The meeting was conducted in a workshop setting, with an outside facilitator hired to devise a list of tasks for the various teams. About twenty people participated.

### ASKING FOR MORE MONEY

What were the major criticisms of the program? One was that there simply weren't enough dollars available to support the program's philosophy, i.e., saving money and reducing toxic waste. (The operating companies fund SMART projects themselves.) Sometimes one has to

(Continued on page 16)

94

## Statewide Survey Finds More Than Half of Iowa Wells Contaminated

High levels of coliform bacteria, nitrates, or pesticide residues were found in more than half of rural Iowa wells sampled during the recent drought, when fewer contaminants were making their way into groundwater, a new survey found.

The survey, which was authorized by Iowa's 1987 Ground Water Protection Act and conducted by the University of Iowa and the Iowa Department of Natural Resources, sampled 686 private wells located in all ninety-nine counties in the state. More than 44 percent of the wells had high levels of coliform bacteria, which are found in human and animal waste.

Nitrate levels exceeding maximum contaminated level (MCL) standards set by the EPA were found in 18 percent of wells tested statewide. Nitrate contamination was worse in the western part of the state, where high levels were found in 38 percent of wells. In eastern areas, where residents often have wells more than 50 feet deep, nitrate levels exceeding the MCL were detected in only 9 percent of wells.

Well samples for the survey were taken between April 1988 and June 1989, a period of low rainfall in the Midwest. As such, they represent a "best case" picture of groundwater conditions. There was very little rainwater moving through the soil to pick up nitrates, pesticides, and other contaminants and carry them down into the groundwater.

More than 13 percent of the wells contained traces of pesticides, with atrazine most frequently detected. For additional information, or to obtain a copy of the survey results, published in March, call Rick Kelley at the Department of Natural Resources, 515-281-3783. ■

Source: Ground Water Monitor

## Washington Update

(Continued from page 15)

### New Additions To NPL

WASHINGTON—EPA placed 71 hazardous waste sites, including fourteen federal facilities, on its final National Priorities List (NPL), indicative of the nation's waste sites that pose the greatest threat to health and the environment. It also dropped one site.

This brings to 1,081 the number of final sites, and to 137 the number of proposed sites.

All fourteen federal sites were Department of Defense (DOD) facilities, bringing to 75 the number of DOD sites on the final NPL. ■

### Chevron Gets SMART

(Continued from page 4)

spend dollars to reduce toxics, it was observed.

Also, many of the operating managers had trouble buying into the concept that waste minimization would reduce their long-term liabilities in any meaningful way.

This may not be so surprising. A plant engineer seeking the most effective ways to manage waste, might say: "Joe's landfill could do it for this..."

A SMART answer: "But if you didn't generate the waste in the first place, then you wouldn't have to worry about Joe's landfill in the future." After all, Joe's could become a Superfund site one day—and the company could be responsible for its cleanup.

But the engineer answers that he has to worry about his costs today. He can't be worrying about what happens

to an outside waste site many years from now.

"The operating companies have trouble buying into the idea of long-term liability," observes Scott, who adds that no one really has a handle on the potential waste liability costs today.

### RAISING AWARENESS

Where then has the SMART program been effective?

Most of the managers agreed that their operating companies reduced hazardous waste as a result of the program—and all agreed it reduced their liability.

They also concurred that the program had raised the general awareness level within the company, making employees more sensitive to waste reduction. All units now have an inventory of their hazardous waste that is more detailed than that required under RCRA (Resource Conservation and Recovery Act), and they have also begun to inventory non-hazardous waste.

### A CORPORATE POLICY

Overall, a waste minimization program needs support from the top in order to succeed, says Scott. At Chevron, the chairman of the company has stated that "eliminating unnecessary waste generation" is now corporate policy. Managers are expected to integrate waste management into their normal business plans. "That's a key," says Scott. Environment is "no longer a poor cousin" within the company, but is seen as part of being competitive, of producing a high-quality product.

Also, to be successful, "the waste minimization process has to filter down to the guy with his hand on the valve, the operator, the laborer. They have to be praised, listened to."

"You can't have a real program run at the corporate level. Then it becomes a paper program. You have to get the operating plant manager on board, not just the environmental coordinator. If the program isn't vitally alive at the operating company level, it won't get anywhere." ■

**THE CHEMICAL MANUFACTURER'S  
ASSOCIATION'S MANAGEMENT PRACTICE  
CODE ON WASTE MINIMIZATION**

WASTE AND RELEASE REDUCTION CODE

Management Practice Milestones

Management Practices

Stages

	I	II	III	IV	V	VI
1. A clear commitment by senior management through policy, communications, and resources, to ongoing reductions, at each of the company's facilities, in releases to the air, water, and land and in the generation of wastes.						
2. A quantitative inventory at each facility of wastes generated and releases to the air, water, and land, measured or estimated at the point of generation or release.						
3. Evaluation, sufficient to assist in establishing reduction priorities, of the potential impact of releases on the environment and the health and safety of employees and the public.						
4. Education of, and dialogue with, employees and members of the public about the inventory, impact evaluation, risks to the community.						
5. Establishment of priorities, goals and plans for waste and release reduction, taking into account both community concerns and the potential health and safety impacts as determined under Practices 3 and 4.						

WASTE AND RELEASE REDUCTION CODE

Management Practice Milestones

Management Practices

Stages

I      II      III      IV      V      VI

<p>6. Ongoing reduction of wastes and releases, giving preference first to source reduction, second to recycle/reuse, and third to treatment. These techniques may be used separately or in combination with one another.</p>						
<p>7. Measurement of progress at each facility in reducing the generation of wastes and in reducing releases to the air, water, and land, by updating the quantitative inventory at least annually.</p>						
<p>8. Ongoing dialogue with employees and members of the public regarding waste and release information, progress in achieving reductions, and future plans. This dialogue should be at a personal, face-to-face level, where possible, and should emphasize listening to others and discussing their concerns and ideas.</p>						
<p>9. Inclusion of waste and release prevention objectives in research and in design of new or modified facilities, processes, and products.</p>						
<p>10. An ongoing program for promotion and support of waste and release reduction by others.</p>						

## **Property Transfer Audits**

- Purpose
- Phase 1, 2, 3, Audits
- Historical Perspective
- Current U.S. Practice

## **Property Transfer Audits (continued)**

**Phase 1:** The phase 1 audit is typically designed to identify the potential presence of the following hazards:

- asbestos
- soil or ground water contamination
- leaking underground storage tanks
- PCB's
- lead-based paint.

**Phase 2:** If, at the conclusion of phase 1, it appears that more information is required to define contamination, then, a limited sampling and analysis is conducted to more fully assess the damage to soil and/or water supplies.

**Phase 3:** In a limited number of cases a full sampling and analysis is conducted to identify more fully the remediation involved to clean-up the contamination.

## **Property Transfer Audits (continued)**

### **Typical Phase 1 Approach:**

- **Review Site Records**
- **Review Chain of Title**
- **Review Aerial Photographs**
- **Review Agency Records**
- **Interview Neighboring Facility Personnel**
- **Conduct On-Site Visit**
- **Prepare a Report**

## **Due Diligence**

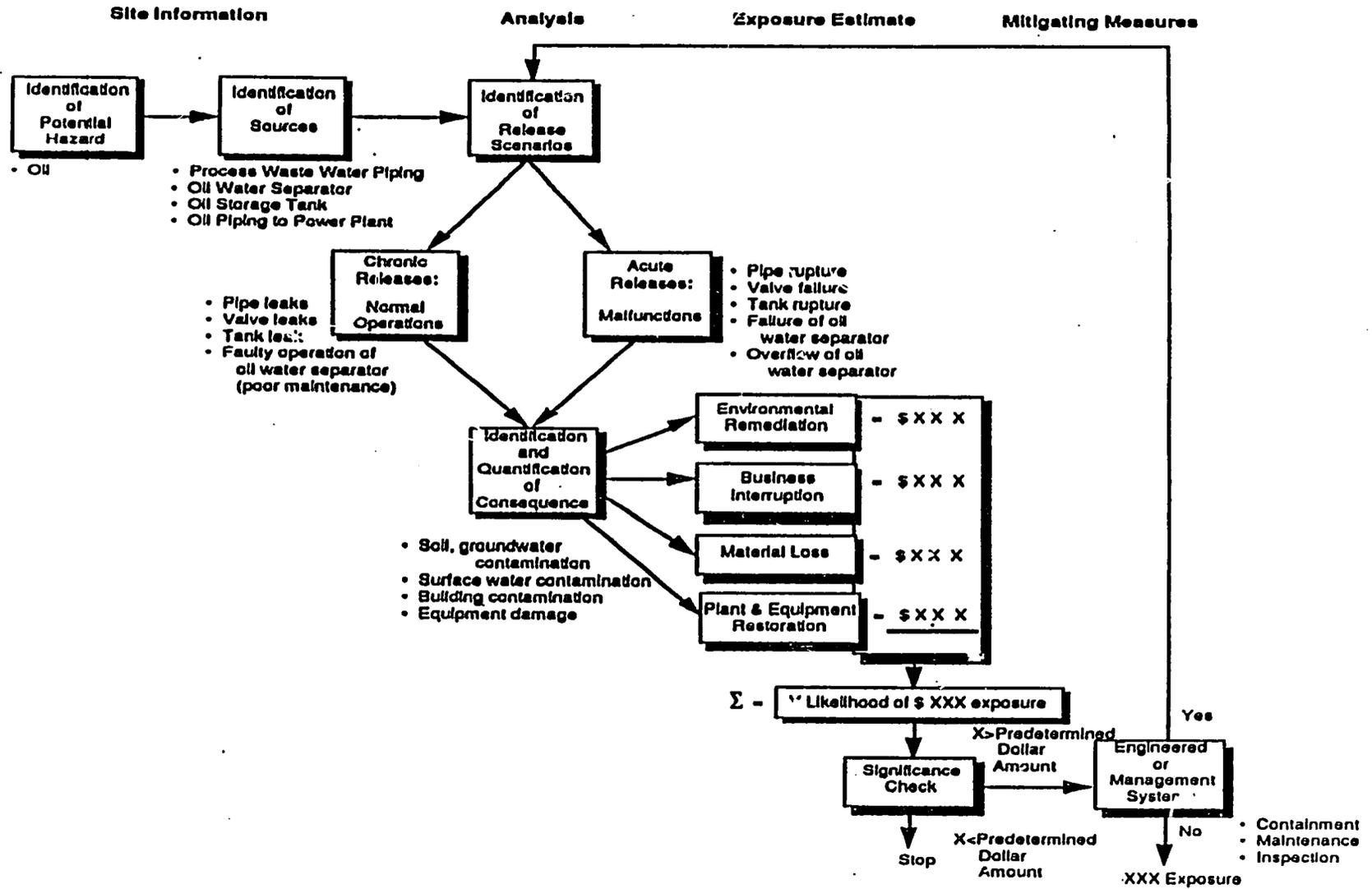
- Purpose
- Scope
- Historical Perspective
- Required by Venture Capitalists,  
Sellers/Owners and Lawyers

## Liability

- Purpose
- Scope
- Historical perspective

# **LIABILITY ASSESSMENT METHODOLOGY**

# LIABILITY ASSESSMENT METHODOLOGY



105

## **Risk Assessment**

- Definition
- Purpose
- Scope
- Role of Auditing in Risk Assessment
  - Assurance Process
  - Facility Equipment, Tool Maintenance
  - Education and Training
  - Documentation

## **LEGAL PERSPECTIVE**

## **LEGAL PERSPECTIVE**

- Confidentiality
- Attorney - Client Privilege
- Disclosure of Audit Reports

## **Confidentiality**

- **Early Involvement of Legal Counsel**
- **Determination as to What Data Needs Protection**
- **Establishment of Attorney-Client Privilege to Maintain Confidentiality**

## **Attorney-Client Privilege**

- Defined as a communication made in confidence to an attorney by a client (or potential client) for the purpose of obtaining legal advice.
- Four elements are necessary to establish this privilege:
  1. the privilege applies only to communications between the client and his attorney
  2. the communication must be made for the purpose of obtaining legal advice
  3. communication for which protection is sought must remain confidential
  4. the absence of a waiver.

