LAYING THE GROUNDWORK FOR EMS

Background and Exhibits

What is an Environmental Management System (EMS)?

An EMS is a continual cycle of planning, implementing, reviewing, and improving the processes and actions that a facility undertakes to meet its environmental obligations.

Does my facility need an EMS?

Ask yourself the following questions:

- Is your facility required to comply with environmental laws and regulations?
- Are you looking for ways to improve your environmental performance?
- Is the state of your facility's environmental affairs a significant liability?
- Does a lack of time or resources prevent your facility from managing its environmental obligations effectively?
- Is the relationship between your facility's environmental goals and other goals unclear?

If you answered YES to one or more of the above questions, an EMS can help your facility — and so will this Guide!

This module provides you with the information you need to get started. It is divided into the following sections:

- Frequently Asked Questions about EMS;
- EMS Costs and Benefits;
- Keys to a Successful EMS;
- Elements of an EMS;
- Integration of Quality and Safety Systems; and
- Laying the Groundwork for an EMS.

Frequently Asked Questions about EMS

1. *We already have a compliance program – why do we need an EMS?*

    An EMS can help you comply with regulations with consistency and effectiveness. It also can help you identify and capitalize on environmental and business opportunities that go beyond compliance.

2. *How big does a facility need to be to successfully implement an EMS?*

    EMS has been implemented by facilities ranging in size from a couple of dozen employees to many thousands of employees. The elements of an EMS (as described in this Guide) are flexible to accommodate a wide range of facility types and sizes.

3. *To implement an EMS, do we have to start from scratch?*

   Much of what you have in place now for environmental management probably can be
   incorporated into the EMS. There is no need to "start over."

4. *How will an EMS affect my existing compliance requirements?*

   An EMS may result in more flexibility or less stringent legal compliance requirements, but
   will in all cases result in more robust compliance assurance. (Learn more about EPA's
   National Environmental Performance Track (NEPT) by visiting
   www.epa.gov/performancetrack. The EMS elements described in this Guide are consistent
   with the NEPT EMS criteria. You may also want to contact your state environmental agency
   to inquire whether it has a recognition and reward program for facilities that implement an
   EMS.)

5. *Do we need to be in 100% compliance in order to have an EMS?*

   No. The concept of continual improvement assumes that no facility is perfect. While an EMS
   should help your facility improve compliance and other measures of performance, problems
   may still arise. However, an effective EMS should help you find and fix these problems and
   prevent their recurrence.

EMS Costs and Benefits

POTENTIAL COSTS	POTENTIAL BENEFITS
Internal • Staff time (manager and other employees) (Note: Internal labor costs represent the bulk of the EMS resources expended by most facilities) **External** • Possible consulting assistance • Possible outside training of personnel	• Improved environmental performance • Enhanced compliance assurance • Prevention of pollution and resource conservation • New customers/markets • Increased efficiency/reduced costs • Enhanced employee morale • Enhanced image with public, regulators, lenders, investors • Employee awareness of environmental issues and responsibilities • Reduced risk

A recent U.S. National Aeronautics & Space Administration (NASA) study established a process
for measuring EMS implementation costs. NASA compiled implementation cost information at
three centers piloting EMS, including estimates on in-house civil servant and contractor support.
Though costs may be slightly different for a specialty-batch chemical manufacturer, the NASA
costs range between $111 and $138 per capita with a range of hours spent from 1.3 to 2.3 per
capita. The returns on such investments tend to have two-year paybacks and can generate savings
of about $3.50 for every dollar invested. These returns drive the savings and break-even points
illustrated in *Exhibit 1-1: EMS Program Costs* and *Exhibit 1-2: EMS Program Savings*. These

exhibits show the decrease in program costs following the initial start-up of the program, while the savings resulting from the program increase over time.
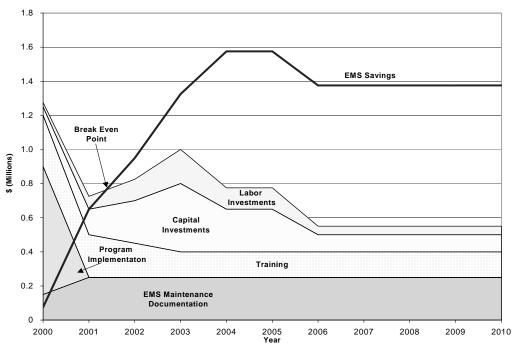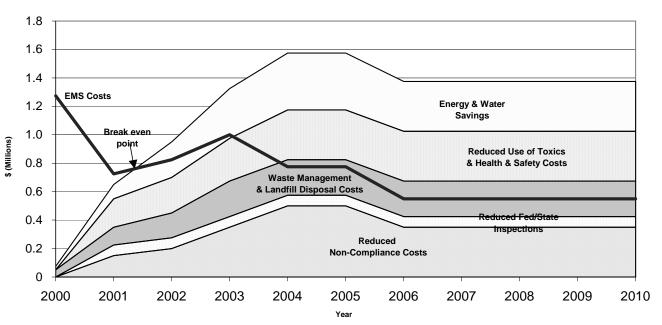
Exhibit 1-1: EMS Program Costs

Exhibit 1-2: EMS Program Savings

Keys to a Successful EMS

You have probably heard of Total Quality Management (TQM). Specialty-batch chemical manufacturers may apply TQM principles to some of their operations and activities.

