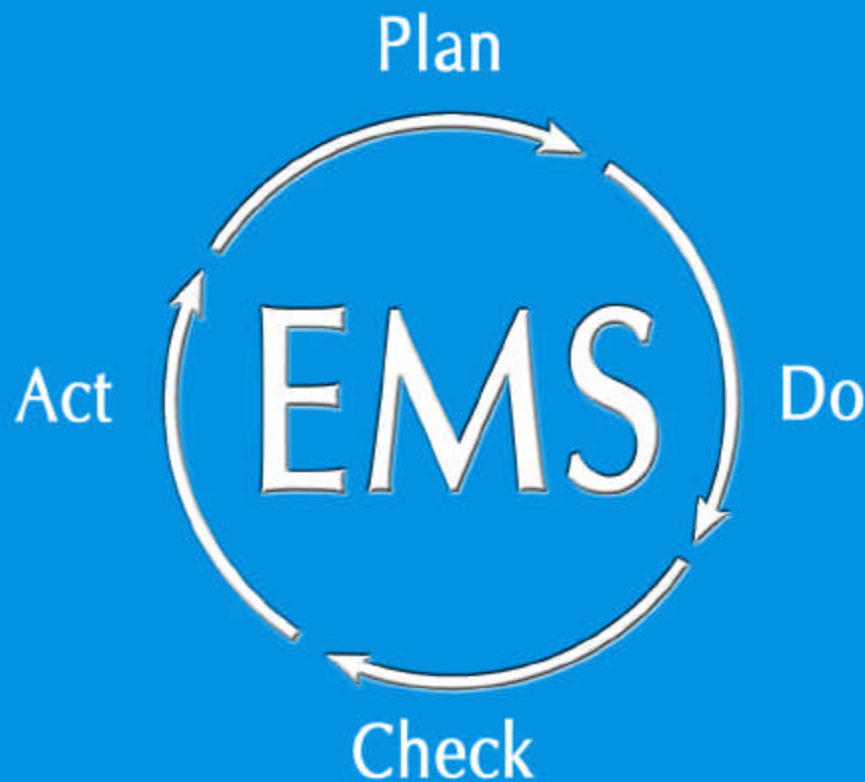# Understanding and Implementing an
Environmental Management System

A Step-by-Step Guide
for
Small and Medium-Sized Organizations

Plan

Act **EMS** Do

Check

Step 2: EMS Development and Implementation Guide

Table of Contents

CHAPTER 1 - LAY THE GROUNDWORK

This chapter addresses the preliminary steps that must be conducted before work on the actual EMS elements can begin. Documents to assist in these steps have been included.

1.1 - Obtain Management Commitment

The first step in the EMS building process is gaining top management's commitment to supporting the EMS. Management sets the priorities, assigns key personnel, and allocates funding for facility activities. Without top management commitment, the resources and support necessary for EMS development and implementation are much more difficult, if not impossible, to obtain.

To gain support, prepare a briefing for top management describing Environmental Management Systems, the benefits of an EMS and what it will take to put an EMS in place. The information in STEP 1: The Basics - Chapter 2 can be used to convince top management of the benefits of an EMS and to estimate the cost of EMS implementation. If after evaluating the briefing, management views an EMS as something that could be beneficial to the company, then you should proceed with an EMS kick-off meeting. At this meeting a presentation should be made to explain what an EMS is, what management is responsible for, a conceptual idea of how the EMS will be developed and implemented, and an open discussion regarding who could serve as the EMS Champion. To aid in the organization of this meeting, a sample meeting announcement, agenda, and meeting guidance are included after this section.

In order to obtain management approval and support, an environmental management system must be seen as vital to the functioning of the organization and as a positive benefit, whether it be in financial terms or in measures such as improved regulatory compliance status, increased production efficiency, or worker protection. If management commitment is lacking, environmental concerns will not receive the priority they deserve.

Inform your top management that organizations that consistently demonstrate management support for pollution prevention and environmental compliance generally perform at the highest levels and will be looked upon as environmental leaders.

Once management commitment is gained, the commitment and vision should be clearly communicated across the organization. Upper management can demonstrate their commitment by playing an active, visible role in the EMS development and implementation process, providing funding and allocating resources, and promoting employee awareness and motivation. An EMS should be viewed as a tool to achieve continuous environmental improvement, rather than daily "firefighting" just to keep up with regulatory requirements.

To build and sustain an effective EMS, management must communicate to all employees the importance of :

• **making the environment an organizational priority**
(thinking of effective environmental management as fundamental to the organization's survival)

• **building environmental management into the entire process**
(thinking about the environment as part of product and process development, among other activities)

• **looking at problems as opportunities**
(identifying problems, determining root causes and preventing their recurrence)

Sample EMS Kick-Off Meeting Announcement

Meeting Announcement

Attendance List: (*list names of attendees*)
Meeting date and time: (*identify date and time of meeting*)

<u>Announcement</u>

A Management Team meeting has been scheduled to review and discuss the Environmental Management System standard, and to obtain your commitment for implementing this system. An EMS will help establish a common environmental baseline across our facility. An EMS can reduce costs while advancing productivity. It will also help improve compliance and our overall environmental performance, thus assuring a safe environment for our children and future generations.

<u>Meeting Agenda</u>

Introduce EMS Elements and Management Responsibilities

Review Development and Implementation Flowchart

Designate EMS Champion and Establish EMS Team

Review Draft EMS Commitment Memorandum

Sample EMS Kick-Off Meeting Agenda

EMS Kick-Off Meeting Agenda

Facility/Plant Name **Environmental Management System
Management Review Meeting #1**

Date: _____

Location: _____

Attendees: <u>See sign-in sheet</u>

<u>Agenda Topics</u>	<u>Time</u>	<u>Responsibility</u>
1. Introduce EMS Elements and Management Responsibilities 2. Review Development and Implementation Flowchart 3. Designate EMS Champion and Establish EMS Team 4. Review Draft EMS Commitment Memorandum		

<u>Agenda Topics</u>	<u>Discussion Topic</u>	<u>Required Documentation</u>
1. Introduce EMS Elements and Management Responsibilities	• EMS background • Review presentation overheads and explain management responsibilities	• Attendance sign-in sheet
2. Review Development and Implementation Flowchart	• Discuss the implementation strategy	• Meeting minutes reflecting endorsement of implementation plan
3. Designate EMS Champion and Establish EMS Team	• Roles and responsibilities of EMS Champion • Selection of EMS Champion	• Meeting minutes identifying EMS Champion
4. Review Draft EMS Commitment Memorandum	• Issuance of memorandum from facility/plant manager committing implementation of EMS and announcing EMS Champion	• Signed memorandum

EMS Kick-Off Meeting Guidance

EMS Kick-Off Meeting Guidance

- Meeting will be conducted by those responsible for obtaining management commitment to implement an EMS
- Schedule meeting when all members of the Management Team can attend, especially the Facility/Plant Manager
- Coordinate meeting so that appropriate Corporate and Division representatives can attend
- Schedule meeting for at least one hour to allow sufficient time to cover all the material

Scheduling
- Review Management Team schedules to ensure full attendance
- Distribute meeting announcement if necessary

Meeting Room Setup
- Overhead projector
- Podium and microphone if required or available
- Flip chart and markers

Meeting Material - presentation material provided by presenters
- Presentation materials
- Environmental management system development and implementation flowchart
- Management review meeting #1 agenda
- Draft EMS commitment memorandum

1.2 - Choose a Champion

A champion is a management representative who will be responsible for leading the EMS development and implementation effort. Not all small or medium-sized organizations have the luxury of choosing among multiple candidates, but your choice of project champion is critical. The champion should have the necessary authority, an understanding of the organization, and project management skills. The champion should be a "systems thinker" and must have the time to commit to the EMS-building process. The champion will be identified as the official spokesperson of the program.

The management representative has to be a person with executive level authority and experience in implementing management systems or other similar projects. The management representative is expected to draft an action plan that upper management will approve. This same person is expected to carry out the action plan by assigning tasks to specific people within the company. Therefore, this person must be a leader with clear communication abilities.

The selection of the EMS Champion should be discussed at the EMS Kick-Off meeting used to obtain management commitment. Once an individual has been selected to champion the EMS, a top company official should make all personnel aware that the EMS Champion will be facilitating the development and implementation of an EMS. This can be effectively communicated to all personnel through correspondence similar to the sample memorandum included after this section.

Sample Memorandum on the Implementation of an EMS

Memorandum

Date: (*Date*)

To: *(Facility/Plant Management)*

From: *(Facility/Plant Manager Name)*

Subject: Implementation of an Environmental Management System

Over the next several months the (*Facility/Plant Name*) will be implementing an Environmental Management System (EMS). The fundamental goal of this voluntary effort is continual improvement in our environmental performance as measured by the types and amounts of wastes and discharges we create. This increased environmental stewardship will help ensure compliance and a safe environment for our children and future generations.

In order to support this new initiative, I am designating *(named individual)* as the Environmental Management System Champion for the (*Facility/Plant Name*). In this capacity, *(named individual)* will be responsible for coordinating the actions needed to meet the environmental management system requirements, as well as those of the company. (*named individual*) will also periodically report implementation progress to Plant Management.

To ensure adequate resources for developing and implementing the new EMS, I have asked (*named individual)* to assemble and direct an EMS Team. This team will have representatives from most plant functions and activities. Team responsibilities may include evaluating current systems and documents for potential inclusion in the EMS, developing an environmental policy, identifying wastes and discharges associated with our operations, determining appropriate tracking metrics, assuring that regulatory compliance requirements are met, and, in general, creating all required system documents and processes.

I would like our new EMS to be fully implemented by (*Date*). I, therefore, request your full support in attaining this goal.

1.3 - Form an EMS Team

If your company can dedicate staff time, you should form an EMS Team led by the EMS Champion. Using a team approach for building your EMS is a good way to improve commitment and ensure that the objectives, procedures and other system elements are realistic, achievable and cost-effective.

The EMS team should meet regularly and lead the development of your EMS. This project team, with representation from key management functions and production or service areas, can identify and assess issues, opportunities and existing processes. The EMS Champion should develop a conceptual list of various company divisions/units that should be represented on the EMS team. Once this conceptual list is developed the EMS Champion should communicate with the appropriate managers to select representatives to participate on the EMS team.

Try to keep the size of the project team under eight people in order to keep meetings manageable. The team should include a cross section of grades and functions. The first task of the EMS team will be to become familiar with EMSs and to develop a presentation to convey the key concepts of an EMS to all company employees. This presentation will help to develop support and understanding of the EMS within your company. The following information will provide additional details on the roles and responsibilities of the EMS team.

Team Membership

The EMS Team should include representation from most functional and process/work areas. In addition to the EMS Champion, typical representation may include:

- Production
- Maintenance
- Human Resources
- Safety

- Engineering
- Material Handling
- Quality

- Controller's Office
- Environmental Engineering
- Training

Environmental Management System Champion Roles & Responsibilities

The EMS Champion is a member of the Management Team and has the primary direct responsibility and authority to develop and implement the EMS, including managing the overall project, reporting progress to the facility manager, scheduling periodic reviews by the Management Team and chairing the EMS Team.

Team Member Roles & Responsibilities

EMS Team members must be motivated and willing to undertake the responsibilities, time commitment and opportunities involved in developing and implementing the EMS at the

facility. They should also have access to their respective Area Manager or Department Manager to assure that:

- area/department environmental aspects are identified.
- objectives and targets are consistent with area/department goals.
- area/department procedures and work instructions are complete, accurate and implemented.

- employee awareness and job specific training are completed.

The EMS Team will have responsibility for EMS development including:

- developing a facility specific environmental policy.
- identifying environmental aspects.
- evaluating aspect significance.
- developing objectives and targets.
- creating environmental management programs.
- detailing operational control requirements.
- directing training resources.
- implementing an internal auditing system.

The EMS Team will also be the primary EMS communication link to area and department personnel. EMS Team members will need support from areas and departments in developing procedures and work instructions, maintaining documents and records, and training all facility employees.

There will be frequent EMS Team meetings and assignment of responsibilities between meetings. The EMS Team should document its meetings with agendas, attendance sign-in lists and minutes indicating decisions and recommendations concerning EMS development and implementation.

Typical Area/Department Activities and Assignments

Facility/Plant Manager

- Overall responsibility for development and implementation of the environmental management system.
- Allocation of resources for implementation and training.

Controller's Office

- Assure financial considerations are addressed in preparing projects, in reviewing projects, and in all aspects of planning.

Department/Area Manufacturing Areas

- Develop and implement area specific procedures and/or work instructions to minimize environmental releases and comply with regulatory requirements.
- Develop procedures and/or work instructions for start-up, shut-down and other non-routine operating conditions.
- Support resource availability for awareness training and job specific training.

Materials Handling

- Develop and implement procedures and/or work instructions to reduce the risk of spills or releases to the environment.
- Develop and implement internal waste management procedures and/or work instructions.

Employee Relations/Human Resources -- Training, Security & Safety

- Develop training needs analyses and plans.
- Implement employee awareness and job specific training.
- Maintain environmental training records.
- Coordinate development and implementation of emergency procedures including procedures to control spills and releases.

Maintenance Operations

- Develop and implement procedures and/or work instructions to assure proper calibration of control and monitoring instrumentation.
- Develop and implement procedures and/or work instructions to maintain environmental control equipment.

Engineering/Environmental Coordinator

- Assure technological and technical options reviewed and considered in establishing objectives and targets.
- Develop and implement procedures and/or work instructions to assure that necessary permit, license and other regulatory approvals are identified during project development.
- Facilitate EMS Team meetings on behalf of EMS Champion when appropriate.
- Manage and maintain facility compliance assurance program.

1.4 - Build Support and Involve Employees

It's important that both management and employees understand not only what an EMS is, but also why they would want one. This step is designed to get people to think about and discuss the ways in which an EMS will benefit your company. First, set up times to discuss the EMS with managers and employees. Develop sessions, to present to your company's employees, on

what an EMS is and why the company is developing one. These information sessions should include a brief presentation from top level management that conveys their support for the EMS concept. These sessions will help to develop support and understanding of the EMS within your company.

Next, discuss the questions listed below with managers and employees. Recording the discussion provides important documentation that can be used to communicate the benefits of an EMS to others. These results may provide ongoing support for the development process. One way to record the discussion is to assign someone the task of writing answers on a flip chart, so that everyone can see them for discussion. The first set of general questions will help you identify your need for an EMS.

• Which environmental and worker safety laws and regulations is your company required to follow?

• Are you looking for ways to improve your overall environmental performance?

• How does your company define environmental performance? Does lack of time or resources prevent your organization from taking charge of its environmental obligations? Are there individuals appointed who are responsible for this function?

• Does your organization know how its environmental objectives relate to its business objectives?

To build support, consider the benefits an EMS might provide for your company. A more systematic approach to meeting your environmental and business goals might contribute to the following in your company:

• improved environmental performance
• improved worker health and safety
• improved competitiveness
• improved compliance and reduced liability
• fewer accidents
• improved public image
• enhanced customer trust
• better access to capital
• improved internal communication
• improved company morale

It will be helpful at this point to create a worksheet to compare the expected costs and benefits of developing an EMS. The following table provides some general categories of costs and benefits. When making your comparison, provide specific examples from the discussion.

Figure 1: Costs and Benefits of Developing and Implementing an EMS	
Costs	**Benefits**
• staff/employee time for information collection, reading and understanding manual, preparation of worksheets, facilitating EMS sessions, participating in EMS development • possible consulting assistance • training of personnel in new procedures • technical resources to analyze environmental impacts and improvement options • resources required to make changes	• improved environmental performance • expected increased efficiency/reduced cost of materials • new customers/markets • enhanced employee morale • expected savings in compliance and record keeping requirements due to changes in materials used • reduced waste disposal/treatment costs

As you develop and implement an EMS, some roadblocks may be encountered. Some people in the organization may view an EMS as bureaucracy or extra expense — an "add-on" to what you do now. There may be resistance to change or fear of new responsibilities. To overcome these potential roadblocks, make sure that everyone understands why the organization needs an effective EMS and how an EMS will help you control environmental impacts in a cost-effective manner. To build the support of your employees stress to them that the EMS will be developed and implemented in a system of open communication. Allow your employees the opportunity to freely discuss environmental aspects, compliance issues, and their ideas on ways to improve the EMS. Consider the development of a labor management committee to assist in the development and implementation of the EMS. Also, consider the development of recognition or rewards programs to encourage employees to contribute to the successful implementation of your EMS.

The information in STEP 1 - The Basics - Chapter 2 will be helpful for these discussions. Also, during these meetings, encourage employee input. Getting people involved in designing and implementing the EMS will demonstrate the organization's commitment to the environment and help to ensure that the EMS is realistic, practical and beneficial.

1.5 - Conduct a Preliminary Review

Conduct a preliminary review of your current environmental programs and systems and compare these to the criteria for your EMS. You may already have policies in place that can be part of an EMS. Understanding your company's approach to environmental concerns will help

you identify areas for improvement. Also, you will want to quantify baseline environmental conditions at your facility for comparison to future conditions.

This review is designed to help you identify how your company currently handles environmental and human health concerns and compares current practice with where you would like to be. In some references, this is called a "gaps analysis", and it is designed to uncover ways to improve your management of these concerns.

This review is best developed through discussions in a group representing different functions in your company, especially line managers and line workers. You'll need to involve those that have the day-to-day working knowledge of your company's operations. Be sure to include people who have direct knowledge of as many relevant functions as possible. This inclusion is important for two reasons. First, it allows employees from different departments within your company to become exposed to the EMS development process. Second, it allows each employee to bring their specific knowledge about environmental practices in their functional area to the EMS process. In this way, they can explore possible changes that strive to improve both environmental management and cost savings for your company.

In order to efficiently manage the preliminary review, it is suggested that you create a checklist of which processes are near conformance and which systems need attention. "Worksheet 1: Preliminary Review Checklist," included after this section, will help you evaluate the deficiencies within your company. In this checklist you should focus on evaluating each of the statements and assess the degree your company has accomplished each statement (i.e., none, some, about half, most or all). The answers to these questions will reveal which processes in your company will need the most attention to implement an EMS. This information will help prioritize tasks within your action plan. Based on the information collected, the EMS Team will develop a report highlighting the gaps between the existing system and the EMS requirements.

The EMS Team should also determine baseline information on your company. This will include the level of current discharges, noise levels, safety violations, employee health issues, compliance status and other related topics. This information will be used for comparison to future conditions.

Worksheet 1: Preliminary Review Checklist

Check the box that best describes the degree your company has satisfied each criteria.

• Statement 1: Environmental Policy					
Criteria	**None**	**Some**	**Half**	**Most**	**All**
1) An environmental policy has been defined by management and includes the following:					
a) Is appropriate for the nature, scale, and environmental impacts of the company's activities, products and services.					
b) Includes a commitment to continual improvement in the prevention of pollution.					
c) Includes a commitment to comply with relevant environmental legislation, regulations, and requirements.					
d) Provides a framework for setting and reviewing environmental objectives and targets.					
e) Is documented, implemented, and maintained.					
f) Has been communicated to all employees.					
g) Is available to the public.					

• Statement 2: Environmental Aspects					
Criteria	**None**	**Some**	**Half**	**Most**	**All**
1) A procedure exists to identify environmental aspects and determine which have significant impacts on the environment.					
2) Significant aspects are considered when setting environmental objectives.					
3) This information is kept up-to-date.					

Check the box that best describes the degree your company has satisfied each criteria.

• Statement 3: Legal and Other Requirements					
Criteria	**None**	**Some**	**Half**	**Most**	**All**
1) A procedure exists to identify and have access to legal and other requirements pertaining to the environmental aspects of your facility.					

• Statement 4: Objectives and Targets					
Criteria	**None**	**Some**	**Half**	**Most**	**All**
1) These have been established at each relevant function and level.					
2) Legal and other requirements were considered in establishing them.					
3) Significant environmental impacts were considered in establishing them.					
4) Technological options were considered in establishing them.					
5) Financial, operational, and business requirements were considered in establishing them.					
6) The views of interested parties were considered in establishing them.					
7) They are consistent with the environmental policy.					