## **Disclosure of Audit Reports**

- **Liability**
  - **the Corporation and its Individual Officers and its Employees**
  - **the Auditors Themselves**
  
- **U.S. environmental statutes impose significant penalties for corporations and individuals for the failure to report, the submission of false information and/or the destruction of required information.**

## **LEGAL PERSPECTIVE DISCUSSION**

## **LEGAL PERSPECTIVE DISCUSSION**

It should be emphasized that there is a body of opinion that would argue that environmental auditing should be undertaken regardless of the potential disclosure of audit-generated data or the potential liability flowing from the audit. The thrust of this argument is that the benefits from knowing where you stand in terms of environmental compliance outweigh the risks inherent in the undertaking. Additionally, some believe that maintaining confidentiality of audit data is difficult at best, or stated another way, is not worth the trouble.

For example, one area of activity in which environmental audits are critical but in which confidentiality is difficult, if not impossible, to maintain is the area of real estate transactions. It is highly likely that, in the future, all parties to property transactions will be held responsible for property investigating and discovering the potential environmental problems relating to transferred property.

### **Confidentiality**

Environmental audits may produce information or opinions which, if revealed, could be harmful to the organization undertaking the audit or to individuals within that organization. For example, audit reports may contain very sensitive data, analysis, and/or recommendations relating to the organization's progress toward obtaining full compliance with the law. Such sensitive information could be damaging in the possession of government attorneys who are bringing enforcement actions or private plaintiffs who have filed or are considering filing lawsuits for personal injuries or environmental damages.

Certain underlying facts can never be protected from disclosure, and none of the protections discussed herein guarantee confidentiality. Furthermore, those in control of an audit may decide that they are relatively unconcerned about future disclosure. If, however, nondisclosure is deemed potentially important, then, from the beginning, the audit should be designed and implemented with an eye toward

meeting the requisites of those protections which are available. The early involvement of legal counsel is important in taking advantage of those protections.

The first step in protecting data is to decide what really needs protection. Generally, it is neither possible nor desirable to maintain the confidentiality of all audit-generated information. Therefore, from the outset, auditors should seek legal protection only for those documents for which there is a legitimate claim and need.

The attorney-client privilege, which protects communications between a lawyer and client, is particularly significant in the context of environmental audits. The rationale for the privilege is the assumption that it is more desirable to risk an occasional miscarriage of justice than to inhibit a client's right to obtain effective legal representation. It is important to remember that four elements are necessary to establish this privilege.

First, the privilege applies only to communications between the client and his attorney. It does not protect underlying facts which may have been disclosed to an attorney. For example, the fact of a facility's violation of an environmental permit cannot be protected from disclosure to a third party by simply communicating the fact of the violation to an attorney. However, recommendations or analysis relating to a violation which is discovered during the course of an environmental audit and communicated by an environmental consultant to the attorney who has been retained by the facility for the purpose of giving legal advice on environmental compliance can, under certain circumstances, be protected by the attorney-client privilege.

The second element of the attorney-client privilege is that the communications must be made for the purpose of obtaining legal advice. Communications which are for the purpose of obtaining business, technical, or other nonlegal advice are not covered by the privilege. Therefore, a letter retaining outside counsel to assist in undertaking an environmental audit should specify that the purpose of the environmental audit is to obtain legal advice. If in-house attorneys oversee the audit, special care must be taken to try to distinguish their general management role from their role as legal advisers for the purposes of the

audit.

Another area of particular concern in the context of environmental auditing relates to the retention of technical consultants to assist in the audit. Although the attorney-client privilege requires that communications be made to the attorney for the purpose of obtaining legal advice, in practice, communications to non-lawyers, who are assisting counsel in providing legal advice may also be protected by the privilege. In order to maximize the availability of the privilege for this kind of communication, it is recommended that the attorney, rather than the client, retain the technical consultant, supervise his work, and that the reports of the consultant be made directly to the attorney.

The third element of the privilege is confidentiality, i.e., the communication for which protection is sought must remain confidential. This element becomes particularly important in the context of corporate disclosures. Documents which are indiscriminately circulated within a corporation may lose the privilege protection. Counsel overseeing the audit should limit dissemination as much as practicable to those immediately concerned with the results of the audit and take care to see that confidential documents are carefully controlled. For example, "privileged and confidential" should be stamped on all documents for which protection will be sought. All persons who participate in the audit should be educated as to the importance of maintaining the confidentiality of certain documents.

The fourth element of the privilege is the absence of waiver. If the holder of the privilege intentionally discloses the communication for which protection is sought, the privilege will be deemed waived. Even unintentional disclosures may destroy the privilege. Thus, counsel overseeing the audit should setup procedures early in the process to minimize the chance of disclosure.

An organization undertaking an audit should consider taking the following steps to maximize the chances that certain environmental auditing documents will be protected by the attorney-client privilege:

- An attorney should be involved from the outset in the design and implementation of the audit and should analyze the process for purposes of strengthening the privilege claim.
- Beginning with the letter retaining counsel to assist in performing the audit, all documents should reflect the fact that the purpose of the undertaking is to obtain legal advice.
- Documentation should reflect that: (1) information necessary to perform the audit is known only to those people who are communicating with the attorney or those consultants hired by him; and (2) employees communicating with the attorney have been advised that the purpose of the communication is to enable the provision of legal advice.
- At the outset, procedures should be established to maintain the confidentiality of communications and prevent intentional or unintentional waiver of the privilege.

In addition to the attorney-client privilege, environmental audit documents may also be protected by the work-product rule. This rule provides qualified protection for information or material assembled or prepared by or for an attorney in anticipation of litigation or in preparation for trial. Although the rule accords strong protection to the opinion work-product which reflects an attorney's thought processes, discovery of other materials can be compelled if the adversary can show "substantial need" and "undue hardship" in obtaining the information from other sources.

First, the materials for which protection is sought must be prepared in anticipation of litigation. This is a threshold requirement. Litigation need not be on-going when the documents in question are prepared, but it must be more than a remote possibility. If it is expected that the protection of the work-product rule will be sought for environmental audit

documents, then early in the process, the client's management should communicate in writing to counsel what litigation is anticipated and why. Counsel should also make sure that the audit documents reflect the anticipation of litigation or preparation for trial.

Second, the materials for which protection is sought must be documents and other tangible things. Facts simply known to an attorney are not protected by the work-product rule. Nor will the rule prevent discovery of the existence or location of the documents in question. It basically protects an attorney's "mental impressions, conclusions, opinions, or legal theories."

An example of protected material in the context of an environmental audit would be an attorney's opinion on the interpretation of a regulation which the audited facility may have violated.

As with the attorney-client privilege, the legal protection afforded by the rule may be waived in certain circumstances. For example, disclosure of environmental audit material to third parties without regard for confidentiality will constitute a waiver which will destroy the protection.

In light of the above, counsel should take the following steps if the protection offered by the work-product rule will be sought for environmental audit documents:

- Research carefully the law relating to the work-product rule in the applicable jurisdiction in order to ensure that the necessary requirements can be met.
- Document the reasons for anticipating litigation.
- Take the necessary steps to insure that the protection of the rule is not waived.

Attorneys and clients should be aware that the circumstances in which this protection is available to environmental audit documents is significantly limited by the requirement that the materials, in fact, be

prepared in anticipation of litigation or in preparation for trial.

In light of the above, the following is a checklist of actions to consider taking in order to maximize the protection which may be afforded to materials generated in an environmental audit by the mechanisms previously described:

- Senior management directs that the audit be undertaken.
- The audit is conducted through counsel.
- A memorandum is communicated from senior management to legal counsel directing that:
  - The audit be conducted.
  - The audit is undertaken by counsel in his legal capacity. (Legal capacity may be easier to establish through outside counsel.)
  - The audit is to obtain legal advice.
  - All information will be held confidential.
  - Litigation is anticipated (asserting the basis for this assumption).
  - All notes are to be logged in the attorney's bound journal only.
- A similar memorandum is directed from counsel to consultants if they are used.
- Counsel directly retains consultants.
- All written communications are labeled "privileged and confidential" an "do not duplicate."

As for the liability of the auditors themselves, outside counsel and consultants retained by them who are privy to information generated through an environmental audit performed for the purpose of providing legal advice are not, in most circumstances, required to report or act on that information pursuant to environmental rules and regulations. In fact, in accordance with the demand of the attorney-client relationship, they can be precluded from revealing client confidences, except to prevent a crime or imminent harm to others.

The auditor can minimize his liability by carefully documenting the purpose of the audit and the actual steps and activities undertaken to accomplish that purpose.

## **AUDITING - A POLICY ISSUE**

## **AUDITING - A POLICY ISSUE**

- Government's Role
- Industry's Role
- Citizen's Role

## **Government's Role**

- **Federal EPA Policy Statement**
- **California EPA Policy Statement**
- **Registration**
- **Certification**

# Federal Register

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Wednesday  
July 9, 1986

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Part IV

## Environmental Protection Agency

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Environmental Auditing Policy Statement;  
Notice

## ENVIRONMENTAL PROTECTION AGENCY

[OPPE-FRL-3046-6]

### Environmental Auditing Policy Statement

**AGENCY:** Environmental Protection Agency (EPA).

**ACTION:** Final policy statement.

**SUMMARY:** It is EPA policy to encourage the use of environmental auditing by regulated entities to help achieve and maintain compliance with environmental laws and regulations, as well as to help identify and correct unregulated environmental hazards. EPA first published this policy as interim guidance on November 8, 1985 (50 FR 46504). Based on comments received regarding the interim guidance, the Agency is issuing today's final policy statement with only minor changes.

This final policy statement specifically:

- Encourages regulated entities to develop, implement and upgrade environmental auditing programs;
- Discusses when the Agency may or may not request audit reports;
- Explains how EPA's inspection and enforcement activities may respond to regulated entities' efforts to assure compliance through auditing;
- Endorses environmental auditing at federal facilities;
- Encourages state and local environmental auditing initiatives; and
- Outlines elements of effective audit programs.

Environmental auditing includes a variety of compliance assessment techniques which go beyond those legally required and are used to identify actual and potential environmental problems. Effective environmental auditing can lead to higher levels of overall compliance and reduced risk to human health and the environment. EPA endorses the practice of environmental auditing and supports its accelerated use by regulated entities to help meet the goals of federal, state and local environmental requirements. However, the existence of an auditing program does not create any defense to, or otherwise limit, the responsibility of any regulated entity to comply with applicable regulatory requirements.

States are encouraged to adopt these or similar and equally effective policies in order to advance the use of environmental auditing on a consistent, nationwide basis.

