Practical Guide to *Environmental Management for Small Business*

EPA
Small
Business
Division

Acknowledgements

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Contents

I. Introduction

In a nutshell...

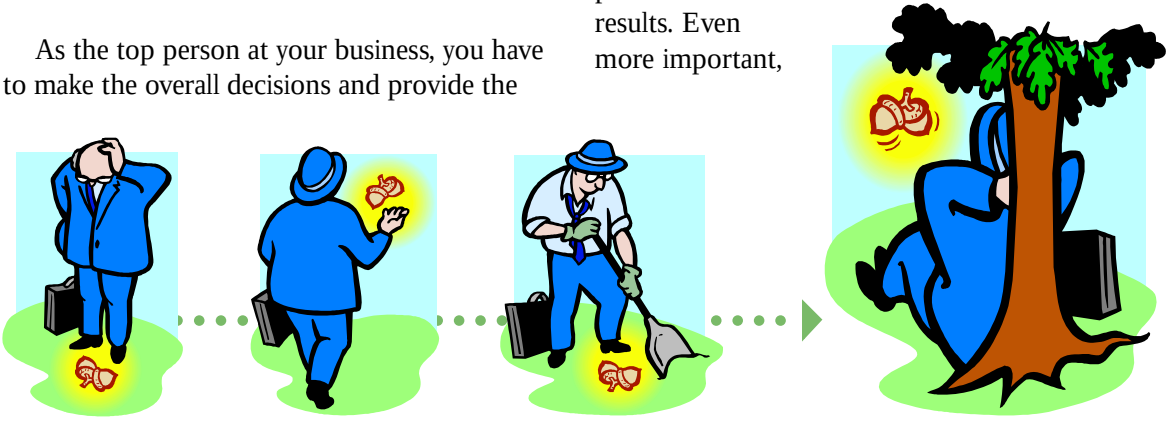
Do you as a small business owner feel like environmental management equals crisis management? Ever wonder how to get control of all the environmental issues at your business once and for all without sinking too much time and money into it? Don't know where to start? This Guide will help you get a handle on these questions and maximize the cost savings and other benefits associated with good environmental management. Following the Guide's step-by-step process, you will learn what good environmental management is and how environmental management duties can slowly be pulled into everyday activities without disruption. The end result will be that you can feel confident that your company is in compliance with environmental regulations, your employees are saving time and money, and you are better able to chart your company's future. So, go ahead and plant the seed to cultivate a reliable, responsible, and efficient environmental management program for your business!

What is this Guide about?

The *Practical Guide to Environmental Management for Small Business* is your Guide to getting organized and making the most of the valuable time you and your employees spend on environmental affairs. It will help you design a management plan that addresses all of the environmental concerns of your business. The Guide will also help you save money and make your business look good in the eyes of your customers and your community.

As the top person at your business, you have to make the overall decisions and provide the driving force for improving environmental management. But, as a small business, it is likely to take a team effort to make much progress, and you will probably have to delegate some day to day environmental activities to others. That is why the Guide is written in plain language. It can be easily understood by everyone at your business.

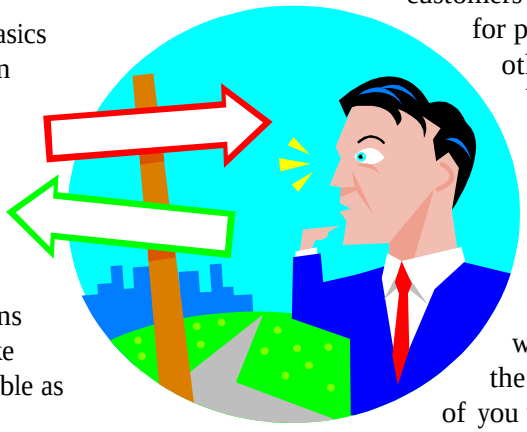
As you work through the Guide, you will find some ideas that you can use right away to produce immediate results. Even more important,



by going through the Guide step-by-step, you will gradually be able to create an effective system to manage your environmental responsibilities and make it much easier and less time consuming to meet regulatory requirements—one that will improve as time goes on.

Here is a quick preview of each Guide Section.

Section II covers the basics your business must have in place to meet the requirements of environmental regulations and to keep employees, the community, and the environment safe. (Don't get discouraged: the following Sections will show you how to make these tasks more manageable as time goes on.)



Once you have the basics in place, you can begin to take advantage of the business benefits of environmental management by working through Section III. This Section shows you how to use information you developed while working through Section II to find ways to save money by conserving water and energy and reducing waste.

Section IV is about taking your early efforts and getting them organized by writing a policy, streamlining who does what, and measuring progress. This enhances your business by making sure that environmental efforts support your business strategy, that responsibilities are handled in a productive way, and that you are moving forward—not spinning your wheels.

Section V explains why it is valuable to share your environmental efforts with those outside your business. It provides suggestions for showing off your environmental successes to customers and your community and for partnering with suppliers and others to improve your business' environmental performance.

Section VI looks at an approach called an environmental management system (EMS) which is what all the other Sections of the Guide lead up to. For those of you who like to read the back of the book first, you might want to glance at Section VI to get a better idea of where the Guide is headed.

The steps outlined in the Guide can be fit into the time you and your employees have available and the workflow of your business. It could take a month to work through the Guide if you can devote some sizeable chunks of time to it, or more than a year if time is more restricted, but the end result will be equally sound. The important thing is to devote regular attention to it while not detracting from your critical business functions.

I. Introduction

The Guide will help you develop a sound approach to environmental management. However, it is not a manual on environmental laws and regulations. It will not tell you the details of what you need to do to comply with specific regulations. However, the Guide does tell you who you can rely on for help with understanding environmental regulations, and how this important step fits into the overall environmental management strategy.

Here's a vision of what you can achieve by working through this Guide: You will understand all the ways your business affects the environment. Your employees will be prepared to handle spills, they will know how to keep safe, and your business will fulfill the requirements of environmental regulations. You will find ways to save money, increase productivity, and maybe even lessen regulatory requirements. Environmental management responsibilities will be efficiently organized and delegated within your business, and good practices will make compliance easier. By being better organized and taking a strategic approach to environmental management, you and your staff will spend less time on it, yet your business will continue to improve its environmental performance. Your environmental management program will be so good that you will be able to show it off to customers and your community.

The Guide is designed to go hand in hand with the U.S. Environmental Protection Agency (EPA) Workbook, *Documenting Your Environmental Management Plan—A Workbook for Small Business.* The Guide provides an explanation of the steps to take to improve your business' environmental management activities. The Workbook gives you a place to keep and organize all of the information you compile while working through the document. If you would like to obtain a copy of the Workbook, call EPA's Small Business Division at 800-368-5888 or download it from www.epa.gov/ems/or www.smallbiz-enviroweb.org.

II. Responsible Environmental Basics—"Have to's"

In a nutshell...

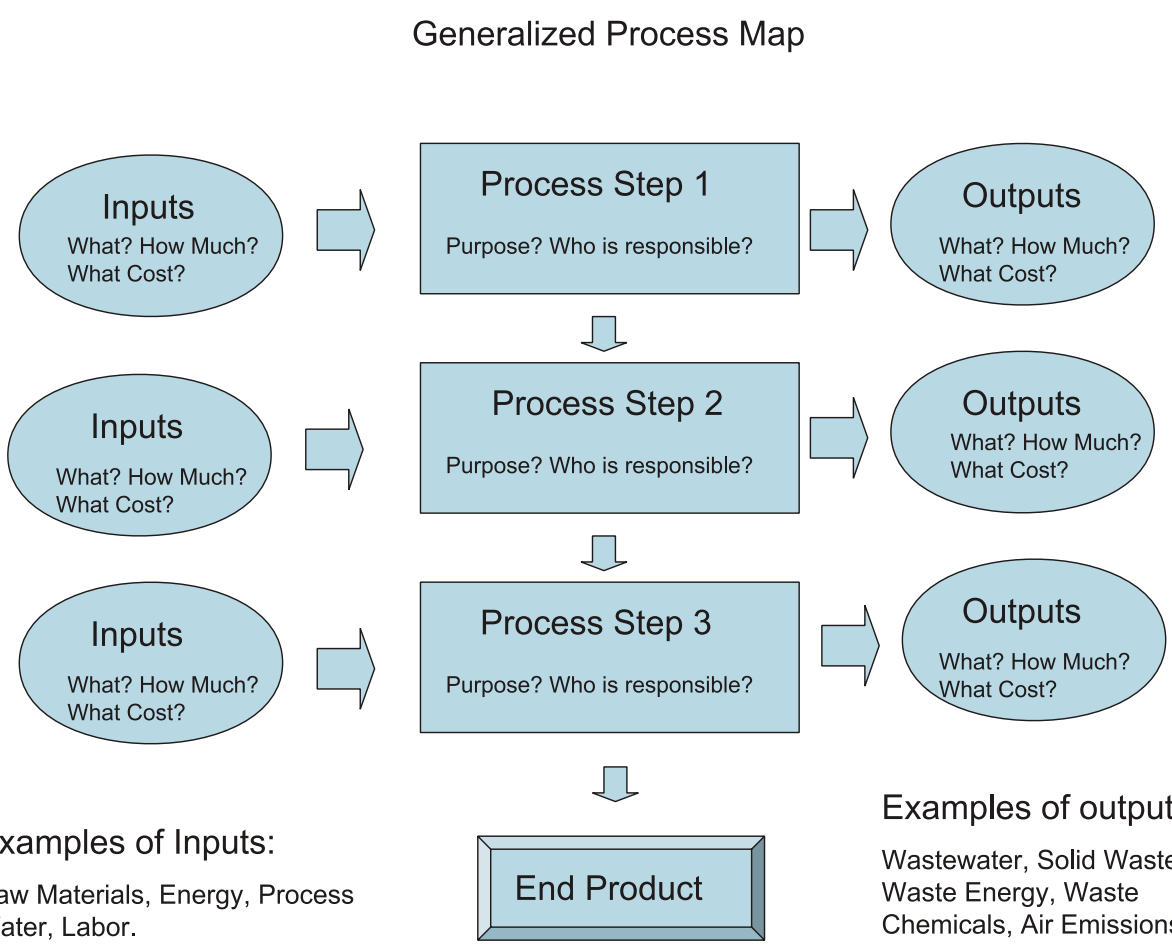
Now that you've planted the seed, you need to take care of the seedling. This Section of the Guide explains how to put in place the critical functions a business must have to keep employees safe, prevent and be prepared for spills, and comply with regulations. It is vital to get these functions under control first because failing to do so poses a high legal and financial risk to your business. By working through this Section with your employees, they will develop good habits that will make regulatory compliance part of the daily routine and save time down the road. The ideas in this Section will get you organized and help you make sure you've got the basics covered using a logical and systematic approach: First you will learn how to develop a process map to quickly get a handle on how your business affects the environment. In turn, this will help you determine what environmental regulations may apply to your business. Then, with this background, you can put in place the essential activities of sound environmental management—being prepared for spills, labeling, housekeeping, training, recordkeeping, and being ready for a regulatory inspection. These activities will tie together to provide a safeguard against unexpected and costly environmental problems at your business. They will also provide a solid foundation that you can build on as you work through later Sections of the Guide to attain real cost savings and increased productivity for your business.

How can I understand how my business is affecting the environment?

You know how when you open the box of a new electronic gizmo like a computer or DVD player, there is usually a handy picture laying on top showing you how to connect all the parts? This part of the Guide explains how to create a picture of your company's processes that is just as handy. This picture, called a process map, will show what comes in and what goes out of the process. The process map is a great tool for environmental management because it will help you see how your business affects the environment. This will help you figure out what regulations might apply and at what points in the process you need to keep required records. Because it shows the flow of chemical products through your business, it allows you to identify the areas where spills are more likely to happen, where housekeeping may be a big concern, and what kinds of labels are needed. You can make sure you are providing training that fits each employee's responsibilities by looking at which steps in the process map they are involved with.

Getting started is easy. Look over the example in Figure 1 to get an idea of what your picture can look like and fill in the blanks. Begin with the basics: the raw materials, the

Figure 1: Generalized Process Flow Diagram



Examples of Inputs:

Raw Materials, Energy, Process Water, Labor.