Check the box that best describes the degree your company has satisfied each criteria.

• **Statement 5: Environmental Management Programs**					
Criteria	**None**	**Some**	**Half**	**Most**	**All**
1) An environmental management program for achieving objectives and targets has been established and includes:					
a) designation of responsibility for achieving objectives and targets at each relevant function and level of the company.					
b) means and time-frame for accomplishment.					
c) new developments, new or modified activities, products, and services.					

• **Statement 6: Structure and Responsibility**					
Criteria	**None**	**Some**	**Half**	**Most**	**All**
1) Roles, responsibilities, and authorities are defined, documented, and communicated.					
2) Resources are provided that are essential to the implementation and operation of the environmental management system.					
3) A specific management representative (one or more) has been appointed by top management with defined roles, responsibility, and authority for:					
a) establishing, implementing, and maintaining the EMS.					
b) reporting on the performance of the EMS to top management.					

Worksheet 1: Preliminary Review Checklist (continued)
Check the box that best describes the degree your company has satisfied each criteria.

• **Statement 7: Training, Awareness, and Competence**					
Criteria	**None**	**Some**	**Half**	**Most**	**All**
1) Training needs are identified, and all personnel whose work may create a significant impact upon the environment have received appropriate training.					
2) Procedures are established and maintained to make appropriate employees aware of:					
a) the importance of conformance with environmental policy, procedures and the requirements of the EMS.					
b) the significant environmental impacts of their work activities and environmental benefits of improved personal performance.					
c) their roles and responsibilities in achieving conformance with environmental policy, procedures, and EMS.					
d) the potential consequences of departure from specific operating procedures.					
3) Personnel performing tasks that can cause significant environmental impacts are competent.					

Worksheet 1: Preliminary Review Checklist (continued)
Check the box that best describes the degree your company has satisfied each criteria.

• **Statement 8: Communication**					
Criteria	**None**	**Some**	**Half**	**Most**	**All**
1) The company has established and maintains procedures for:					
a) internal communications among levels and functions.					
b) receiving, documenting, and responding to relevant communication from external interested parties.					
2) The company has considered processes for external communication of it's significant environmental aspects					

• **Statement 9: EMS Documentation**					
Criteria	**None**	**Some**	**Half**	**Most**	**All**
1) Information describing the core elements of the EMS and their interaction has been established and maintained.					
2) Information providing directions to related documentation has been established and maintained.					

Worksheet 1: Preliminary Review Checklist (continued)
Check the box that best describes the degree your company has satisfied each criteria.

• **Statement 10: Document Control**					
Criteria	**None**	**Some**	**Half**	**Most**	**All**
1) A procedure has been established and maintained for controlling documents to ensure that:					
a) they can be located.					
b) they are periodically reviewed, revised, and approved by authorized personnel.					
c) current versions are available at all appropriate locations.					
d) obsolete documents are promptly removed.					
e) obsolete documents retained for preservation purposes are identified as such.					
f) documents are legible, dated, readily identifiable, maintained, and retained.					
g) procedures exist and are maintained for creation and modification of documents.					

• **Statement 11: Operational Control**					
Criteria	**None**	**Some**	**Half**	**Most**	**All**
1) Procedures have been established and maintained to control key operations/activities.					
2) Employees are trained on these procedures.					
3) Procedures cover normal operations, abnormal operations and emergencies.					

Check the box that best describes the degree your company has satisfied each criteria.

• **Statement 12: Emergency Preparedness and Response**					
Criteria	**None**	**Some**	**Half**	**Most**	**All**
1) There are procedures for identifying the potential for and response to accidents and emergency situations.					
2) There are procedures for preventing and mitigating the environmental impacts that may be associated with emergencies.					
3) These producers are reviewed and revised as necessary.					
4) Procedures are periodically tested where practicable.					

• **Statement 13: Monitoring and Measurement**					
Criteria	**None**	**Some**	**Half**	**Most**	**All**
1) Procedures exist and are documented to regularly monitor and measure the key characteristics of operations having a significant impact on the environment.					
2) This includes recording information to track performance, relevant operations controls, and conformance with objectives and targets.					
3) Monitoring equipment is calibrated and maintained and records of the process are retained.					
4) A procedure exists for periodically evaluating compliance with legislation and regulations.					

Worksheet 1: Preliminary Review Checklist (continued)
Check the box that best describes the degree your company has satisfied each criteria.

• **Statement 14: Nonconformance and Corrective/Preventive Action**					
Criteria	**None**	**Some**	**Half**	**Most**	**All**
1) Procedures exist and are maintained for defining responsibility and authority for handling and investigating nonconformance and for taking appropriate action.					
2) Corrective or preventive action are appropriate.					
3) Changes in procedures resulting from corrective and preventive action are documented.					

• **Statement 15: Records**					
Criteria	**None**	**Some**	**Half**	**Most**	**All**
1) Procedures are established and maintained for the identification, maintenance, and disposition of environmental records. These include training and audit results.					
2) Records are legible, identifiable, and traceable to the activity, product, or service involved.					
3) Records are easily retrievable and protected from damage, deterioration, or loss.					
4) Retention times are established and recorded.					
5) Records demonstrate conformance to the standard.					

Check the box that best describes the degree your company has satisfied each criteria.

• **Statement 16: EMS Audit**					
Criteria	**None**	**Some**	**Half**	**Most**	**All**
1) A program and procedures for periodic EMS audits are established and maintained.					
2) The audits determine:					
a) whether the EMS conforms to the EMS standard.					
b) whether it has been properly implemented and maintained.					
3) The program provides information on the results of audits to management.					
4) Procedures cover the audit scope, frequency, methods, responsibilities and requirements for conducting audits and reporting results.					

• **Statement 17: Management Review**					
Criteria	**None**	**Some**	**Half**	**Most**	**All**
1) Top management regularly reviews the EMS to ensure its suitability, adequacy, and effectiveness.					
2) The review is documented.					
3) Information necessary for management to do this is collected.					
4) The review shall consider the need for changes to policy, objectives, and other elements of the EMS resulting from audits, changing conditions, and the commitment to continual improvement.					

1.6 - Plan the Process

This section will help you set up a plan for completing your EMS. This plan will be unique to your company. You will want to identify:

- the steps that need to be taken, in the appropriate order.
- the decisions that will need to be made.
- resources and schedules for accomplishing the tasks.
- the stakeholders who will participate, the communication needs, and the method of documentation for your EMS process.

1.6.1 - Planning Steps

Your preliminary review of current environmental activities gives you some idea of what will need to be done. To plan for your EMS development, consider the steps presented below. You may not be able to complete every step at this time, but addressing them now will facilitate your EMS development.

1. Decide which areas of environmental activities are the highest priorities.
   Are there some areas that are critical and need to be addressed first?
   Should you work on the EMS in stages?

2. Determine what level of management involvement is required and what decisions will be needed.
   Can you proceed with action steps or do you need additional approvals?
   Is management aware of its options?
   Which decisions can be made by the EMS team and which ones need higher-level management approval?

3. Decide who will be responsible for overseeing completion of various parts of your EMS. That person will be the EMS Champion (in a small business, this person could be the owner). Someone should be designated as responsible for (at least) the elements listed below. The individual selected for each of these elements should be documented in "Worksheet 2: Persons Responsible for EMS Development," located at the end of this section.

   - Identifying and determining significance of environmental aspects.
   - Identifying and determining applicability of legal and other requirements.
   - Competency-based training.
   - Operational controls.
   - Emergency preparedness and response.
   - Monitoring and measurement of "key characteristics" of operations and activities that can have significant environmental impacts (i.e., the "significant environmental aspects").
   - Periodic evaluations of environmental compliance.
   - Handling and investigating nonconformance with the EMS.

- Records management.
- Internal EMS audits.

4. Decide who should be involved in each step of the EMS process. This should be documented in "Worksheet 3: EMS Development Schedule and Resources," located at the end of this section.

Do you know what resources you need to complete the EMS design?
Do you know what resources are available?
Who will make the decision about participants?
Who will make the decision about resources?
How will you define roles, responsibilities, and authorities? The way that will work best is one that is consistent with the way your company is currently managed. Are decisions made centrally, or are they delegated?

5. Set a deadline for developing your EMS and establish a schedule. This should be documented in "Worksheet 3: EMS Development Schedule and Resources," located at the end of this section.

How much time do you estimate it will take to complete design?
How much time do you estimate it will take to implement?

6. Estimate a budget. The budget for each step of the EMS process should be documented in "Worksheet 3: EMS Development Schedule and Resources," located at the end of this section.

7. Set your boundaries.

How much planning is enough?
How much is too much?

1.6.2 - Create an Outline for the Process

It will be helpful at this point to develop some idea of what your EMS document will look like, and thereby, what work will need to be done to fill it in. Create an outline that suits your company. What and how much you actually include depends upon your company and its needs. The following are some of the parts you may want to include:

I.   Environmental Policy
II.   Environmental Action Responsibilities, Assignments
III.   Environmental Documents and Their Location
IV.   Environmental Aspects
V.   Significant Aspects
VI.   Legislative and Regulatory Requirements
VII.   Objectives and Targets
VIII. Environmental Program to Meet Objectives and Targets

IX.   Emergency Preparedness Plan
X.   Internal Auditing Procedures
XI.   Corrective Action Procedures
XII.   Program Review Procedures

The actual content of your outline will be filled in as you develop your EMS.

1.6.3 - Estimate Resources and Schedules

If you have never developed an EMS before, estimating resources and time can be very difficult. There is no magic formula. Even in the smallest organization, some estimate of personnel resources and other costs should be prepared along with a schedule of milestones and decision points. One way to begin is to create a schedule and to estimate resources for completing the chapters in this guide. Other steps can be added as needed. As you begin to work on each chapter, you may want to identify intermediate steps for which you will set additional target completion dates. At some points, you may need to alter the overall schedule. "Worksheet 3: EMS Development Schedule and Resources," will assist you in developing and tracking this plan. As you go through each chapter, revisit this worksheet and list who is participating in each task and your estimated budget and schedule.

At this point it may also be helpful to begin to consider what organizations you may be able to contact for technical and financial assistance as you proceed through your EMS development and implementation. To aid in this process you may want to review Appendix I - Sources of Information and Other Contacts, to identify organizations that may be of help to you. Appendix I lists numerous organizations that can provide both technical and financial assistance as you plan and implement environmental management programs as a result of your EMS.

Worksheet 2: Persons Responsible for EMS Development		
Roles	**Individual Responsible**	**% of Time Designated**
"Management representative" having responsibility for implementing the EMS (in a small business, this person could be the owner)		
Identifying and determining applicability of legal and other requirements		
Competency-based training		
Operational controls		
Emergency preparedness and response		
Monitoring and measurement of "key characteristics" of operations and activities that can have significant environmental impacts (i.e., the "significant environmental aspects")		
Periodic evaluations of environmental compliance		
Handling and investigating nonconformance with the EMS		
Records management		
Internal EMS audits		

Worksheet 3: EMS Development Schedule and Resources Worksheet (Page1 of 2)			
Section	**Participants**	**Budget**	**Target Completion Date**
Getting Started: Management Commitment, Champion, Team, Employee Support, Preliminary Review, Schedule and Plan			
Intermediate steps: (Fill in)			
Identify Environmental Aspects			
Intermediate steps: (Fill in)			
Establish Objectives and Targets			
Intermediate steps: (Fill in)			
Develop Environmental Management Program			
Intermediate steps: (Fill in)			
Prepare Procedures and Documents			

Worksheet 3: EMS Development Schedule and Resources Worksheet (Page 2 of 2)			
Section	**Participants**	**Budget**	**Target Completion Date**
Intermediate steps: (Fill in)			
Assess EMS Performance: Monitoring and Measurement, Nonconformance and Corrective and Preventive Action, Audits			
Intermediate steps: (Fill in)			
Establish Continuing Improvement: Management Review			
Intermediate steps: (Fill in)			
Date completed: Contact person:			

CHAPTER 2 - DEVELOP EMS DOCUMENTATION: THE EMS MANUAL

EMS documentation can be viewed as a series of explanations or statements of how EMS criteria apply to your organization. Much of your documentation will be kept in an EMS manual. An EMS manual explains how your company's EMS is organized. It documents your EMS components such as training, communication, documentation, audits, and review processes. It also contains EMS documents such as your environmental policy. While you don't need to maintain a single "manual," you should maintain your EMS documentation in a form that:

• describes the core elements of your EMS (and how these elements relate to each other).
• provides direction to related documentation.

You can maintain this documentation either on paper or electronically. There may be some advantages to maintaining documents electronically, such as easier updating, access control, and ensuring that the most up-to-date version of a document is used by all readers.

One way to handle documentation is to use a three tier system of documentation: statement of purpose, standard operating procedures to implement each element, and forms/records that confirm the procedures are being followed. All these documents and an organization chart should be assembled into an EMS manual.

You should have a statement of purpose for each element. These statements explain why your company conforms to the particular element. Each statement of purpose should name a particular job title responsible for the implementation of the policy.

2.1 - Statement of Purpose

Each statement of purpose should be less than one page in length and should reflect the requirements within each EMS element listed below:

• Environmental Policy
• Environmental Aspects
• Legal and Other Requirement
• Objectives and Targets
• Environmental Management Programs
• Structure and Responsibility
• Training Awareness and Competence
• Communications
• Environmental Management System Documentation
• Document Control
• Operational Control
• Emergency Preparedness and Response
• Monitoring and Measurement
• Nonconformance and Corrective and Preventive Action
• Records

- Environmental Management System Audit
- Management Review

For each of the above elements, you should create a checklist of requirements. Then, write a statement of purpose for each, explaining why your company will comply. For example, under "Nonconformance and Corrective and Preventive Action," a typical EMS standard requires you to establish a procedure that defines the responsibilities and authorities for handling and investigating nonconformances. In addition you have to take action to reduce the impact from the nonconformance and initiate both corrective and preventive actions.

Therefore, your statement of purpose would begin by naming the person ultimately responsible for this element, such as, "The engineering manager shall be responsible for corrective and preventive actions." Then you need to state your company's policy on this part of the requirements, such as, "A documented system of preventive and corrective actions shall be established and maintained. This system will be initiated whenever a nonconformance is discovered within our operations. Actions shall be taken to reduce the effect of the nonconformance, investigate the root cause of the problem, and actions shall be taken to prevent recurrence."

As you can see, you are almost paraphrasing the requirements. The important point to remember is to accurately describe how your environmental management system operates and the unique character of your company. All of this should be done with a minimal number of words.

Following the statement of purpose for each EMS element, a separate listing of applicable standard operating procedures and reference material should be developed. These lists will allow the reader to easily refer to the correct procedures and reference material necessary to implement this element. This information will also be useful for quickly accessing material for the purpose of monitoring progress.

2.2 - Standard Operating Procedures and Work Instructions

Standard operating procedures describe a particular process usually carried out by a number of different people. It will describe the how, when, who, where, and with which equipment will be required to fulfill the requirements articulated in the statement of purpose.

The work instructions are used by an individual to complete one of the tasks listed in a standard operating procedure. The task is broken down into identifiable steps. In other words, a work instruction tells a person exactly what to do. A good working instruction uses a minimum number of words to convey the necessary information. Illustrations, diagrams, reference tables, and other job aids are strongly encouraged to support work instructions.

A good format for operating procedures and work instructions is to number the paragraphs according to their level of description. For example, the topic of "Purpose" might be numbered 1.0. The general description of this topic might be numbered 1.1. The major topics to be covered in a standard operating procedure could include the following:

- Purpose/Scope
- Definitions
- Responsibilities
- Procedure
- Frequency
- Related Documents
- Audit Questions
- Record of Revisions

When writing your standard operating procedures, you should keep a few things in mind. The procedure should be written in clear, concise, and simple language. In other words, you should write procedures to be understood by any employee.

Procedures and work instructions must be typed or printed in a typeface which is easy to read. The idea is to make your manual of procedures easy to use so that people are encouraged to follow the written instructions. A procedures manual should not create a barrier to operations.

The generic standard operating procedure that follows gives you an idea of how the procedure should be formatted, and the information that should be included.

Generic Procedure XX-001: Standard Operating Procedure (SOP) For _____

1.0 Purpose/Scope

Discuss what the procedure is, the circumstances under which the procedure will be implemented, and explain what your company is trying to achieve by using the procedure.

2.0 Definitions

Include any definitions that will aid in the understanding of the procedure.

3.0. Responsibilities

Include the job title of the individual ultimately responsible for assuring that this procedure is implemented and maintained. A job title is used instead of the person's actual name so that the procedure does not have to be updated when a new person is placed in this job title.

4.0 Procedure

Include a listing of the stages of the process that are necessary to appropriately implement this procedure. First, all identified stages should be listed in numerical order (4.1, 4.2, 4.3...). Each of these identified stages is then followed by a more detailed discussion of the tasks involved in each stage.

5.0 Frequency

Document the frequency in which this procedure needs to be followed.

6.0 Related Documents

This section will list other documents that are applicable to the procedure. A listing of records that are required to document completion of this procedure will be included. In addition, a listing of other sources of reference, information and instruction shall be included to aid the reader.

7.0 Audit Questions

This is an optional section that can include audit questions or an audit check to be used internally for confirming the effective usage of this procedure. If you choose to include this type of section in your procedure you should meet with your internal auditors to help design the best set of questions.

2.3 - EMS Manual

Your EMS manual should be organized along the following lines:

• The manual should be constructed using a three-ring binder. This will allow easy updating of existing procedures.

• The cover should clearly indicate that this is your EMS manual (feel free to use a company logo).

• The first page of the manual should be a copy of your company's environmental policy.

• Your company's environmental policy should be followed by a table of contents.

• The table of contents should be followed by a table that summarizes the revision made to the document. By listing revision, it is easy for your internal audit team to confirm that your manual is up-to-date.

• This, in turn, is followed by a copy of the organizational chart.

• The text of the manual then begins with a section discussing the purpose of the manual. Optional material to include in your EMS manual include:

  • items such as a description of your company.

  • a list of products affected by this manual.

  • a summary of the environmental objectives and targets of your company, and cross references to other standards and environmental regulations.

Although, you can technically add anything you want, the objective is to include the minimal amount of information that will support the procedures and explain why using the environmental procedures is so important to the company.

Once you have written standard operating procedures, they should be submitted to the identified authority for approval. The approval body or person will sign the new or revised operating procedure before it is placed in circulation.

Once a new or revised procedure is created and issued, you should consider what type of training will be required to implement the new document.

Refer to <u>STEP 3: EMS Template</u> for more ideas on the content and structure of your EMS manual.

EMS Checklist

T Have you documented the core elements of the EMS and their interaction?

T Have you described where people can find the documents listed above and related documents?

CHAPTER 3 - ESTABLISH A COMMUNICATION PLAN

Communication is an important feature of a successful EMS. Active communication can increase the effectiveness of the development and implementation of an EMS by (1) explaining your environmental policy and how it relates to the overall business strategy, (2) motivating employees, (3) making sure roles and expectations are understood by all employees, (4) demonstrating management commitment, and (5) identifying potential system improvements.

Communication should be maintained to ensure that environmental goals are met. Communication should explain the environmental policy, define the EMS roles and responsibilities delegated to employees, and address the progress toward specific objectives and targets. Communication should possess mechanisms for top-down and bottom-up information flow. Since employees are on the "front lines," they are often an excellent source of information, issues and ideas. Conversely, the communication of continued management commitment to the EMS and a culture of environmental compliance and excellence is critical to sustaining an effective EMS.

Communicating with external parties is also important for effective environmental management. Obtaining the views of neighbors, community groups, environmental organizations and customers (among others), will help you understand how your organization is perceived by others. By maintaining meaningful dialogue and a proactive approach with external parties, a company can more easily meet EMS and other business goals.

• *Begin early in the process.*

Let people know what you are doing. In most cases, you will need the cooperation of several people within your company to gather information and develop an effective EMS. In small and large organizations alike, early communication will pay off with better acceptance of the resulting system.