**DATES:** This final policy statement is effective July 9, 1986.

**FOR FURTHER INFORMATION CONTACT:** Leonard Fleckenstein, Office of Policy, Planning and Evaluation, (202) 382-2728;

or

Cheryl Wasserman, Office of Enforcement and Compliance Monitoring, (202) 382-7550.

#### SUPPLEMENTARY INFORMATION:

### ENVIRONMENTAL AUDITING POLICY STATEMENT

#### I. Preamble

On November 8, 1985 EPA published an Environmental Auditing Policy Statement, effective as interim guidance, and solicited written comments until January 7, 1986.

Thirteen commenters submitted written comments. Eight were from private industry. Two commenters represented industry trade associations. One federal agency, one consulting firm and one law firm also submitted comments.

Twelve commenters addressed EPA requests for audit reports. Three comments per subject were received regarding inspections, enforcement response and elements of effective environmental auditing. One commenter addressed audit provisions as remedies in enforcement actions, one addressed environmental auditing at federal facilities, and one addressed the relationship of the policy statement to state or local regulatory agencies. Comments generally supported both the concept of a policy statement and the interim guidance, but raised specific concerns with respect to particular language and policy issues in sections of the guidance.

#### General Comments

Three commenters found the interim guidance to be constructive, balanced and effective at encouraging more and better environmental auditing.

Another commenter, while considering the policy on the whole to be constructive, felt that new and identifiable auditing "incentives" should be offered by EPA. Based on earlier comments received from industry, EPA believes most companies would not support or participate in an "incentives-based" environmental auditing program with EPA. Moreover, general promises to forgo inspections or reduce enforcement responses in exchange for companies' adoption of environmental auditing programs—the "incentives" most frequently mentioned in this context—are fraught with legal and policy obstacles.

Several commenters expressed concern that states or localities might

use the interim guidance to *require* auditing. The Agency disagrees that the policy statement opens the way for states and localities to require auditing. No EPA policy can grant states or localities any more (or less) authority than they already possess. EPA believes that the interim guidance effectively encourages *voluntary* auditing. In fact, Section II.B. of the policy states: "because audit quality depends to a large degree on genuine management commitment to the program and its objectives, auditing should remain a voluntary program."

Another commenter suggested that EPA should not expect an audit to identify all potential problem areas or conclude that a problem identified in an audit reflects normal operations and procedures. EPA agrees that an audit report should clearly reflect these realities and should be written to point out the audit's limitations. However, since EPA will not routinely request audit reports, the Agency does not believe these concerns raise issues which need to be addressed in the policy statement.

A second concern expressed by the same commenter was that EPA should acknowledge that environmental audits are only part of a successful environmental management program and thus should not be expected to cover every environmental issue or solve all problems. EPA agrees and accordingly has amended the statement of purpose which appears at the end of this preamble.

Yet another commenter thought EPA should focus on environmental performance results (compliance or non-compliance), not on the processes or vehicles used to achieve those results. In general, EPA agrees with this statement and will continue to focus on environmental results. However, EPA also believes that such results can be improved through Agency efforts to identify and encourage effective environmental management practices, and will continue to encourage such practices in non-regulatory ways.

A final general comment recommended that EPA should sponsor seminars for small businesses on how to start auditing programs. EPA agrees that such seminars would be useful. However, since audit seminars already are available from several private sector organizations, EPA does not believe it should intervene in that market, with the possible exception of seminars for government agencies, especially federal agencies, for which EPA has a broad mandate under Executive Order 12088 to

124

provide technical assistance for environmental compliance.

#### *Requests for Reports*

EPA received 12 comments regarding Agency requests for environmental audit reports, far more than on any other topic in the policy statement. One commenter felt that EPA struck an appropriate balance between respecting the need for self-evaluation with some measure of privacy, and allowing the Agency enough flexibility of inquiry to accomplish future statutory missions. However, most commenters expressed concern that the interim guidance did not go far enough to assuage corporate fears that EPA will use audit reports for environmental compliance "witch hunts." Several commenters suggested additional specific assurances regarding the circumstances under which EPA will request such reports.

One commenter recommended that EPA request audit reports only "when the Agency can show the information it needs to perform its statutory mission cannot be obtained from the monitoring, compliance or other data that is otherwise reportable and/or accessible to EPA, or where the Government deems an audit report material to a criminal investigation." EPA accepts this recommendation in part. The Agency believes it would not be in the best interest of human health and the environment to commit to making a "showing" of a compelling information need before ever requesting an audit report. While EPA may normally be willing to do so, the Agency cannot rule out in advance all circumstances in which such a showing may not be possible. However, it would be helpful to further clarify that a request for an audit report or a portion of a report normally will be made when needed information is not available by alternative means. Therefore, EPA has revised Section III.A., paragraph two and added the phrase: "and usually made where the information needed cannot be obtained from monitoring, reporting or other data otherwise available to the Agency."

Another commenter suggested that (except in the case of criminal investigations) EPA should limit requests for audit documents to specific questions. By including the phrase "or relevant portions of a report" in Section III.A., EPA meant to emphasize it would not request an entire audit document when only a relevant portion would suffice. Likewise, EPA fully intends not to request even a portion of a report if needed information or data can be otherwise obtained. To further clarify this point EPA has added the phrase,

"most likely focused on particular information needs rather than the entire report," to the second sentence of paragraph two, Section III.A. Incorporating the two comments above, the first two sentences in paragraph two of final Section III.A. now read: "EPA's authority to request an audit report, or relevant portions thereof, will be exercised on a case-by-case basis where the Agency determines it is needed to accomplish a statutory mission or the Government deems it to be material to a criminal investigation. EPA expects such requests to be limited, most likely focused on particular information needs rather than the entire report, and usually made where the information needed cannot be obtained from monitoring, reporting or other data otherwise available to the Agency."

Other commenters recommended that EPA not request audit reports under any circumstances, that requests be "restricted to only those legally required," that requests be limited to criminal investigations, or that requests be made only when EPA has reason to believe "that the audit programs or reports are being used to conceal evidence of environmental non-compliance or otherwise being used in bad faith." EPA appreciates concerns underlying all of these comments and has considered each carefully. However, the Agency believes that these recommendations do not strike the appropriate balance between retaining the flexibility to accomplish EPA's statutory missions in future, unforeseen circumstances, and acknowledging regulated entities' need to self-evaluate environmental performance with some measure of privacy. Indeed, based on prime informal comments, the small number of formal comments received, and the even smaller number of adverse comments, EPA believes the final policy statement should remain largely unchanged from the interim version.

#### *Elements of Effective Environmental Auditing*

Three commenters expressed concerns regarding the seven general elements EPA outlined in the Appendix to the interim guidance.

One commenter noted that were EPA to further expand or more fully detail such elements, programs not specifically fulfilling each element would then be judged inadequate. EPA agrees that presenting highly specific and prescriptive auditing elements could be counter-productive by not taking into account numerous factors which vary extensively from one organization to another, but which may still result in effective auditing programs.

Accordingly, EPA does not plan to expand or more fully detail these auditing elements.

Another commenter asserted that states and localities should be cautioned not to consider EPA's auditing elements as mandatory steps. The Agency is fully aware of this concern and in the interim guidance noted its strong opinion that "regulatory agencies should not attempt to prescribe the precise form and structure of regulated entities' environmental management or auditing programs." While EPA cannot require state or local regulators to adopt this or similar policies, the Agency does strongly encourage them to do so, both in the interim and final policies.

A final commenter thought the Appendix too specifically prescribed what should and what should not be included in an auditing program. Other commenters, on the other hand, viewed the elements described as very general in nature. EPA agrees with these other commenters. The elements are in no way binding. Moreover, EPA believes that most mature, effective environmental auditing programs do incorporate each of these general elements in some form, and considers them useful yardsticks for those considering adopting or upgrading audit programs. For these reasons EPA has not revised the Appendix in today's final policy statement.

#### *Other Comments*

Other significant comments addressed EPA inspection priorities for, and enforcement responses to, organizations with environmental auditing programs.

One commenter, stressing that audit programs are *internal* management tools, took exception to the phrase in the second paragraph of section III.B.1. of the interim guidance which states that environmental audits can "complement" regulatory oversight. By using the word "complement" in this context, EPA does not intend to imply that audit reports must be obtained by the Agency in order to supplement regulatory inspections. "Complement" is used in a broad sense of being in addition to inspections and providing something (i.e., self-assessment) which otherwise would be lacking. To clarify this point EPA has added the phrase "by providing self-assessment to assure compliance" after "environmental audits may complement inspections" in this paragraph.

The same commenter also expressed concern that, as EPA sets inspection priorities, a company having an audit program could appear to be a 'poor performer' due to complete and accurate reporting when measured against a

125

company which reports something less than required by law. EPA agrees that it is important to communicate this fact to Agency and state personnel, and will do so. However, the Agency does not believe a change in the policy statement is necessary.

A further comment suggested EPA should commit to take auditing programs into account when assessing all enforcement actions. However, in order to maintain enforcement flexibility under varied circumstances, the Agency cannot promise reduced enforcement responses to violations at all audited facilities where other factors may be overriding. Therefore the policy statement continues to state that EPA may exercise its discretion to consider auditing programs as evidence of honest and genuine efforts to assure compliance, which would then be taken into account in fashioning enforcement responses to violations.

A final commenter suggested the phrase "expeditiously correct environmental problems" not be used in the enforcement context since it implied EPA would use an entity's record of correcting nonregulated matters when evaluating regulatory violations. EPA did not intend for such an inference to be made. EPA intended the term "environmental problems" to refer to the underlying circumstances which eventually lead up to the violations. To clarify this point, EPA is revising the first two sentences of the paragraph to which this comment refers by changing "environmental problems" to "violations and underlying environmental problems" in the first sentence and to "underlying environmental problems" in the second sentence.

In a separate development EPA is preparing an update of its January 1984 *Federal Facilities Compliance Strategy*, which is referenced in section III. C. of the auditing policy. The Strategy should be completed and available on request from EPA's Office of Federal Activities later this year.

EPA thanks all commenters for responding to the November 8, 1985 publication. Today's notice is being issued to inform regulated entities and the public of EPA's final policy toward environmental auditing. This policy was developed to help (a) encourage regulated entities to institutionalize effective audit practices as one means of improving compliance and sound environmental management, and (b) guide internal EPA actions directly related to regulated entities' environmental auditing programs.

EPA will evaluate implementation of this final policy to ensure it meets the above goals and continues to encourage

better environmental management, while strengthening the Agency's own efforts to monitor and enforce compliance with environmental requirements.

## II. General EPA Policy on Environmental Auditing

### A. Introduction

Environmental auditing is a systematic, documented, periodic and objective review by regulated entities<sup>1</sup> of facility operations and practices related to meeting environmental requirements. Audits can be designed to accomplish any or all of the following: verify compliance with environmental requirements; evaluate the effectiveness of environmental management systems already in place; or assess risks from regulated and unregulated materials and practices.

Auditing serves as a quality assurance check to help improve the effectiveness of basic environmental management by verifying that management practices are in place, functioning and adequate. Environmental audits evaluate, and are not a substitute for, direct compliance activities such as obtaining permits, installing controls, monitoring compliance, reporting violations, and keeping records. Environmental auditing may verify but does not include activities required by law, regulation or permit (e.g., continuous emissions monitoring, composite correction plans at wastewater treatment plants, etc.). Audits do not in any way replace regulatory agency inspections. However, environmental audits can improve compliance by complementing conventional federal, state and local oversight.