An effective EMS is built on TQM concepts. Most EMS models (including the ISO 14001 standard) are built on the "Plan, Do, Check, Act" model used in TQM and illustrated in ***Exhibit 1-3: "Plan, Do, Check, Act" Model***. As discussed in *Module 2*, the environmental policy is the keystone that all facets of the EMS support. As discussed in *Modules 3* through *7*, ***Planning*** involves identifying environmental aspects (the ways in which the facility potentially affects the environment), determining which of those aspects are significant, setting objectives and targets to minimize environmental impacts and improve environmental performance, and establishing programs to meet the objectives and targets. In other words, *say what you are going to do*. As discussed in *Modules 8* through *13*, ***Doing*** involves systematically implementing your plans, that is, *do what you say*. And *Modules 14* through *18* represent ***Checking and Acting***, that is, monitoring regulatory compliance and progress toward your objectives, auditing the system, identifying and fixing problems that arise, and reviewing the system to assure its continuing suitability, adequacy, and effectiveness, that is, *prove that you are doing what you said you would do*. The cornerstone of this model is continual improvement.

To improve environmental management, your facility needs to focus not only on what things happen but also on why they happen. Over time, the systematic identification and correction of system deficiencies leads to better environmental (and overall organizational) performance.

Exhibit 1-3: "Plan, Do, Check, Act" Model

Some of the keys to a successful EMS include:

Top Management Commitment

Applying TQM principles to the environmental arena and providing adequate resources are the job of top management. A sample presentation for briefing top management on EMS, including a discussion of cost and benefits, is provided in Appendix E – Additional Tools. To initiate and sustain the EMS effort, top management must communicate to all employees the importance of:

- Making the environment an organizational priority (thinking of effective environmental management as fundamental to the facility's survival);

- Integrating environmental management throughout the facility (thinking about the environment as part of product/service and process development and delivery, among other activities); and
- Looking at problems as opportunities to improve (identifying problems, determining root causes, and preventing problem recurrence).

Focus on Continual Improvement

No facility is perfect. The concept of continual improvement recognizes that problems will occur. A committed facility learns from its mistakes and prevents similar problems from recurring.

Flexibility and Simplicity

An effective EMS must be dynamic to allow your facility to adapt to a quickly changing environment. For this reason, you should keep your EMS flexible and simple. This also helps make your EMS understandable for the people who must implement it — your facility's managers and other employees.

Compatibility with Organizational Culture

The EMS approach and a facility's culture should be compatible. For some facilities, this involves a choice: (1) tailoring the EMS to the culture or (2) changing the culture to be compatible with the EMS approach. Bear in mind that changing a facility's culture can be a long-term process. Keeping this compatibility issue in mind will help you ensure that the EMS meets your facility's needs.

If you have, or are planning to have, an environmental management information system (EMIS) that supports environmental record keeping, report preparation, scheduling of critical tasks, etc., an EMS should make that EMIS a more effective tool and, likewise, the EMIS should streamline EMS implementation, checking and review.

Employee Awareness and Involvement

As you design and implement an EMS, you may encounter roadblocks. Some people may view an EMS as bureaucracy or extra expense. There also may be resistance to change or fear of new responsibilities. To overcome possible roadblocks, make sure that everyone understands why the facility needs an effective EMS, what their role will be, and how an EMS will help to control environmental impacts in a cost-effective manner. Employee involvement helps to demonstrate the facility's commitment to the environment and helps to ensure that the EMS is realistic and practical, and that it adds value.

Building or improving an EMS (with the help of this EMS Guide) is an opportunity to assess how your facility manages environmental obligations and to find better and more cost-effective solutions. While you will probably identify some areas where your current EMS can be improved, this does not mean that you should change things that are working well! By reviewing what your facility does and how well it works, you can ensure that your EMS will be viable and effective, both now and in the future.

Finally, don't get discouraged if your system has some bugs at first — the focus is on continual improvement!