• *Set your communication objectives.*

Decide what you want to achieve in your communication. This will help you get the right message across without overwhelming people with too much information, spending too much time, or missing the mark.

Determine how proactive your external communications strategy will be. Select an approach that fits your organization's culture and strategy. For example, will reporting on environmental performance and progress give you an edge over the competition? While a proactive external communications program may require more resources, some organizations have found that a proactive strategy can be quite beneficial. Weigh the costs and benefits for yourself, but keep in mind that there might be many interested audiences.

• *Target your communication.*

You will want to identify what to communicate and to whom. In many cases these two aspects — the what and the who — are nearly inseparable. Consider which individuals or functions in the organization will need detailed information and which need only general concept information. For example, prospective members of the EMS Team will need considerably more input than the sales department, which may be only peripherally involved. To help you think through and document the various stakeholders with whom you will need to communicate, refer to "Worksheet 5: Identification of Stakeholders" at the end of this section.

• *Communicate regularly.*

To build support for the EMS, try to communicate on a regular basis. It is critical that management continually communicates the vision embodied in the environmental policy in order to support those who are in charge of implementing and maintaining the EMS. Some simple means of regular communication can usually be accomplished without straining resources, for example, periodic all-hands meetings, memorandums that summarize compliance and targets statistics, a bulletin board posting, e-mail messages, awards programs, or articles in the organization newsletter. Don't forget to consider direct word-of-mouth communication, particularly in smaller organizations. Talking directly with key individuals at intervals may be the best mechanism for ensuring good communication. Also, consider communicating with external stakeholders through community meetings, an open house at your facility, or through annual reports to stockholders.

• *Integrate EMS communication.*

Use existing channels of communication to get the message out on your EMS activities. Use "Worksheet 4: Communication Channels" at the end of this section to brainstorm about channels of communication.

3.1 - Discussion Questions

1.   What are the means of communication in your company?
     How often? To whom? Does it reach everyone it is intended to reach?

     • Employees
     • Managers
     • Customers
     • Suppliers
     • Neighbors
     • Local and state government
     • Environmental groups
     • Trade Associations
     • Other groups, e.g., Boy Scouts, Lions Club, Church
     • Public

2. What would you like to communicate to any or all of these groups about the environmental interests and activities of your company?

3. What do you need to communicate about your EMS and to whom?

4. What advantages do you see in communicating information about your EMS?

"Worksheet 6: Communication Work Plan" at the end of this section will help you document the elements of your communication plan as well as monitor your progress in meeting communication objectives and targets.

3.2 - Documenting the Communication Element

An effective EMS should include procedures for communicating internally (between levels and functions), and soliciting, receiving, documenting and responding to external communications.

For more information on documenting communications refer to the Communication Procedure that is included in STEP 3: EMS Template.

	Worksheet 4: Communication Channels		
	What	**How Often/When**	**To Whom**
	Newsletter	/	
	Bulletin Board	/	
	Information Meetings	/	
	E-Mail	/	
	Pay Check Inserts	/	
	Advertising	/	
	Other:	/	

Worksheet 5: Identification of Stakeholders			
Your Stakeholders	What you want to tell them	What you want them to tell you	How to communicate with/tell them

Worksheet 6: Communication Work Plan					
Target Audience	What to Communicate	Mode of Communication	When	Budget	Who Is Responsible?

Date Completed: Contact Person:

EMS Checklist

T Have you established an internal
communications procedure?

 T Have you established a procedure for
receiving, documenting, and responding to
relevant communication from external
interested parties?

T Have you decided what information needs
to be communicated to external
stakeholders?

CHAPTER 4 - CREATE AN ENVIRONMENTAL POLICY STATEMENT

This chapter will help you develop an environmental policy for your company. The discussion questions will help focus your values about the environment and identify which ones might be addressed by your company. A set of principles is also offered that you may want to include in your statement. A sample environmental policy statement and some examples of other companies' environmental policy statements are presented at the end of the chapter.

An environmental policy is your management's declaration of commitment to the environment. The policy should serve as the foundation for your EMS and provide a unifying vision of environmental concern by the entire organization. Your policy should serve as the framework for setting environmental objectives and targets. The policy should be brought to life in your plans and deeds.

Everyone in the organization should understand the environmental policy and what is expected of them in order to achieve the organization's objectives and targets. Your policy should contain three key commitments: continual improvement, pollution prevention, and compliance with relevant laws and regulations. This doesn't mean that you must improve in all areas at once, but that the policy should drive your overall efforts to continually improve your organization's environmental management.

Hints:

• Your organization probably has an environmental policy now, even if it's not written. For example, your organization is probably committed to complying with the law and avoiding major environmental problems, at a minimum. Document your existing commitments as a starting point.

• Your policy should be related to your products and services, as well as your supporting activities. Consider the results of your preliminary review before you make the final policy. Also, make sure the policy reflects the environmental aspects of your products, services and activities (as described in the next chapter).

• Keep your policy simple and understandable. Ask yourself: What are we trying to achieve? How can I best communicate this to the rest of the organization? Will we do what we said we would?

• Keep in mind that your policy should be explicit enough to be auditable. The policy can be a stand-alone document or it can be integrated with your health and safety, quality, or other organizational policies.

• Consider who should be involved in developing the policy and the best process for writing it. Incorporating input from a range of people in your organization should increase the level of commitment and ownership of the policy.

4.1 - Discussion Questions

Discuss each of the following questions and make a list of the environmental issues and shared values of concern to your company.

1.   What environmental issues are of the greatest concern to your company? For example, consider the air, water, soil quality, and landfill issues that may be of concern to the surrounding community. Also consider worker health and safety issues.

2.   What are the major environmental impacts of your company's operations? Think in terms of air emissions, effluent discharges, solid and hazardous wastes, and natural resource consumption.

3.   Who is affected by your company's environmental impacts? Do they occur at a global level, a regional level, a local level? Are there any worker health and safety concerns related to environmental issues, such as using and handling toxic chemicals?

4.   Are there significant environmental impacts associated with the life cycle of your product as you look upstream and downstream from your operations? For example, do your suppliers create significant environmental impact in producing the products you purchase from them?   Do your customers create an impact in using or disposing of the products you sell them? Are these impacts important to you?

5.   On a general level, how do you want to accomplish your environmental goals?

4.2 - Scope of Your Policy Statement and Your EMS

• *Refine Your List of Issues*

        Review the list of issues generated from the discussion questions and put a check beside those activities your company does or could affect.

• *Set Your Boundaries*

        Think also about the boundaries of your policy. Decide if it will include activities beyond internal operations, such as supplier environmental performance or customer product use. You will want to drop issues from your list that do not fall within the boundaries set for your policy statement.

• *Put It Into General Terms*

        Your list of specific issues should be addressed in general terms by your policy statement. For example, if chemicals occurring in water or air are a concern because they potentially impact the community, you could express a commitment to review and, where feasible, make changes in the chemicals used by your company. Another example would be that

if solid waste in landfills is a concern in your area or to your company, this concern could be expressed as a commitment to reduce the solid waste your company produces.

Next, think about how your commitments will be achieved. For example, your commitment to reduce solid waste may be achieved through a pollution prevention program or a program to design products or services that result in minimal waste generated by the consumer. Also, these programs may be implemented one at a time over a several-year period, as part of your commitment to continuing improvement.

4.3 - Sample Commitments

It is important to ask yourself which commitments your company will be capable of addressing. Do not include commitments in your policy that the company will not be able to carry out. The following is a check list of commitments or principles that you may wish to include in your policy statement:

• Commitment to comply with applicable environmental or worker safety laws and regulations.
• Commitment to prevent pollution and accidents.
• Commitment to identify opportunities for risk reduction associated with the processes and chemicals used in your plant, the supplies procured, the products produced, and the disposal of waste products.
• Commitment to be aware of the life cycle (from raw materials extraction and processing to use and eventual disposal) of products produced, including packaging, so as to affect how suppliers and end users impact the environment through your products.
• Commitment to continuing improvement in use of cleaner technologies and processes, and the safer use of chemicals.
• Commitment to wise resource management, including conservation of limited resources and reuse and recycling of materials.

4.4 - Examples

The following are sample environmental policy statements that, in some way, incorporate most of the principles listed above. The Environmental Policy Case Study briefly shows how "Company A" set up a process for creating an environmental policy statement and some of the benefits of doing so.

Sample Policy: Adapt for your company

YOUR COMPANY (ABC)
HEALTH, SAFETY AND ENVIRONMENTAL POLICY

ABC Company is committed to managing health, safety and environmental (HS&E) matters as an integral part of our business. In particular, it is our policy to assure the HS&E integrity of our processes and facilities at all times and at all places. We will do so by adhering to the following principles:

Compliance

We will comply with applicable laws and regulations and will implement programs and procedures to assure compliance. Compliance with HS&E standards will be a key ingredient in training, performance reviews, and incentives for all employees.

Risk Reduction, Prevention, and Resource Management

We will seek opportunities, beyond compliance requirements, for reducing risk to human health and the environment, and we will establish and meet our own HS&E quality standards where appropriate.

We will employ management systems and procedures specifically designed to prevent activities and/or conditions that pose a threat to human health, safety, or the environment. We will look for ways to minimize risk and protect our employees and the communities in which we operate by employing clean technology, including safe technologies and operating procedures, as well as being prepared for emergencies.

We will strive to minimize releases to the air, land, or water through use of cleaner technologies and the safer use of chemicals. We will minimize the amount and toxicity of waste generated and will ensure the safe treatment and disposal of waste.

We will manage scarce resources, such as water, energy, land, and forests in an environmentally sensitive manner.

Communication

We will communicate our commitment to HS&E quality to our employees, vendors, and customers. We will solicit their input in meeting our HS&E goals and in turn will offer assistance to meet their goals.

Continuous Improvement

We will measure our progress as best we can. We will review our progress at least on an annual basis. We will continuously seek opportunities to improve our adherence to these principles and will periodically report progress to our stakeholders.

{Signature}   President   Date

Sample Policy

This is the environmental policy of a small environmental services company specializing in wastewater treatment and laboratory analysis of effluent. The policy is signed by the company's President.

We supply quality products and services. This requires the commitment of everyone working in this institution to pursue our activities safely, while protecting our health and preserving the environment.

To realize this vision we will:

- Establish and periodically review our environmental goals within a program of continual improvement.

- Comply with legal requirements pertinent to our industry and with the requirements of other initiatives we enter into in accordance with our commitment to offer quality products and services.

- Conduct laboratory analyses and supply environmental services without risk to workers' health.

- Operate the laboratory with a minimum of waste in current and future operations.

- Pursue our work with a minimum of disturbance to our neighbors and the community.

- Maintain our vehicles in optimal condition to minimize their consumption of fuel and their emissions to the atmosphere.

- Manage our chemical products safely, principally to prevent spills in their storage and transport.

This policy and any subsequent modifications should be familiar to all employees and available to the public. Implementation of this policy is a primary objective of the President and is the responsibility of all employees.

Environmental Policy Case Study: Company A

Company A is a 20-person manufacturer of large custom metal machine parts for industrial customers. To initiate its EMS, the company formed a small EMS implementation team that was led by the owner's son and included the managers of quality, purchasing, and human resources. This team developed the environmental policy for the review and approval by the owner. Equally important, the team set up a structure for involving all employees in the EMS process. Employees receive general environmental awareness training during some of the company-wide Friday meetings and have been involved in identifying environmental problems and solutions in their areas of responsibility.

Company A's comprehensive approach to environmental management yielded immediate results. After identifying oil usage as a significant environmental aspect, a team of workers and managers identified faulty gaskets as the primary cause of oil leaking from the machines. By replacing these gaskets, the company cut its oil use by 50%. This change, as well as more general improvements in work environment and worker safety, caused the local environmental enforcement agency to reclassify Company A as a non-hazardous waste generator (it had been classified as a hazardous waste generator). The company also reports significant improvements in the environmental awareness of management and workers; though less tangible, this change in attitude may prove equally significant over the long run.

4.5 - Implement the Environmental Policy

Once you have developed the environmental policy, top management must show its support by approving the policy and identifying an individual to oversee and implement the policy. The subsequent chapters of this document will provide you with guidance in implementing this policy.

4.6 - Communicate the Environmental Policy

After you have developed an environmental policy, you must make sure that your employees understand the policy. Display the policy statement in view of all employees. Options for communicating your policy internally include posting it around the site (e.g., in the lunch room), posting it on internal websites, including it in employee paychecks, incorporating the policy into training classes and materials, and referring to the policy at staff meetings. Test awareness from time to time by asking employees what the policy means to them.

Make the policy available to the public and customers, as appropriate. Make it available in another language, as appropriate. Options for external communication include business cards, newspaper advertisements, annual reports and websites, among other options. You can choose to communicate the policy in a proactive manner or in response to external requests.

4.7 - Documenting the Environmental Policy Element

Your Environmental Policy must be documented. A copy of the Environmental Policy must be maintained in the EMS manual. Include top management signatures on the policy to demonstrate understanding and commitment. Also, a description of the procedure for maintaining the policy and communicating it to employees and the public must be documented in the manual. The procedures for periodically reviewing the policy, and revising it to reflect changing conditions and information should be described. A sample Environmental Policy procedure is included in STEP 3: EMS Template.

EMS Checklist

T Have you established an environmental policy?

T Is the policy appropriate for the nature, scale and environmental impacts of your company?

T Does the policy include a commitment to continual improvement, the prevention of pollution and compliance with relevant environmental regulations?

 T Does the policy provide a framework for setting and reviewing environmental objectives and targets?

T Is the policy documented, implemented, and maintained?

 T Has the policy been communicated to all employees?

 T Is the policy available to the public?

CHAPTER 5 - PLANNING

In the planning stage you will formulate a plan to fulfill your environmental policy. The planning stage includes the following EMS elements:

• Environmental aspects

• Legal and other requirements

• Objectives and targets

• Environmental management program.

5.1 - Identify Environmental Aspects

Identifying environmental aspects is the first step in the planning stage of the environmental management system. The fundamental purpose of the EMS is to control and reduce the environmental impacts of your facility's processes and products. For this reason, a critical element of the EMS involves identifying and prioritizing the environmental aspects and impacts associated with your facility. In this section, we begin the technical work that will help you identify the environmental aspects and impacts of your activities. Your company's environmental aspects are any of your activities, products, or services that can have an impact on the environment. In order to identify potential environmental concerns, you should consider regulations, inputs and outputs of various company activities from office work to production processes, and the environmental effects of those activities.

Environmental impacts are the changes to the environment resulting from any of the environmental aspects. Most elements of your business operations will have environmental aspects, intended or unintended. For example, an unintended aspect of using a cleaning solvent may be that there are volatile (airborne) emissions produced during use. The "impact" of these emissions may be hazardous exposure to workers or the community or a contribution to smog formation. Figure 2 shows some examples of environmental aspects and the impacts associated with them. This section will help you review your business activities, products, and services in a way that will identify their environmental aspects. The next section will help you decide which environmental aspects are significant for your business and which ones you wish to improve.

Figure 2	
Environmental Aspects	**Potential Impacts of Each Aspect**
Metals discharged to POTW	Contamination of aquatic habitat and drinking water supply
VOC emissions	Contribution to smog; worker or community exposure to volatile organic compounds (VOCs)
Scrap generation	Degradation of land, habitat, water supply
Fresh water use	Degradation of land, habitat, drinking water supply
Electricity use	Depletion of natural resources
Solid waste generation	Contribution to global warming

5.1.1 - Identifying Aspects: A Four-Step Process

The environmental aspects of your company's activities are identified in a four-step process. The first involves identifying regulatory and other requirements. The second, third, and fourth step involve reviewing, in detail, your company's flow of activities, so as to identify the environmental components of each. This process is best undertaken through group discussion, partly to gain insight through different perspectives and partly to engage everyone in the process of understanding the environmental component of your daily activities.

Step 1: Identify your legal and other requirements

Many of your environmental aspects may be addressed by legal requirements. Therefore, your compliance program is a good starting point for identifying aspects. Each regulatory requirement is focused on one or many environmental aspects. Permits, audit reports, and other such documents can be used to determine the applicable regulations. Also, be sure to investigate feedback from evaluations of previous environmental incidents. Consider to normal and abnormal conditions and potential emergency conditions.

Next, determine the specific legislative and regulatory requirements that pertain to your business activities, products, and services. Even regulations that may not apply to your small business may contain important information about the environmental impacts associated with your type of business.

You can obtain information on regulatory requirements from a variety of sources. The New York State Department of Environmental Conservation Environmental Compliance and Pollution Prevention Guide for Small Quantity Generators and the New York State Department of Environmental Conservation Environmental Audit for Small Businesses are excellent

resources for small businesses. The New York State Department of Environmental Conservation State Agency Environmental Audit Manual is also an excellent resource for New York State regulatory requirements. Appendix I at the end of this document provides information on these documents as well as additional documents and technical assistance offered by state and federal agencies. The Environmental Notice Bulletin is a New York State Department of Environmental Conservation publication that addresses changes in regulations. It is available at http://www.dec.state.ny.us/website/enb/.

Federal, state and local legal requirements need to be considered. Often, states administer federal environmental and occupational safety and health regulatory programs and may have more strict and/or different requirements than federal regulations. In addition to regulations, industry codes of practice and other non regulatory guidelines can help point to environmental aspects of your business activities. Your trade association also may be able to provide you with assistance or may identify useful resources.

All applicable regulatory requirements should be listed and copies of the regulations should be obtained.

Step 2: Map Your Company's Activities and Processes

First, categorize your business activities into areas or steps in the process so that you can review them one by one. Some typical areas to consider might include:

• Receiving Raw Materials, Parts, Equipment and Supplies

• Raw Materials Storage

• Manufacturing Process, Step 1

• Manufacturing Process, Step 2

• Manufacturing Process, Step 3

• Packaging

• Product Storage

• Process Clean-up

• Waste Disposal

• Office

• Building Maintenance

• Product Shipping

• Transportation (including employee travel, and parking)

• Services provided off site

Use this list of areas to develop a flow chart describing the order in which activities take place in your company. Some areas may need their own flow chart; others could be parts of a larger flow chart. An example of a flow chart that depicts the order in which activities take place is shown in Figure 3. Figure 4 provides examples of flow charts that show additional detail for a particular activity at your company.

In Figure 3 you will notice that the first two areas of activities, office operations and building maintenance, have boxes that are separate rather than being part of a sequence. The activities identified under these areas are not related. Under the area "Creating your product," the activities are connected in steps required to produce a product or service. This order will be important to understand later if you decide to work on an aspect that is part of a sequence of steps.