Examples of outputs:

Wastewater, Solid Waste, Waste Energy, Waste Chemicals, Air Emissions.

process, and the product. Good start, but it isn't the complete picture. The process probably requires additions other than just the raw materials. Do you use a tool or dispenser to introduce a raw material to the process? Do the raw materials feed through some type of machine? If so, there are elements or processes required to make it work—probably a power source, possibly oil, filters, or parts that are replaced when they are used up. As you examine all the steps in the process and what makes each of them work, you can add more detail to your process map. At first, this diagram will qualify rather than quantify the flow of materials—just what is involved in the process, not how much. You can plug in numbers later when your company wants to look at process changes and you need to measure results. When you look at the process as a complete cycle, the pieces start to fall into place. Raw materials are just one of the resources utilized. For example, when you consider that a specific tool is used and look at the source of its power, it points out another input for the diagram. Then, you can pinpoint output details because all the inputs have to leave the process in some way, shape, or form.

Once you have it, you can get lots of mileage out of your process map as a business management tool. It helps you think about aspects of your process that may have escaped notice in the past. As you work through later Sections of the Guide, the process map will help you understand how to improve the process because it helps you see clearly the inputs and outputs—and associated costs—of each step. Opportunities to reduce waste or conserve energy will be more obvious. You might notice that you have a "byproduct," something that leaves your process as a waste but can be used to benefit someone else's process. They may even be willing to pay you for it. The process map is also a great planning tool. As you look for areas to improve, the visual diagram will make it easier for you to explain your process, where it is now, and where you want to go with it. It can also be a great way to explain a job position to a new employee.

How can I get a handle on environmental laws and regulations?

If you feel uncertain about what environmental laws and regulations apply to your business and what exactly to do about them, you are not alone. Many small business owners, because of their extremely limited time, have difficulty with this. This part explains why it is vital to your business to take on the task of understanding your environmental legal obligations. It provides an overview of environmental laws and explains how to use your process map to get an idea of which areas apply to your business. Then, it tells you how you can get competent help to quickly understand the details of what is required of your business.

If you are not careful at the beginning to determine all of the environmental requirements

your business must live up to, then your environmental management program will be incomplete and maybe even flawed from the get go. Take extra care with this step and seek outside help. By all means, don't throw up your hands and give up—the possibility of a penalty for breaking environmental laws—even once, even by accident—is way too big of a risk to take for your small business and the people who work there!

What if I find my business is not in compliance?

While determining what laws and regulations apply to your business, you might discover that you have not been meeting requirements that you should have been in the past. If this happens, the Small Business Policy can help. This policy states that if you are working with your state's Small Business Assistance Program to fix a problem, you will be given at least a 90 day window of opportunity to correct the problem without the regulatory agency stepping in. Since this policy has not been adopted by all states, and some states have modified the policy when they adopted it, ask your Small Business Assistance Program representative for details about the policy that is in effect in your state.

A second option is to follow EPA Self-Audit Policy. Under this policy, you can disclose any violations you discover to EPA, and your business will have 60 days to correct the violations after discovery. If your business discloses violations under this policy, EPA cannot assess financial penalties, except that they may assess economic based penalties – the amount of money your institution saved while not meeting requirements. Before entering into a disclosure under EPA Self-Audit Policy, consult with your Small Business Assistance Program representative for advice.

Why comply with environmental regulations?

The most obvious reason is to avoid penalties associated with non-compliance—fines for violations can be in the thousands—a severe blow to a small business (not to mention the black mark of being labeled a violator). How does this happen? Certain agencies at the federal, state, and local levels are there to see that businesses follow environmental regulations. To make this determination, they can send inspectors to any business to see first hand if it is playing by the rules. Of course, when they find problems, your business will be required to fix them. The agency will send an official letter with the list of the problems or violations. They will spell out what they expect you to do about each violation and a due date that it must be completed by. Depending on the violations, your business may be required to pay monetary fines. The regulator can even close down your business temporarily until problems are fixed. It is possible that the responsible person at your company who has completely failed to take notice of or severely disregarded the regulations may be criminally prosecuted and may even

Why Comply?

- ***Monetary fines***
- ***Your business could be closed down until the problems are fixed***
- ***Criminal prosecution or jail time***
- ***Reinspection***

serve jail time. Often, regulatory agency staff will do a follow up inspection to make sure the problems have really been fixed.

If just dealing with the inspection wasn't enough, your problems can make the news. You may have a difficult time getting your local newspaper to mention the food drive your business sponsors, but it's front page news when your business is fined for environmental violations or has an accidental spill. The regulatory agencies keep records of all violations and they are public documents. Anyone can ask to see them—they are allowed to under the "Freedom of Information Act." People are expressing more interest these days in knowing what the companies in their community are doing. EPA's website is experiencing 40 million hits per month. Real estate search engines can find environmental problems in areas surrounding a property. Not only can a negative image hurt sales in your local market, it can also hinder any expansion activities you may plan. This is because some expansions require an environmental permit before you can proceed. When a company is applying for a new permit, there is a public comment period and often a public hearing. If your company has a bad reputation for environmental harm, members of your community are likely to oppose the permit, causing a delay. If the public is really opposed, the permit may not be issued at all, jeopardizing your expansion plans.

Compliance with environmental regulations will help retain the value of your property. Any negative environmental impact can decrease your property value. Before loaning money, banks usually require buyers to pay for a professional review of previous property uses to see if the property may have been contaminated in some way. Because of this, if you ever need to change locations or use your property for collateral, it will become important to be able to show that your activities have not caused contamination. Good documentation that your company is in compliance with environmental regulations can protect you from having to pay for past contamination to your site. Likewise compliance with regulations can lower the cost of liability insurance, because insurance companies will have less concern about the future costs of a clean-up or the risk of harm to the health of your employees and community.

Why can't I wait until someone tells me what to do?

There are a lot of environmental laws out there and not all of them matter to your business. Why should you weed through all of that now instead of catching up on work that should have been done yesterday? Why not wait until an inspector shows up, takes a tour, and creates a list of burning issues—signed, sealed, and delivered? After all, the bureaucrats created regulations that no one else can understand—let them tell you what you are supposed to be doing about the whole mess. Well, sorry to say, this is not the easy way out.

First, not understanding what regulations

apply to your business is not an acceptable excuse for failing to meet the requirements. Just as you can be ticketed for breaking a traffic law without being aware of it or penalized for a mistake in a tax return or failure to pay enough, ignorance of the rules does not protect you from enforcement, even criminal enforcement.

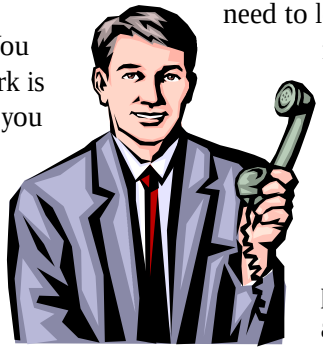
Second, although an inspection will provide you with a handy list of things that you need to do, dropping everything to meet the imposed deadlines can cost more than would have been invested to get into compliance in the first place. You will not have the luxury of time to look for the least expensive and disruptive way to work within the rules.

What regulations might impact me?

'There are so many environmental laws and regulations that they fill many books. When you're already swamped with day to day business, how can you find out which regulations are important without wasting too much time? A good place to start is to pull out your process map and think about how your business activities could affect the environment. You bring in raw materials and after some work is done, they leave as a product. Or, maybe you use raw materials to perform a service that fixes, improves, or cleans something for your customer. But, what else is going on? Is the air and water leaving your property the same as when it came in? If your process has leftovers that may be contaminated by chemicals—even in tiny amounts—they could be regulated. Where do they go? To a storm drain or sanitary sewer? To the dumpster? Perhaps you keep materials on your property that could cause a spill if their containers leaked. As you think about these questions, this is a good time to add to your process map any new inputs or outputs you have thought of. Now you are ready to take a look at the table at the back of the Guide called "Major Categories of Environmental Regulations." Although it doesn't cover every last environmental regulation, and provides only a general picture, it will give you a good idea of common regulations that you should be concerned about as well as ones that are not likely to apply.

How can I get more information about regulations that may apply to my business?

This Guide would be too long and complicated if it gave you detailed information on each regulation, and it would go out of date quickly. Besides, the table in the back of the Guide covers federal regulations only. You also need to look at your state's requirements, and maybe even those of your city or county. Fortunately, you can call your state's Small Business Assistance Program to help you.



Just a phone call away is a person who's not a regulator or an inspector but has the

Fines can add up to large sums. A kitchen and bath cabinet company with 50 employees was fined $25,000 for neglecting to file an annual report under EPCRA. The fine was based on $5000 per report times 5 years. The regulation cited allows for fines up to $25,000 per violation, which would have added up to $125,000. But, the 'low' penalty was allowed because it was a small business using small amounts of chemicals.

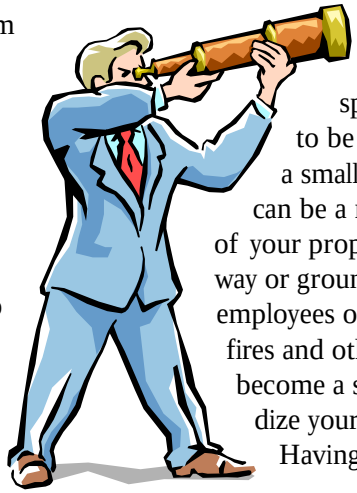
experience and know-how to help you cut through the red tape and quickly figure out what regulations apply to your business. After all, you call a tax auditor to be sure you have filed your taxes properly, don't you? In the same way, you may need an expert to help you take care of all the nitty gritty details of environmental compliance. If you need assistance finding the phone number and contact person for the Small Business Assistance Program in your state, call EPA's Small Business Division at 800-368-5888 or go to www.smallbiz-enviroweb.org/.

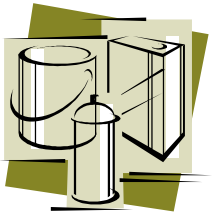
Consultation with your Small Business Assistance Program is free of charge. Also, if your business seeks help from your Small Business Assistance Program, the Clean Air Act Compliance Assistance Enforcement Policy can give you some leeway to correct any problems that you find without triggering enforcement. Some states have similar policies or agreements.

As you work with your Small Business Assistance Program contact, ask him or her to help you write down the actions you need to take to comply with each regulation that applies to your company. These actions might include training, labeling, recordkeeping, filing reports, and others. Once you have a good handle on what regulations apply to your business and what specific actions you need to take to comply, you can go about getting to it. But, don't forget that regulations are notorious for changing often. You also need to find a way to stay on top of this so you don't get out of compliance by accident. One way is to attend an update conference on the regulations that apply to your business once a year or so. Or, you could just put a tickler on your calendar to call the Small Business Assistance Program on a regular basis and ask them to help you stay in the loop.

What are the basics of good environmental management?

Now that you understand the ways your business can affect the environment and what environmental regulations your business has to comply with, you are ready to put in place the basics of good environmental management: preventing and being prepared for spills, making sure all chemical materials have proper labels, practicing good housekeeping, training employees in their environmental responsibilities, keeping good records, and being prepared for a regulatory inspection. This part begins with spill preparedness because it needs to be among your highest priorities as a small business owner. Having a spill can be a nightmare, especially if it gets off of your property and contaminates a waterway or groundwater. A spill can injure your employees or make them sick. It can lead to fires and other property damage. It can become a source of bad press and jeopardize your relationship with the community. Having a high profile spill is a sure way





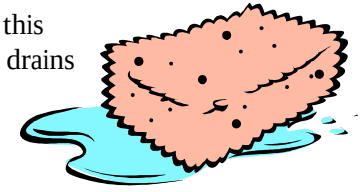
to get an inspector to show up at your business. And, on top of all that, even a small spill can cost thousands to clean up.

Working on spill preparedness naturally leads to working on some of the other basics. Having proper labels on containers makes it much easier to handle a spill because you know what you are dealing with. Practicing good housekeeping helps keep spills from happening. Since a spill situation can be dangerous, it is sensible to make sure everyone is trained so they know how to keep safe and what to do the moment a spill happens. Having good recordkeeping in place helps ensure that the chemical incident response plan is readily available as well as the response call list. If a spill does trigger a regulatory inspection, you will be able to handle it better if you have a game plan and employees know what is expected of them. This illustrates how the basics of good environmental management inter-relate, so that doing a good job in one area has a positive effect on performance in the other areas.