The appendix to this policy statement outlines some basic elements of environmental auditing (e.g., auditor independence and top management support) for use by those considering implementation of effective auditing programs to help achieve and maintain compliance. Additional information on environmental auditing practices can be found in various published materials.<sup>2</sup>

<sup>1</sup> "Regulated entities" include private firms and public agencies with facilities subject to environmental regulation. Public agencies can include federal, state or local agencies as well as special-purpose organizations such as regional sewage commissions.

<sup>2</sup> See, e.g., "Current Practices in Environmental Auditing," EPA Report No. EPA-230-09-83-006, February 1984; "Annotated Bibliography on Environmental Auditing," Fifth Edition, September 1985, both available from: Regulatory Reform Staff, PM-223, EPA, 401 M Street SW, Washington, DC 20460.

Environmental auditing has developed for sound business reasons, particularly as a means of helping regulated entities manage pollution control affirmatively over time instead of reacting to crises. Auditing can result in improved facility environmental performance, help communicate effective solutions to common environmental problems, focus facility managers' attention on current and upcoming regulatory requirements, and generate protocols and checklists which help facilities better manage themselves. Auditing also can result in better-integrated management of environmental hazards, since auditors frequently identify environmental liabilities which go beyond regulatory compliance. Companies, public entities and federal facilities have employed a variety of environmental auditing practices in recent years. Several hundred major firms in diverse industries now have environmental auditing programs, although they often are known by other names such as assessment, survey, surveillance, review or appraisal.

While auditing has demonstrated its usefulness to those with audit programs, many others still do not audit. Clarification of EPA's position regarding auditing may help encourage regulated entities to establish audit programs or upgrade systems already in place.

### B. EPA Encourages the Use of Environmental Auditing

EPA encourages regulated entities to adopt sound environmental management practices to improve environmental performance. In particular, EPA encourages regulated entities subject to environmental regulations to institute environmental auditing programs to help ensure the adequacy of internal systems to achieve, maintain and monitor compliance. Implementation of environmental auditing programs can result in better identification, resolution and avoidance of environmental problems, as well as improvements to management practices. Audits can be conducted effectively by independent internal or third party auditors. Larger organizations generally have greater resources to devote to an internal audit team, while smaller entities might be more likely to use outside auditors.

Regulated entities are responsible for taking all necessary steps to ensure compliance with environmental requirements, whether or not they adopt audit programs. Although environmental laws do not require a regulated facility to have an auditing program, ultimate responsibility for the environmental

performance of the facility lies with top management, which therefore has a strong incentive to use reasonable means, such as environmental auditing, to secure reliable information of facility compliance status.

EPA does not intend to dictate or interfere with the environmental management practices of private or public organizations. Nor does EPA intend to mandate auditing (though in certain instances EPA may seek to include provisions for environmental auditing as part of settlement agreements, as noted below). Because environmental auditing systems have been widely adopted on a voluntary basis in the past, and because audit quality depends to a large degree upon genuine management commitment to the program and its objectives, auditing should remain a voluntary activity.

### III. EPA Policy on Specific Environmental Auditing Issues

#### A. Agency Requests for Audit Reports

EPA has broad statutory authority to request relevant information on the environmental compliance status of regulated entities. However, EPA believes routine Agency requests for audit reports<sup>3</sup> could inhibit auditing in the long run, decreasing both the quantity and quality of audits conducted. Therefore, as a matter of policy, EPA will *not* routinely request environmental audit reports.

EPA's authority to request an audit report, or relevant portions thereof, will be exercised on a case-by-case basis where the Agency determines it is needed to accomplish a statutory mission, or where the Government deems it to be material to a criminal investigation. EPA expects such requests to be limited, most likely focused on particular information needs rather than the entire report, and usually made where the information needed cannot be obtained from monitoring, reporting or other data otherwise available to the Agency. Examples would likely include situations where: audits are conducted under consent decrees or other settlement agreements; a company has placed its management practices at issue by raising them as a defense; or state of mind or intent are a relevant element of inquiry, such as during a criminal investigation. This list

<sup>3</sup> An "environmental audit report" is a written report which candidly and thoroughly presents findings from a review, conducted as part of an environmental audit as described in section II.A., of facility environmental performance and practices. An audit report is not a substitute for compliance monitoring reports or other reports or records which may be required by EPA or other regulatory agencies.

is illustrative rather than exhaustive, since there doubtless will be other situations, not subject to prediction, in which audit reports rather than information may be required.

EPA acknowledges regulated entities' need to self-evaluate environmental performance with some measure of privacy and encourages such activity. However, audit reports may not shield monitoring, compliance, or other information that would otherwise be reportable and/or accessible to EPA, even if there is no explicit 'requirement' to generate that data.<sup>4</sup> Thus, this policy does not alter regulated entities' existing or future obligations to monitor, record or report information required under environmental statutes, regulations or permits, or to allow EPA access to that information. Nor does this policy alter EPA's authority to request and receive any relevant information—including that contained in audit reports—under various environmental statutes (e.g., Clean Water Act section 308, Clean Air Act sections 114 and 208) or in other administrative or judicial proceedings.

Regulated entities also should be aware that certain audit findings may by law have to be reported to government agencies. However, in addition to any such requirements, EPA encourages regulated entities to notify appropriate State or Federal officials of findings which suggest significant environmental or public health risks, even when not specifically required to do so.

#### B. EPA Response to Environmental Auditing

##### 1. General Policy

EPA will not promise to forgo inspections, reduce enforcement responses, or offer other such incentives in exchange for implementation of environmental auditing or other sound environmental management practices. Indeed, a credible enforcement program provides a strong incentive for regulated entities to audit.

Regulatory agencies have an obligation to assess source compliance status independently and cannot eliminate inspections for particular firms or classes of firms. Although environmental audits may complement inspections by providing self-assessment to assure compliance, they are in no way a substitute for regulatory oversight. Moreover, certain statutes (e.g. RCRA) and Agency policies

<sup>4</sup> See, for example, "Duties to Report or Disclose Information on the Environmental Aspects of Business Activities," Environmental Law Institute report to EPA, final report, September 1985.

establish minimum facility inspection frequencies to which EPA will adhere.

However, EPA will continue to address environmental problems on a priority basis and will consequently inspect facilities with poor environmental records and practices more frequently. Since effective environmental auditing helps management identify and promptly correct actual or potential problems, audited facilities' environmental performance should improve. Thus, while EPA inspections of self-audited facilities will continue, to the extent that compliance performance is considered in setting inspection priorities, facilities with a good compliance history may be subject to fewer inspections.

In fashioning enforcement responses to violations, EPA policy is to take into account, on a case-by-case basis, the honest and genuine efforts of regulated entities to avoid and promptly correct violations and underlying environmental problems. When regulated entities take reasonable precautions to avoid noncompliance, expeditiously correct underlying environmental problems discovered through audits or other means, and implement measures to prevent their recurrence, EPA may exercise its discretion to consider such actions as honest and genuine efforts to assure compliance. Such consideration applies particularly when a regulated entity promptly reports violations or compliance data which otherwise were not required to be recorded or reported to EPA.

##### 2. Audit Provisions as Remedies in Enforcement Actions

EPA may propose environmental auditing provisions in consent decrees and in other settlement negotiations where auditing could provide a remedy for identified problems and reduce the likelihood of similar problems recurring in the future.<sup>5</sup> Environmental auditing provisions are most likely to be proposed in settlement negotiations where:

- A pattern of violations can be attributed, at least in part, to the absence or poor functioning of an environmental management system; or
- The type or nature of violations indicates a likelihood that similar noncompliance problems may exist or occur elsewhere in the facility or at other facilities operated by the regulated entity.

<sup>5</sup> EPA is developing guidance for use by Agency negotiators in structuring appropriate environmental audit provisions for consent decrees and other settlement negotiations.

Through this consent decree approach and other means, EPA may consider how to encourage effective auditing by publicly owned sewage treatment works (POTWs). POTWs often have compliance problems related to operation and maintenance procedures which can be addressed effectively through the use of environmental auditing. Under its National Municipal Policy EPA already is requiring many POTWs to develop composite correction plans to identify and correct compliance problems.

#### *C. Environmental Auditing at Federal Facilities*

EPA encourages all federal agencies subject to environmental laws and regulations to institute environmental auditing systems to help ensure the adequacy of internal systems to achieve, maintain and monitor compliance. Environmental auditing at federal facilities can be an effective supplement to EPA and state inspections. Such federal facility environmental audit programs should be structured to promptly identify environmental problems and expeditiously develop schedules for remedial action.

To the extent feasible, EPA will provide technical assistance to help federal agencies design and initiate audit programs. Where appropriate, EPA will enter into agreements with other agencies to clarify the respective roles, responsibilities and commitments of each agency in conducting and responding to federal facility environmental audits.

With respect to inspections of self-audited facilities (see section III.B.1 above) and requests for audit reports (see section III.A above), EPA generally will respond to environmental audits by federal facilities in the same manner as it does for other regulated entities, in keeping with the spirit and intent of Executive Order 12088 and the EPA *Federal Facilities Compliance Strategy* (January 1984, update forthcoming in late 1986). Federal agencies should, however, be aware that the Freedom of Information Act will govern any disclosure of audit reports or audit-generated information requested from federal agencies by the public.

When federal agencies discover significant violations through an environmental audit, EPA encourages them to submit the related audit findings and remedial action plans expeditiously to the applicable EPA regional office (and responsible state agencies, where appropriate) even when not specifically required to do so. EPA will review the audit findings and action plans and either provide written approval or

negotiate a Federal Facilities Compliance Agreement. EPA will utilize the escalation procedures provided in Executive Order 12088 and the EPA *Federal Facilities Compliance Strategy* only when agreement between agencies cannot be reached. In any event, federal agencies are expected to report pollution abatement projects involving costs (necessary to correct problems discovered through the audit) to EPA in accordance with OMB Circular A-106. Upon request, and in appropriate circumstances, EPA will assist affected federal agencies through coordination of any public release of audit findings with approved action plans once agreement has been reached.

#### **IV. Relationship to State or Local Regulatory Agencies**

State and local regulatory agencies have independent jurisdiction over regulated entities. EPA encourages them to adopt these or similar policies, in order to advance the use of effective environmental auditing in a consistent manner.

EPA recognizes that some states have already undertaken environmental auditing initiatives which differ somewhat from this policy. Other states also may want to develop auditing policies which accommodate their particular needs or circumstances. Nothing in this policy statement is intended to preempt or preclude states from developing other approaches to environmental auditing. EPA encourages state and local authorities to consider the basic principles which guided the Agency in developing this policy:

- Regulated entities must continue to report or record compliance information required under existing statutes or regulations, regardless of whether such information is generated by an environmental audit or contained in an audit report. Required information cannot be withheld merely because it is generated by an audit rather than by some other means.

- Regulatory agencies cannot make promises to forgo or limit enforcement action against a particular facility or class of facilities in exchange for the use of environmental auditing systems. However, such agencies may use their discretion to adjust enforcement actions on a case-by-case basis in response to honest and genuine efforts by regulated entities to assure environmental compliance.

- When setting inspection priorities regulatory agencies should focus to the extent possible on compliance performance and environmental results.

- Regulatory agencies must continue to meet minimum program requirements

(e.g., minimum inspection requirements, etc.).

- Regulatory agencies should not attempt to prescribe the precise form and structure of regulated entities' environmental management or auditing programs.