Here are some things to think about to expedite your EMS design and implementation process:

- *Pace yourself* — move quickly enough that employees stay interested and engaged, but not so fast that those involved are overloaded or that the effort becomes superficial.
- *Don't re-invent the wheel* — existing management practices should help address many EMS requirements.
- *Help is available* — don't hesitate to use it. Sources of help include the EPA, state & local governments, public assistance providers (such as universities), and consultants.
- *Make efficient use of consultants* — they can help you evaluate your EMS and suggest approaches used successfully elsewhere. Explore ways to hold consulting costs down. You may be able to join forces with other facilities to hire a consultant or sponsor a training course. Remember that an EMS developed by consultants "in isolation" will not work. Your own people need to be involved in the EMS development process.
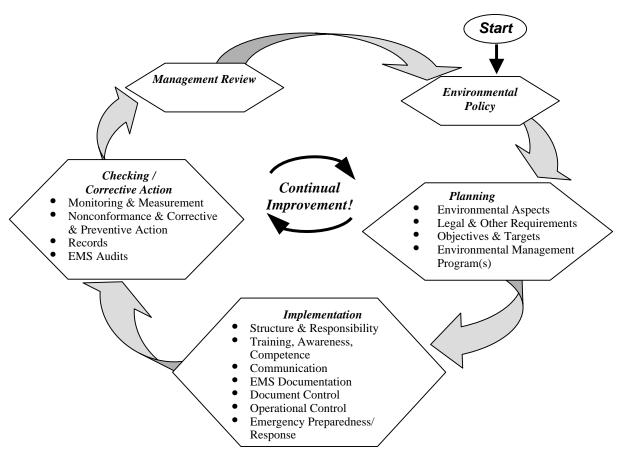
Elements of an EMS

As mentioned earlier, your EMS should be built on the "Plan, Do, Check, Act" model to ensure that environmental matters are systematically identified, controlled, and monitored. Using this approach will help to ensure that performance of your EMS improves over time.

This section describes the 17 EMS elements that are common to most EMS models and notes the key linkages among these elements (see ***Exhibit 1-4: EMS Model***). While several good EMS models are available, this Guide uses the ISO 14001 standard as a starting point for describing EMS elements. This has been done for several reasons:

- ISO 14001 is a widely accepted international standard for EMS that focuses on continual improvement;
- Companies may be asked to demonstrate conformance with ISO 14001 as a condition of doing business in some markets; and
- The ISO 14001 standard is consistent with the key principles found in many EMS-based programs, including the EPA's Performance Track and many state environmental programs.

Exhibit 1-4: EMS Model

The elements of an EMS are listed below in the order in which they are discussed in this Guide. Note that these are not necessarily arranged in the order presented in the ISO 14001 Standard.

1. *Structure and responsibility* — Establish roles and responsibilities for environmental management and provide appropriate resources.
2. *Environmental policy* — Develop a statement of your facility's commitment to the environment. Use this policy as a framework for planning and action.
3. *Legal and other requirements* — Identify and ensure access to relevant laws and regulations, as well as other requirements to which your facility adheres.
4. *Environmental aspects* — Identify environmental attributes of your products, activities, and services. Determine those that could have significant impacts on the environment.
5. *Objectives and targets* — Establish environmental goals for your facility, in line with your policy, environmental impacts, the views of interested parties, and other factors.
6. *Environmental management program(s)* — Plan actions necessary to achieve your objectives and targets.
7. *Training, awareness, and competence* — Ensure that your employees are trained and capable of carrying out their environmental responsibilities.
8. *Communication* — Establish processes for internal and external communications on environmental management issues.

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9. *EMS documentation* — Maintain information on your EMS and related documents. Often this EMS information is assembled to create an EMS manual, either in hard copy or electronic form.
10. *Document control* — Ensure effective management of procedures and other system documents.
11. *Operational control* — Identify, plan, and manage your operations and activities in line with your policy, objectives, and targets.
12. *Emergency preparedness and response* — Identify possible emergencies and develop procedures for preventing and responding to them.
13. *Monitoring and measurement* — Monitor key activities and track performance. Conduct periodic assessments of compliance with legal requirements.
14. *Nonconformance and corrective and preventive action* — Identify and correct problems and prevent their recurrence.
15. *Records* — Maintain and manage records of EMS performance.
16. *EMS audit* — Periodically verify that your EMS is operating as intended.
17. *Management review* — Periodically review your EMS with an eye to continual improvement.

Integration of Quality and Safety Systems

Integration of Quality Management System (QMS) and EMS

If your facility already has, or is considering, a quality management system (based on ISO 9001: 1994, for example) you will find significant synergy between what you need for quality management and for environmental management (see below). A thorough discussion of quality and environmental management systems integration is provided in Appendix B –Integration of Environmental Management Systems and Quality Management Systems.

Some Common Aspects of Quality and Environmental Management Systems

QMS	*EMS*
• Quality Policy	• Environmental Policy
• Adequate Resources	• Adequate Resources
• Responsibilities and Authorities	• Responsibilities and Authorities
• Training	• Training
• System Documentation	• System Documentation
• Process Controls	• Operational Controls
• Document Control	• Document Control
• System Audits	• System Audits
• Management Review	• Management Review

A more detailed analysis of the comparison between OHSAS 18001, ISO 14001:1996 and ISO 9001:2000 is provided in the following table from the British Standards Institution.