Prevent and Be Prepared for Spills. A common cause of spills is the container: either it is so old and decrepit that it springs a leak, or someone knocks it over or drops it. There are several easy ways to prevent this. Make sure all employees who work with chemicals know these tips:

- Take a close look at the chemicals in your work area every week or so. If you notice any containers in bad condition, get rid of them (using proper disposal methods) or transfer their contents to a new container. Check to see that containers have good caps that are tightly closed.
- Put containers holding hazardous chemicals or wastes into other containers, trays, or drip pans to catch and contain any chemical that spills or leaks out.
- When you move a chemical container from one place to another, place small containers in a bucket or pail. Place larger containers in a tub with hand grips or onto a cart with sides on it that will prevent any spill from flowing off.
- When transferring a chemical from its original container, be sure the new container will safely hold the chemical you are pouring into it: Is it made of a material that won't react with or dissolve in the chemical? Does it have a tight fitting cap? Be careful not to overfill the new container.

Another good thing to do is to locate all the drains on your property, both indoors and outdoors, and determine where they go to. If your building is old, you may be surprised to find that the drain you were sure led to the sanitary sewer and your local wastewater treatment plant actually connects to the storm sewer system that drains directly to a lake or river. After you go to all this trouble, mark your drains accordingly. Consider placing easy-to-use drain



Document any training even if it is an informal tailgate session. Keep a record of who was trained, the topic, the date, how long it was, and whether it was classroom, one-on-one, or on-the-job. If training involves a new task, offer to help the employee the first time they undertake the task, or team him or her up with an employee experienced in the task. This counts as training too.

covers and spill supplies close by drains to close them off from a spill if you have time and it is safe to do so.

If you don't have a chemical incident response plan, make it a high priority to develop one. Chances are you have to have some type of incident response plan anyway to comply with regulations. This doesn't mean your employees have to know how to clean up a spill by themselves. In fact, they should not clean up chemical spills at all, except for tiny ones, unless they have had extensive training. But, anyone in your business who works with chemicals should know how to keep themselves and their coworkers safe if there is a spill and who to call for help. Take some time to ask about the capabilities of your city or county emergency services. Do they have a hazardous materials response team (often called a hazmat team)? If so, do they have the necessary equipment and training to clean up the types of spills that could happen at your place? If you call them in, how much will it cost? Answer these questions before you have a spill in progress and things are going to go a lot more smoothly.

Train employees. Too often, the environmental management program hides in files and reports and never gets out to where the rubber meets the road. You can have the greatest ideas in the world to protect the environment, and even some that will save money to boot, but nothing will come of them if employees don't know about them. This sounds obvious until you remember that at most small businesses everyone is short on time. Because of this, it is not unusual that what needs to be done never gets communicated to who needs to do it. A well thought out training program is like sunlight to your seedling environmental management program. It energizes employees because training sheds light on what they need to be doing.

Here are some tips for setting up and managing your training program:

- As you get your training up and running, set priorities—(1) train those who handle chemicals to use them safely and on what to do if there is a spill or release, (2) make sure you have training programs as required by regulations (contact your Small Business Assistance Program if you don't know), (3) train them on additional good practices.
- Use your process maps to discover whose jobs involve tasks that could affect the environment.
- Develop a list of training topics that make sense for each job, beginning with training required by regulations. You can use a matrix to help with this (Figure 2). These tools can help you set up training efficiently so each employee gets the training he or she needs, but does not sit through training they don't need (a good way to make them mad at you and lose interest).
- If your business already has a strong employee safety program, build your environmental training into the existing

Figure 2: Sample Employee Training Matrix

Employee's Name: John Doe
Employment Date: March 21, 2000
Termination Date:
Job Title: Press Operator

Note: OJT refers to On the Job Training.

Required Training:

- Hazardous Waste—initial and annual.
- Incident Response—initial, annual drill, incident critiques, and when plan changes.
- DOT—initial Awareness, initial Function Specific, three-year refresher.
- Storm Water—per permit, annual.
- Air—per permit, initial and when permit changes affect press operation.

Training	Initial	2001	2002	2003
Hazardous Waste	3/30/00	Annual Refresher: 3/15/01 Update (OJT):		
Incident Response Plan	3/30/00	Drill: 1/10/01 Incident Critique: 2/23/01 Plan Update: 3/15/01		
DOT Hazmat	Awareness: 3/30/00 Function Specific: 4/12/00			
Storm Water	3/30/00	Update (OJT): 3/11/01		
Air Permit	3/30/00	Update (OJT): 2/29/01		

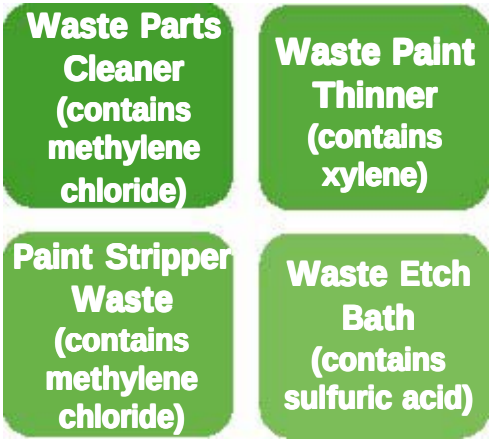
safety training to be more efficient with employees' time and to help them better understand the big picture. For example, if you are already doing OSHA Right-to-Know (Hazard Communication Standard) training, which is about how to keep safe when using chemicals, it is a simple thing to add a short segment on how to properly handle and dispose of wastes associated with the use of that chemical.

- Make sure those in your business who are doing training are available for follow up questions and know ahead of time who to call if someone asks a question they don't know the answer to. (Your Small Business Assistance Program contact can help here too.)

Label Hazardous Materials and Wastes Properly. Have you ever looked at a glass jar of clear liquid in your maintenance cabinet trying to remember what it is? You think on it and narrow

it down to one of two things: a xylene-based paint thinner or a paint stripper containing methylene chloride. This is a serious problem because these products have very different hazards. The paint thinner is flammable while the stripper is not. The stripper is a lot more toxic than the thinner. You can't even dispose of it properly because they each have a different hazardous waste code. To prevent this headache, when you look over your chemicals to check for leaks and bad containers, check the labels too. If any are falling off or fading, write the label information on a fresh sticker and attach it to the container. When transferring chemicals from the original container to another one, label the new container right away so you won't forget what it is. When deciding on a label for a waste container, be specific. If not, too soon you will have a mixture of wastes that will be hard to classify, unsafe to handle because you don't know what's in it, and more costly to ship out.

When deciding on a label for a waste container, it makes a big difference whether or not it is a "hazardous waste" as defined by regulations. Hazardous wastes have particular requirements, including labeling. You should still label wastes that are not hazardous so you don't get them mixed up with hazardous wastes and because many non-hazardous wastes still pose hazards to your employees. Here are some examples of good labels for waste containers that might be found in your small business:



Important Note: The above labels meet certain hazardous waste requirements only. There may be additional labeling requirements depending on the regulations that apply to your business. If you are not sure what labels are required, consult with your Small Business Assistance Program contact.

Maintain Good Housekeeping. Here are some signs that you need to devote more time to housekeeping:

- You find yourself ordering a chemical product that you already have because your shelves were so cluttered when you looked for it you couldn't see it was there.
- You pick up a spray paint can out of the storage cabinet only to discover that it is empty.
- You open the shop door and knock over a can of paint that was sitting just inside.

Here are some goals to strive for:

- You open any storage cabinet and can tell at

a glance what products are there and whether any containers have leaked or spilled.

- There is a list nearby to check off chemicals that need reordering.
- Chemical containers are situated safely—that is, away from the edges of shelves, away from high traffic areas, and out of the way of swinging doors.
- Empty containers are marked as such and properly disposed of right away, or at least staged at a labeled bin or shelf, so they don't get confused with products still in use.
- You cannot find a container without a label anywhere in your business.
- At the end of a shift, your employees tightly close any chemical containers they are using and return them to their designated storage space.
- You have supplies and personal protective equipment (also called PPE, e.g., safety goggles and protective gloves) for safely cleaning up small spills in each work space in a location that is easy to get to and well marked, and employees are trained on when and how to use them.

If you think your housekeeping is in pretty good shape, invite your local fire inspector in for a look. He or she will probably give you a few more ideas. Getting your housekeeping in order is like weeding—it's a pain in the neck but it has to be done so you can see whether anything worthwhile is under all the clutter.

Keep records of your efforts and successes. Good records tell you at a glance what's going on and what needs to be done on a regular basis (like annual training or weekly inspections). They put you in a better position to pass a regulatory inspection. Most inspectors start with a close look at your environmental records. Records in good shape start you off on a good note. It pays to be clear on what files you must have to be in compliance and get them organized first. After that, you can decide what information has additional value to you. Some records are essential to protect you from legal and financial troubles down the road. Others can give you valuable data on business performance, or come in handy when you want to show your customers and neighbors that your business is "green."

The Sample Master File List in Figure 3 gives you a simple system to organize your environmental management files and records. It covers the most common environmental filing and recordkeeping requirements, the ones that apply to most small businesses, so you can use it as a starting point. However, be sure to go back and look at the records and documents that you are required to maintain by the particular regulations that apply to your business to make sure nothing is missing. Consult your Small Business Assistance Program contact again if you are not sure. Table 2 summarizes the information in the Master File List, explains why each file needs to be maintained, and provides guidelines for how long files and records need to be kept.

While thinking about files, here is an important point. Make sure that all critical communications with regulators are documented. Either ask the regulator to send you something in writing (e.g., letter, regulation, interpretation) or write down your understanding of what was said in a letter, send it to the regulator, and keep a copy in your file. Also keep a copy of all important correspondence, such as permit applications, required reports, or written responses to regulatory inspection citations, and send the original certified mail with return receipt.

Be Prepared for a Regulatory Inspection. Maybe you think it can't happen to you because your business is too small. But, if you do get inspected—even just once—it will pay to be prepared. Knowing what to expect will help you be more confident and less stressed during an inspection.

Before an inspection takes place, decide who can best answer questions about your business' compliance with environmental regulations while also having a good grasp of its operations. Designate a primary contact and a back-up person. Both should have access to the files, records, and locations within the business that an inspector may want to look at.

Let's say you, as the business owner, are the primary contact. Tell front office staff that if an inspector drops by, they should welcome him or her and call or page you or your back-up. Once you get the call, get there as soon as possible. When you first meet the inspector, it is appropriate to ask for some identification and for information about the kinds of issues he or she is interested in. The inspector will usually look at records first and then ask for a tour of your operations. Be sure to provide appropriate personal protective equipment (safety glasses are usually a minimum), then take the inspector to any place in your facility they request. Take thorough notes during the inspection. If the inspector takes a sample (such as a wastewater sample) ask him or her to split the sample with you so you can have your own analysis done later if you choose to. Take photos of whatever the inspector photographs. If you can, direct employees to immediately correct any problems brought up by the inspector, as long as you clearly understand what needs to be done.

At the end of the inspection, if you are comfortable doing so, ask the inspector what her or his impression was to get a sense of where you stand. After the inspector leaves it may take weeks or even months for you to receive a follow up letter from the regulatory agency stating the results. But, don't consider the matter closed until you receive a letter that says so. If you are served with a Notice of Violation or other citation as a result of the inspection don't panic. Ask your contact at the Small Business Assistance Program to help you respond. They can help you understand what corrective actions you must take and how soon. They may be able to serve as a go between and advocate for you. Finally, try to keep a positive outlook. Going through an inspection can be a stressful and disruptive experience, but you will get through it. Afterwards you will know better how your environmental management program is doing.

Figure 3: Master File List

General Environmental Management Files

Facility ID number(s)—In many states, the regulatory agency assigns an ID number to your facility that applies agency-wide. Keep this on file so you can find it when talking to regulators, or when visiting the regulatory agency to look at files or records they have about your facility.