An effective state/federal partnership is needed to accomplish the mutual goal of achieving and maintaining high levels of compliance with environmental laws and regulations. The greater the consistency between state or local policies and this federal response to environmental auditing, the greater the degree to which sound auditing practices might be adopted and compliance levels improve.

Dated: June 28, 1986.

Lee M. Thomas,  
Administrator.

#### **Appendix—Elements of Effective Environmental Auditing Programs**

*Introduction:* Environmental auditing is a systematic, documented, periodic and objective review by a regulated entity of facility operations and practices related to meeting environmental requirements.

Private sector environmental audits of facilities have been conducted for several years and have taken a variety of forms, in part to accommodate unique organizational structures and circumstances. Nevertheless, effective environmental audits appear to have certain discernible elements in common with other kinds of audits. Standards for internal audits have been documented extensively. The elements outlined below draw heavily on two of these documents: "Compendium of Audit Standards" (©1983, Walter Willborn, American Society for Quality Control) and "Standards for the Professional Practice of Internal Auditing" (©1981, The Institute of Internal Auditors, Inc.). They also reflect Agency analyses conducted over the last several years.

Performance-oriented auditing elements are outlined here to help accomplish several objectives. A general description of features of effective, mature audit programs can help those starting audit programs, especially federal agencies and smaller businesses. These elements also indicate the attributes of auditing EPA generally considers important to ensure program effectiveness. Regulatory agencies may use these elements in negotiating environmental auditing provisions for consent decrees. Finally, these elements can help guide states and localities considering auditing initiatives.

188

An effective environmental auditing system will likely include the following general elements:

**I. Explicit top management support for environmental auditing and commitment to follow-up on audit findings.** Management support may be demonstrated by a written policy articulating upper management support for the auditing program, and for compliance with all pertinent requirements, including corporate policies and permit requirements as well as federal, state and local statutes and regulations.

Management support for the auditing program also should be demonstrated by an explicit written commitment to follow-up on audit findings to correct identified problems and prevent their recurrence.

**II. An environmental auditing function independent of audited activities.** The status or organizational locus of environmental auditors should be sufficient to ensure objective and unobstructed inquiry, observation and testing. Auditor objectivity should not be impaired by personal relationships, financial or other conflicts of interest, interference with free inquiry or judgment, or fear of potential retribution.

**III. Adequate team staffing and auditor training.** Environmental auditors should possess or have ready access to the knowledge, skills, and disciplines needed to accomplish audit objectives. Each individual auditor should comply with the company's professional standards of conduct. Auditors, whether full-time or part-time, should maintain their technical and analytical competence through continuing education and training.

**IV. Explicit audit program objectives, scope, resources and frequency.** At a minimum, audit objectives should include assessing compliance with applicable environmental laws and evaluating the adequacy of internal compliance policies, procedures and personnel training programs to ensure continued compliance.

Audits should be based on a process which provides auditors: all corporate policies, permits, and federal, state, and local regulations pertinent to the facility; and checklists or protocols addressing specific features that should be evaluated by auditors.

Explicit written audit procedures generally should be used for planning audits, establishing audit scope, examining and evaluating audit findings, communicating audit results, and following-up.

**V. A process which collects, analyzes, interprets and documents information sufficient to achieve audit objectives.** Information should be collected before and during an onsite visit regarding environmental compliance(1), environmental management effectiveness(2), and other matters (3) related to audit objectives and scope. This information should be sufficient, reliable, relevant and useful to provide a sound basis for audit findings and recommendations.

**a. Sufficient** information is factual, adequate and convincing so that a prudent, informed person would be likely to reach the same conclusions as the auditor.

**b. Reliable** information is the best attainable through use of appropriate audit techniques.

**c. Relevant** information supports audit findings and recommendations and is consistent with the objectives for the audit.

**d. Useful** information helps the organization meet its goals.

The audit process should include a periodic review of the reliability and integrity of this information and the means used to identify, measure, classify and report it. Audit procedures, including the testing and sampling techniques employed, should be selected in advance, to the extent practical, and expanded or altered if circumstances warrant. The process of collecting, analyzing, interpreting, and documenting information should provide reasonable assurance that audit objectivity is maintained and audit goals are met.

**VI. A process which includes specific procedures to promptly prepare candid, clear and appropriate written reports on audit findings, corrective actions, and schedules for implementation.**

Procedures should be in place to ensure that such information is communicated to managers, including facility and corporate management, who can evaluate the information and ensure correction of identified problems. Procedures also should be in place for determining what internal findings are reportable to state or federal agencies.

**VII. A process which includes quality assurance procedures to assure the accuracy and thoroughness of environmental audits.** Quality assurance may be accomplished through supervision, independent internal reviews, external reviews, or a combination of these approaches.

#### Footnotes to Appendix

(1) A comprehensive assessment of compliance with federal environmental regulations requires an analysis of facility performance against numerous environmental statutes and implementing regulations. These statutes include: Resource Conservation and Recovery Act, Federal Water Pollution Control Act, Clean Air Act, Hazardous Materials Transportation Act, Toxic Substances Control Act, Comprehensive Environmental Response, Compensation and Liability Act, Safe Drinking Water Act, Federal Insecticide, Fungicide and Rodenticide Act, Marine Protection, Research and Sanctuaries Act, Uranium Mill Tailings Radiation Control Act.

In addition, state and local government are likely to have their own environmental laws. Many states have been delegated authority to administer federal programs. Many local governments' building, fire, safety and health codes also have environmental requirements relevant to an audit evaluation.

(2) An environmental audit could go well beyond the type of compliance assessment normally conducted during regulatory inspections, for example, by evaluating policies and practices, regardless of whether they are part of the environmental system or the operating and maintenance procedures. Specifically, audits can evaluate the extent to which systems or procedures:

1. Develop organizational environmental policies which: a. implement regulatory requirements; b. provide management guidance for environmental hazards not specifically addressed in regulations;

2. Train and motivate facility personnel to work in an environmentally-acceptable manner and to understand and comply with government regulations and the entity's environmental policy;

3. Communicate relevant environmental developments expeditiously to facility and other personnel;

4. Communicate effectively with government and the public regarding serious environmental incidents;

5. Require third parties working for, with or on behalf of the organization to follow its environmental procedures;

6. Make proficient personnel available at all times to carry out environmental (especially emergency) procedures;

7. Incorporate environmental protection into written operating procedures;

8. Apply best management practices and operating procedures, including "good housekeeping" techniques;

9. Institute preventive and corrective maintenance systems to minimize actual and potential environmental harm;

10. Utilize best available process and control technologies;

11. Use most-effective sampling and monitoring techniques, test methods, recordkeeping systems or reporting protocols (beyond minimum legal requirements);

12. Evaluate causes behind any serious environmental incidents and establish procedures to avoid recurrence;

13. Exploit source reduction, recycle and reuse potential wherever practical; and

14. Substitute materials or processes to allow use of the least-hazardous substances feasible.

(3) Auditors could also assess environmental risks and uncertainties.

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# California Environmental Protection Agency

Air Resources Board • Department of Pesticide Regulation • Department of Toxic Substances Control • Integrated Waste Management Board  
Office of Environmental Health Hazard Assessment • State Water Resources Control Board • Regional Water Quality Control Boards

Pete Wilson  
Governor



James M. Strock  
Secretary for Environmental Protection

## MEMORANDUM

TO: Directors  
Executive Officers  
Chief Counsel  
Enforcement Chiefs

FROM: William W. Carter *W.W. Carter*  
Assistant Secretary for Law Enforcement  
and Counsel

DATE: March 8, 1993

SUBJECT: Cal/EPA General Policy on Environmental Auditing

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This memorandum sets forth Cal/EPA's policy on environmental auditing or voluntary disclosure. This policy closely follows those adopted by US EPA and the US Department of Justice. This policy applies only to administrative and civil cases, not criminal cases.

It is the policy of Cal/EPA to encourage self-auditing, self-policing, and voluntary disclosure of environmental violations by the regulated community by indicating that these activities are viewed as mitigating factors in the Agency's exercise of environmental enforcement discretion. This document is intended to set forth Cal/EPA's policy on environmental auditing and specific issues relating to environmental auditing. Further, it describes the factors that Cal/EPA considers in deciding whether to bring an enforcement action for a violation of an environmental statute, so that such actions do not create a disincentive to or undermine the goal of encouraging critical self-auditing, self-policing, and voluntary disclosure. It is not intended to limit or abridge the right of a district attorney, Attorney General, U.S. Attorney, or city attorney to exercise prosecutorial discretion in evaluating criminal actions. Rather, it is designed to give direction concerning the exercise of enforcement discretion in non-criminal environmental cases and to ensure that such discretion is exercised consistently statewide. Finally, it is suggested that this document be followed in conjunction with Cal/EPA's policy on "Response to Suspected Criminal Violations of Environmental Law."

It is also intended to give the regulated community a sense

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131

of how the state exercises its enforcement discretion with respect to such factors as the facility's voluntary disclosure of violations, cooperation with the government in investigating the violations, use of environmental audits and other procedures to ensure compliance with all applicable environmental laws and regulations, and use of measures to remedy expeditiously and completely any violations and the harms caused thereby.

I recommend that each Board and Department incorporate this policy into their media-specific policies. Any questions concerning the implementation of this policy should be addressed to the Chief Counsel of the appropriate Board or Department, or to the Agency's Assistant Secretary for Law Enforcement and Counsel.

Attachment

## I. General Cal/EPA Policy on Environmental Auditing

### A. Introduction

Environmental auditing is a systematic, documented, periodic and objective review by regulated entities<sup>1</sup> of facility operations and practices related to meeting environmental requirements. Audits can be designed to accomplish any or all of the following: verify compliance with environmental requirements; evaluate the effectiveness of environmental management systems already in place; or, assess risks from regulated and unregulated materials and practices.

Auditing serves as a quality assurance check to help improve the effectiveness of basic environmental management by verifying that management practices are in place, functioning and adequate. Environmental audits evaluate, and are not a substitute for, direct compliance activities such as obtaining permits, installing controls, monitoring compliance, reporting violations, and keeping records. Environmental auditing may verify, but does not include, activities required by law, regulation, or permit (e.g., continuous emissions monitoring composite correction plans at wastewater treatment plants, etc.). Audits do not in any way replace regulatory agency inspections. However, environmental audits can improve compliance by complementing conventional federal, state, and local oversight.

The appendix to this policy statement outlines some basic elements of environmental auditing (e.g., auditor independence and top management support) for use by those considering implementation of effective auditing programs to help achieve and maintain compliance. Additional information on environmental auditing practices can be found in various published materials.<sup>2</sup>

Environmental auditing has developed for sound business reasons, particularly as a means of helping regulated entities manage pollution control affirmatively over time instead of reacting to crises. Auditing can result in improved facility environmental performance, help communicate effective solutions to common environmental problems, focus facility managers' attention on current and upcoming regulatory requirements, and

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<sup>1</sup> "Regulated entities" include private firms and public agencies with facilities subject to environmental regulation. Public agencies can include federal, state or local agencies.

<sup>2</sup> See e.g., "Current Practices in Environmental Auditing," EPA Reports No. EPA-330-09-83-008 February 1984, "Annotated Bibliography on Environmental Auditing Fifth Edition September 1985, both available from Regulatory Reform Staff PM-223, EPA 400 M Street, SW, Washington, D.C. 20460.

generate protocols and checklists which help facilities better manage themselves. Auditing also can result in better integrated management of environmental hazards since auditors frequently identify environmental liabilities which go beyond regulatory compliance. Companies, public entities, and federal facilities have employed a variety of environmental auditing practices in recent years. Several hundred major firms in diverse industries now have environmental auditing programs, although they often are known by other names such as assessment, survey, surveillance review, or appraisal.