Generic Flowchart For Business Activities

Office Operations:

Word Processing

Copying

Drafting

Building Maintenance:

Lighting

Cleaning

Heating and Air Conditioning
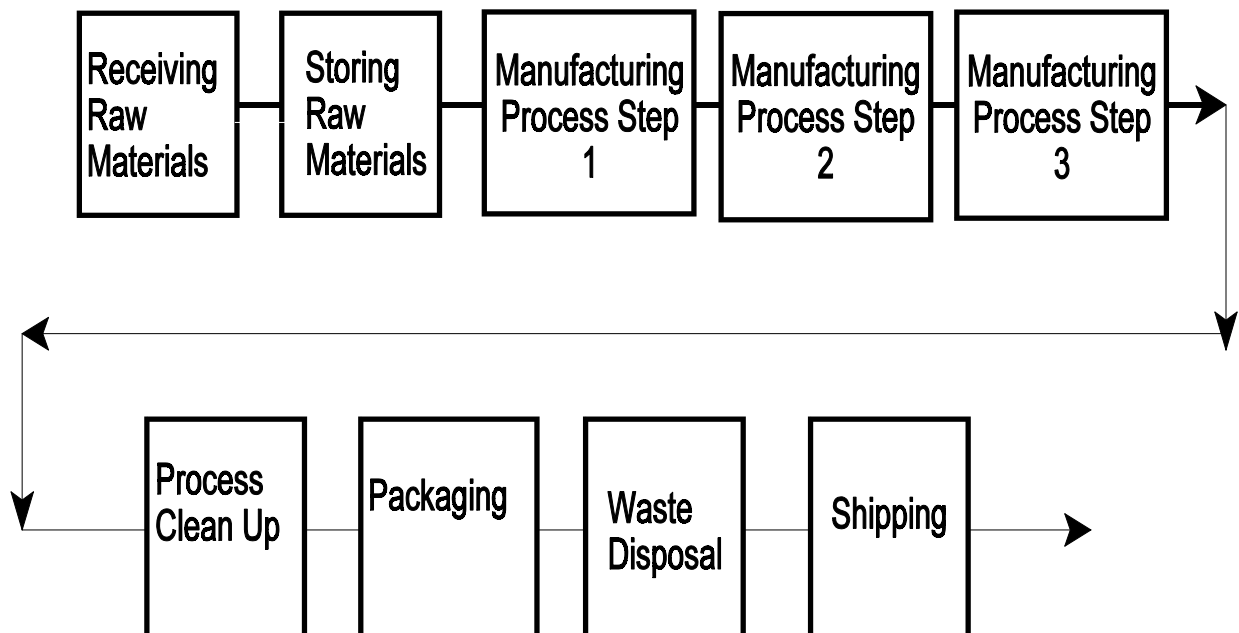
Creating Your Product

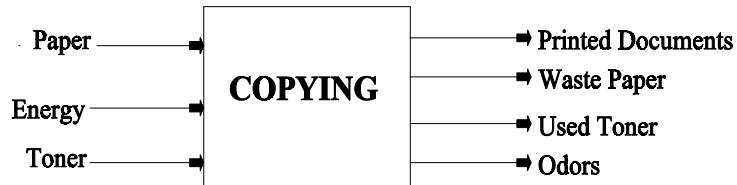| Receiving Raw Materials	Storing Raw Materials	Manufacturing Process Step 1	Manufacturing Process Step 2	Manufacturing Process Step 3

Process Clean Up	Packaging	Waste Disposal	Shipping

Figure 3

Detailed Flow Charts For Specific Business Operations

Sample Flowchart for Copying

Inputs		COPYING		Outputs

Paper ──➤ | **COPYING** | ──➤ Printed Documents

Energy ──➤ ──➤ Waste Paper

Toner ──➤ ──➤ Used Toner

──➤ Odors

Sample Flowchart for a Manufacturing Operation

Chemicals ──➤ | **MANUFACTURING PROCESS STEP** | ──➤ Chemical Waste

Materials ──➤ ──➤ Materials Waste

Energy ──➤ ──➤ Wastewater

Water ──➤ ──➤ Air Releases

──➤ Product for Next Step

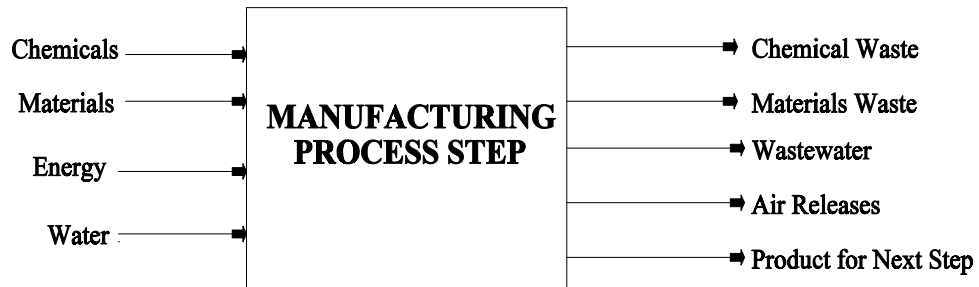## Figure 4

Step 3: Identify the Inputs and Outputs of Each Activity

   Next, identify the inputs and outputs of each box. Among those inputs and outputs will be some that have environmental effects. Refer to Figure 4 for examples of inputs and outputs related to your activities.

Step 4: Identify Environmental Aspects of Each Activity

   Using your flowchart, identify the environmental aspect of each input and output. A facility walk-through is a good way to start this process. Evaluate each aspect for environmental impacts. Keep the following key points in mind when identifying the environmental aspect of a particular activity:

• Can it be toxic or hazardous to humans or the environment?

• Does it use natural resources?

• How is it disposed of?

Consider:

Air Emissions

Water Effluents

Solid and Hazardous Wastes

Land Use

Contamination of Land

Raw Material and Resource Use

Local Issues (e.g., concerns raised by the community such as: noise, odor, dust, traffic, appearance, etc.)

Normal and Abnormal Conditions (e.g., start-up, shutdown, emergencies)

5.1.2 - Sample Aspects

   Some sample aspects are:

Material Receiving Aspects

• Stormwater Discharge (Lots and Dock Area)

• Emergency Spill Reponse

• Outdoor Tanks, Pipelines, Couplings (Spill Control and Countermeasures)

• Underground Storage Tanks

• Hazardous Material Handling (from their truck to your storage area)

Office Aspects

• Purchasing Procedures and Documentation

• MSDS

• Accounting

- Waste Handling, Treatment and Disposal Costs
- Water and Sewer Costs
- Solid Waste Disposal Costs
- Product, Energy and Raw Material Costs
- Documentation and Recordkeeping

<u>Storage and Handling Aspects</u>

- Storage of Chemicals
- Contingency Plan for Hazardous Waste
- Container Use, Testing, Maintenance
- Chemical Management System

<u>Laboratory Aspects</u>

- Chemical Inventory and MSDS
- Out of Specification, Vendor Samples, Surplus
- Waste Characterization and Disposal Practices
- Chemical and Sample Storage
- Emergency Response
- Cleaning and Housekeeping

<u>Manufacturing Aspects</u>

- Emergency Spill and Response
- Training for Critical Process Procedures
- Satellite Waste Accumulation Site Management
- Pollution Prevention Opportunities

<u>Maintenance Aspects</u>

- Wastes From Process Start-up and Shut Down
- Spills, Absorbent, Contaminated Soil, Socks, Protective Equipment
- Fugitive Emissions From Equipment Leaks
- Cleaning/Maintenance Waste (From Fouling, Filters, Sludges, Blowdown)
- Miscellaneous Waste: Oils, Cleaning Solvents, Paints, Construction Materials, Electrical

<u>Shipping Aspects</u>

- Hazardous Materials and Waste Shipping
- Emergency Spill Response
- Stormwater Discharge
- Facility Security

- Abandoned Drums, Equipment, Vehicles

Emissions Aspects

- Waste Stream Characterization

Treatment Aspects

- Wastewater Treatment

- Wastewater Pre-Treatment

- Hazardous Waste Treatment

Disposal Aspects

- Cradle to Grave Responsibility for Disposal to Land , Water, Groundwater

- Facility Baseline Study

- Documentation of Waste Sent Off-Site

General Facility Aspects

- Community Complaints: Noise, Odors, Lights

- Traffic Patterns and Parking Lots

- Disposal of Used Containers

- Visitor and Contractor Access

     Create an Identifying Environmental Aspects Worksheet as shown in Figure 5 to help you list each process step and its associated environmental aspect. A blank worksheet for your use follows.

Figure 5: Identifying Environmental Aspects Sample Worksheet		
Input/Output	**Environmental Aspect**	**Environmental Impact**
	Office Activities	
Paper (In)	Use of paper	Use of natural resources
Energy (In)	Use of energy	Use of natural resources; air quality degradation
Toner (In)	Harmful chemicals	Health and environmental effects
Documents (In)	Solid waste	Degradation of land, habitat, drinking water
Waste Paper (Out)	Solid waste	Degradation of land, habitat, drinking water
Used Toner (Out)	Solid and chemical waste	Degradation of land, habitat, drinking water
Odors (Out)	Production of odors	Indoor air quality
	Manufacturing Process	
Chemicals (In) List	Chemicals that are toxic to humans or the environment	Health and environmental effects
Materials (In) List	Materials that are toxic to humans or the environment	Health and environmental effects
Energy (In)	Use of energy	Use of natural resources; air quality degradation
Water (In)	Use of water	Use of natural resources
Chemical Waste (Out) List	Production of hazardous waste, solid waste	Degradation of land, habitat, drinking water
Materials Waste (Out) List	Production of hazardous waste, solid waste	Degradation of land, habitat, drinking water
Waste Water (Out)	Production of waste water	Degradation of drinking water
Air releases (Out)	Production of air pollutants	Degradation of air quality

Worksheet 7: Identifying Environmental Aspects		
Input/Output	**Environmental Aspect**	**Environmental Impact**
	Office Operations	
	Manufacturing Operations	

5.1.3 - Documenting Legal and Other Requirements and Environmental Aspects Elements

Your facility must establish and maintain procedures to identify, have access to and understand all legal and other requirements related to environmental aspects of its activities. You must develop documentation of this process. A sample procedure for regulatory tracking and analysis is included, as the procedure for Legal and Other Requirements, within <u>STEP 3: EMS Template</u>.

While establishing your regulatory tracking procedure, you may want to create a library of applicable environmental regulations, permits and reports. As a result, all of the environmental requirements for your company will be in one place. The existence of this library of information should be known to all staff at your company. This will allow various people to access this information when they need it. For example, a plant engineer wishing to install a new ventilation system could consult the library to determine the local, state, and federal requirements for vent placement and air discharge limits.

If possible, you may want to designate a staff member with environmental knowledge to maintain the library and create a monthly newsletter that updates all managers on changes in environmental regulations.

Your facility must also document the procedure for assessing environmental aspects and impacts. A sample procedure for performing the assessment is provided in <u>STEP 3: EMS Template</u>. You can start out with a simple process for identifying aspects and then refine the process over time as needed. You also can address the more obvious impacts first, then tackle the more complex issues later.

EMS Checklist

T Do you have a procedure to identify and provide access to legal and other requirements pertaining to environmental aspects?

T Do you have a procedure to identify environmental aspects and determine which have significant impacts on the environment?

T Do you have a procedure for making sure that significant environmental aspects are considered in setting environmental objectives?

T Do you have a procedure for keeping aspects up-to-date?

5.2 - Establish Objectives and Targets

You have probably identified a number of "environmental aspects" associated with your company's activities. This chapter will help you prioritize those aspects and use them to establish objectives and targets. An **objective** is a facility goal that is consistent with the company's environmental policy, priority environmental aspects and impacts, and applicable environmental regulations. A **target** is a more detailed performance requirement related to and supporting a specific objective. In other words, specific targets must be met for an objective to be achieved.

Figure 6: Comparing Objectives and Targets - Some Examples

Objectives	Targets
Reduce energy use	• Reduce electricity use by 10% in 1996 • Reduce natural gas use by 15% in 1996
Reduce use of hazardous chemicals	• Eliminate use of CFC's by 1997 • Reduce use of high-VOC paints by 25%
Reduce hazardous waste generation	• Reduce chrome wastes in plating area by 50% in 1997
Improve employee awareness of environmental issues	• Hold monthly awareness training courses • Train 100% of employees by end of year
Improve compliance with wastewater discharge permit limits	• Zero permit limit violations by the end of 1997

Do not expect to work on all the environmental aspects identified. "Continuous improvement" implies that this is an on-going process where you address some concerns now and others in the future.

Step 1: Assemble Information Sources

Think about what information sources your team will need to determine which environmental aspects are significant and to subsequently establish objectives and targets. Pull together information sources such as those listed in the following chart:

Information Sources	How they will help
• process maps • waste and emission data • site maps • compliance audit reports • descriptions of identified environmental aspects • communications from interested parties *(you may also want to do a plant tour or "walk through" to identify other issues)*	**e.g.,** • *identify process steps with environmental aspects* • *determine current wastes and sources*

Step 2: Determine Which Aspects Are Significant

Using the list of environmental aspects and available information, prioritize the list. Now determine which aspects have the most significance for your company. "Worksheet 8: Criteria to Determine Significant Aspects," located at the end of this section, may help in making this determination. Your company's significant aspects will be developed into objectives and targets. Determining what aspects are significant includes making subjective decisions. For this reason, results will be improved by having a team of people representing a cross-section of operational experience participate in this decision making effort.

Worksheet 8 can be effectively used in a number of ways. A possible approach involves looking at each aspect and ranking it in relation to each individual criteria listed. The following table can be used to develop rankings in each criteria. The ranking for each criteria can either be done using the letter or number depiction shown. If the letter ranking is used, you will develop a final ranking by simply looking across the aspect's row and estimating the average ranking. If you use the number ranking, you can average the rankings for each criteria to develop a final score. Those aspects with the higher scores have the most potential for significant impacts.

Ranking	Description	Meaning
H or 5	High	Most Impact
M-H or 4	Moderately High	More Impact
M or 3	Moderate	Medium Impact
M-L or 2	Moderately Low	Lower Impact
L or 1	Low	Lowest Impact

Identifying significant environmental aspects is one of the most critical elements of the EMS — and it can be one of the most challenging. Decisions you make in this task can affect many other system elements (such as setting objectives and targets, establishing operational

controls, and defining monitoring needs). Careful planning and conduct of this activity will pay dividends in later steps.

Step 3: Establish Objectives and Targets

Objectives and targets should be set by the people in the functional area involved — they will be best positioned to establish, plan for, and achieve these goals. Also, involving people in the area will help build commitment. Objectives should be consistent with your overall business mission and plan as well as the key commitments established in your policy (pollution prevention, continual improvement, and compliance).

Step 4: Look at processes (such as plating or assembly) and activities (such as shipping or purchasing). Are there any other significant aspects that were missed? (For example, you might want to establish an objective to reduce spills of hazardous materials at the loading dock, even if this was not identified as a potentially significant environmental impact.)

Process or Activity	Issues	Possible Objectives and Targets

Step 5: List any regulatory requirements that affect the facility (or other regulations for which the need for additional actions has been identified).

Regulations, other requirements	Possible Objectives and Targets

Step 6: List the communications with interested parties. Is there any need for additional objectives related to the views of neighbors, community groups or other parties?

Communications with Interested Parties	Possible Objectives and Targets

Step 7: Look at the lists of possible objectives developed in Steps 3-6. Discuss with the team whether these objectives are:

• Reasonable

• Technologically feasible

• Consistent with the business plan

• Affordable

List preliminary objectives and targets based on this exercise. Objectives should be specific and targets should be measurable where practicable.

Be flexible in your objectives. Define a desired result and let the responsible people determine how to achieve the result. Keep your objectives simple initially, gain some early successes, and then build on them.

Once established, communicate objectives and targets (as well as your progress in achieving them) across the organization. Consider a regular report on progress at staff meetings.

5.2.1 - Documenting the Objectives and Targets Element

You must document and maintain a list of objectives and targets. You must also establish a procedure for setting and tracking environmental objectives and targets. A sample procedure is included in STEP 3: EMS Template.

Worksheet 8: Criteria to Determine Significant Aspects											
	Criteria										
Aspect			Risk								
	Regulatory Concerns	Pollution	Effects of Chemicals and Materials		Workers (Exposure)	Community (Exposure)	Environment (Exposure)	Noise	Safety	Natural Resource Uses	Score or Rank
			Humans	Environment							

EMS Checklist

T Have you established and documented objectives and targets at each relevant function and level?

T Have you considered legal and other requirements; significant environmental impacts; technological options; financial, operational, and business requirements; and the views of interested parties in establishing objectives and targets?

T Are your objectives and targets consistent with your environmental policy?

T Do you have a documented procedure for establishing objectives and targets?

5.3 - Develop an Environmental Management Program

Now you must develop an Environmental Management Program (Action Plan) to ensure that objectives and targets are achieved. The Environmental Management Program should be linked directly to your objectives and targets — that is, the program should describe how your company will translate its goals into concrete actions so that environmental objectives and targets will be achieved.

To ensure its effectiveness, your environmental management program should:

• Designate responsibilities for achieving goals.

• Define the means and time frame for achieving those goals.

Keep in mind that your program should be a dynamic one. Consider modifying the program when:

• Objectives and targets are revised or added.

• Progress in achieving your objectives and targets is made (or not made).

• Products, processes, or facilities change or other factors arise.

Your action plan need not be compiled into a single document. A "road map" to several plans is an acceptable alternative, as long as the key responsibilities, tactical steps and schedules are adequately defined in these other documents.

Also, keep in mind that this program should not be developed in a vacuum — it should be coordinated or integrated with other business plans, strategies, and budgets. For example, if you are planning changes to a manufacturing process (say, for quality or production purposes), then it makes sense to look at the possible environmental issues associated with this process change at the same time.

Hints:

• Involve your employees early in establishing and carrying out the program.

• Clearly communicate the expectations and responsibilities laid out in the program to those who need to know.

• Build on the plans and programs you have now for environmental compliance, health and safety, and quality management.

• Re-evaluate your action plan when you are considering significant changes to your products, processes, facilities or materials. Make this re-evaluation part of your management process.

• Keep it simple, and focus on continual improvement of the program over time.

5.3.1 - Discussion Questions

For each objective and target, ask:

• What are the necessary action items?

• Who will be responsible?

• What is the time frame?

• What resources are necessary?

• What is the priority?

  After completing the discussion questions, you should document this effort by completing "Worksheet 9: Environmental Management Program Tool", which follows this section, for each objective and target.

Worksheet 9: Environmental Management Program Tool					
Objective/Target # ___ : _____					
Action Items	**Priority**	**Responsibilities**	**Schedule**	**Resources Needed**	**Comments**

EMS Checklist

T Have you established and documented an environmental management program for achieving objectives and targets?

T Does the environmental management program include a designation of responsibility for achieving objectives and targets at each relevant function and level of the company, as well as a means and time-frame for accomplishment?

T Does the program apply to new developments, and new or modified activities, products and services?

CHAPTER 6 - IMPLEMENTATION

In the implementation stage your company will follow through with the plan by establishing responsibilities, training, communication, documentation, operating procedures, and an emergency plan to ensure that environmental targets are met. The implementation stage includes the following EMS elements:

- Communication

- EMS documentation

- Document control

- Operational control

- Emergency preparedness and response

- Structure and responsibility

- Training, awareness and competence

The communication and EMS documentation elements were previously addressed in Chapters 2 and 3. The remaining elements are addressed in this chapter.

6.1 - Develop Operational Controls

For every aspect your company determines to be significant, objectives have been specified. Now, some action must be taken to achieve the objective. You must develop operational control procedures for activities or steps in a production process where the potential impact can be well controlled. In writing operational controls, determine the environmental performance standard desired for that aspect, set targets for that performance and write procedures (operational controls) to ensure that the standard will be met.

Start by looking at the environmental aspects and impacts which you identified earlier. Identify the processes from which these significant impacts arise, and consider what types of controls might be needed to prevent or manage these impacts. If you have flow charts of these processes, identify the points in each process where some type of control may be appropriate.

In some cases, procedures may already exist for some of the activities associated with a significant aspect. Identify which aspects have written procedures that describe operational controls and which aspects will need to have procedures developed. In some cases, the procedures that you have in place to comply with environmental and health and safety regulations may be useful to meet your EMS objectives. Generally, they may at least provide examples of how to write procedures. The following worksheet (worksheet 10) will help you record the aspects that will require the development of procedures and controls.

Aspect/Cause	Procedure needed (none exists)	Procedure exists, but is not documented	Procedure exists and is documented		No Procedure Needed
			Adequate	Not Adequate	

Worksheet 10: Procedures for Significant Aspects

It is important that the people who will implement the procedures be involved in drafting them. You can accomplish this in several ways:

• Have a meeting with employees they can describe current procedures. Discuss the desired environmental performance and how to write procedures to ensure that the objectives will be met.

• Have someone (possibly an intern) interview employees to establish current procedures; then draft newly-written or revised procedures. Have employees review the draft procedures.

• Have a manager draft the new or revised procedures. Be sure that employees have a chance to review and comment on the draft procedures.

Keep the written procedures simple and concise. The procedures should include the appropriate actions, precautions and notifications required. For the small business, it is also important to focus on activities that may lead to significant impacts and not to get overwhelmed trying to control every activity and process.