Spill Response—Keep copies of all your spill response plans and associated documents here. At the top of each plan, keep a current call list for your on-site emergency coordinators and off-site responders (e.g., city hazmat team). If these contacts are the same for all plans, place the call list in a separate, well marked file folder at the front of this part of files. Do the same for listing phone numbers you would use to report a spill to regulatory agencies (e.g., state spill response hotline, State Emergency Response Board, National Response Center). Helpful categories could include:

- *Incident response call list and decision tree*
- *Spill reporting call list*
- *Hazardous waste spill response plan*
- *SPCC plan*
- *Storm water spill preparedness plan*

Within each plan file include:

- *Copy of plan*
- *Summary of annual plan exercises*
- *Documentation and critique of incidents that triggered the plan*

Interaction with Regulators—Keep a record of all your interactions with regulators here, except for information directly related to a specific environmental permit, which should be kept in the permit file. This includes copies of any letters you send to regulators and brief notes of any conversations you have with them—not just the stuff they send to you. If you act based on their answer to one of your questions and someone later disagrees, it will help to be able to show who gave you that information and when. If there isn't a lot of information, you may be able to keep it all in one file. If not, consider breaking it up into files for each agency (e.g., EPA, your state environmental regulatory agency, municipal sanitary sewer authority, local solid waste authority) or by areas (e.g., air, water, waste, emergency response). It's best to keep these documents in order by date so you can easily lay your hands on the information when you need it. The information in these files should include:

- *Regulatory inspections (active and closed, filed by agency)*
- *Reports of spills or releases*
- *Other correspondence with regulatory agencies*

Training Records—While many different environmental regulations require training, most companies find it easiest to organize them according to employee. For each person, place the matrix of the training they need to meet their job responsibilities (as explained in the previous Section) in the front of their training folder. Behind this, keep the employee's training certificate and an agenda or topics list for each training session. Place this information in chronological order, and use the matrix to quickly pull training records needed during an inspection. Some regulations (such as hazardous waste) require that you write out each employee's duties in that area. If possible, append these to the employee's position description in their personnel file so it is clear that he or she is working within the scope of their job when doing hazardous waste or other environmental duties.

Use red file folders or file tabs for your emergency contact files so you can get your hands on them quickly during a spill or emergency.

Write down contact information for regulators you communicate with often on the inside of the file folder for easy access.

If your company has a spreadsheet or database computer program, you can keep each employee's training matrix electronically, and print a hard copy to put in the file.

In the language of environmental management, the term "media" refers to how pollutants can get into the environment such as waste, water, or air.

Figure 3: Master File List (cont'd.)

Media-specific Environmental Management Files

Waste Management—Keep all information associated with management of your business' waste streams in this file. Suggested categories include:

- *EPA Generator ID number(s)*
- *Current hazardous waste permit and associated documents and correspondence (if applicable)*
- *Records of waste determination (information you used to tell whether a waste is hazardous or not; keep them even if the waste is not hazardous)*
- *Hazardous waste shipment paperwork*
- *Special waste shipment paperwork, including, but not limited to:*
  - Universal waste batteries
  - Universal waste lamps
  - Universal waste mercury switches
  - Used oil
  - PCB and non-PCB Ballast recycling
- *Solid waste tipping records*
- *Inspection logs*

Air Management

- *Current permits for major or minor sources and associated documents and correspondence*
- *Emission calculations for Potential to Emit (PTE)*
- *Annual air toxics inventory*
- *Inspection records and chemical usage records as required by permit conditions (e.g., VOC records, pressure drop inspections, operating hours).*

Wastewater Management

- *Correspondence with local wastewater treatment plant authority*
- *Copy of current sanitary sewer ordinance*
- *Pre-treatment permit (if applicable) and associated documents and correspondence*

Storm Water Management

- *Inventory of storm water drainage and outfalls from your property (include map)*
- *Storm water pollution prevention plan*
- *Maintenance plan for storm water infrastructure*
- *Storm water permit (if applicable) and associated documents and correspondence*
- *Storm water annual reports and sampling results (if applicable)*

II. Responsible Environmental Basics—"Have to's"

Table 1: Summary of Environmental Files

What to Include	Why? C[1]	Why? L[2]	Why? GMP[3]	Records Retention Recommendations
Facility ID number(s)			✓	Keep active facility numbers up front, keep inactive facility numbers in the back of the file.
Spill Response	✓	✓	✓	Keep current plans at the front of the file. Keep summaries of drills and exercises for three years. Move dated plans, closed incident reports, and critiques to back of the file after three years and retain indefinitely.
Interaction with Regulators			✓	Keep active inspection documents and notes on interpretations or advice from regulators up front. Keep closed inspection files for three years, then you can shred them. Keep regulatory notes that are no longer in effect at the back of the file as a record of past practices.
Training Records	✓	✓	✓	Keep at the front training records and environmental position descriptions for employees throughout their employment. (Hazardous waste training records must be retained for three years, even if the employee has left.) Move training records of employees who have left the company to the back and keep them in case you need to account for your past practices.
Waste Management	✓	✓	✓	Keep up front active EPA ID numbers, permits, and waste determinations. Move inactive EPA ID numbers, expired permits and the original permit application, and waste determinations for wastes you no longer generate to the back of the file. Keep hazardous waste/universal waste shipping records, and activity reports on file for three years (required), then move them to the back of the file. Keep inspection logs for three years, then shred. Keep solid waste tipping records up front for one year, then move them to the back of the file and keep them.
Air Management	✓		✓	Keep active permits up front. Move expired permits, original permit applications, any calculations or data that you used in the permit process or to prove xemption to the back. Keep up front annual air emissions reports and monitoring results for the past three years, then move them to the back of the file.
Wastewater Management	✓		✓	Keep active permits and the current sanitary sewer ordinance up front. Move expired permits, the original permit application, and expired ordinances to the back. Keep up front annual reports and results of required monitoring for three years, then move them to the back.
Storm Water Management	✓		✓	Keep up front active permits and storm water pollution prevention plans. Move expired permits and plans to the back. Keep up front annual reports and monitoring results for the past three years, then move them to the back.

[1] Compliance—Means you need to keep this file to meet recordkeeping requirements of environmental regulations.

[2] Liability—Keep this file because it contains information that could help stay out of financial and legal trouble from future environmental claims.

[3] Good Management Practice—Keep this on file because it provides information that helps you keep track of your environmental program, or saves you and your staff time later.

III. Saving Money Through Sound Environmental Management

In a nutshell...

Your tree is maturing and requires less attention to flourish. You are starting to see the return on your efforts as it provides shade for your yard. After working through Section II, you are beginning to develop a sound environmental management program and no longer feel like you are in crisis management mode. You can talk knowledgably about the regulatory requirements and what methods you are using to meet them. Now that you have the basics in place, you can turn some of your attention to the fun stuff: looking for opportunities to make your business more profitable and productive as well as more friendly toward the environment. This Section includes pointers for cutting back on your energy, water, and waste disposal costs. After you have worked at this for a while, you may even find that your regulatory requirements have been reduced by changing, scaling back, or eliminating a process. All of this will be good preparation for working though Section IV which is about streamlining environmental management and ensuring that the program will continuously improve over the long run.

How can I use the process map to save money?

To be useful for working through this Section of the Guide, you may need to add some details to the process map that you put together at the beginning of Section II. If you haven't already done so, look at the inputs and outputs of each step in the process, and figure out quantities and costs associated with them. You may need to make some estimates if you don't keep detailed records, and that's OK. You are looking for a ballpark idea of the magnitude of expenses. Once you identify your big cost centers, you can make better decisions about where to focus your efforts to reduce costs. To see where this is going, take a look at figure 1 on page 9. The idea here is to plug the leaks to cut back on waste energy, wastewater, or waste that is created in the process. You also want to find ways to make the process more efficient so you can cut back on the inputs without decreasing the quality or rate of production of the end product.

Greenhouse gases such as carbon dioxide (CO_2), sulfur dioxide (SO_2), and nitrous oxide (N_2O) are responsible for global climate change, acid rain and smog.

How can I conserve energy?

Here are three reasons to work on energy conservation:

- First, saving energy in your business translates into cost savings.
- Second, using less electricity means less coal and less natural gas are burned, which reduces greenhouse gas emissions and other forms of air pollution and conserves resources for future generations.
- Third, there is free assistance available to help your business explore even some of the more involved options so why not take advantage of them?

Let us first start with no cost and very low cost suggestions. Most of these involve changes in employee activities and some readily made equipment changes:

- Turn off lights or office equipment at night and on weekends or take advantage of

natural daylight for lighting needs.

- Disconnect unnecessary equipment completely.
- Turn up or turn back the thermostat during unoccupied times or consider buying a programmable thermostat.
- Caulk and weather-strip windows and doors.
- Install blinds or shades to keep out summer sun to lower air-conditioning costs.
- Purchase fans to keep warm air from accumulating at the ceiling during winter.
- Insulate hot water holding tanks and hot and cold pipes and improve insulation of the climate controlled portions of your facility.
- Replace light bulbs with more efficient ones. You can order inexpensive sub-compact fluorescent lamps through a U.S. Department of Energy (DOE) program. These last eight to ten times as long as a regular bulb and use one quarter to one third of the energy.
- Place your lights on motion detectors or install timers on lights and electric equipment to keep them on only when in use.
- It may be worthwhile to replace lighting fixtures instead of just the bulbs. The new fixtures can allow you to utilize a smaller bulb and get the same amount of light, or reuse the ballast portion of the light.

Call your local utility company to see if they still have a program to evaluate your building for energy efficiency. (Many have dropped their programs since deregulation.) If the service is available, the utility will provide you with specific options for making your business more energy efficient, usually for free. If your local utility company does not provide this service, check with your state's energy program to see if they do, or know who does. There are Industrial Assessment Centers throughout the country that perform process audits to reduce energy use, improve efficiency, or reduce waste. (To find the Industrial Assessment Center in your area see www.oit.doe.gov/iac/)

Consider Participating in the Energy Star® Program. Energy Star® is the trade mark EPA uses to signify energy-efficient products. This voluntary program is a partnership between EPA, the U.S. Department of Energy (DOE), product manufacturers, local utility companies, and retailers. The agencies set energy efficiency criteria for specific consumer and commercial products. Products meeting or exceeding the energy efficiency criteria established by the agencies are awarded the Energy Star® label. These include items like computers, monitors, fax machines, printers and copiers. Energy Star® also has a small business partnership program.

There are some real possibilities for cost savings over time by replacing major equipment within your facility. Not only will there be savings on operational costs because of increased efficiency, it can also avoid maintenance problems that take up time and budget, and justify replacing

equipment that is out of date for reasons other than just efficiency. One example is that traditional systems often have wasted energy and money by running motors continuously at full capacity, regardless of the end-use need. Fortunately, motors can now be equipped with variable speed drives to allow the motor to closely match its power output with the energy necessary for the task—eliminating waste and saving money.

It is possible to make necessary upgrades with no up-front capital and pay for them later through the energy savings that result. Best of all these savings can be guaranteed through the energy performance contracting and assistance provided by your state energy office in cooperation with the Energy Services Coalition (ESC). This works by entering into an agreement with a private Energy Service Company (ESCO). The energy service company identifies and evaluates energy-saving opportunities and recommends some improvements to be paid for through savings. The savings must meet or exceed annual payments to cover all project costs over the contract period, usually seven to ten years, or the energy service company pays the difference. To ensure savings the energy service company offers staff training and long term maintenance services. Check with the National Association of Energy Service Companies at www.naesco.org or call them at 202-822-0950 to find a company near you. Your state energy office can also provide you with information, local case studies, and resources to get you started.

Twenty thousand dollars can buy a lot of bread. That is what a fast food franchise owner is saving by taking advantage of energy-efficient technologies at his restaurant. What is his recipe for success? He upgraded his store's lighting from 40-watt T-12 lamps and magnetic ballasts to T-8 lamps and electronic ballasts. In addition to his 50-percent energy savings, he now has brighter lighting to make the food look more appetizing. He replaced his old air-conditioning units with high-efficiency models and added ceiling fans to circulate the store's air. He can now set the store's thermostats 3 to 5 degrees higher in the summer without affecting comfort. With these upgrades, he will pay back his investment in three years. (Source: EPA Smallbiz Success Stories)

Alternative energy sources merit consideration too. At University of Texas Medical Branch, alternative energy uses include the installation of a photovoltaic system in a parking garage. UTMB parking garages are required to have lighting 24 hours a day, 7 days a week to provide safe parking. Photovoltaic panels are currently being installed with grant money from the Texas Natural Resource Conservation Commission. In addition, solar water heating is becoming a very popular way of saving energy in facilities with large water heating needs.

How can I conserve water?

Think about it: most business activities are using part of a limited supply of water that is good enough to drink. Only a tiny fraction of the planet's water is drinkable. Ninety-seven

percent is sea water, which is expensive and difficult to desalinate. About two percent is caught in polar ice caps. That leaves just one percent to sustain life. Much of the world's population gets their drinking water from natural underground storage tanks called aquifers. Humankind is rapidly using up those reserves, digging ever-deeper wells and lowering water levels in every continent. Also, your business pays for using this resource. This may not seem like a large part of your overhead. That is, until you realize that you pay for it twice: coming to the tap and going to the sewer. Take a look at your combined water-sewer bill. If you want to save some money while reducing the impact of your business on your community's water supply, consider some of the ideas below as a starting point for your water conservation efforts.