While auditing has demonstrated its usefulness to those with audit programs, many others still do not audit. Clarification of Cal/EPA's position regarding auditing may help encourage regulated entities to establish audit programs or upgrade systems already in place.

#### B. Cal/EPA Encourages the Use of Environmental Auditing

Cal/EPA encourages regulated entities to adopt sound environmental management practices to improve environmental performance. In particular, Cal/EPA encourages regulated entities subject to environmental regulations to institute environmental auditing programs to help ensure the adequacy of internal systems to achieve, maintain, and monitor compliance. Implementation of environmental auditing programs can result in better identification, resolution, and avoidance of environmental problems, as well as improvements to management practices. Audits can be conducted effectively by independent, internal, or third party auditors. Larger organizations generally have greater resources to devote to an internal audit team, while smaller entities might be more likely to use outside auditors.

Regulated entities are responsible for taking all necessary steps to ensure compliance with environmental requirements, whether or not they adopt audit programs. Although environmental laws do not require a regulated facility to have an auditing program, ultimate responsibility for the environmental performance of the facility lies with top management, which therefore has a strong incentive to use reasonable means, such as environmental auditing to secure reliable information of facility compliance status.

Cal/EPA does not intend to dictate or interfere with the environmental management practices of private or public organizations. Nor does Cal/EPA intend to mandate auditing (though in certain instances, Cal/EPA may seek to include provisions for environmental auditing as part of settlement agreements, as noted below). Because environmental auditing systems have been widely adopted on a voluntary basis in the past, and because audit quality depends to a large degree upon genuine management commitment in the program and its objectives,

auditing should remain a voluntary activity.

## II. Cal/EPA Policy on Specific Environmental Auditing Issues

### A. Agency Requests for Audit Reports

Cal/EPA has broad statutory authority to request relevant information on the environmental compliance status of regulated entities. However, Cal/EPA believes routine Agency requests for audit reports<sup>3</sup> could inhibit auditing in the long run, decreasing both the quantity and quality of audits conducted. Therefore, as a matter of policy, Cal/EPA will not routinely request environmental audit reports.

Cal/EPA's authority to request an audit report, or relevant portions thereof, will be exercised on a case-by-case basis where the Agency determines it is needed to accomplish a statutory mission, or where the State deems it to be material to a criminal investigation. Cal/EPA expects such requests to be limited, most likely focused on particular information needs rather than the entire report, and usually made where the information needed cannot be obtained from monitoring, reporting, or other data otherwise available to the Agency. Examples would likely include situations where: audits are conducted under consent decrees or other settlement agreements; a company has placed its management practices at issue by raising them as a defense, or state of mind, or intent are a relevant element of inquiry, such as during a criminal investigation. This list is illustrative rather than exhaustive since there doubtless will be other situations, not subject to prediction, in which audit reports rather than information may be required.

Cal/EPA acknowledges regulated entities need to self-evaluate environmental performance with some measure of privacy and encourages such activity. However, audit reports may not shield monitoring, compliance, or other information that would otherwise be reportable and/or accessible to Cal/EPA, even if there is no explicit "requirement" to generate that data. Thus, this policy does not alter regulated entities existing or future obligations to monitor, record, or report information required

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<sup>3</sup> An "environmental audit report" is a written report which candidly and thoroughly presents findings from a review conducted as a part of an environmental audit as described in Section II.A of facility environmental performance and practices. An audit report is not a substitute for compliance monitoring reports or other reports or records which may be mandated by Cal/EPA or other regulatory authority.

under environmental statutes, regulations, or permits, or to allow Cal/EPA access to that information. Nor does this policy alter Cal/EPA's authority to request and receive any relevant information--including that contained in audit reports--under various environmental statutes (e.g., Health & Saf. Code, §§ 42303 & 25185.6 and Water Code, § 13267(b)) or in other administrative or judicial proceedings.

Regulated entities also should be aware that certain audit findings may by law have to be reported to government agencies. However, in addition to any such requirements, Cal/EPA encourages regulated entities to notify appropriate State or Federal officials of findings which suggest significant environmental or public health risks, even when not specifically required to do so.

## B. Cal/EPA Response to Environmental Auditing

### 1. General Policy

Cal/EPA will not promise to forego inspections, reduce enforcement responses, or offer other such incentives in exchange for implementation of environmental auditing or other sound environmental management practices. Indeed, a credible enforcement program provides a strong incentive for regulated entities to audit.

Regulatory agencies have an obligation to assess source compliance status independently and cannot eliminate inspections for particular firms or classes of firms. Although environmental audits may complement inspections by providing self-assessment to assure compliance, they are in no way a substitute for regulatory oversight. Moreover, certain statutes (e.g., RCRA) and Agency policies establish minimum facility inspection frequencies to which Cal/EPA will adhere.

However, Cal/EPA will continue to address environmental problems on a priority basis and will consequently inspect facilities with poor environmental records and practices more frequently. Since effective environmental auditing helps management identify and properly correct actual or potential problems, audited facilities' environmental performance should improve. Thus, while Cal/EPA inspections of self-audited facilities will continue to the extent that compliance performance is considered in setting inspection priorities, facilities with a good compliance history may be subject to fewer inspections.

In fashioning enforcement responses to violations, Cal/EPA policy is to take into account, on a case-by-case basis, the honest and genuine efforts of regulated entities to avoid and promptly correct violations and underlying environmental

problems. When regulated entities take reasonable precautions to avoid noncompliance, expeditiously correct underlying environmental problems discovered through audits or other means, and implement measures to prevent their recurrence, Cal/EPA may exercise its discretion to consider such actions as honest and genuine efforts to assure compliance. Such consideration applies particularly when a regulated entity promptly reports violations or compliance data which otherwise were not required to be recorded or reported to Cal/EPA.

## 2. Audit provisions as remedies in enforcement actions.

Cal/EPA may propose environmental auditing provisions in consent decrees and in other settlement negotiations where auditing could provide a remedy for identified problems and reduce the likelihood of similar problems recurring in the future. Environmental auditing provisions are most likely to be proposed in settlement negotiations where:

- A pattern of violations can be attributed, at least in part, to the absence or poor functioning of an environmental management system; or
- The type or nature of violations indicates a likelihood that similar noncompliance problems may exist or occur elsewhere in the facility or at other facilities operated by the regulated entity.

## C. Environmental Auditing at Federal Facilities.

Cal/EPA encourages all federal agencies subject to environmental laws and regulations to institute environmental auditing systems to help ensure the adequacy of internal systems to achieve, maintain and monitor compliance. Environmental auditing at federal facilities can be an effective supplement to US EPA and Cal/EPA inspections. Such federal facility environmental audit programs should be structured to promptly identify environmental problems and expeditiously develop schedules for remedial action.

To the extent feasible, Cal/EPA will provide technical assistance to help federal agencies design and initiate audit programs. Where appropriate, Cal/EPA will enter into agreements with other agencies to clarify the respective roles, responsibilities and commitments of each agency in conducting and responding to federal facility environmental audits.

With respect to inspections of self-audited facilities (see Section II.B.1 above) and requests for audit reports (see Section II.A above), Cal/EPA generally will respond to environmental audits by federal facilities in the same manner as it does for other regulated entities, in keeping with the spirit and intent

of the Federal Facilities Compliance Act of 1993 (HR 3194). Federal agencies should, however, be aware that the Freedom of Information Act will govern any disclosure of audit reports or audit-generated information requested from federal agencies by the public.

When federal agencies discover significant violations through an environmental audit, Cal/EPA encourages them to submit the related audit findings and remedial action plans expeditiously to the applicable Cal/EPA regional office and responsible federal agencies, where appropriate, even when not specifically required to do so. Upon request and in appropriate circumstances, Cal/EPA will review the audit findings and assist the affected federal agencies.

### III. Relationship to Federal and Local Regulatory Agencies

Federal and local regulatory agencies have independent jurisdiction over regulated entities. Cal/EPA has adopted auditing policies similar to those of US EPA. Moreover, the Agency encourages local agencies to adopt these or similar policies, in order to advance the use of effective environmental auditing in a consistent manner.

Nothing in this policy statement is intended to preempt or preclude locals from developing other approaches to environmental auditing. Cal/EPA encourages local authorities to consider the basic principles which guided the Agency in developing this policy:

○ Regulated entities must continue to report or record compliance information required under existing statutes or regulations, regardless of whether such information is generated by an environmental audit or contained in an audit report. Required information cannot be withheld merely because it is generated by an audit rather than by some other means.

○ Regulatory agencies cannot make promises to forgo or limit enforcement action against a particular facility or class of facilities in exchange for the use of environmental auditing systems. However, such agencies may use their discretion to adjust enforcement actions on a case-by-case basis in response to honest and genuine efforts by regulated entities to assure environmental compliance.

○ When setting inspection priorities regulatory agencies should focus, to the extent possible, on compliance performance and environmental results.

○ Regulatory agencies must continue to meet minimum program requirements (e.g. minimum inspection requirements, etc.)

o Regulatory agencies should not attempt to prescribe the precise form and structure of regulated entities' environmental management or auditing programs.

An effective local/state/federal partnership is needed to accomplish the mutual goal of achieving and maintaining high levels of compliance with environmental laws and regulations. The greater the consistency between federal or local policies and this state response to environmental auditing, the greater the degree to which sound auditing practices might be adopted and compliance levels improved.

#### APPENDIX

##### An Effective Environmental Auditing System:

As previously stated, environmental auditing is a systematic, documented, periodic and objective review by a regulated entity of facility operations and practices related to meeting environmental requirements.

Private sector environmental audits of facilities have been conducted for several years and have taken a variety of forms, in part to accommodate unique organizational structures and circumstances. Nevertheless, effective environmental audits appear to have certain discernible elements in common with other kinds of audits. Standards for internal audits have been documented extensively. The elements outlined below draw heavily on two of these documents: "Compendium of Audit Standards" (1983, Walter Willborn. American Society for Quality Control) and "Standards for the Professional Practice of Internal Auditing" (1981. The Institute of Internal Auditors, Inc.)

Performance-oriented auditing elements are outlined here to help accomplish several objectives. A general description of features of effective, mature audit programs can help those starting audit programs, especially federal agencies and smaller businesses. These elements also indicate the attributes of auditing Cal/EPA generally considers important to ensure program effectiveness. Regulatory agencies may use these elements in negotiating environmental auditing provisions for consent decrees. Finally, these elements can help guide localities considering auditing initiatives.

An effective environmental auditing system will likely include the following general elements:

I. Explicit top management support for environmental auditing and commitment to follow-up on audit findings.

reliable, relevant and useful to provide a sound basis for audit findings and recommendations.

- a. Sufficient information is factual, adequate and convincing so that a prudent, informed person would be likely to reach the same conclusions as the auditor.
- b. Reliable information is the best attainable through use of appropriate audit techniques.
- c. Relevant information supports audit findings and recommendations and is consistent with the objectives for the audit.
- d. Useful information helps the organization meet its goals.

The audit process should include a periodic review of the reliability and integrity of this information and the means used to identify, measure, classify and report it. Audit procedures, including the testing and sampling techniques employed, should be selected in advance, to the extent practical, and expanded or altered if circumstances warrant. The process of collecting, analyzing, interpreting, and documenting information should provide reasonable assurance that audit objectivity is maintained and audit goals are met.