In order to write clear procedures, use the following process:

• Understand the existing process, (Start with a flow chart, if one is available.)

• Build on informal procedures where possible.

• Focus on steps needed for consistent implementation.

• Use a consistent format and approach.

• Review draft procedures with employees who will have to implement them. (Better yet, enlist employees to help write them.)

• Keep procedures simple and concise. Excessive detail doesn't provide more control and is not needed.

In order to ensure that procedures are followed and deviations corrected, it is important to designate those people responsible both for maintaining the controls and for reviewing them. Generally, the employees responsible for the significant aspect under consideration will be responsible for implementing the procedures designed to meet the environmental objectives. The immediate line manager would most likely be responsible for regular review of the procedures and controls. It is helpful to list those people responsible for each set of procedures. The following worksheet (worksheet 11) will help with documenting responsibilities.

In addition to documenting who is responsible, it is also helpful to specify in the employee's performance standards the percent of time to be devoted to maintaining or reviewing controls. In addition, the performance standards could specify what percentage of deviation from controls would result in unfavorable performance reviews.

6.1.1 - Documenting the Operational Controls Element

Refer to Chapter 2 in this document and STEP 3: EMS Template for guidance on structuring your procedures.

Worksheet 11: Operational Control Responsibilities			
Significant Aspect	**Procedures**	**Responsible for Maintaining Controls**	**Responsible for Review of Controls**

EMS Checklist

Τ Have you identified operations and activities associated with your objectives and targets?

Τ Have you established, documented and maintained procedures for these activities to ensure that they are carried out under specified conditions to meet objectives and targets?

Τ Have you established, documented and maintained procedures to address the significant aspects of goods and services used by your organization and communicated relevant procedures and requirements to suppliers and contractors?

6.2 - Develop Emergency Preparedness and Response Procedures

Despite an organization's best efforts, the possibility of accidents and other emergency situations still exists. Effective planning and preparation can reduce injuries, protect employees and neighbors, reduce asset losses and minimize production downtime. An effective emergency preparedness and response program should include provisions for:

• Assessing the potential for accidents and emergencies.

• Preventing incidents and their associated environmental impacts.

• Plans and procedures for responding to incidents.

• Periodic testing of emergency plans and procedures.

• Mitigating impacts associated with these incidents.

Consistent with your organization's focus on continual improvement, it also is a good idea to review the emergency response performance after an incident has occurred. This review can help determine if more training is needed or if emergency plans and procedures should be revised.

Getting Started:

• This is another area where you should not have to start from scratch. Several environmental and health and safety regulatory programs require emergency plans and procedures. Look at what you have in place now and assess how well it satisfies the items discussed above.

• One area where additional work is often needed is identifying the potential for accidents and emergencies. A team of site personnel (from engineering, maintenance and environmental health and safety, for example) can identify most potential emergencies by asking a series of "what if" questions related to hazardous materials, activities, and processes employed at the site. In addition to normal operations, the team should consider start-up and shutdown of process equipment, and other abnormal operating conditions.

• Ask yourself: Does everyone (including new employees) know what to do in an emergency? How would contractors or site visitors know what to do in an emergency situation?

• Communicate with local officials (fire department, hospital, etc.) about potential emergencies at your site and how they can support your response efforts.

Hints:

• Mock drills can be an excellent way to reinforce training and get feedback on the effectiveness of your plans and procedures.

• Post copies of the plan (or at least critical contact names and phone numbers) around the site and especially in areas where high hazards exist. Include phone numbers for your on-site emergency coordinator, local fire department, local police, hospital, rescue squad and others, as appropriate.

6.2.1 - Checklist for Emergency Preparedness and Response Plan

Does your plan describe the following:

• Potential emergency situations (such as fires, explosions, spills or releases of hazardous materials, and natural disasters)?

• Hazardous materials used on-site (and their locations)?

• Key organizational responsibilities (including emergency coordinator)?

• Arrangements with local emergency support providers?

• Emergency response procedures, including emergency communication procedures?

• Locations and types of emergency response equipment?

• Maintenance of emergency response equipment?

• Training and testing of personnel, including the on-site emergency response team, if applicable?

• Testing of alarm and public address systems?

• Evacuation routes and exits (map), and assembly points?

6.2.2 - Documenting the Emergency Preparedness and Response Element

An example of an Emergency Preparedness and Response procedure is included in

STEP 3: EMS Template. This procedure describes the personnel responsible for completing emergency preparations and incident reviews, and how and when the tasks will be completed. There are many overlapping requirements in local, state and federal regulations concerning emergency response and preparedness. Often, the most difficult part of developing emergency preparedness and response plans is identifying the potential for accidents and emergencies. The environmental manager should form a team composed of company personnel (and outside consultants or regulators if necessary) to examine all facility activities. Extend your evaluation beyond those facility materials and operations that are obviously or inherently dangerous and ask "what if" questions under both normal and abnormal conditions.

EMS Checklist

T Have you established, documented and maintained procedures for identifying the potential for and response to accidents and emergency situations?

T Have you established, documented and maintained procedures for preventing and mitigating the environmental impacts that may be associated with emergencies?

T Are these procedures reviewed and revised as necessary?

T Are these procedures periodically tested?

6.3 - Designate Organizational Structure and Responsibility

For your EMS to be effective, roles and responsibilities must be clearly defined and communicated. The commitment of all employees is needed. This commitment must go beyond those who are responsible for procedures. The roles, responsibility and authorities of all involved employees must be defined, documented and communicated in order to facilitate effective environmental management.

The following questions can help you determine the right organizational structure for environmental management:

• Look at the scope of your environmental management program: What capabilities do we need? Who needs to be involved to make the system effective? What training or other resources will we need?

• Look at your significant environmental impacts: What operations and activities need to be controlled? Who needs to be involved to ensure that controls are implemented?

• Look at the results of previous audits or other assessments: What does this information tell us about the effectiveness of our organizational structure? How could it be improved?

• Look at the current responsibilities for environmental management: How can we enhance ownership of environmental management across the organization? How can other business functions support the EMS?

• Look at your quality management and other existing management systems: What roles and responsibilities exist in these management systems? Where are the opportunities for integration?

Consider creating a flow chart that depicts your organizational activities that relate to environmental management. This can help you understand how processes work, and the final product can be a great communication and training tool. Flow charts might be useful to look at processes such as chemical purchasing and distribution, employee training, and preventive maintenance, among others.

Top management must participate and provide the resources to effectively implement the EMS and to appoint a management representative. This representative (1) ensures that the EMS is established and implemented, (2) reports on its performance over time, and (3) works with others to modify the EMS when necessary. The management representative could be the same person who serves as the project champion as discussed in Chapter 1, (but this is not mandatory).

Using the information above, develop a responsibility matrix. This matrix can be used to communicate to people their roles (as well as the roles of others). An example of a completed responsibility matrix is depicted in Figure 7. A blank responsibility matrix, Worksheet 12, is also included for your use.

Figure 7: Sample Responsibility Matrix

Legend:
L = Lead Role
S = Supporting Role

	Plant M'gr	EHS M'gr	HR M'gr	Maintenance	Purchasing/ Materials	Engineering	Production Supervisor(s)	Finance	EMS Mg't Rep.	Employees
Communicate importance of environmental management	L	S					S			
Coordinate auditing efforts		L		S			S			
Track/analyze new regulations (and maintain library)		L								
Obtain permits and develop compliance plans		L				S				
Prepare reports required by regulations		L								
Coordinate communications with interested parties			L							
Train employees		S					L			
Integrate environmental management into recruiting practices			L							
Integrate environmental management into performance appraisal process			L							
Communicate with contractors on environmental expectations					L					
Comply with applicable regulatory requirements	L	L	S	S	S	S	S	S	S	S
Conform with organization's EMS requirements	L	L	S	S	S	S	S	S	S	S
Maintain equipment / tools to control environmental impact				L						
Monitor key processes		S					L			
Coordinate emergency response efforts	L	S								
Identify environmental aspects of products, activities, or services	S	L	S	S	S	S	S	S	S	
Establish environmental objectives and targets	L	S					S			
Develop budget for environmental management		S						L		
Maintain EMS records (training, etc.)		L								
Coordinate EMS document control efforts					S				L	

Worksheet 12: Responsibility Matrix

Legend:
L = Lead Role
S = Supporting Role

	Plant M'gr	EHS M'gr	HR M'gr	Maintenance	Purchasing/ Materials	Engineering	Production Supervisor(s)	Finance	EMS Mg't Rep.	Employees
Communicate importance of environmental management										
Coordinate auditing efforts										
Track/analyze new regulations (and maintain library)										
Obtain permits and develop compliance plans										
Prepare reports required by regulations										
Coordinate communications with interested parties										
Train employees										
Integrate environmental management into recruiting practices										
Integrate environmental management into performance appraisal process										
Communicate with contractors on environmental expectations										
Comply with applicable regulatory requirements										
Conform with organization's EMS requirements										
Maintain equipment / tools to control environmental impact										
Monitor key processes										
Coordinate emergency response efforts										
Identify environmental aspects of products, activities, or services										
Establish environmental objectives and targets										
Develop budget for environmental management										
Maintain EMS records (training, etc.)										
Coordinate EMS document control efforts										

6.3.1 - Documenting the Structure and Responsibility Element

   The procedure included in <u>STEP 3: EMS Template</u>, entitled "Structure and Responsibility," describes how to assign responsibilities and determine organizational roles for the EMS. The procedure can be implemented, in part, through the Responsibilities Matrix and Organizational Chart. The matrix and chart should be used to assign EMS responsibilities, as well as to communicate these responsibilities to other people in the company. After EMS responsibilities have been assigned, it will be helpful to develop an organizational chart showing responsible employees, lines of communication and reporting, and any hierarchy that may be in place.

   Your structure and responsibilities procedure should address how responsible personnel:

- Obtain sufficient training, resources and personnel for implementation.
- Initiate action to ensure compliance with environmental policy.
- Anticipate, identify and record any environmental problems.
- Initiate, recommend or provide solutions to those problems.
- Verify the implementation of such solutions.
- Control further activities until any environmental deficiency or unsatisfactory condition has been corrected.
- Obtain appropriate training to act in emergency situations.
- Gain an understanding of the consequences of non-compliance.
- Gain an understanding of the accountability that applies to them.
- Encourage voluntary action and initiatives.

EMS Checklist

T Have you defined, documented and communicated roles, responsibilities, and authorities?

T Has management provided resources that are essential to the implementation and operation of the environmental management system?

T Has a management representative (one or more) been appointed by top management with defined roles, responsibility, and authority for establishing, implementing, and maintaining the EMS and reporting to top management?

6.4 - Establish Document Control

In order for your EMS to work effectively, procedures, drawings and other documents must be correct and up-to-date. Without a mechanism to control EMS documents, the organization has no way of knowing (or verifying) that people are working with the right tools. To ensure that everyone is working with the proper EMS documents, your organization should have a procedure that describes how documents are controlled.

Implementation of this procedure should ensure that:

• EMS documents can be located.

• They are periodically reviewed.

• Current versions are available where needed.

• Obsolete documents are removed.

Your document control procedure should designate responsibility and authority for preparing documents, making changes to them and keeping them up-to-date. In other words, you need to make it clear who can actually change documents and what the change and approval process is.

Getting Started:

• Your organization probably has document controls in place for other business purposes (such as finance, human resources or purchasing). Assess how well these controls work and if they can be adapted for your EMS.

Hints:

• Don't make your procedure more complicated than it needs to be. While larger organizations often have complex processes for document control, smaller organizations can use simpler systems.

• Limiting distribution makes the job easier. Does everyone have access to one or a few copies? Determine how many copies you really need and where they should be located for ease of access.

• If the people that need access to documents are connected to a local area network, consider using a paperless system. This can facilitate control and revision of documents considerably.

• Prepare a document control index that shows all of your EMS documents and the history of their revision. Include this index in your manual. Also, if multiple copies of documents are available at the facility, prepare a distribution list, showing who has each copy and where the copies are located.