Find out how your company uses water. You may have water guzzling processes that can be changed or updated. Some water cooled equipment can be replaced with air cooled equipment. Are you spending more for the water to run a process than you would spend to buy the goods or services directly? If the water use in the process can't be eliminated completely, perhaps the water can be reused. For example, can your business reuse process water to wash equipment instead of sending it to the sewer? Since few people would ignore ways to reduce chemical use, doesn't it make sense to look at reduction in water use as well? Rinsewaters can be used for lower priority cleaning applications just as you might use a slightly contaminated solvent for another use before you dispose of it. And just as used solvents can be reclaimed through distillation, water can be reclaimed through ultrafiltration. Furthermore, water recycled through ultrafiltration or reverse osmosis systems can be of better quality than supply water.

For More Information...

Energy Star® program: www.epa.gov/smallbiz/ or 888-STAR-YES.

Federal Energy Management Program: 800-363-3732.

Putting Energy Into Profits—Energy Star® Guide for Small Businesses is available through both of the above agencies.

For info on motor selection: www.eren.doe.gov/femp/procurement/pdfs/motor.pdf

The Department of Energy's Industrial Best Practices: www.oit.doe.gov/bestpractices/

State renewable energy assistance programs: www.energy.ca.gov/reports/500-99-008.PDF

Keeping your plumbing fixtures in good working order or upgrading fixtures can save both water and money. Below are several ideas and suggestions for you to try:

- An easy way to test for leaks in the toilet is to put food dye in the toilet tank. Let it sit for an hour or two without flushing. If you see dye in the toilet bowl, you have a leak. Check to make sure the overflow tube is not flowing continually.
- Consider an inspection program for leaks.
- Repair dripping faucets by replacing washers.
- It may be worthwhile to replace plumbing fixtures with more water efficient options.

Did you know how quickly a small water leak can add up? Toilet leaks can waste more than 50 gallons of water a day, 18,250 per year. One drip per second from a leaky faucet equates to 2,700 gallons of water per year.

- Faucet aerators with flow restrictors are available to reduce water use.
- Some heating and cooling equipment models reuse or recycle water.
- Automatic shut offs on water supplies such as sinks and hose nozzles will keep them from being left on.
- High pressure/low volume cleaning nozzles on spray washers also use less water.
- Cover liquid holding areas when not in use to reduce evaporation.

If you have grounds or greenspace, look at outdoor water uses, such as landscaping. Remember that established plants and lawns need less water than new ones, and many native plant species do with less water than imports. Here are some additional ideas:

- Adding mulch can further reduce your water needs.
- Set sprinkler patterns to avoid watering structures and concreted areas and install moisture-detection devices on automatic outdoor sprinklers so that they will not activate when it is raining.
- Water lawns early in the morning when temperature and wind speed are lowest to reduce evaporation.

- Upgrade to an irrigation system that relies on data on natural water loss through solar radiation, temperature, wind velocity, soil conditions and humidity to avoid over watering by replacing only the water lost.

Small adjustments in your process can help you to save money on your water and sewer bills. Keep track of these expenses so that you can gauge progress and quickly spot changes. Check your meter for increased use that can signal a problem. It is possible through continued improvements that your company could reach a point where there is "zero discharge" from your processes through water recycling and reuse. Other companies have achieved this level of efficiency motivated either by a desire to reduce cost associated with water consumption or to eliminate the need to permit wastewater discharge or to pay to dispose of wastewater. If possible, talk with other companies about methods they have used to save water. Your water utility company may also be a source of information on conservation methods.

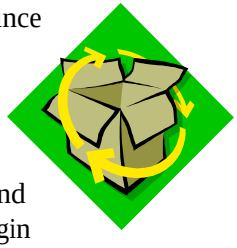
How can I reduce waste management costs?

Waste disposal can drive up unit costs on your production lines. Here are some tips for getting them under control:

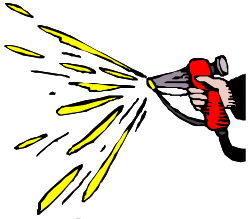
One strategy is to make sure you are managing your wastes efficiently. When you hire a hazardous waste contractor, ask them to help you find ways to cut down on costs. While it might seem that it is not in your contractor's best interest to do this, the hazardous waste market has gotten so competitive that contractors are looking for ways to add value to their service and set themselves apart from the competition. Things you should consult with your contractor about: Would accumulating your waste in a container of a different size or type make it less

costly for the contractor to handle? Could you save money by sending your hazardous waste solvents for use as fuel for cement kilns? Maybe there is a component in your waste that makes it hard to manage and drives up its disposal cost. Look for an opportunity to keep this item out of the waste either by collecting it separately or finding a replacement for it in your process.

Another approach is to look for ways to reduce the amount of wastes your business creates. A simple example is to reuse corrugated boxes two or three times before you send them off for recycling. Since new boxes are expensive, savings can add up fast. Let's use the example of a spray painting operation to illustrate several more waste recycling and pollution prevention ideas. Begin with the inventory of paints you keep on hand. Do you sometimes have paint that you can't use up because their shelf life has expired? Or excess paint that you have no use for anymore and have to be disposed? If so, take a look at your purchasing practices. Many vendors will work with you on the concept of "just in time and just the right amount." This means that they will deliver your raw material more frequently in amounts that nearly match your process needs. This may be a little more costly than ordering bulk quantities up front, but you may be surprised: with today's shipping options, many suppliers have the ability for quick delivery at only a little additional cost. Once you take into account all the costs of handling paint purchased in bulk (managing the material in storage, dispensing it, disposing of excess or expired material) you may find that you will come out ahead by opting for "just in time" delivery.



After you look at how paint is delivered to your process, take a look at the process itself. Sit down with the workers who are most familiar with the process and figure out exactly how wastes are created in the spray painting operation. Perhaps you are using fresh mineral spirits each time you clean the paint guns. What if you could keep some mineral spirits in a container to be reused the next time you clean the guns? It's likely that you use several rinses to get the guns clean and that the mineral spirits used in the final pass isn't very dirty. This could be reused in the initial rinse the next cleaning and brand new mineral spirits saved for the final rinses only. Every bit of chemical that is reused is saving that much new material and reducing the waste created by that amount too. So, you save money on both ends of the process.



Another strategy is to find a different material to use to clean the paint guns so that a hazardous waste would not be generated at all. There are new clean-up products available that are not combustible and aren't hazardous wastes once they are used up. Of course, it would be prudent to do some trials on a limited scale so you can make sure the switch is going to work just as well and be cost effective. Beyond paint operations, there are similar green products available for parts washing and stripping operations, to name a couple. Some of these products have been on

the market for more than a decade, so they have the bugs worked out of them. In addition to saving money and reducing the amount of hazardous waste your business generates, many of these greener products are also safer for employees to use.

Another thing you might try is to get better equipment. Perhaps you can upgrade your spray paint equipment to a gun that has a smaller reservoir but delivers the paint just as effectively. Use plastic liners to eliminate cleaning the gun reservoirs. Also, a newer HVLP gun is likely to be more efficient by having higher deposit efficiency and less overspray, thus saving money on paint purchases. An enclosed paint gun cleaning system that recycles cleaning fluid will also save money by losing less product to evaporation and re-using product. These process changes will save on waste disposal costs as well as product purchases. They will greatly reduce air emissions, perhaps to levels that do not require an environmental permit. If you have been operating under an air permit, you know how costly it is to keep up, so being able to drop the permit will save time and money too.

Creative Solutions...

A trophy company owner had a dilemma—finding an inexpensive shipping solution for the large-sized trophies. The large, odd-sized boxes he needed were more expensive than normal shipping boxes. Through the Minnesota Materials Exchange program, the business owner was put in touch with a chemical company that was willing to part with a supply of boxes that were the exact size he needed—for free! Since then, the trophy company has found other boxes and bubble wrap for packing trophies through the program. Using the Materials Exchange Program his company saves about $4,500 per year.

For other case studies see:
State of Texas: http://p2.utep.edu/success/index.cfm
State of Minnesota: http://www.moea.state.mn.us/p2week99/stories.cfm

How do I predict savings from proposed projects?

This part of the Guide has emphasized projects that are likely to have a financial payback. It is understandable that you, as the top person at your business, will want to know how much and how soon the return will be for the effort and funding invested in the project. But, after you have sharpened your pencil, what exactly do you include in a cost work up?

The question you need to answer is, “What is the up front cost of the change you are considering, and how long will it take for enough savings to accumulate to offset this up front cost?” This is the “return on investment,” and usually, if it will take more than two years for benefits to outweigh the initial outlay, it may be difficult to convince you and your staff to do the project unless there are other really good reasons to do it, such as improved employee safety. With

this in mind, here are some cost categories to consider as you work up your analysis.

Initial start up costs. In addition to the cost of purchasing, will the change require remodeling or modifications to meet building codes?

Changeover costs. When changing from the old process to the new process, what will happen to excess raw materials that can no longer be used? Will employees need training before they can begin using the new process? Will you need a trial period to work out any bugs?

With the up front costs nailed down, compare the old process and the new process head to head.

Operating costs. These can include electricity, water use, and ventilation systems. Also look at whether the new process will be more or less labor intensive. Will the new process be more productive, for example, higher units of output per hour or lower amount of raw materials per unit?

Environmental management and compliance costs. What are the waste management costs? Will compliance be made easier by the new process? For example, will it eliminate a required report to regulators? Will it put you in a hazardous waste generator category with reduced requirements? Will you be able to discontinue an environmental permit? If so, try to estimate the time company employees put into these efforts to come up with an estimate of dollars saved.

For More Information About Pollution Prevention...

Environmental Protection Agency

Pollution Prevention Information Clearinghouse: *www.epa.gov/opptintr/library/libppic.htm*

Envirofacts: *www.epa.gov/enviro/index_java.html*

Environmentally Preferable Purchasing web site: *www.epa.gov/oppintr/epp*

Region 1: *www.epa.gov/region1/compliance/assist/p2page.html*
Region 2: *www.epa.gov/r02earth/p2/p2home.htm*
Region 3: *www.epa.gov/reg3p2p2/*
Region 4: *www.epa.gov/region4/air/polprev.htm*
Region 5: *www.epa.gov/reg5rcra/wptdiv/p2pages/index.html*
Region 8: *www.epa.gov/region08/conservation_recycling/p2home/p2home.html*
Region 9: *www.epa.gov/region09/cross_pr/p2/index.html*
Region 10: *yosemite.epa.gov/R10/OWCM.NSF/prevent/prvntrec*

Other

Pacific Northwest National Laboratory P2 website: *www.pnl.gov/p2/*
Kentucky Pollution Prevention Center: *www.kppc.org/*

Avoided costs. In addition to avoided waste disposal costs, consider whether the new process requires less raw material inputs, thus saving costs in purchasing them. Will the new process eliminate spills and their associated costs? Will there be less personal protective equipment and safety training required?

It may not be a formal and totally complete analysis, but if you think through all of the above categories you will have a much clearer picture when you get done of whether your idea is as valuable as you first thought.

IV. Keeping the Program Alive

In a nutshell...

Now that your tree is fully mature, you want to make sure it will stay healthy over the long run. Could it become susceptible to disease or get blown down in a storm? To this point, you have put in place the essential functions of environmental management; you've taken some opportunities to save money. But, you worry about losing the momentum. You want to bring your environmental management program up to a level that no matter what changes occur at your business, it will reliably steer your business activities in a direction that keeps employees safe, avoids bad effects on the environment, complies with regulations, and saves money. This Section of the Guide helps you accomplish that. It will help you get employees more thoroughly involved in environmental management. It explains how a company's environmental policy can act as a tap root, feeding environmental concerns into all decision making branches. While it may seem like you have to devote more time at first, you will be streamlining and integrating environmental responsibilities—thinning them out and making them easier and less time consuming for each employee. Then you can apply methods to gauge progress over time, set goals, and form a simple environmental management plan to guide your program towards improvement. Once this is done, you will be able to have complete confidence in the long term vitality of your environmental program. Then, you will be ready to make people outside your company aware of your business' exemplary performance in environmental management by working through Section V.

How do we involve our employees in environmental management activities?

By now you have taken some steps to put a basic environmental management program in place and find that it makes good sense. You, as the business owner, continue to offer visible support for environmental management so the program is taken seriously. But, do you wonder how you are ever going to keep it going while still meeting everyday business demands? It's time to enlist some help. Environmental efforts within your company will be more successful if employees are directly involved. Employees are a great source of knowledge on environmental issues related to their work areas and the effectiveness of current procedures. Consider setting up an Environmental Management Team and making a company environmental policy. The team can then use the policy to make the company's environmental efforts more efficient and to get more employees actively involved in them.