Correspondence between OHSAS 18001, ISO 14001:1996 and ISO 9001:2000

CLAUSE	OHSAS 18001	CLAUSE	ISO 14001:1996	CLAUSE	ISO 9001:2000
			Introduction	0 0.1 0.2 0.3 0.4	Introduction General Process approach Relationship with ISO 9004 Compatibility with other management systems
1	Scope	1	Scope	1 1.1 1.2	Scope General Application
2	Reference publications	2	Normative reference	2	Normative reference
3	Definitions	3	Definitions	3	Terms and definitions
4	OH&S management system elements	4	Environmental management system requirements	4	Quality management system
4.1	General requirements	4.1	General requirements	4.1 5.5 5.5.1	General requirements Responsibility, authority and communication Responsibility and authority
4.2	OH&S policy	4.2	Environmental policy	5.1 5.3 8.5	Management commitment Quality policy Improvement
4.3	Planning	4.3	Planning	5.4	Planning
4.3.1	Planning for hazard identification, risk assessment and risk control	4.3.1	Environmental aspects	5.2 7.2.1 7.2.2	Customer focus Determination of requirements related to the product Review of requirements related to the product
4.3.2	Legal and other requirements	4.3.2	Legal and other requirements	5.2 7.2.1	Customer focus Determination of requirements related to the product
4.3.3	Objectives	4.3.3	Objectives and targets	5.4.1	Quality objectives
4.3.4	OH&S management programme(s)	4.3.4	Environmental management programme(s)	5.4.2 8.5.1	Quality management system planning Continual improvement
4.4	Implementation and operation	4.4	Implementation and operation	7 7.1	Product realization Planning of product realization
4.4.1	Structure and responsibility	4.4.1	Structure and responsibility	5 5.1 5.5.1 5.5.2 6 6.1 6.2 6.2.1 6.3 6.4	Management responsibility Management commitment Responsibility and authority Management representative Resource management Provision of resources Human resources General Infrastructure Work environment
4.4.2	Training, awareness and competence	4.4.2	Training, awareness and competence	6.2.2	Competence, awareness and training
4.4.3	Consultation and communication	4.4.3	Communication	5.5.3 7.2.3	Internal communication Customer communication
4.4.4	Documentation	4.4.4	Environmental management system documentation	4.2 4.2.1 4.2.2	Documentation requirements General Quality manual
4.4.5	Document and data control	4.4.5	Document control	4.2.3	Control of documents

Correspondence between OHSAS 18001, ISO 14001:1996 and ISO 9001:2000 (continued)

CLAUSE	OHSAS 18001	CLAUSE	ISO 14001:1996	CLAUSE	ISO 9001:2000
4.4.6	Operational control	4.4.6	Operational control	7 7.1 7.2 7.2.1 7.2.2 7.3 7.3.1 7.3.2 7.3.3 7.3.4 7.3.5 7.3.6 7.3.7 7.4 7.4.1 7.4.2 7.4.3 7.5 7.5.1 7.5.3 7.5.4 7.5.5 7.5.2	Product realization Planning of product realization Customer-related processes Determination of requirements related to the product Review of requirements related to the product Design and development Design and development planning Design and development inputs Design and development outputs Design and development review Design and development verification Design and development validation Control of design and development changes Purchasing Purchasing process Purchasing information Verification of purchased product Production and service provision Control of production and service provision Identification and traceability Customer property Preservation of product Validation of processes for production and service provision
4.4.7	Emergency preparedness and response	4.4.7	Emergency preparedness and response	8.3	Control of nonconforming product
4.5	Checking and corrective action	4.5	Checking and corrective action	8	Measurement, analysis and improvement
4.5.1	Performance measurement and monitoring	4.5.1	Monitoring and measurement	7.6 8.1 8.2 8.2.1 8.2.3 8.2.4 8.4	Control of monitoring and measuring devices General Monitoring and measurement Customer satisfaction Monitoring and measurement of processes Monitoring and measurement of product Analysis of data
4.5.2	Accidents, incidents, nonconformance and corrective and preventive action	4.5.2	Nonconformance and corrective and preventive action	8.3 8.5.2 8.5.3	Control of nonconforming product Corrective action Preventive action
4.5.3	Records and records management	4.5.3	Records	4.2.4	Control of records
4.5.4	Audit	4.5.4	Environmental management system audit	8.2.2	Internal audit
4.6	Management review	4.6	Management review	5.6 5.6.1 5.6.2 5.6.3	Management review General Review input Review output
Annexes A and B	Correspondence to ISO 14001 and ISO 9001	Annex B	Correspondence to ISO 9001	Annex A	Correspondence to ISO 14001
———	Bibliography	Annex C	Bibliography	———	Bibliography
———	*(See OHSAS 18002)*	Annex A	Guidance on the use of the specification	———	

Aspects of Health and Safety in EMS

Your Health and Safety (H&S) program can play a significant role in EMS because it reflects how your facility currently handles human health concerns; in many areas, H&S and environmental concerns and requirements may be similar, and some requirements may be addressed concurrently. Therefore, some companies find that integrating H&S and EMS efforts can achieve improved compliance and/or cost savings. A questionnaire about integrating H&S into your EMS is in Appendix C – Health and Safety Integration Questionnaire.