• As your procedures or other documents are revised, highlight the changes (by underlining, boldface, etc.). This will make it easier for the reader to find the changes.

```
┌─────────────────────────────┐
│  Suggested elements         │
│  of document control:       │
│                             │
│  • issue / revision date    │
│  • effective date           │
│  • approval (i.e., signature)│
│  • revision number          │
│  • document number (or      │
│    other identifier)        │
│  • copy number              │
│  • cross-references         │
│                             │
└─────────────────────────────┘
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6.4.1 - Documenting the Document Control Element

Document control should be the responsibility of one person – usually the environmental manager. The "Control of EMS Documents" procedure, located in <u>STEP 3: EMS Template,</u> provides you with an idea of how EMS documents should be controlled.

EMS Checklist

Τ Have you established, documented and maintained a procedure for controlling documents to ensure that they can be located, periodically reviewed, revised, and approved by authorized personnel?

Τ Does your procedure require that current versions of documents are available at all appropriate locations and obsolete documents are promptly removed?

Τ Does your procedure require that obsolete documents retained for preservation purposes are identified as such?

Τ Are documents legible, dated, readily identifiable, maintained, and retained?

6.5 - Train Employees

Once you have prepared procedures and documents, you must train employees on how to use them. In addition, each person in your organization should receive training on the EMS. There are two excellent reasons for training employees about environmental management and your EMS:

• Every employee can have an impact on the environment.

• Any employee can have good ideas about how to improve environmental management efforts.

Everyone in the organization should be trained on the environmental policy, significant environmental impacts of their work activities, key EMS roles and responsibilities, procedures that apply to their activities, and the importance of conformance with EMS requirements.

All personnel should receive appropriate training. However, you must also establish the competency for certain key roles (including tasks which can cause significant environmental impacts). Training is just one element of establishing competence. Competence is typically based on a combination of education, training, and experience. You should establish criteria for measuring the competence of individuals performing those tasks.

6.5.1 - Develop a Training Program

Step 1: Assess training needs and requirements

A critical first step in developing your training program is assessing your training and skill needs. In assessing these needs, you should consider both general and specific aspects (e.g., What EMS procedures affect Joe's daily work and what happens if they aren't followed? What environmental impacts might Joe's work cause? What broader understanding of environmental issues and our EMS does Joe need?). "Worksheet 13: Training Plan," which follows this section, will help you identify, plan for and track the training needs of your employees and will assist in developing and putting your EMS in place. After procedures are drafted, training ensures everyone understands both the procedures and their own role in ensuring that the procedures are followed.

New employees can pose a significant training challenge. Consider developing an EMS training package for new employee orientation. Even better, videotape one of your current EMS training courses to show new employees.

Step 2: Define training objectives

Step 3: Select suitable programs and methods

Step 4: Prepare training plan (who, what, when, where, how)

Look at the training you conduct for compliance with environmental and health and safety regulations and other purposes. You may find that your existing training efforts go a long way towards satisfying the requirements for the EMS.

Step 5: Implement training program

Step 6: Track training (and maintain records)

Worksheets 14 and 15 following this section can be used to document training that has been completed and to note training that is required for a particular employee.

Step 7: Evaluate training effectiveness

Step 8: Improve training program (as needed)

6.5.2 - Documenting the Training Element

You must develop, implement and document a training program that communicates to all employees (1) the environmental impacts of their activities, (2) the company's environmental policy, (3) EMS roles, responsibilities, and procedures, and (4) methods and actions for meeting EMS objectives and targets.

You must develop a procedure for identifying training needs and for ensuring that all employees receive training on the environmental policy, significant environmental impacts of their work activities, key EMS roles and responsibilities, procedures that apply to their activities, and the importance of conformance with EMS requirements.

A generic procedure for training is included in <u>STEP 3: EMS Template</u>.

Worksheet 13: Training Plan						
Jobs Affecting Environment	Training Needs	What Vehicle	When/ Length	Budget	Completion Date	Who is Responsible
Sample: Staff EH&S Person	Environmental Policy	Staff Training Session	Once/ Two hrs	?	?	?

Worksheet 14 - Training Needs

Employee Name:

Job Function(s):

Date:

Training Completed:

Training Required:

Worksheet 15

Training Program
Year_____

EMS Training Log						
Topic Title	Attendees	Frequency	Course Length	Course Method	Comments	Date Completed
EMS Awareness						
Supervisor EHS Training						
Hazardous Waste Management						
Wastewater Treatment						
Spill Prevention and Response						
Chemical Handling						
Emergency Response						
Dragout Reduction						
Hazard Communication						
Personal Protective Equipment						
Fire Safety						
Electrical Safety						
Hearing Conservation						
Job-Specific Training (List)						

EMS Checklist

T Have you identified training needs for your organization?

T Do you require that all personnel whose work may create a significant impact upon the environment receive appropriate training?

T Have you established, documented and maintained a training procedure?

T Does the procedure make employees aware of the importance of conformance with environmental policy and procedures and the requirements of the EMS?

T Does the procedure make employees aware of the significant environmental impacts of their work activities and environmental benefits of improved personal performance?

T Does the procedure make employees aware of their roles and responsibilities in achieving conformance with environmental policy, procedures and EMS, and the potential consequences of departure from specified operating procedures?

CHAPTER 7 - CHECKING AND CORRECTIVE ACTION

After the EMS is up and running, you must assess system performance. This will be accomplished through ongoing monitoring and measurement, compliance audits, and periodic EMS audits. Assessment of EMS performance provides the opportunity to improve the system and your environmental performance over time. In addition to an assessment of the EMS performance, assurance of your organizations compliance with relevant laws and regulations is an essential element of an effective EMS. Nonconformance and Corrective/Preventive Action procedures must be established to correct identified failures. Records of the assessment process must be maintained. This stage includes the following EMS elements:

- Monitoring and measurement
- Nonconformance and corrective/preventive action
- Records
- EMS audit

7.1 - Establish Monitoring and Measurement Procedures

Some say that an EMS without an effective monitoring and measurement program is like driving at night without the headlights on – you know that you are moving but you can't tell where you are going! To determine how well you are proceeding in meeting your goals, you need to decide how you will measure progress. Identify the key characteristics of the process you are working to improve. Your performance indicators should be:

- Simple and understandable.
- Objective.
- Verifiable.
- Relevant to your goals and targets.

Below are some sample indicators of environmental performance. Each indicator that you choose should be related to the cause of a potential impact. The samples below illustrate ways to state your indicators.

- Tons of SO2 released per unit of electricity produced.
- Pounds of hazardous substance "X" emitted per pound of product.
- Percentage reduction in the discharge of a material versus a baseline year.

It is important to measure "input" with respect to "output," rather than by itself. Changes in input can be caused by reduced sales of the product as well as more efficient use of the input during the production process. To be sure you are measuring success rather than simply changes in sales volume, be sure to include output in your measurement criteria. Each measure should be an indicator of where problems may be occurring in the process. "Worksheet 16: Environmental Performance Measurement Indicators", which follows this section, is designed to assist you in tracking your measurement indicators.

It is also important that when you measure your environmental performance, you maintain and calibrate any sensitive measurement equipment on a regular schedule. Again, designate a person to be responsible for this task, provide appropriate training on maintaining the measurement equipment, and document the schedule of checks and calibration.

Worksheet 16: Environmental Performance Measurement Indicators						
Aspect	Objective	Indicator	Date Checked	Who Checked	Result	Corrective Action

Getting Started:

• Clearly define your monitoring and measuring needs. While collecting information is clearly important, monitoring and measuring can be resource-intensive. Resist the urge to collect data "for data's sake."

• Review the kinds of monitoring you currently do for regulatory compliance and other purposes (such as quality or health and safety management). How well does this serve your EMS purposes? What additional monitoring or measurement might be needed?

• Start with a relatively simple monitoring and measurement system, then build on it as you gain experience.

• Evaluate equipment environmental performance: Go back and look at your significant environmental aspects and the objectives and targets associated with those significant aspects. What information will you need to determine if the company is achieving its objectives and targets?

• Calibrate equipment: Identify process equipment and activities that truly affect your environmental performance. Some companies choose to put key monitoring equipment under a special calibration and preventive maintenance program. This can help to ensure accurate monitoring, and lets employees know which instruments are most critical for environmental monitoring purposes.   In some cases, it may be more cost-effective to subcontract calibration and maintenance of monitoring equipment than to perform these functions internally.

• Assess regulatory compliance: Determining your compliance status on a regular basis is very important. You should have a process to systematically identify, correct, and prevent violations. Performance of the compliance management program should be considered during EMS management review. The following box describes the elements of a good compliance management program.

• People respond best to information that is meaningful to "their world." Putting environmental information in a form that is relevant to their function increases the likelihood they will act on the information. Be sure to link your measurement program with your communications program and other elements of the EMS (such as management reviews, as discussed later).

7.1.1 - Documenting the Monitoring and Measurement Element

Your organization should develop procedures to:

• Monitor key characteristics of operations and activities that can have significant environmental impacts.
• Track performance (including how well you meet your objectives and targets).
• Calibrate and maintain monitoring equipment.
• Periodically evaluate your compliance with applicable laws and regulations, through internal compliance audits.

A sample procedure for measurement and monitoring is included in STEP 3: EMS Template.

EMS Checklist

T Have you identified key process
characteristics and how to measure and
monitor them?

T Have you established, documented and
maintained procedures to regularly monitor
and measure the key characteristics of
operations having a significant impact on
the environment?

T Have you established, documented and
maintained procedures for calibrating
monitoring equipment and retaining records
of the process?

T Have you established, documented and
maintained procedures for periodically
evaluating compliance with legislation and
regulations?

7.2 - Establish Nonconformance and Corrective and Preventive Action Procedures

Action to correct failures in procedure should be taken as quickly as possible to meet environmental objectives and assure compliance. Responsibilities for action and schedules should be clear. For example, employees in the shop may recognize the need for corrective action and provide good ideas for solving problems. Find ways to get them involved in the improvement process. It's important to determine whether a lapse is temporary or due to some flaw in the procedures or controls. For this reason, communicate any compliance or EMS flaws to the employees, and get their input on the cause of the identified deficiencies. Keep in mind that your ultimate goal should be to find the root cause of the problems identified. Without identifying the cause of problems, you have the potential of providing only a temporary fix and not permanently solving the problem. Once actions are taken to correct problems provide follow-up training on changes in policies or procedures that were necessary. The following is a checklist to help complete corrective action. Have you:

- Identified the problem(s)?
- Identified the cause(s)?
- Come up with a solution for each?
- Implemented the solution(s)?
- Documented the solution(s)?
- Communicated the solution(s)?
- Documented the action(s)?

"Worksheet 17: Corrective Action Notice," which follows this section, will assist in documenting the resolution process. In addition to the Corrective Action Notice, that helps to document and track specific actions, it is also helpful to track measurement, problems, and solutions. Worksheet 18: Measurement and Corrective Action Tracking Log will be useful in integrating the documentation and tracking of your environmental quality control system.

7.2.1 - Documenting the Nonconformance and Corrective and Preventive Action Element

A procedure for preventive and corrective action is included in STEP 3: EMS Template. This procedure describes how and when corrective action will be taken. The procedure is implemented, in part, through the Corrective Action Notice. This form should be used to document corrective actions. Specifically, the form enables you to describe the "problem" (the EMS nonconformance), most likely causes, possible solutions, implemented solution (corrective actions), and results.

Worksheet 17:	**Corrective Action Notice**	
Issue Date:		Solution Due Date:
Requested by:		
Issued to:		
Problem Statement:		
Most Likely Causes:		
Suggested Solutions:		
Action Taken:		
Measured Results:		
Corrective Action Closed by:		Date:
Contact for Notice:		

Worksheet 18: Measurement and Corrective Action Tracking Log		
Area and Step Measured		Date
Person Responsible	Means of Measurement	Results
Person Responsible	Problems Identified	Solution Due
Person Responsible	Solutions Identified	Action Taken
Person Responsible	Effectiveness Verified	Date
Contact person for log		

EMS Checklist

T Have you established, documented and
maintained procedures for defining
responsibility and authority for handling
and investigating nonconformance and for
taking appropriate action?

T Does the procedure require that changes
in procedures resulting from corrective and
preventive action be documented?

7.3 - Establish Records Procedures

The value of records management is fairly simple - you should be able to prove that your organization is actually implementing the EMS as designed. While records have value internally, over time you may need to provide evidence of EMS implementation to external parties (such as customers, a registrar, or the public). Records management is often viewed as bureaucratic, but it is hard to imagine a process or system operating consistently without keeping accurate records.

Basic records management is straightforward — you need to decide what records you will keep, how you will keep them and for how long. You should also think about how you will dispose of records once you no longer need them.

Hints:

• Focus on records that add value - avoid bureaucracy. If records have no value, then don't collect them. The records you choose to keep should be accurate and complete.
• You may need to generate certain forms as you develop your EMS. These forms should be simple and understandable.
• Consider combining your records management processes for environmental and health and safety records.
• Establish a records retention policy and stick to it. Make sure that your policy takes into account records retention requirements specified in applicable environmental regulations.
• In designing your records management system, be sure to consider:
　　　-who needs access?
　　　-to what records?
　　　-in what circumstances?
• If your organization uses computers extensively, consider using an electronic EMS records management system. Maintaining records electronically can provide an excellent means for rapid retrieval of records as well as for controlling access to sensitive records.
• Think about which records might require additional security. Do you need to restrict access to certain records? Should a back-up copy of critical records be maintained at another location?

Types of Records You Might Maintain (Examples):

• Legal, regulatory and other code requirements.
• Results of environmental aspects identification.
• Reports of progress towards meeting objectives and targets.
• Permits, licenses and other approvals.
• Training records.
• EMS audit and regulatory compliance audit reports.
• Reports of identified nonconformities, corrective action plans and corrective action tracking data.
• Hazardous material spill and other incident reports.
• Communications with customers, suppliers, contractors and other external parties.
• Results of management reviews.
• Sampling and monitoring data.
• Maintenance records.
• Equipment calibration records.

Key Questions:

• **What records are kept?**
• **Who keeps them?**
• **Where are they kept?**
• **How are they kept?**
• **How long are they kept?**
• **How are they accessed?**
• **How are they disposed?**

7.3.1 - Documenting the Records Element

Basic records management is straight forward – the records procedure, included in <u>STEP 3: EMS Template</u>, describes what records you should keep, how they are kept, how long they are retained, and how to dispose of records that are no longer needed.

EMS Checklist

T Have you established, documented and maintained procedures for the identification, maintenance, and disposition of environmental records including training and audit results?

T Are records legible, identifiable, and traceable to the activity, product, or service involved?

 T Are records easily retrievable and protected from damage, deterioration, or loss?

T Are records retention times established and recorded?

7.4 - Develop Audit Procedures

Once your organization has established its EMS, verifying the implementation of the system will be critical. To identify and resolve EMS deficiencies, you must actively seek them out. In a small organization, audits are particularly relevant since managers are often so close to the work that they may not see problems or bad habits that have developed. Periodic EMS audits will establish whether or not all of the requirements of the EMS are being carried out in the specified manner. For your EMS audit program to be effective, you should:

• Develop audit procedures and protocols.
• Establish an appropriate audit frequency.
• Train your auditors.
• Maintain audit records.

The results of your EMS audits should be linked to the corrective action system. While they can be time-consuming, EMS audits are critical to EMS effectiveness. Systematic identification and reporting of EMS deficiencies to management provides a great opportunity to:

• Maintain management focus on the environment.
• Improve the EMS.
• Ensure its cost-effectiveness.

Getting Started:

• How frequently do we need to audit?

In determining the frequency of your EMS audits, some issues to consider are:
- The nature of your operations.
- The significant environmental aspects and impacts (which you identified earlier).
- The results of your monitoring program.
- The results of previous audits.

As a rule of thumb, all parts of the EMS should be audited at least annually. You can audit the entire EMS at one time or break it down into discrete elements for more frequent audits. (There may be advantages to more frequent audits, but the decision is up to you.)

• Who will perform the audits?

You will need trained EMS auditors. Auditor training should be both initial and ongoing. Commercial EMS auditor training is available, but it might be more cost-effective to link up with businesses and other organizations in your area (perhaps through a trade association) to sponsor an auditor training course. A local community college might also provide auditor training. EMS auditors should be trained in auditing techniques and management system concepts. Familiarity with environmental regulations, facility operations, and environmental science is a big plus, and in some cases may be essential to adequately assess the EMS. Some auditor training can be obtained on-the-job. Your organization's first few EMS audits can be considered part of your auditor training program (but make sure that an experienced auditor takes part in those "training" audits).

If your company is registered under ISO 9000, consider using your internal ISO 9000 auditors as EMS auditors. Although some additional training might be needed, many of the required skills are the same for both types of audits.

• How should management use audit results?

Management can use EMS audit results to identify trends or patterns in EMS deficiencies. The organization must also make sure that any identified system gaps or deficiencies are corrected in a timely fashion and that the corrective actions are documented.

Hints:

• Your EMS audits should focus on objective evidence of conformance. (If you cannot tell whether or not a particular procedure has been followed, then you should consider revising the procedure.) During the actual audit, auditors should resist the temptation to evaluate why a procedure was not followed — that step comes later.

• During the course of the audit, auditors should discuss identified deficiencies with the people who work in the area. This will help the auditors verify that their understanding is correct. It can also serve as refresher training (on EMS requirements) for employees.

• If possible, train at least two people as internal auditors. This allows your auditors to work as a team. It also allows audits to take place when one auditor has a schedule conflict (which is unavoidable in a small organization!).

Some Options for Auditing
        - Barter for audit services with other small companies.
        - Use external auditors.
        - Have office personnel audit production areas (and vice-versa).

• Before you start an audit, be sure to communicate the audit scope, schedule, and other pertinent information with the people in the affected area(s). This will help avoid confusion and will facilitate the audit process.

• Consider linking your EMS audit program to your regulatory compliance audit process. The results of each audit can then be widely communicated within your organization to ensure the causes of problems are properly identified and corrective action is taken.

7.4.1 - Documenting the Audit Element

A sample EMS audit procedure is included in STEP 3: EMS Template.

EMS Checklist