The team approach will help to fit another activity into an already busy schedule and the discussion it brings about will create a more complete picture of where you currently stand and where you go from here. If you can't guide the Environmental Management Team all the



time, appoint a team leader to encourage communication between employees, supervisors, and company leadership. For this to work, the team leader needs some authority to keep things moving. The team should include representatives from throughout the company. For example, at a small company, a team could include supervisors from each process line as well as people responsible for human resources, sales, and plant operations. In a very small company, the team leader and the business owner may be the same person, and the team may consist of the entire staff. Small companies can have a real advantage over larger companies. Communication is easier, staff is used to having multiple roles, and processes are well understood by everyone.

The first task is to write a company environmental policy. You may want to do this and pass it down to the team, or you can ask the team to do it for your review and approval. A company environmental policy is the shared starting point for people to understand the basic environmental beliefs and commitments of the company's leaders. It states how environmental concerns are considered in the company's decision making and how these concerns fit into its day to day activities. The policy should reflect your commitment to the environmental program. It should be short, to the point, and well communicated throughout the company so that employees understand and remember the policy. All the other steps for improving the environmental management program are geared towards meeting the environmental beliefs stated in the policy.

Ways to Keep Employees Involved

1. ***Post the Environmental Policy at prominent locations throughout your business.***
2. ***Set up a suggestion box for environmental improvements. Recognize or give awards to employees that make suggestions that get incorporated into environmental management procedures.***
3. ***Inform employees through a company newsletter or bulletin board and provide them updates on the company's progress in fulfilling its Environmental Policy.***

How do we go about getting things written down and why should we spend time on this?

With the policy in hand, the team can begin to organize and write down the activities that make up your environmental management program. To do this, bring together and examine all parts of the environmental management program your company developed by working through Section II of the Guide. This written program will support your policy and later form the basis for setting goals and making an environmental management plan. Your written program should

assign roles and responsibilities for accomplishing the activities that you have identified. Break these down into small manageable jobs that are clearly defined so that everyone knows what their job is and nothing gets missed. The benefit of doing this is that when you add up the duties of all individuals it will provide complete coverage of your company's environmental responsibilities and commitments, but no one person will have too much to do.

Another good reason to spend time on a written program is that the team will see where there is duplication of effort that can be streamlined. For example, your team may discover that employees are being pulled out of their work for training several times per year. What if your company set aside time for training covering all requirements on one day each year? You can also streamline training by covering more than one regulation under a given topic—such as training on labeling requirements that covers requirements of both the Occupational Safety and Health Administration (OSHA) and EPA, as well as any local requirements such as those of your municipal fire department.

Another area that can often be streamlined is spill preparedness. Some small businesses may have more than one spill response plan—one to cover storm water regulations, one to cover hazardous waste spills, and one to cover petroleum product spills. For a small company where these plans are not too complicated, covering all the requirements in one plan will reduce the amount of effort it takes to keep it up to date. It makes the plan more effective too because employees don't have to learn a different set of procedures for each plan, and try to remember during a spill situation which plan applies to it.

With a good overview of the environmental management program, the team can begin to look at more detailed procedures that need to be consistent with the written program and the environmental policy. Ask employees to write down what they do during normal daily activities. Getting this written down makes sense so that nothing gets forgotten and procedures are easy to communicate. Written procedures make cross training easier, ensuring that someone will be available to perform a critical function if the regular employee is away. They can make turnover easier because the person hiring will have a better idea of what each job entails.

Once they are written down, the team can evaluate procedures so that each employee's activities include good environmental management practices. Without good environmental management practices, employees may get the impression that anything other than steps absolutely crucial to making the product are "extras." They have to rely on word of mouth for information, and the answer depends on who they ask. With no good environmental management practices, they are more likely to take shortcuts when pressed for time that are not

safe or good for the environment. Your company can reinforce the importance of good environmental management practices by making them part of job performance evaluations. Supervisors can use the good environmental practices in written procedures to explain to new employees how the company environmental policy relates to their job.

When evaluating environmental management practices, you should see if best environmental management practices have been identified for your business sector by environmental regulatory agencies or your trade or industry association. For example, EPA Small Business Division has compiled best environmental management practices for certain sectors in its publication called *Plugging into Best Environmental Management Practices*. To find out what sectors are included and, if they pertain to your business, obtain a copy, call EPA's Small Business Division at 800-368-5888.

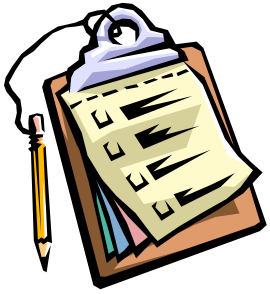
How does this fit in with my company's safety or quality management program?

While the focus here is environmental management, don't overlook the opportunity to integrate with other business management systems such as process quality, production control, or safety management. They offer many opportunities to complement your environmental management efforts and vice versa. If you are already doing job hazard assessments to develop safety procedures, it is a simple extra step to address environmental hazards at the same time. Material safety data sheets that you must have for your safety program and product specification or quality verification sheets that you maintain for your quality program offer a wealth of information about environmental issues. If your business has an electronic business management system, this puts information at your fingertips such as rates of raw material use, product outputs, and cost data—a great resource for environmental performance improvement.

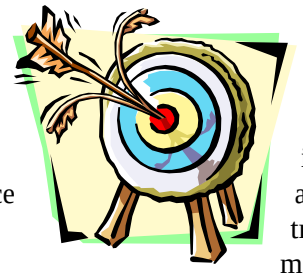
Is this working—are we getting the results we wanted?

After your environmental management program has been in place a while, you might be wondering how you can tell how things are going. Are you making progress on getting into compliance? Are all your shops and operations getting the information they need to keep moving ahead?

Audits are a great way to gather information on how well your environmental management efforts are working. These can be done internally under the oversight of the Environmental Management Team or your business can get outside help. By involving employees in environmental audits, you will give them a first hand look at what they are doing right and what still needs



improvement. If getting into compliance is a big priority, then it is wise to get some assistance from outside your company. Fortunately, there are many outside resources you can draw on. A number of compliance assistance organizations make audit checklists freely available that cover specific regulations. A representative from your state Small Business Assistance Program can come do a compliance audit for you. This has the added weight of an outside expert without the headaches that you would get from a true regulatory inspection. Since a compliance audit conducted by an outside organization feels a lot like a regulatory inspection to your employees, it is also good practice. After each audit, organize findings and follow up actions by work area to make it easier to pass them on to those responsible. In addition, the auditor should provide a summary of larger tasks that need to be done company-wide.



Your audits help you gauge which areas you are making progress in and which areas are lagging. Once you have audit results, it is a good time to set some goals and targets. After all, there is a lot of truth to the old adage, "What gets measured gets done." Get the Environmental Management Team together, go over the audit results with them, and ask them for their impressions of how things are going. This is a great time to go over other information that tells you how you are doing: How many spills did you have last year? Are the consumption of chemical raw materials and the amount of waste generated per unit of product produced increasing or decreasing? Do problems in a particular area signal that procedures need to be updated? Are new employees getting trained soon after they come on board?

As a group, decide on a few goals. Be sure that these goals are realistic and fit into previously established organizational goals. With all the other demands on small businesses, setting expectations that are exceedingly difficult to meet would sure put the chill on the progress you've made so far. After the group agrees on a goal, then they need to decide how to measure in the future whether or not you are making progress toward your goal and by how much you want to improve. This is your target.

One last bit of advice on goals and targets. Don't set too many of them in a given year, or you will wind up with a mini-bureaucracy of

On Setting Targets

Let's say your goal is to reduce hazardous waste. You could look for a percentage reduction in the amount of all hazardous waste generated. But, this won't be meaningful if your waste generation is linked to production and your production doubles in the coming year. What if you look for a percentage reduction in hazardous waste per unit of product produced? This is a measure you can use to set a meaningful target—say, a ten percent reduction in hazardous waste per unit produced.

your own. Remember, the beauty of this tool is that you can get back together next year, look at your results to see whether your company met its goal and then regroup. You can choose a different approach if the first one you tried isn't as useful as you hoped. You can add new goals—perhaps in an entirely different area or production line. Once you have the system set up to measure performance, keeping it going will be a lot less time intensive than the initial investment to get it up and running. It is a good idea to take your time to select goals that have a lot of mileage and find the right measures for them. In just a few years, you will be able to demonstrate in hard numbers the value of your environmental management program, and, well, that's just good business.

You may not realize it, but you have just laid the groundwork for an effective annual plan for your environmental management program. Take your company policy; add a summary of audit results, accomplishments, and setbacks for the past year. Then, review the thinking used to analyze problems, set criteria, select goals for the coming year, and update the list of goals and targets. Now you have an environmental management plan. Of course, this is a simplified planning approach—but once you have the process established, you can build on it. Whenever the plan changes enlist the Environmental Management Team to communicate the changes. Employees want to know why it is important to accomplish a particular environmental task and what part they are to play in achieving selected goals.

OK, now you have your written environmental management program, you have a plan for what you want to improve and how you are going to measure improvements. By now, employee environmental management responsibilities are so well defined and accepted that they are second nature—just like filing a timesheet, or starting up their line at the beginning of a shift. There's only one last thing your company needs to do to make your environmental management program complete. Make sure top management at your company checks in on a regular basis.

As the small business owner, you may need to periodically do your own assessment of how the environmental management program is working. Revisit the environmental policy and make your own evaluation of whether it is still in synch with company goals. Finally, pull this together into a written review to give the Environmental Management Team feedback on what needs to be changed, if anything.

What exactly is an environmental management plan?

An environmental management plan describes the actions an organization is taking to determine how it affects the environment, complies with regulations, keeps track of environmental management activities, and meets environmental goals and targets. It also documents key elements of environmental management. It is the compass for your environmental management program because it tells you what direction you are going in.

V. Taking it Outside Your Facility

In a nutshell...

The environmental management program you have cultivated is providing value to your customers and your community. This Section of the Guide explores the value of paying attention to relationships beyond the walls of your small business to show off and improve your environmental management activities. It suggests ways to make neighbors, the surrounding community, customers, suppliers, and others aware of your environmental management achievements and how to team up with them to improve environmental performance.

How do I communicate our environmental management efforts to those outside of our business?

There are people outside your business who are either interested in your efforts or can help you with them. Now that your company has invested effort to develop a good environmental management program it's time you got a pat on the back for it. One relationship that you are already very interested in is the one you have with your customers. After all, that's what keeps the money coming in and the wheels turning. But, the relationships your business develops with community officials, suppliers, and the regulatory community are also important to your business. That is where you get information and the support to make your program more effective.

The opinions of your neighbors and the community around you are important to the success of your business. How do you tell these people that you are taking steps to be environmentally friendly? First, you can post a copy of your company environmental policy so that it is visible to anyone who visits your business. Look for a way to make them a partner in your efforts such as having them return your package for a refill. This gives them yet another reason to come see you. Another idea is to sponsor an education day for a local school biology, ecology, or environmental science class to tour your facility. Every parent that asks "What did you do in school today?" will get to hear a little about your company. You can also post information or make information available on the latest improvement you made at your business that made a positive impact on the environment. Place this information in your front office to help waiting visitors pass the time.

Companies who don't see their end users in person can add information about positive environmental achievements directly to the product packag-

ing. You can modify your packaging to show use of a post consumer recyclable product or the potential for recycling after use. These steps may help catch the eye of new customers as well. You can create a refill version of your product that eliminates the large packaging completely. This may attract the customer who is conscious about the amount of waste they generate or it may just be more convenient to carry or store. You can also pursue obtaining environmentally friendly designations for your products such as "Energy Star®" or "Grown in accordance with the Californian Organic Foods Act." Consumers in many markets have proven that they are interested in buying environmentally superior products. People will invest extra money in energy efficient products if they know that these products will pay for the difference in future savings. The market for organically grown produce continues to increase even though the prices for these items are substantially greater than their less environmentally sound competitors. There are organizations and web sites that spread the word about green products. Your business may be able to obtain a listing on these sources if your product is produced in an environmentally friendly manner.

How can the activities of our suppliers complement our efforts towards environmental management?