Laying the Groundwork for an EMS

Below are the 10 key steps for laying the groundwork for an EMS.

Define Facility's Goals for EMS

A first step in EMS planning is to decide why you are pursuing the development of an EMS. Are you trying to improve your environmental performance (for example, reducing risk associated with regulatory noncompliance or increasing pollution prevention)? Are you trying to promote involvement throughout the facility? Write down your goals and refer to them frequently as you move forward. As you design and implement the EMS, ask: How is this task going to help us achieve our goals? This also is a good time to define your EMS scope or "fenceline" (i.e., what is the "facility" that the EMS will cover? One location? Multiple locations? Should you "pilot" the EMS at one location then implement the system at other locations later?). See Tips on Defining an Appropriate Scope at the end of this section.

Secure Top Management Commitment

One of the most crucial steps in the planning process is gaining top management's commitment to support EMS development and implementation. Management must first understand the benefits of an EMS and what it will take to put an EMS in place. Explain the strengths and limitations of your current approach and how those limitations can affect your financial and business performance. Then explain how an EMS can help address these limitations. Management also has a role in ensuring that the goals for the EMS (see above) are clear and consistent with other organizational goals. Management's commitment should be communicated across the facility.

Select EMS Leadership

Small facilities may only have a single EMS "champion," but larger ones will usually have two levels of EMS leadership.
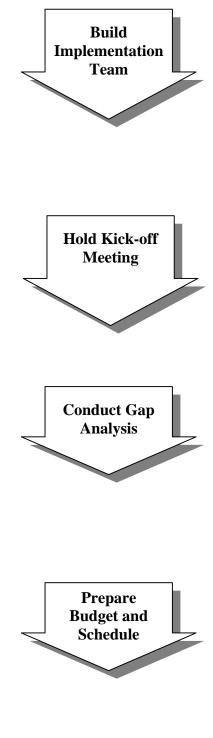
An Environmental Management Representative (EMR) should be chosen from the facility's top management group to be responsible for the functioning of the EMS (i.e., making sure that all tasks relating to the EMS are identified and completed in a timely manner). The EMR is responsible for reporting

periodically to the top facility management group on the progress and results of the EMS. An EMS Coordinator should have time to commit to the EMS-building process because his or her responsibility will be to work closely with the EMR and with the cross functional team (see below) to identify, assign, schedule, provide the necessary support for, and ensure completion of all tasks relating to the EMS.

Build Implementation Team

A Cross Functional Team (CFT) with representatives from key management functions (such as engineering, finance, human resources, production and/or service) can identify and assess issues, opportunities, and existing processes. Consider including contractors, suppliers, or other external parties as part of the CFT, where appropriate. The CFT will need to meet regularly, especially in the early stages of your EMS efforts. A CFT can help to ensure that procedures are practical and effective and can build commitment to and "ownership" of the EMS. See Module 2 for more information.

Hold Kick-off Meeting

Once the team has been selected, hold a kick-off meeting to discuss the facility's goals in implementing an EMS, the steps that need to be taken initially, and the roles of team members, among other topics. If possible, get top management to describe its commitment to the EMS at this meeting. The kick-off meeting also is a good opportunity to provide some EMS training for CFT members. Follow this meeting with a communication to all employees.
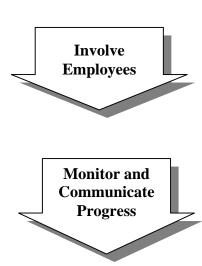
Conduct Gap Analysis

The next step is for the CFT to conduct a gap analysis of your current compliance and other environmental programs/systems and to compare these against the criteria for your EMS (such as ISO 14001). Evaluate your facility's structure, procedures, policies, environmental impacts, training programs, and other factors. Determine which parts of your current EMS are in good shape and which need additional work. See Tips on Gap Analysis at the end of this section and *Exhibit 1-5, Gap Analysis Tool/Self-Assessment Checklist*.

Prepare Budget and Schedule

Based on the results of the preliminary review, prepare an implementation plan, with a budget and schedule. The plan should identify what key actions are needed, who will be responsible, what resources are needed, and when actions will be completed. Keep the plan flexible, but set some environmental performance improvement goals. Think about how you will maintain project focus and momentum over time. Look for possible "early successes" that can help to build momentum and

reinforce the benefits of the EMS. Background, exhibits, and examples in *Module 2* will help you in planning the necessary human and financial resources.

Secure Resources, Assistance

The plan and budget should be reviewed and approved by top management. In some cases, there may be outside funding or other types of assistance available (from a trade association, a state technical assistance office, etc.).

Involve Employees

Employees are a great source of knowledge on environmental and health & safety issues related to their work areas as well as on the effectiveness of current processes and procedures. They also can help the project team in drafting procedures. Ownership of the EMS will be greatly enhanced by meaningful employee involvement in the EMS development process.