VI. A process which includes specific procedures to promptly prepare candid, clear and appropriate written reports on audit findings, corrective actions, and schedules for implementation. Procedures should be in place to ensure that such information is communicated to managers, including facility and corporate management, who can evaluate the information and ensure correction of identified problems. Procedures also should be in place for determining what internal findings are reportable to state or federal agencies.

VII. A process which includes quality assurance procedures to assure the accuracy and thoroughness of environmental audits. Quality assurance may be accomplished through supervision, independent internal reviews, external reviews, or a combination of these approaches.

Guidance on Environmental Auditing When Initiating an Enforcement Action:

I. Nature of this Guidance

This guidance explains the current general practice of Agency in making enforcement decisions after giving consideration to the criteria described below, as well as any other criteria

Management support may be demonstrated by a written policy articulating upper management support for the auditing program and for compliance with all pertinent requirements, including corporate policies and permit requirements as well as federal, state and local statutes and regulations.

Management support for the auditing program also should be demonstrated by an explicit written commitment to follow-up audit findings to correct identified problems and prevent their recurrence.

II. An environmental auditing function independent of audited activities. The status or organizational locus of environmental auditors should be sufficient to ensure objective and unobstructed inquiry, observation and testing. Auditor objectivity should not be impaired by personal relationships,

financial or other conflicts of interest, interference with free inquiry or judgment, or fear of potential retribution.

III. Adequate team staffing and auditor training. Environmental auditors should possess or have ready access to the knowledge, skills, and disciplines needed to accomplish audit objectives. Each individual auditor should comply with the company's professional standards of conduct. Auditors, whether full-time or part-time, should maintain their technical and analytical competence through continuing education and training.

IV. Explicit audit program objectives, scope, resources and frequency. At a minimum, audit objectives should include assessing compliance with applicable environmental laws and evaluating the adequacy of internal compliance policies, procedures and personnel training programs to ensure continued compliance.

Audits should be based on a process which provides auditors: all corporate policies; permits; and federal, state, and local regulations pertinent to the facility; and checklists or protocols addressing specific features that should be evaluated by auditors.

Explicit written audit procedures generally should be used for planning audits, establishing audit scope, examining and evaluating audit findings, communicating audit results, and following-up.

V. A process which collects analyses, interprets and documents information sufficient to achieve audit objectives. Information should be collected before and during an onsite visit regarding environmental compliance (1), environmental management effectiveness (2), and other matters (3) related to audit objectives and scope. This information should be sufficient,

that are relevant to the exercise of enforcement discretion in a particular case. This discussion is an expression of, and in no way departs from, the long tradition of exercising enforcement discretion. The criteria set forth below are intended only as internal guidance to Cal/EPA attorneys. They are not intended to, do not, and may not be relied upon to create a right or benefit, substantive or procedural, enforceable at law by a party to litigation with the State of California, nor do they in any way limit the lawful litigative prerogatives, including civil or administrative enforcement actions, of the any Board or Department of the California Environmental Protection Agency. They are provided to guide the effective use of limited enforcement resources, and do not derive from, find their basis in, nor constitute any legal requirement, whether constitutional, statutory, or otherwise, to forego or modify an enforcement action or the use of any evidentiary material.

Finally, this guidance and the examples contained herein provide framework for the determination of whether a particular case presents the type of circumstances in which lenience would be appropriate.

## II. Factors to be Considered

Where the law and evidence would otherwise be sufficient for an enforcement action, the Board or Department should consider the factors contained herein, to the extent they are applicable, along with any other relevant factors, in determining whether and how to proceed. It must be emphasized that these are examples of the types of factors which could be relevant. They do not constitute a definitive recipe or checklist of requirements. They merely illustrate some of the types of information which is relevant to our exercise of enforcement discretion.

It is unlikely that any one factor will be dispositive in any given case. All relevant factors are considered and given the weight deemed appropriate in the particular case.

### A. Voluntary Disclosure

The Cal/EPA Board or Department should consider whether the person<sup>4</sup> made a voluntary, timely, and complete disclosure of the matter under investigation. Consideration should be given to whether the person came forward promptly after discovering the noncompliance, and to the quantity and quality of information provided. Particular consideration should be given to whether the disclosure substantially aided the government's investigation

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<sup>4</sup> As used in this document, the terms "person" and "violator" are intended to refer to business and nonprofit entities, as well as individuals.

process, and whether it occurred before a law enforcement or regulatory authority (federal, state, or local authority) had already obtained knowledge regarding noncompliance. A disclosure is not considered to be "voluntary" if that disclosure is already specifically required by law, regulation, or permit.<sup>5</sup>

#### B. Cooperation

The Board or Department should consider the degree and timeliness of cooperation by the person. Full and prompt cooperation is essential, whether in the context of a voluntary disclosure or after the government has independently learned of the violation. Consideration should be given to the violator's willingness to make all relevant information (including the complete results of any internal or external investigation and the names of all potential witnesses) available to government investigators and regulators. Consideration should also be given to the extent and quality of the violator's assistance to the government's investigation.

#### C. Preventive Measures and Compliance Programs

The Board or Department should consider the existence and scope of any regularized, intensive, and comprehensive environmental compliance program; such a program may include an environmental compliance or management audit. Particular consideration should be given to whether the compliance or audit program includes sufficient measures to identify and prevent future noncompliance, and whether the program was adopted in good faith in a timely manner.

Compliance programs may vary, but the following questions should be asked in evaluating any program: Was there a strong institutional policy to comply with all environmental requirements? Had safeguards beyond those required by existing law been developed and implemented to prevent noncompliance from occurring? Were there regular procedures, including internal or external compliance and management audits, to evaluate, detect, prevent, and remedy circumstances like those that led to the noncompliance? Were there procedures and safeguards to ensure the integrity of any audit conducted? Did the audit evaluate all sources of pollution (i.e., all media), including the possibility of cross-media transfers of pollutants? Were the auditor's

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<sup>5</sup> For example, any party, without regard to intent or negligence, responsible for the discharge or threatened discharge of oil in marine waters shall report the discharge to the Office of Emergency Services who, in turn, notifies the public agencies affected by the spill, including the regional water quality control board having jurisdiction over the location of the discharged oil. (Gov. Code, § 8670.25.5.)

recommendations implemented in a timely fashion? Were adequate resources committed to the auditing program and to implementing its recommendations? Was environmental compliance a standard by which employee and corporate departmental performance was judged?

D. Additional Factors Which May Be Relevant

1. Pervasiveness of Noncompliance

Pervasive noncompliance may indicate systemic or repeated participation in or condonation of criminal behavior. It may also indicate the lack of a meaningful compliance program. In evaluating this factor, the Board or Department should consider, among other things, the number and level of employees participating in the unlawful activities and the obviousness, seriousness, duration, history, and frequency of noncompliance.

2. Internal Disciplinary Action

Effective internal disciplinary action is crucial to any compliance program. The Board or Department should consider whether there was an effective system of discipline for employees who violated company environmental compliance policies. Did the disciplinary system establish an awareness in other employees that unlawful conduct would not be condoned?

3. Subsequent Compliance Efforts

The Board or Department should consider the extent of any efforts to remedy any ongoing noncompliance. The promptness and completeness of any action taken to remove the source of the noncompliance and to lessen the environmental hazard resulting from the noncompliance should be considered. Considerable weight should be given to prompt, good-faith efforts to reach environmental compliance agreements with federal or state authorities, or both. Full compliance with such agreements should be a factor in any decision whether to institute an enforcement action.

III. Application of These Factors to Hypothetical Examples<sup>6</sup>

These examples are intended to assist Agency personnel in their exercise of discretion in evaluating environmental cases. The situations, of course, present a wide variety of fact patterns. Therefore, in a given case, some of the criteria may be satisfied while others may not. Moreover, satisfaction of

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<sup>6</sup> While this policy applies to both individuals and organizational violators, these examples focus particularly upon situations involving organizations.

various criteria may be a matter of degree. Consequently, the effect of a given mix of factors also is a matter of degree. In the ideal situation, if a company fully meets all of the criteria, the result may be a decision not to take an enforcement action against that company. Even if satisfaction of the criteria is not complete, still the company may benefit in terms of degree of enforcement response by the government. The following hypothetical examples are intended to illustrate the operation of these guidelines.

Example 1:

This is the ideal case in terms of criteria satisfaction and consequent enforcement leniency.

1. Company A regularly conducts a comprehensive audit of its compliance with environmental requirements.
2. The audit uncovers information about employees' disposing of hazardous wastes by dumping them in an unpermitted location.
3. An internal company investigation confirms the audit information. (Depending upon the nature of the audit, this follow-up investigation may be unnecessary.)
4. Prior to the violations the company had a sound compliance program, which included clear policies, employee training, and a hotline for suspected violations.
5. As soon as the company confirms the violations, it discloses all pertinent information to the appropriate government agency; it undertakes compliance planning with that agency; and it carries out satisfactory remediation measures.
6. The company also undertakes to correct any false information previously submitted to the government in relation to the violations.
7. Internally the company disciplines the employees actually involved in the violations, including any supervisor who was lax in preventing or detecting the activity. Also, the company reviews its compliance program to determine how the violations slipped by and corrects the weaknesses found by that review.
8. The company discloses to the government the names of the employees actually responsible for the violations, and it cooperates with the government by providing

documentation necessary to the investigation of those persons.

Under these circumstances Company A would stand a good chance of being favorably considered for enforcement leniency. The degree of any leniency, however, may turn upon other relevant factors not specifically dealt with in these guidelines.<sup>7</sup>

Example 2:

At the opposite end of the scale is Company Z, which meets few of the criteria. The likelihood of enforcement leniency, therefore, is remote. Company Z's circumstances may include any of the following:

1. Because an employee has threatened to report a violation to the authorities, the company is afraid the investigators may begin looking at it. An audit is undertaken, but it focuses only upon the particular violation, ignoring the possibility that the violation may be indicative of widespread activities in the organization.
2. After completing the audit, Company Z reports the violations discovered to the government.
3. The company had a compliance program, but it was effectively no more than a collection of paper. No effort is made to disseminate its content, impress upon employees its significance, train employees in its application, or oversee its implementation.
4. Even after "discovery" of the violation, the company makes no effort to strengthen its compliance procedures.
5. The company makes no effort to come to terms with regulators regarding its violations. It resists any remedial work and refuses to pay any monetary sanctions.
6. Because of the noncompliance, information submitted to regulators over the years has been materially inaccurate, painting a substantially false picture of the company's true compliance situation. The company fails to take any steps to correct that inaccuracy.

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<sup>7</sup> For example, if the company had a long history of noncompliance, the compliance audit was done only under pressure from regulators, and a timely audit would have ended the violations much sooner, those circumstances would be considered.

7. The company does not cooperate with regulators in identifying those employees (including managers) who actually were involved in the violation, and it resists disclosure of any documents relating either to the violations or to the responsible employees.

In these circumstances leniency is unlikely. The only positive action is the so-called audit, but that was so narrowly focused as to be of questionable value, and it was undertaken only to head off a possible investigation. Otherwise, the company demonstrated no good faith either in terms of compliance efforts or in assisting the government in obtaining a full understanding of the violation and discovering its sources.