Your suppliers can be an extension of your successful program. Once you communicate to your suppliers and vendors that you favor raw materials and services that result in improved environmental performance, they can assist you with your needs. They can reformulate your raw materials to meet your waste reduction goals and help you find better substitute products. They can offer "just in time" delivery, allowing you to keep less hazardous chemicals on-site at any given time, and possibly to use smaller containers. Some suppliers will allow you to return unused product to be beneficially reused or recycled in their process. You can encourage them to incorporate recycled materials in their products and packaging, or to modify the quantity of product or the product container to best fit your needs. You can talk with them about the option of returning their packaging for a refill. Many companies have discovered that it saves them money to pick up the empty containers when they deliver fresh product, rather than to constantly replace them.

When you consider a new product:

- Ask manufacturers for substantive data on their green products compared with conventional products.
- Obtain customer references to verify product performance.
- Request a guarantee policy and special prices to test green products on a trial basis.
- Determine whether another organization has certified that the product is environmentally preferable.

Of course you want to make sure that the greener products perform to acceptable standards, are competitively priced, and do not offset environmental gains in other areas, such as a cleaning product that requires more water. There are resources that can help you more quickly identify environmentally superior products, or get a sense of what's available in the market. EPA's Comprehensive Procurement Guidelines at www.epa.gov/cpg/ provide recommended specifications for recycled content for a variety of products. Another resource is the Green Seal program at www.greenseal.org.

What's the key to improving my image in the greater community?

There are many organizations in place to assist small businesses. Taking advantage of these services is viewed positively by regulatory agencies and can offer many benefits. A great strategy is to become active in the trade or industry association for your type of business. Through this relationship, you will get valuable information about new regulations, and have a much greater voice on Capitol Hill by joining with others. These can connect businesses for peer exchange or business-to-business mentoring. In addition to being a great resource on questions about upcoming and existing regulations, your state's Small Business Assistance Program staff can help you identify what trade and industry associations are out there and help you develop a strategy to get your message out to the community. The Regulatory Flexibility Act requires that the impact of new regulations on small businesses be studied before they go into effect. Staying in the loop will allow you to put your two cents in before another rule is added to the books. The Small Business Assistance Program staff can also tell you about other services you might want to take advantage of, such as agencies that help you find pollution prevention ideas that save your business money. You might also want to become involved in your state's Compliance Advisory Panel, a group of small business owners appointed in some states to advise the Small Business Assistance Program on how it can better serve small businesses. There is also a National Compliance Advisory Panel that advises EPA.

Consider having a representative from your business get involved in local boards or committees such as the Local Emergency Planning Committee. Often the Chamber of Commerce will have an environmental affairs group. The regulatory agency may have an industry feedback group of some type. Their meetings give you an opportunity to obtain information about new developments and to ask questions and share concerns in a relaxed atmosphere.

VI. Summary

In a nutshell...

Because you have invested effort regularly over many months or even years, your environmental management program has grown strong. Like a healthy tree, it provides protection for you and your neighbors. You have set up an approach to environmental management that naturally leads to ongoing improvement. You may not realize it, but you have put in place an environmental management system. If you want to, you can even seek outside recognition or official verification of your environmental management system. This Section of the Guide explains the components of an environmental management system and how you can determine whether you have all the components in place. It also describes what kinds of official recognition you can seek for your environmental management system, and what to consider when deciding whether seeking recognition is a good idea for your business.

What is an environmental management system?

An environmental management system (EMS) is an organizational approach to environmental management that incorporates quality improvement principles (sometimes referred to as "Plan-Do-Check-Act") to develop, achieve, review, and maintain an environmental policy. The components of an environmental management system were outlined in 1995 in a standard developed by the International Organization for Standardization called ISO 14001. Since then, many approaches to environmental management systems have been developed, but nearly all have similar components:

Environmental Policy. This is the statement by top management of their intentions and principles in relation to environmental performance. It is at the heart of the environmental management system and provides the framework for planning and action the organization takes through the environmental management system.

Environmental Planning. The steps in formal environmental planning include figuring out all the ways the business impacts the environment (called "environmental aspects"), identifying the legal and other requirements that the business must comply with, setting goals and targets to improve environmental performance, and putting in place a written program to achieve

your goals. The plan also documents key elements of environmental management including the environmental policy, responsibilities, environmental manual, applicable standard operating procedures and best management practices, recordkeeping, document control, reports, communication, training, monitoring, and corrective action.

Implementation and Operation. This part of the environmental management system defines the structure and assigns responsibility for environmental management. It lays out training needs and how they will be met. It sets up communication channels to make sure that everyone within your business is aware of the environmental management system and that persons outside the company can provide input. It puts in place an information management system that includes document control. It outlines procedures for control of operations that impact or have potential to impact the environment and sets up an emergency preparedness and response program.

Checking and Corrective Action. This includes the methods for monitoring processes and measuring their impact on the environment. It identifies what actions the business takes to correct problems that come up and to prevent them from happening again. It defines who is responsible for taking action if there is nonconformance. It defines what environmental records must be kept and for how long. It also explains the audit program used to check on how well the business is meeting its environmental management goals.

Management Review. This is a process in which the business owner and other key people review the environmental management system to determine if it is still suitable and effective, and whether the business is doing what it has committed to do.

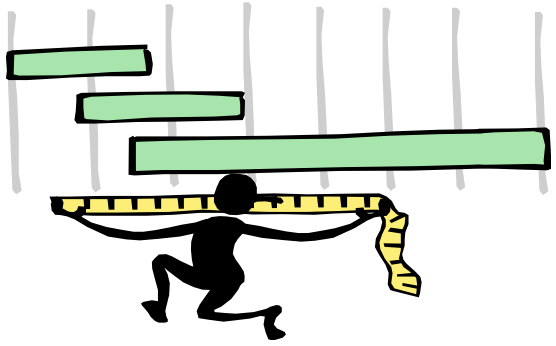
How does what I've done so far relate to an environmental management system?

Although the description of an environmental management system may be daunting, how to put it in place has already been described in earlier Sections of the Guide, as shown by Table 2. You can see that if you continue to make steady progress on the recommendations in Sections II through V of the Guide, you will have nearly all the components of an environmental management system. Even if you don't have all of the elements in place yet, keeping them in mind helps you get a vision of the full potential of your environmental management program as it keeps improving over time.

How do you know when you have assembled all the components of an environmental management system? You can find this out yourself by comparing what you've got in place at your business against the ISO 14001 standard or another widely accepted benchmark. This is referred to as doing a "gap analysis." If your gap analysis finds that you have all the components of the environmental management system in place, then you need to look at whether your environmental management system is perform-

ing the way you want it to. Is your business' performance consistent with your environmental policy? Are you making forward progress on environmental objectives and targets? This is referred to as doing an audit of your environmental management system, or an "EMS audit." (This is the last piece you need to put in place to have all the components of an environmental management system.) Let's say that your gap analysis shows that you have all the components of an environmental management system in place, and your EMS audit shows that your environmental management system is performing as it was intended to. If so, then, congratulations! You have put in place an environmental management system.

To demonstrate that your business has met all of the criteria for an environmental management system, you can also seek verification or certification from an outside party. For example, some states have programs (often called "environmental leadership programs") that give recognition, awards, or other perks to businesses that demonstrate they have an effective environmental management system in place. EPA also has a program, called National Performance Track, that recognizes and encourages top environmental performers—those who go beyond compliance with regulations to attain levels of performance that benefit people, communities, and the environment. (See www.epa.gov/performancetrack/index.htm.) You can obtain the most official type of approval by hiring an outside auditor to come in and look at your environmental management system to confirm that it has all of the elements required by ISO 14001 and is functioning properly. If it passes the audit, your company will be "ISO 14001 certified." This certification carries with it a distinction similar to being "ISO 9001 certified" for quality management.



Why would I want to have an environmental management system?

After working through previous Guide Sections, you already know many of the benefits of having an environmental management system. It has helped you cut costs. It gives you a comfort level that you have covered your bases as far as meeting regulatory requirements, and that there will be no unpleasant surprises. It makes it easier for you to answer inquiries from employees, neighbors, community leaders, and regulators about your business' environmental performance. It demonstrates your business' commitment to being a good neighbor and puts information at your fingertips about your business' track record and current environmental efforts.

VI. Summary

Table 2: Correlation Between Environmental Management System (EMS) Components and Guide Sections

EMS Component	Guide Section(s) and Part(s)
Environmental Policy	IV. How do we involve our employees in environmental management activities?
Environmental Planning	
▶ Identify environmental aspects	II. How can I understand how my business is affecting the environment?
▶ Identify legal and other requirements	II. How can I get a handle on environmental laws and regulations?
▶ Set objectives and targets	IV. Is this working—are we getting the results we wanted?
▶ Written plan	IV. Is this working—are we getting the results we wanted?
Implementation and Operation	
▶ Structure and responsibility	IV. How do we go about getting things written down and why should we spend time on this?
▶ Training	II. What are the basics of good environmental management? IV. How do we go about getting things written down and why should we spend time on this?
▶ Communication	II. What are the basics of good environmental management? IV. How do we involve our employees in environmental management activities? V. How do I communicate our environmental management efforts to those outside of our business? What's the key to improving my image in the greater community?
▶ Documentation and document control	II. What are the basics of good environmental management? IV. How do we go about getting things written down and why should we spend time on this?
▶ Operational control	II. All Parts. III. How can I use the process map to save money? How do I predict savings from proposed projects? IV. All Parts.
▶ Emergency preparedness and response	II. What are the basics of good environmental management? IV. How do we go about getting things written down and why should we spend time on this?
Monitoring and Measurement	
▶ Monitoring and measurement	III. How can I use the process map to save money? How do I predict savings fromproposed projects? IV. Is this working—are we getting the results we wanted?
▶ Non-conformance and corrective and preventive action	II. What are the basics of good environmental management? IV. Is this working—are we getting the results we wanted?
▶ Records	II. What are the basics of good environmental management? IV. How do we go about getting things written down and why should we spend time on this?
▶ EMS audits	IV. Is this working—are we getting the results we wanted?
Management Review	IV. Is this working—are we getting the results we wanted?

So why would you want to obtain outside recognition or certification for your environmental management system? Obtaining recognition from a state environmental leadership program or EPA's National Performance Track may impress some of your customers and distinguish you from your competitors. ISO certification is expensive, so it may not be worthwhile for a small business to do. But, if one of your major customers requires it, as some of the major automobile manufacturers have of their suppliers, it may be worth the money. Also, the rigor of the ISO certification process provides a structure and focus that prevents environmental management efforts from backsliding over time.

Why are trade organizations and regulatory agencies supporting environmental management systems?

Many businesses have demonstrated that through their environmental management system they can make great improvements in their environmental performance while saving money and increasing productivity. As a result, trade associations and other business organizations support environmental management systems because they make good business sense. Also, if the majority of companies in a business sector adopt environmental management systems and show greatly improved environmental performance, this enhances the long term viability of the business sector, and gives it a fresh marketing angle.

Regulatory agencies support environmental management systems because they are aware that the traditional "command and control" system of environmental regulation is limited in its potential to have major positive impacts on the environment over the long term. They are more open to working with industries and trade organizations on more flexible and performance-based approaches to improving environmental performance than traditional compliance methods. When making agreements to allow such flexibility, regulatory agencies often require businesses to put an environmental management system in place to show accountability for their actions in the absence of certain elements of the traditional compliance framework. This allows regulatory agencies to make forward progress towards streamlining regulations while accounting to the public that the new systems are working. Regulatory agencies have also incorporated the environmental management system approach into their enforcement activities. It is very common for regulators to require a violator to put an environmental management system in place as part of the settlement agreement.

How can I get help with putting an environmental management system in place and getting recognition for it?

Your Small Business Assistance Program can

give you assistance with environmental management systems. (Again, to get contact information for your state, visit www.smallbiz-enviroweb.org/ or call EPA's Small Business Division at 800-368-5888.) They can also help you make application to EPA's National Performance Track program, make you aware of other recognition programs that your business may qualify for, or put you in touch with reputable third party auditors if you wish to seek ISO 14001 certification. EPA's Small Business Division can also provide assistance and refer you to other contacts and resources. Finally, if you want to learn more about environmental management systems, there is a wealth of resources available at EPA's website, www.epa.gov/ems/. At that website, you might be especially interested in the case study for Federal Foam, a small business in Wisconsin that decided to seek ISO 14001 certification. Another good resource is the companion publication to this one, *Documenting Your Environmental Management Plan—A Workbook for Small Business*, which includes worksheets for achieving the steps outlined in this Guide. It is available through EPA's Small Business Division and at www.epa.gov/ems/. EPA's Small Business Division is also collecting best management practices for selected business sectors. If your business sector is included, you may want to take a look at these.