Monitor and Communicate Progress

As you build the EMS, be sure to regularly monitor your progress against the plan and communicate this progress within the facility. Be sure to communicate the accomplishments that have been made and describe what happens next. Build on small successes. Be sure to keep top management informed and engaged, especially if you might need additional resources.

As part of laying the groundwork, Appendix E – Additional Tools, provides a set of launch and implementation tools that includes:

- A launch guidance document;
- An EMS development and implementation flowchart; and
- A sample EMS development and implementation schedule.

Defining an Appropriate EMS Scope

Part of laying the groundwork for you EMS involves defining its scope. To define the scope, define boundaries around your facility's activities and determine the areas that your management can control and over which it has influence. Your facility should consider items such as the following:

- The boundaries of environmental licenses, permits or approvals;
- The extent of authority to determine how the environmental policy is implemented; and
- The extent of authority to allocate appropriate resources.

For initial development of its EMS, your facility may find that it is most effective to limit the scope of your EMS to any activities that occur within the facility's physical property limits or

that occur on adjacent property as a direct result of your operations (for example, wastewater discharges or storm water run-off).

At a later time you might wish to expand the scope to include such things as:

- Transportation to and from your facility;
- Post consumer disposal, and other life-cycle considerations; and
- Purchasing of resources.

Temporary activities, such as construction sites, should be covered by the EMS if the facility has management control over them. A scope example is provided below.

Scope of ABC Facility's EMS

The ABC Chemical Company has facilities in California, Louisiana, and Virginia. The ABC Chemical Company is committed to improving environmental performance through the use of innovative techniques such as EMS. We will implement EMS in a phased approach, one facility at a time. Thus, while the ABC Chemical Company's EMS currently covers only the New Orleans, Louisiana, facility, it has plans to address its other facilities through EMSs over time.

This EMS for ABC Chemical Company's New Orleans facility includes all operations that support specialty-batch chemical manufacturing. In addition to this primary function, all on-site support operations are included in the scope of the EMS (for example, equipment maintenance, administrative functions, and contractors working on our property). The EMS also addresses emissions and discharges regulated through environmental permits and other legal requirements. However, the EMS includes only those environmental aspects over which we have control or influence. For example, the EMS addresses waste disposal, even though the facility is not the final disposal site. Rather, the facility will influence the safe disposition of wastes through research and periodic audits of its waste transport and disposal contractors. In this way, the facility will support environmental protection and risk-reduction goals associated with its EMS.

Conducting an Effective Gap Analysis

One important component of laying the groundwork for an EMS is conducting an initial review or "gap analysis" to evaluate your current program and specific needs. Although the gap analysis is very important, it can be counter-productive if you only focus on what it is missing. It is also important to recognize what your facility is already doing and to evaluate ways to improve and build on existing programs and activities. Some facilities may find that they already perform many of the suggested activities. This is good; there is no need to rebuild a program from scratch. Looking outside the environmental arena can provide inspiration. An area such as a

quality management system may not be strictly environmental, but may help with your EMS. If an activity you already perform helps you manage important facility activities, it can probably help in environmental management as well.

A gap analysis is designed to answer the following questions:

- How well are the facility and its environmental programs performing?
- Has the facility defined the environmental goals it hopes to achieve?
- What are the gaps between existing programs and the elements and criteria for an EMS?
- What existing programs and activities can serve as the best foundation for improved environmental performance?

Building on existing programs becomes even more important when facilities are faced with diminishing resources and are being asked to "do more with less." Through careful analysis, facilities will probably find ways to address some EMS elements at little or no cost. For example, developing a policy statement on environmental protection does not require large investments in personnel or equipment, yet it can carry facility-wide visibility and impact. Ultimately, facilities that are able to invest in the implementation of EMS elements are likely to realize a high return on that investment through an improved "risk profile" at their facilities; this can lower costs associated with regulatory compliance, health and safety, incident response, and the cleanup of contaminated sites. Non-monetary benefits, such as improved public opinion and employee satisfaction, can also be achieved.

Use *Exhibit 1-5: Gap Analysis Tool/Self-Assessment Checklist* to assess your current programs and specific needs to help you get started with the development of an EMS. Use *Exhibit 1-6: Sample Worksheet for People Responsible for EMS Development* to keep track of individuals' roles, their designated time allotment for their role, and budget.

Exhibit 1-5: Gap Analysis Tool/Self-Assessment Checklist

Facility Name: **Date:**   **Assessor(s):**

Environmental Management System (EMS) Requirement	Yes	No	NA	Findings/Remarks	Closed (Complete)/Evidence
Module 2: Structure and Responsibility					
Facility has defined the roles, responsibilities, and authorities to facilitate an effective EMS.					
Facility management has appointed an Environmental Management Representative (EMR) with defined roles and responsibilities to implement the EMS.					
Facility EMR reports on the performance of the EMS to top management for review and continuous improvement.					
Module 3: Environmental Policy					
Top management has defined the facility's environmental policy.					
Policy is specific to facility and is appropriate to the nature, scale, and environmental impacts of its activities, products, or services.					
Policy includes a commitment to continuous improvement in environmental performance and the prevention of pollution.					
Policy includes a commitment to sharing information on EMS performance with the community.					
Policy includes a commitment to comply with relevant environmental legislation and regulations.					
Policy includes a commitment to meeting other requirements to which the facility subscribes.					
Policy provides the framework for setting and reviewing environmental objectives and targets.					
Policy is implemented and maintained.					
Policy is communicated to all employees.					
Policy is made available to the public.					