Nonetheless, these factors do not necessarily assure seeking a criminal prosecution of Company Z. As with Company A, above, other circumstances may be present which affect the balance for consideration. For example, the effect of the violation (because of substance, duration, or amount) may be such that prosecutors would not consider it to be an appropriate criminal case. Administrative or civil proceedings may be considered a more appropriate response.

#### Other Examples:

Between these extremes there is a range of possibilities. The presence, absence, or degree of any criterion may affect the exercise of discretion. Below are some examples of such effects:

1. In a situation otherwise similar to that of Company A above, Company B performs an audit that is very limited in scope and probably reflects no more than an effort to avoid an enforcement action. Despite that background, Company B is cooperative in terms of both bringing itself into compliance and providing information regarding the crime and its perpetrators. The result could be any of a number of outcomes, including enforcement of a lesser violation or a decision to enforce against the individuals rather than the company.
2. Again the situation is similar to Company A's, but Company C refuses to reveal any information regarding the individual violators. The likelihood of the Board or Department seeking to prosecute the company criminally are substantially increased.
3. In another situation similar to Company A's, Company D chooses to "sit on" the audit and take corrective action without telling the government. The government learns of the situation months or years after the fact.

A complicating fact here is that environmental regulatory programs are self policing: they include a substantial number of reporting requirements. If reports which in fact presented false information are allowed to stand uncorrected, the reliability of this system is undermined. They also may lead to adverse and unfair impacts upon other members of the regulated community. For example, Company D failed to report discharges of X contaminant into a municipal sewer system, discharges that were terminated as a result of an audit. The sewer authority, though, knowing only that there have been excessive loadings of X, but not knowing that Company D was a source, tightens limitations upon all known sources of X. Thus, all of those sources incur additional treatment expenses, but Company D is unaffected. Had Company D revealed its audit results, the other companies would not have suffered unnecessary expenses.

In some situations, moreover, failure to report is a crime. (See, Gov. Code, § 8670.64(c)(1).) To illustrate the effect of this factor, consider Company E, which conducts a thorough audit and finds that hazardous wastes have been disposed of by dumping them on the ground. The company cleans up the area and tightens up its compliance program, but does not reveal the situation to regulators. Assuming that a reportable quantity of a hazardous substance was released, the company was under a legal obligation under Government Code section 8670.64(c)(1) to report that release as soon as it had knowledge of it, thereby allowing regulators the opportunity to assure proper clean up. Company E's knowing failure to report that release upon learning of it is itself a felony.

In the cases of both Company D and Company E, consideration would be given by regulators for remedial efforts; hence enforcement of fewer or lesser charges might result. However, because Company D's silence adversely affected others who are entitled to fair regulatory treatment and because Company E deprived those legally responsible for evaluating cleanup needs of the ability to carry out their functions, the likelihood of their totally escaping the initiation of a criminal prosecution is significantly reduced.

4. Company F's situation is similar to that of Company B. However, with regard to the various violations shown by the audit, it concentrates upon correcting only the easier, less expensive, less significant among them. Its lackadaisical approach to correction does not make it a strong candidate for leniency.
5. Company G is similar to Company D in that it performs an audit and finds violations, but does not bring them to the government's attention. Those violations do not involve failures to comply with reporting requirements. The company undertakes a program of gradually

correcting its violations. When the government learns of the situation, Company G still has not remedied its most significant violations, but claim that it certainly planned to get to them. Company G could receive some consideration for its efforts, but its failure to disclose and the slowness of its remedial work probably mean that it cannot expect a substantial degree of leniency.

6. Comprehensive audits are considered positive efforts toward good faith compliance. However, such audits are not indispensable to enforcement leniency. Company H's situation is essentially identical to that of Company A, except for the fact that it does not undertake a comprehensive audit. It does not have a formal audit program, but, as part of its efforts to ensure compliance, does realize that it is committing an environmental violation. It thereafter takes steps otherwise identical to those of Company A in terms of compliance efforts and cooperation. Company H is also a likely candidate for leniency, including possibly no criminal prosecution.

In sum, mitigating efforts made by the regulated community will be recognized and evaluated. While Cal/EPA cannot grant immunity from prosecution, only a district attorney, attorney general or a city attorney can make such promises, Cal/EPA can make recommendations based on the above criteria. The greater the showing of good faith, the more likely it will be met with leniency. Conversely, the less good faith shown, the less likely that enforcement discretion will tend toward leniency.

## **Industry's Role**

- Voluntary
- Proactive
- Setting Example Worldwide
- Promotion
- Training
- Global Environmental Management Initiative

## Citizen's Role

- Valdez Principles
- Community Right to Know

## **MULTINATIONALS' AUDIT PROGRAMS**

## **MULTINATIONALS' AUDIT PROGRAMS**

- 3M Company
- U.S. Minerals-Based Company
- Atlantic Richfield Company
- General Motors
- Royal Dutch/Shell Group

# ENVIRONMENTAL AUDITING

## U.S. ENVIRONMENTAL COMPLIANCE AUDITING PROGRAM PROFILE

<b>PROGRAM ESTABLISHED</b>	1981
<b>PROGRAM OBJECTIVES</b>	<ul style="list-style-type: none"><li>* To measure and ensure the procedures, practices and programs comply with environmental regulations and 3M corporate policies</li><li>* Identify potential environmental problems</li><li>* Keep top management informed on compliance issues.</li><li>* Manage beyond compliance</li></ul>
<b>ORGANIZATION</b>	Program managed by Auditing Supervisor who reports to EE&PC Vice President through the quality Assurance Manager.
<b>AUDIT TEAM OBJECTIVES</b>	Working as a team, the facility and EE&PC personnel strive to identify all the environmental concerns at the facility.
<b>SCOPE AND FOCUS</b>	Environmental multi-media and management systems review at 3M facilities.
<b>AUDIT FREQUENCY</b>	Facilities are audited every one to four year depending.
<b>TEAM SIZE AND DURATION</b>	One to three people; varies from one to four days per facility.
<b>AUDIT METHODOLOGY</b>	Checklists used as guide to help identify areas of concern.
<b>REPORTING FINDINGS</b>	All audits are performed under legal direction with the Attorney-Client Privilege. A formal, written report of the audit is issued to top management and to the corrective action team.
<b>REPORT CONTENT</b>	Executive summary report stating what was found (positive and negative), recommendations for improvements and timing on the corrective follow-up process.
<b>REPORT TIMING</b>	Formal report issued from General Counsel office within two weeks of the completion of the audit.
<b>REPORT DISTRIBUTION</b>	Limited to Facility Manager, EE&PC Manager and Division Contact, Manufacturing Director, Division Vice President, Government Compliance Audit Department, and EE&PC Auditing files.
<b>EXIT MEETING</b>	A draft report is reviewed at the site by facility and EE&PC personal at the conclusion of the audit.
<b>CORRECTIVE ACTION AND FOLLOW-UP</b>	Facility and corporate environmental staff select target dates and assign coordinators for each audit finding. Facility manager is responsible for corrective action and follow-up process.
<b>TRACKING AUDIT FINDINGS</b>	Audit computer tracking (ACT) status reports issued on open audit findings every 30 days to EE&PC division contact and facility manager until all audit findings are corrected.
<b>AUDIT WRAP-UP</b>	Letter sent to manufacturing director indicating all audit findings completed. Survey sent to facility managers for their assessment of auditing process.

Issued: 2 Jan 85  
Reissued: 20 Dec 91

3M Company

153

## **3M Company's Auditing Program** **Outside the U.S.**

### **Evolving Program - 2 part Strategy:**

- **Conduct Environmental, Health and Safety (EHS) Management Systems Reviews at Locations "Outside the U.S." (OUS).**
- **Review Team Consists of Corporate Environmental, Safety and Industrial Hygiene Staff.**
- **OUS Site Periodically Uses EHS Compliance Checklists in Self-Assessment Reviews.**

# U.S. Minerals-Based Company

## **Environmental Compliance Audit Program**

**Organization:** Corporate Environmental Affairs

Reports to General Counsel

**Staffing:** Team leader is operational manager

Team members are division/location environmental managers/coordinators

**Scope:** Air, water, waste management, USTs, PCBs

**Coverage:** Facilities are ranked by risk and audited at frequencies between once every two years and once every five years

**Team Size:** Three to five members

**Duration:** Five days

**Approach:** Questionnaires

Protocols

Computerized procedures to verify compliance

Working papers

**Reporting:** Written reports to

- Facility vice president and general manager
- Division president
- Legal
- Environmental affairs

# Atlantic Richfield Company

## **Environmental Review Program**

**Organization:** Program run by corporate environmental services group

**Staffing:** Rotating team

Team leader and members selected from pool of middle managers

**Scope:** Air pollution control

Water pollution control

Solid and hazardous waste management

**Coverage:** Each major facility audited at least once every four years

**Team Size:** Three to four managers from other operating companies plus corporate environmental advisor

**Duration:** Ten days

**Approach:** Audit against internal criteria

Comprehensive environmental review procedures manual

Pre-review questionnaire

Extensive interviews

Records review

Emergency drill

## Atlantic Richfield Company (continued)

### **Environmental Review Program**

**Reporting:** Written report includes both

- Findings and recommendations
- Facility's Response

Sent to

- Facility manager's supervisor
- Operating company president
- All interviewed levels of management

### **Program Evolution:**

After several years of conducting corporate reviews, decided to

- Delegate review program to operating companies
- Establish corporate audit program

## General Motors

### **Industrial Environmental Performance Review**

- Organization:** Separate group within Plant  
Environmental Department of the Environmental  
Activities Staff  
Reports to Manager, Plant Environmental Audit
- Staffing:** Nine full-time auditors
- Scope:** Air quality  
Water quality  
Hazardous and waste materials handling  
Energy conservation  
Certain occupational safety and health related topics
- Coverage:** Review all manufacturing plants within a four-year cycle
- Team Size:** Two- to four-person team, depending on size of facility
- Duration:** Generally five days; large facilities, ten days
- Approach:** Detailed checklists  
Informal interviews  
Review of records, procedures, and test data  
Physical observation of plant operating situations

## Royal Dutch/Shell Group

### **Environmental Audit Program**

- Organization:** Audits requested by operating companies are administered through Central Office Environmental Affairs (Service Company)
- Staffing:** Rotating team comprised typically of members of Environmental Affairs, members of relevant functional groups (e.g., Manufacturing, Chemicals, Exploration, and Production), environmental staff, member from comparable location, and a representative from the site being audited
- Scope:** Air pollution control  
Water pollution control  
Special wastes  
Drinking water  
Soil and groundwater
- Coverage:** Each major facility is encouraged to be audited at least every three to five years
- Team Size:** Four to eight people
- Duration:** One to ten days depending on size

## Royal Dutch/Shell Group (continued)

### **Environmental Audit Program**

**Approach:** Audit against applicable regulations, internal policies, and management standards

Broad guidelines established for identifying topics to be covered during each audit

Pre audit information package gathered and distributed to team

Kick-off meeting with senior management at the site

Staff interviews

**Reporting:** Draft prepared on site and presented at the "wrap-up" discussion before leaving

Full report prepared within one month for operating company management that requested the audit

Site management develops the plan to address the findings

## **FUTURE OF AUDITING**

## **FUTURE OF AUDITING**

- Will Become a Worldwide Activity
- Will Become a Standard Environment, Safety and Health Management Philosophy
- May Get Included as Part of ISO 9000
- Increased Use of Auditing as an Enforcement Tool
- Trend away from Compliance Auditing and towards Management Systems Reviews