What's the bottom line here?

This Guide has given you tools to develop a complete environmental management system, geared to your business' available time and resources. No matter how long it takes, if you follow the recommendations in Guide Sections II through V, you will have a solid compliance program, an environmental policy to focus your efforts, programs and procedures that are written down and kept up to date, and clearly defined roles that are understood by each employee. You set goals and targets for each year and have a plan to move your business in the direction of improvement. You work at this over time because it makes good business sense, increases your business' productivity, and brings you peace of mind. If you have gotten this far, your business has all the components of an environmental management system and is in a good position to seek outside verification. But, in the end, whether or not it will be valuable or cost effective to seek outside verification of your environmental management system is up to you.

Table 3: Major Categories of Environmental Regulations

Type of Impact	Applicable Law(s)	Overview of Regulations[1]
Wastes containing chemicals even in tiny amounts. Examples: Parts washing fluids, paint thinners, acids, caustics, toxic chemicals like pesticides or chlorinated solvents, and wastes that have toxic metals in them like lead, cadmium, or chromium.	Resource Conservation and Recovery Act (RCRA) of 1976 and subsequent amendments	*Tells you what a hazardous waste is and sets requirements for taking care of it on-site, moving it from one place to another, and where and how it may be treated or disposed. Regulation includes special provisions to make recycling easier for universal wastes: mercury-containing lamps, batteries, mercury switches, and recalled pesticides.* Thresholds: Applies to any amount of hazardous waste. Requires Permit? Yes, for certain hazardous waste activities. Regulatory Reports? Yes, annually, for some, but not all, generators, and any business that must have a permit. May also require notification of the regulatory agency of hazardous waste activities depending on the amount of waste generated. Important Considerations: The law requires your business to determine whether any of its wastes are legally classified as hazardous. Make sure this is done properly to avoid severe financial and liability risk if wastes are illegally disposed (even by accident).
Waste disposal liability. Example: The company that took your waste ten years ago went bankrupt, leaving a contaminated landfill. Now you may be required to share in the cost for the site's clean-up.	Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)	Maintains "Superfund" to pay for clean up of hazardous waste sites up front. Later, the Environmental Protection Agency (EPA) can recover costs from each "Responsible Party (RP)." Those who once owned the site, presently own the site, or sent waste to the site can be an RP. Thresholds: Anyone who owned or contributed waste to a site can be an RP. Requires Permit? No. Regulatory Reports? No, but lots of other paperwork. Important Considerations: If you ever receive a letter that suggests your business may be an RP, get a good environmental attorney before you reply.
Air pollutants released from business operations. Examples: Boilers and furnaces, paint and dye application, parts cleaning, sand blasting or other dusty operations.	Clean Air Act (CAA) and its amendments	Sets up a system of controls to be sure that pollutants coming from a business' operations or heating plant do not hurt the overall air quality in the region. It regulates numerous pollutants. Of particular concern to small businesses are volatile organic compounds (VOCs), nitrous oxides (NOx), and hazardous air pollutants (HAPs), though additional ones may apply. Thresholds: Numerous thresholds for specific air contaminants, usually given in tons or pounds per year. These thresholds are based on your business' potential to emit (PTE), assuming 24 hour production at peak rates, as well as its actual emissions, so your business could be covered even if its actual emissions are low. Requires Permit? Yes, depending on what contaminants are emitted and the amount of actual and potential emissions. Regulatory Reports? Yes, annually, if your business is subject to a permit. Daily monitoring and quarterly reporting may also be required depending on the type of operation. Important Considerations: A business may require a permit based on its potential to emit, even if its actual emissions do not exceed thresholds. Also, you may have to obtain a permit before you can begin construction of operations that will increase air emissions.
Contaminated water from business operations or propery. Examples: Process water going off your property through a drain. Storm water that runs off your property through a storm drain or another waterway.	Clean Water Act (CWA) and its amendments	Sets up a system of controls to be sure that contaminated water coming from cities, businesses, and farms does not hurt waterways such as wetlands, ponds, streams, and lakes, or harm groundwater quality. Industrial wastewater cannot be discharged into a septic system. If you put anything but sanitary waste down the drain, you must abide by the local sanitary sewer ordinance. Thresholds: Vary for each contaminant based on where it is going and what authority has control. It can be very small, such as a couple parts per million. Requires Permit? Yes, if your business dumps contaminated water into a waterway, onto the ground, or into the street, a storm drain, or a ditch, you may have to obtain a permit, even if you treat the wastewater first. Some local authorities also require a permit for discharges to the sanitary sewer. Under storm water regulations, even if you are not required to have a storm water permit, you still may have to file a "no exposure certification." Regulatory Reports? Yes, if your business is covered by the permit requirements. Monitoring may also be required. Businesses required to have a storm water permit will also have to submit a storm water pollution prevention plan.

[1]*This table provides only a general overview of regulatory requirements. It is not all inclusive and does not describe specific state or local requirements. Its purpose is to give you an overall understanding so you will be better prepared to seek assistance from your state Small Business Assistance Program contact and to begin looking at specific regulations that apply to your business.*

Table 3: Major Categories of Environmental Regulations (cont'd.)

Type of Impact	Applicable Law(s)	Overview of Regulations[1]
Chemical spills to air, water, or land. Examples: A chemical leaks into a storm drain and contaminates a stream. A valve on your refrigeration unit fails, releasing ammonia gas to the air.	Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)	Makes possible a national emergency response program for certain spills and accidental releases. If your business releases certain chemicals, called "hazardous substances," you must notify the National Response Center. Thresholds: Amount of a substance released is more than or equal to its listed "Reportable Quantity," or "RQ." These amounts vary by substance and can be as small as one pound. Requires Permit? No. Regulatory Reports? Yes, in follow up to reported releases.
	Emergency Release Notification under the Emergency Planning and Community Right-to-Know Act (EPCRA)	Requires you to notify state and local emergency planning commissions immediately if your business has an unplanned release of certain chemicals. In addition to the CERCLA hazardous substances mentioned just above, it covers "extremely hazardous substances" that are listed in regulations put in place to carry out the Emergency Planning and Community Right-to-Know Act. Thresholds: Amount of a substance released is more than or equal to its "Reportable Quantity" (RQ). Requires Permit? No. Regulatory Reports? Yes, in follow up to reported releases.
Emergency planning for chemicals stored and used at your business site. Example: Your business has hazardous chemicals on-site that could pose a danger to the local community if they spilled, were released, or involved in a fire.	*Emergency Planning* under EPCRA	Puts in place coordination and planning so that state and local government agencies can prepare for and respond to hazardous chemical spills. If your business is covered by these requirements, you must notify state and local planning commissions and assist these agencies with maintaining the local emergency plan, including providing pertinent information. Thresholds: If the amount of a listed substance kept on-site at your business is more than or equal to the listed Threshold Planning Quantity (TPQ). then you must participate in local emergency planning as described above. TPQ's vary by substance and can be as little as one pound. Requires Permit? No. Regulatory Reports? Notification of any changes at your facility that affect emergency planning.
Telling the community and local responders about chemicals stored and used at your business site. Example: Your business has hazardous chemicals on-site that could pose a danger to the local community if they spilled, were released, or involved in a fire.	*Hazardous Chemical Reporting: Community Right-to-Know* under EPCRA	Provides a way for the pubic to access information about hazardous chemicals that community businesses use, store, or release to the environment. Requires you to submit copies of Material Safety Data Sheets for certain hazardous chemicals you keep and use at your business, and to report how much of each you have. Thresholds: For listed substance, the TPQ or 500 pounds, whichever is less; for all other OSHA hazardous chemicals, 10,000 pounds. Requires Permit? No. Regulatory Reports? Yes, an annual chemical inventory report, called a "Tier 1" or "Tier 2" report is required. Which report your business will have to file depends on local and state requirements.
Telling the community and regulators about chemicals released into the environment as part of your normal business operations. Example: Your business has hazardous chemicals on-site that could pose a danger to the local community if they spilled, were released, or involved in a fire.	*Toxic Chemical Release Reporting: Community Right-to-Know* under EPCRA	For certain hazardous chemicals used by certain industries (as determined by SIC code), requires you to measure or estimate the amount that came on your site during the year and what happened to it; such as, how much went into your wastestream. You are exempt if your business does not have 10 or more full-time employees. This information is made available to the public, such as on EPA's EnviroFacts web site. Thresholds: You manufacture or process 25,000 pounds or otherwise use 10,000 pounds of a listed hazardous substance at your site in a year. (Certain chemicals of special concern have lower thresholds, like mercury at 10 pounds, lead at 100 pounds, and polycyclic aromatic compounds at 100 pounds.) Requires Permit? No. Regulatory Reports? Yes, an annual Toxic Release Inventory (TRI) that identifies the amounts of toxic chemicals, covered by the requirement, your business releases to the environment.

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Table 3: Major Categories of Environmental Regulations (cont'd.)

Type of Impact	Applicable Law(s)	Overview of Regulations[1]
Managing Chemical Risks. Example: You have a process within your business operations that could release a dangerous amount of toxic chemicals to the air if it malfunctioned.	*Chemical Accident Prevention* under the Clean Air Act	Requires you to evaluate certain processes of your business operations to determine if it could pose a danger to your neighbors through an accidental chemical release. If so, you must undertake planning to prevent malfunctions from occurring and to reduce the harm from a chemical release if it does occur. Thresholds: The amount of a chemical in a process is equal to or more than its listed threshold. Requires Permit? No. Regulatory Report? Yes, requires initial submission of Risk Management Plan and registration form which documents that your business has completed the hazard assessment, analysis, and planning necessary to prevent and respond to accidental chemical releases from any process covered by the regulation. Also, requires updates according to a schedule given in the regulation.
Pesticides. Examples: Your staff apply weed killers on outdoor property, use pesticides to control rodents or insects, or you hire a pesticide applicator to do this.	Federal Insecticide, Fungicide and Rodenticide Act (FIFRA)	Governs the use and disposal of all pesticides to prevent harm to people and the environment. Requires that you be sure that people using certain pesticides at your business are certified, and, if you are an agricultural business, that you put in place an extensive Worker Protection program for employees who work with pesticides. (There are many additional requirements if your business manufactures pesticides or creates plants that are genetically pest resistant.) Thresholds: Applies to any amount of restricted use pesticide, and certain other pesticides. Requires Permit? Requires certification of persons who apply certain pesticides. Regulatory Report? No.
Polychlorinated Biphenyls (PCBs). Example: You have equipment that uses a PCB-containing transformer as a component; you have to replace PCB-containing electrical ballasts in your lighting fixtures.	*Polychlorinated Biphenyls (PCBs)* under the Toxic Substances Control Act (TSCA)	Requires identification and extensive recordkeeping for PCB-containing items. Sets requirements for taking care of these items on-site, moving them from one place to another, and where and how they may be treated or disposed. Thresholds: Applies to certain PCB-containing material (depends on whether PCB concentration of the source of contamination was 50 ppm or greater). Requires Permit? Yes, if your business treats or disposes of PCB-containing wastes. Regulatory Report? Yes, requires submission of annual report if you use or store greater than 45 kg at one time. Reporting requirements are identified in 40 CFR 761.180.
Storage, management, and disposal of petroleum products. Examples: Your business has one or more storage tanks for petroleum products such as gasoline, diesel fuel, or heating oil. You business drains used oil from motor vehicles. Your business has potential to spill petroleum products into a waterway.	Underground storage tank and used oil regulations of RCRA. EPA's Oil Pollution Prevention Regulation, part of CWA.	Applies to petroleum products stored and used such as vehicle fuel, heating oil, and motor oil. Underground petroleum storage tanks must meet performance standards, the purpose of which is to prevent leaks into soil or groundwater. (Underground storage tank systems containing other hazardous chemicals may also be regulated.) Requires additional controls and management practices to detect, prevent, and respond to petroleum leaks or spills. If your property becomes contaminated by a petroleum spill, there are specific clean up requirements that apply. Thresholds: Your business is required to develop a Spill Prevention Control and Countermeasure Plan if your business has a total on-site storage capacity of more than 1,320 gallons of petroleum products in aboveground tanks and containers (containers less than 55 gallons in capacity are exempt) or has underground petroleum storage capacity of greater than 42,000 gallons (completely buried tanks regulated under 40 CFR Parts 280 and 281 are exempt), and can reasonably be expected to discharge oil in harmful quantities into waters of the United States. Requires Permit? No. Regulatory Report? Yes, in follow up to reportable releases.

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