Environmental Management System (EMS) Requirement	Yes	No	NA	Findings/Remarks	Closed (Complete)/Evidence
Module 4: Legal and Other Requirements					
Facility has a procedure to identify and have access to legal and other requirements.					
Facility maintains access to all current Federal, State, and local regulations and ordinances (e.g., by contacting the appropriate authorities or subscribing to a regulatory update service).					
Module 5: Environmental Aspects					
Facility has established and maintains a procedure to identify the environmental aspects that it can control or over which it can be expected to have an influence in order to determine those that have or can have significant impacts.					
In its significant environmental aspect (SEA) determination facility has considered the aspects associated with on-site contractor activities.					
SEAs form the basis for establishing process and management controls, environmental improvement programs, and SEAs for further investigation and study.					
Module 6: Objectives and Targets					
Facility has considered technological options, and financial, operational, and business requirements in establishing its objectives and targets.					
Facility has considering legal and other requirements in establishing objectives and targets.					
Facility has considered the views of interested parties in establishing objectives and targets.					
Facility objectives and targets are consistent with environmental policy and its commitment to prevention of pollution.					

Environmental Management System (EMS) Requirement	Yes	No	NA	Findings/Remarks	Closed (Complete)/Evidence
Module 7: Environmental Management Programs (EMPs)					
Facility has established and maintained EMPs that include the means and time-frame for achieving its objectives and targets.					
New activities, products, or services are reviewed for potential EMPs, plans, and controls.					
Facility has defined roles and responsibilities for environmental review of new projects.					
Project originator reviews and characterizes the environmental and energy aspects of a new project.					
Module 8: Training, Awareness & Competence					
The facility has performed a comprehensive environmental training needs analysis.					
Personnel whose work may create a significant impact or is associated with an SEA have received appropriate training.					
Facility has a procedure to make its employees aware of the importance of conformance with policy and procedures, the significant impacts associated with their work, and their roles and responsibilities as these pertain to the environmental policy.					
Facility has a procedure to make its employees aware of: requirements of the EMS, the possible consequences of departure from operating procedures, and emergency preparedness and response.					
Facility personnel performing tasks that can cause significant environmental impact are competent on the basis of education, training, and/or experience.					
Module 9: Communication					
Facility has a procedure for internal communication among the various levels and functions of the facility.					

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Environmental Management System (EMS) Requirement	Yes	No	NA	Findings/Remarks	Closed (Complete)/Evidence
Internal communications procedures are used to facilitate implementation of regulatory, facility policy, and other requirements.					
Facility has a procedure to log external communications and record the responses to external communications that concern environmental issues.					
EMR or designee responds to inquiries from the community and regulatory agencies.					
A designated person (for example, an Employee Relations Manager or Corporate Communications Officer), in consultation with the EMR, is responsible for responding to media communications.					
Where the external communication relates to an environmental incident, appropriate emergency response procedures are identified (see *Module 13*) and followed. The facility has considered processes for informal communication of its SEAs and recorded its decision.					
Module 10: EMS Documentation					
Facility has information in paper or electronic form to describe the core elements of the EMS and their interactions.					
Facility has information in paper or electronic form to provide direction to related documentation.					
Module 11: Document Control					
Facility has a procedure for controlling all documents required by the EMS.					
Authorized personnel review documents and forms for adequacy before use or release.					
The EMR or designee maintains a master list of documents and records.					
Relevant documents are available at the locations where they are needed.					

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Environmental Management System (EMS) Requirement	Yes	No	NA	Findings/Remarks	Closed (Complete)/Evidence
Obsolete documents are promptly removed from all points of use or otherwise assured against unintended use.					
Obsolete documents retained for legal or preservation purposes are properly identified.					
Facility has a procedure for defining responsibility concerning the creation and modification of documents.					
Documentation is legible, dated and readily identifiable, maintained in an orderly manner, and retained for a specified period.					
Module 12: Operational Control					
Facility has identified operations associated with SEAs.					
Facility has planned maintenance activities to ensure that they are carried out under specified conditions.					
Operations associated with SEAs have documented procedures to cover situations where their absence could lead to deviations from the policy, objectives, and/or targets.					
Procedures stipulate operating conditions.					
Facility has a procedure related to the identifiable SEAs of goods and services provided by contractors and vendors and communicates procedures and requirements to suppliers and contractors.					
Facility or initiating activity communicates relevant facility-specific environmental procedures, work practices, and requirements to affected contractors prior to the commencement of requested work.					
Module 13: Emergency Preparedness and Response (EP&R)					
Environmental incidents and emergencies likely to occur at the facility have been identified.					