T Have you established, documented and maintained a program and procedure for periodic EMS audits?

T Does the audit program determine whether the EMS conforms to the EMS standard and whether it has been properly implemented and maintained?

T Does the audit program provide information on the results of audits to management?

T Does the audit procedure cover the audit scope, frequency, methods, responsibilities, and requirements for conducting audits and reporting results?

CHAPTER 8 - ESTABLISH CONTINUING IMPROVEMENT: MANAGEMENT REVIEW

To ensure success and continuing improvement, regular reviews of your EMS are needed. Management reviews should be scheduled regularly to check on progress of the EMS and of the environmental programs set up to meet targets.

Just as a person should have periodic physical exams, your EMS must be reviewed by management from time to time to stay "healthy." Management reviews are the key to continual improvement and to ensuring that the EMS will continue to meet your organization's needs over time. Management reviews also offer a great opportunity to keep your EMS efficient and cost-effective. For example, some organizations have found that certain procedures and processes initially put in place were not needed to achieve their environmental objectives or to control key processes. If EMS procedures and other activities don't add value, eliminate them.

The key question that a management review seeks to answer is:

Is the system working? That is, is the EMS suitable, adequate and effective, given our needs?

Hints:

• There are two kinds of people who should be involved in the management review process:

    - People who have the right information/knowledge.

    - People who can make decisions.

• Determine the frequency for management reviews that will work best for your organization. Some organizations combine these reviews with other meetings (such as director meetings) while other organizations hold "stand-alone" reviews.

• Regardless of what approach your organization takes, make sure that someone takes notes on what issues were discussed, what decisions were made, and what action items were selected. Management reviews should be documented.

• The management review should assess how changing circumstances might influence the suitability, effectiveness or adequacy of your EMS. Changing circumstances may be internal to your organization (i.e., new facilities, new materials, changes in products or services, new customers, etc.) or may be external factors (such as new laws, new scientific information, or changes in adjacent land use).

• Once you have documented the action items arising from your management review, be sure that someone follows-up. Progress on these items should be tracked.

• As you evaluate potential changes to your EMS, be sure to consider your other organizational plans and goals. Environmental decision-making should be integrated into your overall management and strategy.

8.1 - Questions to Address During Management Reviews

• Did we achieve our objectives and targets? (If not, why not?) Should we modify our objectives?

• Is our environmental policy still relevant to what we do?

• Are roles and responsibilities clear and do they make sense?

• Are we applying resources appropriately?

• Are the procedures clear and adequate? Do we need others? Should we eliminate some?

• Are we monitoring our EMS (e.g., via system audits)? What do the results of those audits tell us?

• What effects have changes in materials, products, or services had on our EMS and its effectiveness?

• Do changes in laws or regulations require us to change some of our approaches?

• What stakeholder concerns have been raised since our last review?

• Is there a better way? What else can we do to improve?

8.2 - Documenting the Management Review Element

You must document your management review procedure. A sample management review procedure is included in STEP 3: EMS Template.

EMS Checklist

T Have you established, documented and maintained a program and procedure for top management to regularly review the EMS to ensure its suitability, adequacy, and effectiveness?

T Is the review documented?

T Is the information necessary for management to conduct a management review collected?

T Does the review address the need for changes to policy, objectives, and other elements of the EMS resulting from audit results, changing conditions, and the commitment to continual improvement?

Appendix I

Sources of Information and Other Contacts

Sources of Information and Other Contacts

	NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION		
	625 Broadway, Albany, NY 12233		
Organization	**Resource**	**Telephone Number / Internet Address**	**Description**
New York State Department of Environmental Conservation	NYSDEC Home Page	http://www.dec.state.ny.us/index.html	Provides information on regulations, reports, publications, pollution prevention (P2) and program contacts.
	Pollution Prevention Unit	518-402-9469 http://www.dec.state.ny.us/website/ppu/	Provides P2 information, develops industry sector manuals and other publications, offers workshops/training, holds annual P2 conferences, coordinates NYS Governor's P2 Awards, and prepares annual toxic release inventory (TRI) reports.
	Small Quantity Generator Hotline	800-462-2553	Offers P2 information and small quantity generator regulatory information.
	Division of Solid & Hazardous Materials Bureau of Solid Waste and Land Management	518-402-8660 http://www.dec.state.ny.us/website/dshm/sldwaste/sw.htm	Administer the Part 360 Program for landfills, waste-to-energy facilities, transfer stations and regulated medical waste facilities.
	Division of Solid & Hazardous Materials Bureau of Hazardous Waste Management	518-402-8633 http://www.dec.state.ny.us/website/dshm/hzwstman/index.htm	Responsible for making hazardous waste determinations, reviewing hazardous waste reduction plans, hazardous waste permitting.

Organization	Resource	Telephone Number / Internet Address	Description
	Division of Solid & Hazardous Materials Bureau of Waste Reduction & Recycling	518-402-8705 http://www.dec.state.ny.us/website/dshm/redrecy/wrr.htm	Responsible for the waste tire program, the beneficial use program, the composting program, and other solid waste recycling and waste reduction issues.
	Division of Air Resources Bureau of Stationary Sources	518-402-8403 http://www.dec.state.ny.us/website/dar/boss/index.html	Responsible for source review, permitting, MACT, NESHAP implementation, and air toxics assessments.
	Division of Water Bureau of Water Permits	518-402-8110 http://www.dec.state.ny.us/website/dow/bwp.htm	Responsible for managing the State Pollutant Discharge Elimination System (SPDES) permits, the SPDES program for storm water discharges, the water resources programs, and the municipal water supply permits.
	Petroleum Bulk Storage Hotline	518-402-9549	Provides technical assistance on chemical and petroleum above/underground storage tanks.
	Division of Solid and Hazardous Material Waste Transporter Section	518-402-8705	Responsible for issuing permits to waste haulers that transport solid and hazardous, industrial/commercial, sewage and septage waste.
	Division of Environmental Permits	518-402-9182 http://www.dec.state.ny.us/website/dcs/index.html	Serves as the focal point for permit application review and decision making for activities requiring approval for alterations or releases to the environment.

Organization	Resource	Telephone Number / Internet Address	Description
	Spill Response Hotline	800-457-7362	To report releases of petroleum products or hazardous substances to air, land or water. Regulations require reporting within 2 hours if certain conditions are not met. Also, the National Response Center should be notified.
New York State Department of Environmental Conservation	The NYSDEC is organized into nine regional offices that bring NYSDEC programs within the reach of all New Yorkers from Long Island to Buffalo. Each NYSDEC region is headed by a regional director and is organized to serve the needs of communities within its boundaries.		
Regional Offices			
	REGION 1 Building 40 SUNY at Stony Brook Stony Brook, NY 11794	631-444-0375 http://www.dec.state.ny.us/website/reg1/index.html	Nassau and Suffolk Counties
	REGION 2 1 Hunters Point Plaza Long Island City, NY 11101	718-482-4900 http://www.dec.state.ny.us/website/reg2/index.html	Bronx, Kings, New York, Queens and Richmond Counties
	REGION 3 21 South Putt Corners Road New Paltz, NY 12561-1696	845-256-3000 http://www.dec.state.ny.us/website/reg3/index.html	Dutchess, Orange, Putnam, Rockland, Sullivan, Ulster and Westchester Counties
	REGION 4 1150 North Westcott Road Schenectady, NY 12306-2014	518-357-2234 http://www.dec.state.ny.us/website/reg4/index.html	Albany, Columbia, Delaware, Greene, Montgomery, Otsego, Rensselaer, Schenectady and Schoharie Counties

Organization	Resource	Telephone Number / Internet Address	Description
	REGION 5 Route 86 Ray Brook, NY 12977	518-897-1200 http://www.dec.state.ny.us/website/reg5/index.html	Clinton, Essex, Franklin, Fulton, Hamilton, Saratoga, Warren and Washington Counties
	REGION 6 317 Washington Street Watertown, NY 13601	315-785-2513 http://www.dec.state.ny.us/website/reg6/index.html	Herkimer, Jefferson, Lewis, Oneida and St. Lawrence Counties
	REGION 7 615 Erie Boulevard West Syracuse, NY 13204-2400	315-426-7400 http://www.dec.state.ny.us/website/reg7/index.html	Broome, Cayuga, Chenango, Cortland, Madison, Onondaga, Oswego, Tioga and Tompkins Counties
	REGION 8 6274 East Avon-Lima Road Avon, NY 14414	716-226-2466 http://www.dec.state.ny.us/website/reg8/index.html	Chemung, Genesee, Livingston, Monroe, Ontario, Orleans, Schuyler, Seneca, Steuben, Wayne and Yates Counties
	REGION 9 270 Michigan Avenue Buffalo, NY 14203-2999	716-851-7000 http://www.dec.state.ny.us/website/reg9/index.html	Allegany, Cattaraugus, Chautauqua, Erie, Niagara and Wyoming Counties

Organization	Resource	Telephone Number / Internet Address	Description
	State and Local Assistance		
County and City Offices	Erie County Office of Pollution Prevention Department of Environment and Planning 95 Franklin Street, Room 1077 Buffalo, NY 14202-3973	716-858-7674	Provides confidential assistance to businesses and the private sector in Erie County.
	NYC Department of Environmental Protection, Environmental Economic Development Assistance Unit 59-17 Junction Boulevard Corona, NY 11368	718-595-4436	Provides assistance to small businesses in New York City.
	Broome County Division of Solid Waste Management Edwin Crawford County Office Building 44 Hawley Street Binghamton, NY 13901	607-778-2250	Provides assistance to residents and businesses in Broome County.
State University of New York	The Center for Business and Industry SUNY at Fredonia, Lagrasso Hall Fredonia, NY 14063	716-673-3177	Provides assistance for businesses located in Chautauqua, Cattaraugus, and Allegany counties.

Organization	Resource	Telephone Number / Internet Address	Description
	SUNY Buffalo Center for Integrated Waste Management Jarvis Hall, Room 207 Buffalo, NY 14260-4400	716-645-3446	Provides research and development support to industries, businesses, and governmental agencies.
NYS Environmental Facilities Corporation	NYS Environmental Facilities Corporation Small Business Assistance Program 50 Wolf Road, Room 502 Albany, NY 12205	800-882-9721 518-402-6924 http://www.nysefc.org/tas/SBAP/SBAP.htm	Provides confidential technical assistance to small businesses in New York State on issues regarding the Clean Air Act.
	NYS Environmental Facilities Corporation Financial Assistance Business Program 50 Wolf Road, 5th Floor, Albany, NY 12205	518-402-6924 Hotline: 1-800-882-9721 http://www.nysefc.org	Helps businesses cope with the cost of complying with environmental protection mandates.
Empire State Development	Clean Air Act Small Business Ombudsman Empire State Development Small Business Division 633 3rd Avenue, 32nd Floor New York, NY 10017	800-STATENY or 800-782-8369 http://www.empire.state.ny.us/sbeo	Provides confidential assistance to small businesses in New York State on issues regarding the Clean Air Act.
	Empire State Development Environmental Management Investment Group 30 South Pearl Street, Albany, NY 12245	518-292-5348 http://www.empire.state.ny.us/environment	Financial assistance to NYS businesses, non-profits, and municipalities on behalf of businesses for waste/pollution prevention and recycling projects that go beyond compliance with environmental regulations. Can assist waste reductions/recycling in any media.

Organization	Resource	Telephone Number / Internet Address	Description
NYS Energy Research and Development Authority	NYS Energy Research and Development Authority Energy Efficiency and Technical Assistance 286 Washington Avenue Ext., Albany, NY 12203-6399	518-862-1090 Hotline #: 518-862-1090 Ext. 3344 http://www.nyserda.org/programs.html	Provides technical assistance to improve the energy and environmental performance of businesses and institutions, helps secure energy-project funding from private and public sources, and converts fleet vehicles to alternative fuels.
	Energy Research and Development Authority Research and Development Corporate Plaza West, Albany, NY 12203	518-862-1090 http://www.nyserda.org/programs.html	Reduces the cost of energy for businesses, municipalities, and residents; minimizes environmental impacts; and helps to create and retain jobs. Helps companies bring into use innovative, energy-efficient, and environmentally beneficial products.
Manufacturing Extension Partnerships	Manufacturing Extension Partnerships assist thousands of the State's 26,000 small and mid-sized manufacturers in becoming more productive and more efficient. All services are provided at substantially-reduced rates and are offered through a combination of center field engineers/staff and outside consultants.		
	Alliance for Manufacturing and Technology 61 Court Street, 6th Floor, Binghamton, NY 13901	607-774-0022 http://www.amt-mep.org/welcome2.htm	Serving the following counties: Broome, Tioga, Chenango, Tompkins, Otsego, Chemung, Schuyler, Delaware and Steuben
	Center for Economic Growth One KeyCorp Plaza, Suite 600, Albany, NY 12207	518-465-8975 http://www.ceg.org	Serving the following counties: Albany, Columbia, Greene, Rensselaer, Saratoga, Schenectady, Warren and Washington.
	Small Business Development Corp. Manufacturing Field Office 385 Jordan Road, Troy, NY 12180-2014	518-286-1014	

Organization	Resource	Telephone Number / Internet Address	Description
	Central New York TDO 1201 East Fayette Street, Syracuse, NY 13210	315-425-5144 http://www.cnytdo.org	Serving the following counties: Madison, Onondaga, Oswego, Cayuga and Cortland.
	CI-TEC at Potsdam 185 Margaret Street, Plattsburgh, NY 12901	315-268-37778 http://www.citec.org/	Serving the following counties: St. Lawrence, Jefferson, Lewis, Franklin, Clinton and Essex.
	High Tech of Rochester 5 United Way, Rochester, NY 14604	716-327-7920 http://www.monroe.edu/rochproj/htr.html	Serving the following counties: Monroe, Wayne, Orleans, Genesee, Wyoming, Livingston, Ontario, Yates and Seneca.
	Hudson Valley Technology Development Center Inc. 300 Westage Business Center, Suite 130 Fishkill, NY 12524	914-896-6934 X3004 http://www.hvtdc.org	Serving the following counties: Ulster, Orange, Rockland, Sullivan, Westchester, Putnam and Dutchess.
	Industrial Technology Assistance Corp. 253 Broadway, Room 302, New York, NY 10007	212-240-6920 Hotline #: 1-800-MEP4MFG http://www.itac.com	Serving the five boroughs of New York City.
	Long Island Forum for Technology P.O. Box 170, Farmingdale, NY 11735	631-755-3321 http://www.lift.org	Serving the following counties: Nassau and Suffolk.
	Mohawk Valley Applied Technology Corporation 207 Genesee Street, Suite 405 Utica, NY 13501	315-793-8050 http://www.mvatc.net	Serving the following counties: Oneida, Herkimer, Fulton, Madison, Montgomery, Schoharie and Hamilton.

Organization	Resource	Telephone Number / Internet Address	Description
	Western New York Technology Development Center Inc. 1576 Sweet Home Road, Amherst, NY 14228	716-636-3626 Hotline #: 1-800-MEP-4MFG http://www.wnytdc.org	Serving the following counties: Niagara, Erie, Chautauqua, Allegany and Cattaraugus.

Organization	Resource	Telephone Number / Internet Address	Description
		FEDERAL AGENCIES	
United States Environmental Protection Agency (USEPA)	Small Business Compliance Assistance Centers	General Information: 202-564-7066 http://es.epa.gov/oeca/main/compasst/compcenters.html#ccar	Centers are Internet Web Sites with comprehensive environmental compliance, technical assistance, and pollution prevention information for specific industries.
	Pollution Prevention Clearinghouse	202-260-1023 http://www.epa.gov/opptintr/library/libppic.htm	Technical Information on materials and processes, including publications related to waste minimization and pollution prevention.
	Public Information Center	202-260-7751	General information about EPA programs.
	RCRA / Superfund Hotline	800-424-9346 202-382-3000	Provides information about hazardous waste regulations and handles requests for federal documents and laws.
	Small Business and Asbestos Ombudsman	800-368-5888 202-557-1938	Information and advice on compliance issues for small quantity generators of hazardous waste.
	Technology Transfer and Support Division	513-569-7562 http://www.epa.gov/ttbnrmrl/	Access to the Office of Research and Development's research information and publications.
	TSCA Hotline	202-554-1404	Assistance and guidance on TSCA regulations.
	USEPA - Enviroene	http://es.epa.gov	Provides a single repository for pollution prevention, compliance assurance, and enforcement information and data bases.

Organization	Resource	Telephone Number / Internet Address	Description
	USEPA - Industry Sector Notebooks	http://es.epa.gov/oeca/sector	A series of profiles or notebooks containing information on selected major industries. These notebooks, which focus on key indicators that holistically present air, water, and land pollutant release data, have been thoroughly reviewed by experts from both inside and outside the EPA.
	USEPA - Small Business Assistance Program	http://www.epa.gov/smallbusiness	The U. S. Environmental Protection Agency (EPA) gateway to environmental information and contacts for small businesses.
	USEPA - Office of Underground Storage Tanks	http://www.epa.gov/swerust1/aboutust.htm	Provides current information relevant to the federal underground storage tank (UST) program.
	USEPA - Technology Transfer Network	http://www.epa.gov/ttn/	A network of technical sites maintained by the EPA's Office of Air Quality Planning and Standards (OAQPS). The network provides information and technology exchange in different areas of air pollution control, ranging from emission test methods to regulatory air pollution models.
	EPA Headquarters Home Page	http://www.epa.gov/	Provides information about EPA regulations, initiatives, and links to the home pages of other governmental agencies and EPA regional offices.
	EPA Office of Compliance 401 M St., SW Washington, DC 20460	Phone: 202-260-1821 Fax: 202-564-0009	Regulatory, technical, compliance and pollution prevention assistance.

Organization	Resource	Telephone Number / Internet Address	Description
USEPA Region II	EPA Region II HomePage	http://www.epa.gov/region02/	Provides environmental and pollution prevention information as well as links to EPA offices, programs and databases.
	EPA Region II Office Compliance Assistance and Program Support 290 Broadway, 21st Floor New York, NY 10007-1866	212-637-3268	Provides technical assistance and guidance on compliance, pollution prevention and waste minimization issues on a multimedia basis.
	EPA Region II Office Division of Enforcement and Compliance Assistance - RCRA Compliance Branch 290 Broadway, 22nd Floor New York, NY 10007-1866	212-637-4145	In addition to conducting RCRA inspections on small businesses, this office provides technical assistance on RCRA related issues.
	EPA Region II Pollution Prevention Page	http://www.epa.gov/region02/p2/p2home.htm	Provides compliance and pollution prevention information and P2 resources.
U.S. Department of Transportation	U.S. Department of Transportation	800-467-4922	Technical assistance on matters related to DOT's hazardous materials transportation regulations.
National Response Center	National Response Center	800-424-8802 In Washington, D.C. 202-426-2675	To report oil and chemical spills to the Federal Government. This hotline is manned by the U.S. Coast Guard.
U.S. Department of Energy	U.S. Department of Energy Pollution Prevention Information Clearinghouse	http://epic.er.doe.gov/epic	Provides a centralized source of U.S. DOE Pollution Prevention Information and assists with valuable P2 resources outside of the DOE.

Organization	Resource	Telephone Number / Internet Address	Description
National Pollution Prevention Roundtable	National Pollution Prevention Roundtable	http://es.epa.gov/nppr	Provides a national forum for promoting the development, implementation, and evaluation of efforts to avoid, eliminate, or reduce pollution at the source.
Tellus Institute	Tellus Institute	http://www.tellus.org	Assists government, business, and communities in preventing environmental and public health risks through research, training and education.
Waste Reduction Resource Center	Waste Reduction Resource Center	http://www.p2pays.org	Provides technical assistance on cost-effective ways to eliminate, reduce, or recycle waste and conserve natural resources.
U.S. Small Business Administration (SBA)	SBA Answer Desk	1-800-8-ASK-SBA	Information about SBA programs, and telephone numbers for local offices.
	SBA Home Page	http://www.sbaonline.sba.gov/	Information about business services available to your organization, with links to other related sites.
Government Printing Office	GPO Superintendent of Documents	202-512-1800	Information about available documents and instructions on ordering GPO publications.

EMS CONTACTS

Organization	Resource	Telephone Number / Internet Address	Description
USEPA	U.S. EPA EMS Website	http://www.epa.gov/epaems01/index.htm	Contains links to key information about EPA's efforts to develop policies and related materials about environmental management systems (EMS).
	U.S. EPA Office of Pollution Prevention and Toxics Design for the Environment EMS Home page	http://www.epa.gov/opptintr/dfe/tools/ems/ems.html	Helps businesses incorporate environmental considerations into the design and redesign of products, processes, and technical and management systems. General information about what an EMS is and how to incorporate DfE principles into an EMS.
	EPA Standards Network	http://es.epa.gov/partners/iso/iso.html	Provides information on ISO 14000 and EMS.
	EPA Office of Water Office of Wastewater Management	http://www.epa.gov/owmitnet/wm046200.htm	Provides Environmental Management Systems/ISO 14001 Publications including the Environmental Management Systems: An Implementation Guide for Small and Medium-Sized Organizations.
.	ISO 14000 Information Center	http://www.iso14000.com	Answers to questions on ISO 14000 standards
	ISO Online	http://www.iso.ch	Provides information on ISO, its structure, members, technical committees, meetings, and events.

| NSF Home Page | http://www.nsf.org | Contains information on NSF International and its pilot projects in EMS implementation. NSF is one of the administrators of the U.S. Technical Advisory Group to TC 207 and one of the official sources of the ISO 14000 standards. |

REGULATIONS

Legal Citation (6NYCRR)	Regulation Name	Internet Address	Telephone Number	Approval Required	Records Required	Reports Required	Other Requirements
AIR RESOURCES PROGRAM							
205	Architectural Coatings	http://www.dec.state.ny.us/website/regs/205.htm	518-402-8396		None	None	One time report on package code
221	Asbestos Containing Surface Coatings	http://www.dec.state.ny.us/website/regs/221.htm	518-402-8403		None	None	N/A
200 201 232	Dry Cleaning	http://www.dec.state.ny.us/website/regs/200. htm http://www.dec.state.ny.us/website/regs/201.htm http://www.dec.state.ny.us/website/regs/232.htm	518-402-8403	UPA Permit & Certificate	None	None	N/A
200 201 233	Pharmaceutical Manufacturing Processes	http://www.dec.state.ny.us/website/regs/233.htm	518-402-8403	UPA Permit & Certificate	Required (keep 5 years]	Required (if DEC requests)	N/A
200 201 236	Synthetic Organic Chemical Manufacturing	http://www.dec.state.ny.us/website/regs/236.htm	518-402-8403	UPA Permit & Certificate	Required (keep 2 years)	Required quarterly	Inspection Log and Leak Detection Repair Plan
235	Consumer and Commercial Products	http://www.dec.state.ny.us/website/regs/235.htm	518-402-8396		None	Once each 3 years (see Regulations)	N/A
225-1	Fuel Composition and Use- Sulfur Limitations	http://www.dec.state.ny.us/website/regs/225.htm	518-402-8403		Required (keep 3 years)	None	Fuel analysis, fuel usage and test results if DEC requests

Legal Citation (6NYCRR)	Regulation Name	Internet Address	Telephone Number	Approval Required	Records Required	Reports Required	Other Requirements
200 201 225-2	Fuel Composition and Used Waste Fuel	http://www.dec.state.ny.us/website/regs/225.htm	Region 1/ 631-444-0205 Region 2/718-482-4944 Region 3 /914-255-5453 Region 4 /518-357-2045 Region 5/ 518-623-3671 Region 6/ 315-785-2513 Region 7/ 315-426-7552 Region 8/ 716-226-2466 Region 9/ 716-851-7130	UPA Permit & Certificate	Required (keep 3 years)	Required (if DEC requests)	N/A
225-3	Fuel Composition and Use-Gasoline	http://www.dec.state.ny.us/website/regs/225.htm	518-402-8396		Required (keep 2 years)	Required (if DEC requests)	N/A
200 201 230	Gasoline Dispensing Sites and Transport Vehicles	http://www.dec.state.ny.us/website/regs/230.htm	518-402-8403	Registration	Recommend (keep 2 years)	Required (if DEC requests)	N/A
217-1	Emissions from Non-Electric or Non-Diesel Motor Vehicles	http://www.dec.state.ny.us/website/regs/217.htm	518-402-8401	Certificate (sticker)	None	None	N/A
217.1	Emission from Motor Vehicles Propelled by Diesel Engines	http://www.dec.state.ny.us/website/regs/217.htm	518-402-8292		None	None	N/A

Legal Citation (6NYCRR)	Regulation Name	Internet Address	Telephone Number	Approval Required	Records Required	Reports Required	Other Requirements
218	Emission Standards for Motor Vehicles and Motor Vehicle Engines	http://www.dec.state.ny.us/website/regs/218.htm	518-402-8292				
217-5	Heavy Duty Vehicle Inspection and Maintenance Program	http://www.dec.state.ny.us/website/regs/217.htm	518-402-8292				
201 212	General Process Emission Sources	http://www.dec.state.ny.us/website/regs/212.htm	518-402-8403	UPA Permit & Certificate	None	None	N/A
202	Emission Statements	http://www.dec.state.ny.us/website/regs/202.htm	518-402-8396		Required (keep 5 years)	Annually	N/A
207	Control Measures for an Air Pollution Episode	http://www.dec.state.ny.us/website/regs/207.htm	518-402-8403	Certificate	None	None	Episode Action Plan
211	General Nuisance	http://www.dec.state.ny.us/website/regs/211.htm	518-402-8403		None	None	N/A
200 201 234	Graphic Arts Facilities	http://www.dec.state.ny.us/website/regs/234.htm	518- 402-8403	UPA Permit & Certificate	Required (keep 5 years)	Required (if DEC requests)	N/A

Legal Citation (6NYCRR)	Regulation Name	Internet Address	Telephone Number	Approval Required	Records Required	Reports Required	Other Requirements
200 201 219	Incinerators	http://www.dec.state.ny.us/website/regs/219.htm	518-402-8403	UPA Permit & Certificate	Recommend (keep 3 years)	Required quarterly (infectious waste required annually)	Violation report within 24 hours
203	Indirect Source Permits	http://www.dec.state.ny.us/website/regs/203.htm	518-402-8396	Permit	None	None	N/A
200 201 231	New Source Review in Non-Attainment Areas	http://www.dec.state.ny.us/website/regs/231.htm	518-402-8403	UPA Permit & Certificate	None	None	N/A
215	Open Burning	http://www.dec.state.ny.us/website/regs/215.htm	518-402-8403	Permit	None	None	N/A
229	Petroleum Liquid Facilities	http://www.dec.state.ny.us/website/regs/229.htm	518-402-8403	UPA Permit & Certificate	Required	None	N/A
200 201 226	Solvent Metal Cleaning Processes	http://www.dec.state.ny.us/website/regs/226.htm	518-402-8403	UPA Permit & Certificate	Required	Required (if DEC requests)	N/A
200 201 227	Stationary Combustion Installations	http://www.dec.state.ny.us/website/regs/227.htm	518-402-8403	UPA Permit & Certificate	Recommend (keep 3 years)	Required (if DEC requests)	N/A
200 201 228	Surface Coating Processes	http://www.dec.state.ny.us/website/regs/228.htm	518-402-8403	UPA Permit & Certificate	Required (keep 5 years)	Required (if DEC requests)	Violation report required quarterly

Legal Citation (6NYCRR)	Regulation Name	Internet Address	Telephone Number	Approval Required	Records Required	Reports Required	Other Requirements
		FISH, WILDLIFE & MARINE RESOURCES PROGRAM					
ECL Sections 11-0521 & 11-0523	Destructive Wildlife - Permit to Take	http://assembly.state.ny.us/cgi-bin/claws?law=37&art=24	518-402-8919	Permit	Recommend	As required, by permit	N/A
ECL Section 11-0707	Fishing Permit (Institutional)	http://assembly.state.ny.us/cgi-bin/claws?law=37&art=25	518-402-8995	Authorization	Recommend	Required (if DEC requests)	N/A
662, 663, 664, & 665; 9NYCRR Part 578	Freshwater Wetlands Protection	http://www.dec.state.ny.us/website/regs/663.htm http://www.dec.state.ny.us/website/regs/664.htm	518-402-8996	UPA Permit	None	None	N/A
ECL Section 11-0507	Liberation of Fish and Wildlife	http://www.dec.state.ny.us/website/regs/664.htm	518-402-8920 518-402-8919	Permit	Recommend	None	N/A
ECL Section 11-0535	Permit to Possess Endangered Species	http://assembly.state.ny.us/cgi-bin/claws?law=37&art=24	518-402-8995	License	Recommend	None	N/A
608	Protection of Waters		518-402-8996	UPA Permit or MOU	None	None	N/A
ECL Section 11-0515	Scientific Collectors Permit	http://assembly.state.ny.us/cgi-bin/claws?law=37&art=24	518-402-8995	License	Recommend	Required (if DEC requests)	N/A
666	Wild, Scenic and Recreational River Systems		518-402-8996	UPA Permit	None	None	N/A
ECL Section 13-0316	Marine Aquaculture Permits	http://assembly.state.ny.us/cgi-bin/claws?law=37&art=39	631-444-0483	Permit	Recommend	None	N/A

Legal Citation (6NYCRR)	Regulation Name	Internet Address	Telephone Number	Approval Required	Records Required	Reports Required	Other Requirements
ECL Sections 13-0319 and 13-0321	Shellfish Management	http://assembly.state.ny.us/cgi-bin/claws?law=37&art=39	631-444-0483	Permit	Recommend	Required (if DEC requests)	N/A
661	Tidal Wetlands	http://www.dec.state.ny.us/website/regs/661a.htm	631-444-0468	UPA Permit or Letter	None	None	N/A
LANDS AND FORESTS PROGRAM							
193	Protected Native Plants	http://www.dec.state.ny.us/website/regs/193.htm	518-402-9405	Permit or Authorization	None	None	N/A
195	Off Premises Signs	http://www.dec.state.ny.us/website/regs/195.htm	518-402-9428	Permit	None	None	Must maintain log
ECL Section 9-0105	Use of State Lands	http://assembly.state.ny.us/cgi-bin/claws?law=37&art=12	518-402-9428	Permit	None	None	Must maintain log
194.1 thru 194.11	Prescribed Fire	http://www.dec.state.ny.us/website/regs/194.htm	518-402-9428	Authorization	Recommend	After each burn	Management Plan
MINERAL RESOURCES PROGRAM							
420 - 426	Mined Land Reclamation Program	http://www.dec.state.ny.us/website/regs/420.htm	518-402-8072	UPA Permit	Recommend	None	Mining Plan and Reclamation Plan
ECL Article 23, Title 11	Oil and Gas Leases on State Lands	http://assembly.state.ny.us/cgi-bin/claws?law=37&art=96	518-402-8076		Recommend	None	Annual well permits may be required
550 - 559	Oil, Gas and Solution Mining Well Drilling	http://www.dec.state.ny.us/website/regs/550.htm	518-402-8076	Permit	Recommend	Required annually	Annual well permits may be required

Legal Citation (6NYCRR)	Regulation Name	Internet Address	Telephone Number	Approval Required	Records Required	Reports Required	Other Requirements
ENVIRONMENTAL PERMITS PROGRAM							
617	State Environmental Quality Review (SEQR)	http://www.dec.state.ny.us/website/regs/617.htm	518-402-9172		Recommend	None	EIS Required
608.7	401 Certification of Water Quality		518-402-9152	UPA Certification	None	None	N/A
SOLID AND HAZARDOUS MATERIALS PROGRAM							
364	Waste Transporter Permit: Transporting Regulated Wastes	http://www.dec.state.ny.us/website/regs/364.htm	518-402-8705	UPA Permit	Recommend (keep 3 years)	Required annually	N/A
364	Waste Transporter Permit: Annual Report	http://www.dec.state.ny.us/website/regs/364.htm	518-402-8705		Recommend (keep 3 years)	Required annually	N/A

Legal Citation (6NYCRR)	Regulation Name	Internet Address	Telephone Number	Approval Required	Records Required	Reports Required	Other Requirements
364, 484	Medical Waste	http://www.dec.state.ny.us/website/regs/364.htm	Region 1/631-444-0375 Region 2/718-482-4900 Region 3/914-256-3000 Region 4/518-357-2234 Region 5/518-897-1200 Region 6/315-785-2238 Region 7/315-426-7400 Region 8/716-226-2466 Region 9/716-851-7000	Registration	Required (7 years)	Quarterly and Annually	N/A
325	Agency Registration to Handle Pesticides	http://www.dec.state.ny.us/website/regs/325.htm	518-402-8748	Registration	Required	Required annually	N/A
326	Pesticide Product Registration	http://www.dec.state.ny.us/website/regs/326.htm	518-402-8768		Recommend	None	N/A
325	Pesticide Storage, Disposal and Safety	http://www.dec.state.ny.us/website/regs/325.htm	518-402-8748		Recommend	None	N/A
ECL Article 33	Prior Notification of Pesticide Applications and Posting of Commercial Lawn Application of Pesticides	http://assembly.state.ny.us/cgi-bin/claws?law=37&art=136	518-402-8748		Recommend	None	N/A

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Legal Citation (6NYCRR)	Regulation Name	Internet Address	Telephone Number	Approval Required	Records Required	Reports Required	Other Requirements
325	Commercial Pesticide Applicator Certification	http://www.dec.state.ny.us/website/regs/325.htm	518-402-8748	Certification	Recommend	None	N/A
ECL Article 33, Title 7 and Article 33, Title 12	Pesticide Reporting Law	http://assembly.state.ny.us/cgi-bin/claws?law=37&art=140 http://assembly.state.ny.us/cgi-bin/claws?law=37&art=144	518-402-8765		Required	Required annually	N/A
325, 327, 328 & 329	Aquatic Pesticide Permit	http://www.dec.state.ny.us/website/regs/325.htm http://www.dec.state.ny.us/website/regs/327.htm http://www.dec.state.ny.us/website/regs/328.htm http://www.dec.state.ny.us/website/regs/329.htm	518-402-8748	Certification	Recommend	None	N/A
370, 371, 372, 373, 374 & 376	Regulation of Hazardous Waste Generators	http://www.dec.state.ny.us/website/regs/370.htm http://www.dec.state.ny.us/website/regs/371.htm http://www.dec.state.ny.us/website/dshm/regs/370parts.htm	518-402-8633		Required	Annually LQG only	Exception Reports
ECL Section 27-0923	Hazardous Waste Special Assessment Fees	http://assembly.state.ny.us/cgi-bin/claws?law=37&art=125	518-402-8629		Required	None	Quarterly Fee
372	Hazardous Waste Generator Annual Report Requirements	http://www.dec.state.ny.us/website/dshm/regs/370parts.htm	518-402-8730		Hazard. Waste	Required Annually	Maintain manifests
370 - 374	Hazardous Waste Manifesting Program	http://www.dec.state.ny.us/website/dshm/regs/370parts.htm	518-402-8712		Required	None	Manifest document required 3 years

Legal Citation (6NYCRR)	Regulation Name	Internet Address	Telephone Number	Approval Required	Records Required	Reports Required	Other Requirements
Subparts 373-1, 373-2 & 373-3	Hazardous Waste Management Facility Permits	http://www.dec.state.ny.us/website/dshm/regs/370parts.htm	518-402-8610	UPA Permit	As permit requires	As permit requires	N/A
380	Control of Radioactive Materials	http://www.dec.state.ny.us/website/regs/380.htm	518-402-8579	Permit	Required	Required annually	Required on notice by DEC
381	Low Level Radioactive Waste Transportation	http://www.dec.state.ny.us/website/regs/380.htm	518-402-8579	Permit	Required	Required annually	Emergency level notification requried
Subparts 360-1, 360-2, 360-7 & 360-8	Landfills	http://www.dec.state.ny.us/website/regs/360.htm	518-402-8694	UPA Permit	Required	Required quarterly and annually	N/A
Subparts 360-1 & 360-7	Construction and Demolition Debris Landfills	http://www.dec.state.ny.us/website/regs/360.htm	518-402-8692	UPA Permit or Registration	Required	Required quarterly and annually	N/A
Subparts 360-1 & 360-7	Long Island Landfills	http://www.dec.state.ny.us/website/regs/360.htm	518-402-8694	UPA Permit	Required	Required quarterly and annually	N/A
Subparts 360-1 & 360-11	Landfill Gas Recovery Facilities	http://www.dec.state.ny.us/website/regs/360.htm	518-402-8692	UPA Permit	Required	Required quarterly and annually	N/A

Legal Citation (6NYCRR)	Regulation Name	Internet Address	Telephone Number	Approval Required	Records Required	Reports Required	Other Requirements
Subparts 360-1 & 360-11	Transfer Stations	http://www.dec.state.ny.us/website/regs/360.htm	Region 1/631-444-0375 Region 2/718-482-4996 Region 3/914-256-3137 Region 4/518-357-2246 Region 5/518-897-1241 Region 6/315-785-2515 Region 7/315-426-7419 Region 8/716-226-2466 Region 9/716-851-7220	UPA Permit or Registration	Required	Required annually	N/A
Subparts 360-1 & 360-12	Recyclables Handling and Recovery Facilities	http://www.dec.state.ny.us/website/regs/360.htm	518-402-8705	Registration	Required	Required quarterly and annually	N/A
Subparts 360-1 & 360-4	Land Application Facilities	http://www.dec.state.ny.us/website/regs/360.htm	518-402-8678	UPA Permit	Required	Required annually	N/A
Subparts 360-1 & 360-5	Composting Facilities	http://www.dec.state.ny.us/website/regs/360.htm	518-402-8678	UPA Permit	Required	Required annually	N/A
Subparts 360-1 & 360-13	Waste Tire Storage Facilities	http://www.dec.state.ny.us/website/regs/360.htm	518-402-8706	UPA Permit or Registration	Required	Required quarterly and annually	N/A
Subparts 360-1 & 360-6	Liquid Storage Facilities	http://www.dec.state.ny.us/website/regs/360.htm	518-402-8694	UPA Permit	Required	Required quarterly and annually	N/A

Legal Citation (6NYCRR)	Regulation Name	Internet Address	Telephone Number	Approval Required	Records Required	Reports Required	Other Requirements
Subparts 360-1, 360-14 & 374-2	Used Oil Facilities	http://www.dec.state.ny.us/website/regs/360.htm	518-402-8633	UPA Permit or Registration	Required	Required quarterly and annually	Contingency Plan and Closure Plan
Subparts 360-1 & 360-3	Solid Waste Incinerators and Refuse-Derived Fuel Processing Facilities	http://www.dec.state.ny.us/website/regs/360.htm	518-402-8692	UPA Permit or Registration	Required	Required quarterly and annually	O & M Manual
Subparts 360-1, 360-10 & 360-17	Regulated Medical Waste Storage, Treatment and Disposal	http://www.dec.state.ny.us/website/regs/360.htm	518-402-8692	UPA Permit	Recommend	Required quarterly and annually	Operation Plan
Subparts 360-1, 360-16	Construction and Demolition Debris Processing Facilities	http://www.dec.state.ny.us/website/regs/360.htm	518-402-8706	UPA Permit or Registration	Required	Required annually	Contingency Plan and O & M Manual
ECL 27-0105 & 27-0908	Hazardous Waste Reduction Plans	http://assembly.state.ny.us/cgi-bin/claws?law=37&art=120 http://assembly.state.ny.us/cgi-bin/claws?law=37	518-402-8633		Required	Required annual status and biennial updates	N/A
ECL 27-0106	Solid Waste Reduction	http://assembly.state.ny.us/cgi-bin/claws?law=37&art=120	518-402-8705		Recommend	None	N/A
Subpart 374-3	Universal Waste Rule	http://www.dec.state.ny.us/website/dshm/regs/370parts.htm	518-402-8633		Required	None	N/A
WATER PROGRAM							
505	Coastal Erosion Management		518-402-8140	UPA Permit	None	Required annually	Local municipality must submit annual report

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Legal Citation (6NYCRR)	Regulation Name	Internet Address	Telephone Number	Approval Required	Records Required	Reports Required	Other Requirements
608	Construction and Repair of Flood Control and Impoundment Structures		518-402-8127	UPA Permit	None	None	N/A
673	Public Safety Inspection of Dams		518-402-8127		None	None	N/A
502	Flood Plain Management		518-402-8256		None	None	N/A
501	Use of Flood Control Lands		518-402-8141	Permit	None	None	N/A
501.9	Use of Snowmobiles and Motorized Vehicles on Flood Control Lands		518-402-8141	Permit	None	None	N/A
501.4 and 501.9	Use of Flood Control Lands - Fees		518-402-8141	Permit	None	None	Fees for permit
ECL Section 16-0111	Operation and Maintenance of Flood Protection Projects	http://assembly.state.ny.us/cgi-bin/claws?law=37&art=58	518-402-8141	None	None	None	N/A
602	Long Island Wells		631-444-0405	UPA Permit	Recommend	As permit specifies	N/A
601	Public Water Supply		518-402-8101	UPA Permit	Recommend	As permit specifies	N/A

Legal Citation (6NYCRR)	Regulation Name	Internet Address	Telephone Number	Approval Required	Records Required	Reports Required	Other Requirements
652 & 750 - 758	Wastewater Discharge, State Pollutant Discharge Elimination System (SPDES), SPDES Permit Applications, Wastewater Treatment Works Operation, and Discharge Monitoring Violations	http://www.dec.state.ny.us/website/regs/750.htm	518-402-8110	UPA Permit	Required	Annually as specified by SPDES	N/A
652, 750 - 758	Sign Posting and Public Notification	http://www.dec.state.ny.us/website/regs/750.htm	518-402-8122				
650	Wastewater Treatment Plant Operator Certification	http://www.dec.state.ny.us/website/regs/650.htm	518-402-8092	Certification	Training record required	None	N/ A
675	Great Lakes Water Withdrawal	http://www.dec.state.ny.us/website/regs/675.htm	518-402-8098	Registration	Recommend	None	Registration fee: agricultural (annually) and others (biannually)

ENVIRONMENTAL REMEDIATION PROGRAM							
595 - 599	Chemical Bulk Storage	http://www.dec.state.ny.us/website/regs/595.htm	518-402-9549	Registration	Required	Required	Self Inspection Records

Legal Citation (6NYCRR)	Regulation Name	Internet Address	Telephone Number	Approval Required	Records Required	Reports Required	Other Requirements
595 & 596	Chemical and Hazardous Substance Spills	http://www.dec.state.ny.us/website/regs/595.htm http://www.dec.state.ny.us/website/regs/596.htm	518-402-9549		Recommend	After each incident	Tanks - biannually
595 - 597	Chemical Bulk Storage Fee	http://www.dec.state.ny.us/website/regs/595.htm	518-402-9549		Recommend	None	Biennial fee
610, 612 - 614	Petroleum Bulk Storage	http://www.dec.state.ny.us/website/regs/612.htm http://www.dec.state.ny.us/website/regs/614.htm	518-402-9549	Registration	Required	Required	N/A
611 & 17 NYCRR Part 32	Petroleum Spills	http://www.dec.state.ny.us/website/regs/611.htm	518-402-9546		Recommend	After each incident	N/A
610 and 17 NYCRR Part 30	Major Onshore Petroleum Facility		518-402-9549	License or Certification	Required	Required (if DEC requests)	Contingency Plan; Annual tax
612	Petroleum Bulk Storage Fee	http://www.dec.state.ny.us/website/regs/612.htm	518-402-9549		Recommend	None	Annual fee
REGULATORY FEES							
480, 481 & 482	Air Quality Fees		518-402-9343		Recommend	None	Annual fee
482.2	Operating Permit Program Fees for Stationary Contamination Sources		518-402-8451		Recommend	None	Annual fee
480, 481 & 484	Waste Transporter Permit: Regulatory Fees		518-402-9343		Recommend	None	Annual fee

Legal Citation (6NYCRR)	Regulation Name	Internet Address	Telephone Number	Approval Required	Records Required	Reports Required	Other Requirements
480, 481 and 483	Hazardous Waste Generator Fees	http://www.dec.state.ny.us/website/regs/483.htm	518-402-9343		Recommend	None	Annual fee
483	Hazardous Waste Management Facility Fee	http://www.dec.state.ny.us/website/regs/483.htm	518-402-9343		Required	None	Annual fee
ECL Section 72-1003	Mined Land Reclamation Fee	http://assembly.state.ny.us/cgi-bin/claws?law=37&art=237	518-402-9343		Recommend	None	Annual fee
480, 481 & 485	SPDES Program Fees		518-402-9343		Recommend	None	Annual fee

PUBLICATIONS

Title	Source	Telephone Number/Internet Address	Description
Guide to DEC	NYSDEC	http://www.dec.state.ny.us/website/dpae/pubs/gdec.html	Describes the department's major program divisions and gives their telephone numbers.
Environmental Notice Bulletin	NYSDEC	http://www.dec.state.ny.us/website/enb/index.html	The official notice bulletin of the New York State Department of Environmental Conservation (DEC). Includes notices of complete applications for environmental permits, notices of: DEC hearings, proposed and adopted changes to DEC policy, technical guidance and regulations and an assortment of other environmental notices.
Environmental Compliance & Pollution Prevention Guide for Small Quantity Generators (1422 K, 45 pages)	NYSDEC Pollution Prevention Unit	http://www.dec.state.ny.us/website/ppu/p2pub.html	A summary of regulations for air, water, and hazardous waste and information on pollution prevention opportunities.
Environmental Self-Audit for Small Businesses (126 K, 44 pages)	NYSDEC Pollution Prevention Unit	http://www.dec.state.ny.us/website/ppu/p2pub.html	A quick and easy guide to determine whether a small business is in compliance with environmental requirements.
Pollution Prevention Guidance for Small Business & Local Government (283 K, 89 pages)	NYSDEC Pollution Prevention Unit	http://www.dec.state.ny.us/website/ppu/p2pub.html	A tool to help small businesses and local planning boards evaluate the environmental impacts and regulatory status of sources of pollution in their facilities and communities.
Environmental Compliance & Pollution Prevention Guide for Lithographic Printers (146 K, 19 pages)	NYSDEC Pollution Prevention Unit	http://www.dec.state.ny.us/website/ppu/p2pub.html	A summary of regulations, environmental compliance requirements, and pollution prevention methods for commercial printers.
Environmental Self-Assessment for Lithographic Printers (42 K, 19 pages)	NYSDEC Pollution Prevention Unit	http://www.dec.state.ny.us/website/ppu/p2pub.html	A quick and easy checklist for determining environmental compliance and pollution prevention opportunities for commercial printers.

Title	Source	Telephone Number/Internet Address	Description
Environmental Compliance & Pollution Prevention Guide for Vehicle Maintenance Shops (243 K, 45 pages)	NYSDEC Pollution Prevention Unit	http://www.dec.state.ny.us/website/ppu/p2pub.html	A summary of regulations, environmental compliance requirements, and pollution prevention methods for vehicle maintenance shops and automobile recyclers
Environmental Self-Assessment for Vehicle Maintenance Shops (52 K, 20 pages)	NYSDEC Pollution Prevention Unit	http://www.dec.state.ny.us/website/ppu/p2pub.html	A quick and easy checklist for determining environmental compliance and pollution prevention opportunities for vehicle maintenance shops and automobile recyclers.
Environmental Compliance & Pollution Prevention Guide for the Electronics and Computer Industry (443 K, 84 pages)	NYSDEC Pollution Prevention Unit	http://www.dec.state.ny.us/website/ppu/p2pub.html	A summary of regulations, environmental compliance requirements, and pollution prevention methods for electronics and computer businesses.
Environmental Self-Assessment for the Electronics and Computer Industry (203 K, 23 pages)	NYSDEC Pollution Prevention Unit	http://www.dec.state.ny.us/website/ppu/p2pub.html	A quick and easy checklist for determining environmental compliance and pollution prevention opportunities for electronics and computer businesses.
Environmental Self-Assessment for Health Care Facilities (115 K, 47 pages)	NYSDEC Pollution Prevention Unit	http://www.dec.state.ny.us/website/ppu/p2pub.html	A quick and easy checklist of pollution prevention measures for health care facilities
Environmental Compliance & Pollution Prevention Guide for Campus-based Organizations (72 K, 52 pages)	NYSDEC Pollution Prevention Unit	http://www.dec.state.ny.us/website/ppu/p2pub.html	A summary of regulations, environmental compliance requirements, and pollution prevention methods for operational and facility maintenance personnel on campuses.
Environmental Self-Assessment for Campus-based Organizations (151 K, 66 pages).	NYSDEC Pollution Prevention Unit	http://www.dec.state.ny.us/website/ppu/p2pub.html	A quick and easy checklist for determining environmental compliance and pollution prevention opportunities for operational and facility maintenance personnel on campuses.

Title	Source	Telephone Number/Internet Address	Description
State Agency Environmental Audit Guidance Manual - updated for 2000 (1.3M, 616 pages)	NYSDEC Pollution Prevention Unit	http://www.dec.state.ny.us/website/ppu/p2audit.html	Prepared to provide assistance to those individuals who are assigned the task of completing the required state agency self-audit. A set of forms is contained in the manual and is to be used to complete the audit. A comprehensive questionnaire is also provided, including a set of screening questions, that provides a guide for each of the Environmental Conservation Department's regulatory programs. In addition, a section containing paraphrased abstracts of the various environmental statutes and regulations is included in the manual.
New York State Environmental Assistance Network Directory of Service Providers (133 K, 55 pages)	NYSDEC Pollution Prevention Unit	http://www.dec.state.ny.us/website/ppu/p2pub.html	Lists sources of technical and environmental assistance throughout New York State