Environmental Management System (EMS) Requirement	Yes	No	NA	Findings/Remarks	Closed (Complete)/Evidence
Methods for preventing, mitigating, and responding to likely releases that require emergency response have been established and maintained at the facility and involve the appropriate response personnel.					
Roles and responsibilities for communications within the facility and for obtaining outside support services (e.g., police, fire) have been established and are maintained at the facility.					
The EP&R procedures at the facility are reviewed and revised on an annual basis or as necessary.					
EP&R methods and communications are tested as practicable.					
The facility emergency response leader records information necessary to determine corrective and preventive actions and any improvements to existing procedures that may be needed.					
Module 14: Monitoring and Measurement					
Facility has documented procedures for monitoring and measuring key characteristics of operations associated with SEAs.					
Facility has established metrics to track performance, relevant operational controls, and conformance with objectives and targets.					
Monitoring and measuring equipment is calibrated and maintained as evidenced by appropriate records.					
Facility has documented procedures for periodically evaluating compliance with relevant environmental legislation and regulations.					
EMR or designee is responsible for planning, scheduling, and implementing internal environmental regulatory compliance assessments, including the identification of required resources.					

Environmental Management System (EMS) Requirement	Yes	No	NA	Findings/Remarks	Closed (Complete)/Evidence
The assessment team records audit information and issues a Corrective and Preventive Action Notice (CAPAN) when appropriate. Upon completion of corrective and/or preventative actions, the responsible staff person furnishes the EMR or designee with a signed or acknowledged CAPAN (see *Module 15*).					
Module 15: Nonconformance and Corrective and Preventive Action					
Facility has a procedure for nonconformance and corrective and preventive actions defining responsibility and authority for investigating and mitigating environmental impacts.					
Each activity within the facility is responsible for identifying specific techniques to: identify the root cause(s); take appropriate corrective or preventive action; and verify effectiveness and prevent recurrence where possible.					
Facility records and makes changes in documented procedures resulting from corrective and preventive actions.					
Module 16: Records					
Facility has a procedure to identify, maintain, and dispose of environmental records.					
Each activity responsible for maintaining a record has the responsibility for establishing the method for filing and indexing the records for accessibility.					
The responsible activity is the generator of the record.					
Facility records procedure is consistent with corporate record retention procedures.					
Module 17: EMS Audits					
Facility has a program and procedure for periodic EMS audits.					
The EMR or designee is responsible for planning, scheduling, and implementing internal EMS audits.					

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Environmental Management System (EMS) Requirement	Yes	No	NA	Findings/Remarks	Closed (Complete)/Evidence
An EMS audit team will be formed whose membership has no responsibility within the activity to be audited.					
An EMS audit schedule will be developed for each activity to be audited. Audit frequency is determined on priority basis that accounts for previous audit results and the environmental importance of the activity, and is not to be less than the interval that the facility determines.					
The EMS audit team has established a checklist of questions relating to the EMS. These questions are reviewed and amended as necessary based on audit findings and other factors.					
During the audit, the EMS audit team records audit observations, indicating items checked, individuals interviewed, any concerns identified and any corrective or preventive actions completed during the audit.					
The audit team documents its findings using an audit findings form.					
The area representatives address the corrective and preventive action sections within the specified time limit and return the information to the audit team and the EMR.					
The EMR notifies facility management of likely regulatory non-compliance.					
The audit team reviews corrective actions and confirms proper implementation either by a subsequent check or during the next audit.					
The EMR or designee submits audit summaries for management review.					
Module 18: Management Review					
Management reviews are conducted by the EMR and the management committee.					
The EMR schedules these reviews at intervals that the facility determines.					

Environmental Management System (EMS) Requirement	Yes	No	NA	Findings/Remarks	Closed (Complete)/Evidence
The management review addresses the possible need for changes to policy, objectives, and other elements of the EMS, in light of EMS audit results, changing circumstances, and the commitment to continuous improvement.					

Exhibit 1-6: Sample Worksheet for People Responsible for EMS Development

Roles	Individual(s) Responsible	Percent of Time Designated	Budget
EMR with responsibility for implementing the EMS (in small businesses, this could be the owner).			
EMS Coordinator			
EMS Team participants (Cross functional team [CFT])			
Conduct gap analysis.			
Identify and determine significance of environmental aspects.			
Identify and determine applicability of legal and other requirements.			
Address competency-based training.			
Address operational controls.			
Implement emergency preparedness and response.			
Monitoring and measurement of "key characteristics" of operations and activities that can have significant environmental impacts (i.e., the "significant environmental aspects").			
Periodically evaluate environmental compliance.			
Handle and investigate non-conformance with the EMS.			
Address records management.			
Implement internal EMS audits.			
Contact Person:		Date Completed:	

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