

**EPA 300-B-02-012**

# **Environmental Management System Tools: A Reference Guide**

June 2001

## INSTRUCTIONS

### USE OF EMS SELF-ASSESSMENT TOOLS AND SUMMARY SHEETS (FOR FEDERAL AGENCIES / FACILITIES / INSTALLATIONS)

**Background:** In April 2001, an EMS-Self Assessment Team, comprised of members from the Federal Interagency E.O. 13148 EMS Sub-Work Group, screened numerous assessment instruments and recommended the use of 2 instruments for guidance in conducting self assessments.

In addition to recommending specific self assessment instruments / tools for use at the agency level or facility / installation level, the Work Group designed summary sheets to use in recording important aspects of the self assessment.

#### WHAT ISO 14001 INSTRUMENT OR TOOL IS RECOMMENDED?

For those attempting to conform to ISO 14001 standards, the team suggests that you use the worksheets contained in the **EMS Guide (Modified from Oregon Permits Program Guide)**. This guide includes useful worksheets that prompt you to identify elements of your EMS that conform to particular elements. The guide also lists documents and activities that would provide objective evidence to verify your conformance.

#### WHAT CEMP TOOL IS RECOMMENDED?

For those who wish to use CEMP guidelines, a **CEMP Self-Assessment (Modified from A Guide for Implementation of the CEMP at NOAA Facilities)** has been recommended to assess EMS conformance. The Self-Assessment was adapted from the matrix in the *Implementation Guide for the Code of Environmental Management Principles for Federal Agencies*. This assessment model lists indicators of conformance for each CEMP principle. Then for each principle and subsection, five different levels of development are described.

#### WHAT DO THE EMS SELF-ASSESSMENT SUMMARY SHEETS DO?

The EMS-Self Assessment Summary Sheets identify the requirements of the elements of ISO 14001 and CEMP principles, record the assignment of an assessment code or level, and provide for verification of documentation and accountability. The summary sheets use similar formats for both the ISO 14001 standard and the CEMP.

#### HOW SHOULD CODES, LEVELS, OR SCORES BE USED?

Both EMS tools recommended by the team use assessment scales. Assignment of a code in the EMS Guide (ISO approach) is based on an overall assessment of the items of an EMS element. The codes are:

C, S, or N where C = In Conformance; S = Sufficiently In Conformance; and N = Not in Conformance. (There is an option to use indicators such as AIn Place,@ ARevision Needed,@ or AGap.@)

The summary sheet offers a column in which to record the assessment codes. Note, however, there is no place on the template to quantify or provide an overall assessment score. Each element stands alone. Remember that self assessment (or gap analysis) is a management tool, not a reporting tool. The summary sheet is intended to assist management in recording and filling gaps. The summary sheet assigns actions needed and identifies those responsible to take action towards conformance.

The CEMP approach, listing different levels and indicators of performance, provides a column to record assessment levels. This numerical scale provides a greater temptation to misuse the assessment.

Do not use the levels of performance, and their associated numbering (1-5), as an overall indicator of performance. Again, each indicator should be judged in developmental terms and addressed independently. Do not quantify the levels and provide an overall assessment score. In lieu of the levels 1-5, you may use the indicators of AIn Place,@ ARevision Needed,@ or AGap.@

There is also a column on the CEMP Summary Sheet to record the objective evidence since the CEMP tool recommended has no associated worksheets. One may choose to fill in the Objective Evidence column or use the worksheet associated with the EMS elements in the EMS Guide.

Additionally, a CEMP-ISO CrossWalk form is provided to assist you with finding the corresponding EMS element should you be working with both the EMS and CEMP models.

For further information, contact:

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or

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## **CODE OF ENVIRONMENTAL MANAGEMENT PRINCIPLES (CEMP)**

### **PRINCIPLE 1; MANAGEMENT COMMITMENT**

#### **1.1 Obtain Management Support**

##### **1.1.1 Policy Development**

Level 1:

The organization evaluates its mission and activities in environmental terms by preparing environmental Mission and Vision statements.

Level 2:

The organization evaluates environmental concerns of key stakeholders by:

- Developing goals and priorities
- Communicating with stakeholders

Level 3:

The organization develops draft environmental policy and circulates it for review and comment

Level 4:

The organization develops a final environmental policy and communicates it internally

Level 5:

The organization communicates its environmental policy externally, to regulatory authorities, other agencies, and other stakeholders

##### **1.1.2 System Integration**

Level 1:

The environmental program is communicated throughout the organization. The necessary internal environmental groups are established and their missions are defined in order to:

- Identify liabilities and risks
- Provide awareness training

Level 2:

Environmental criteria are developed and incorporated into the managerial performance standards. The program is integrated through 25% of the organization, starting with activities most affected. This process includes:

- Conducting an organizational review of all environmental risks and liabilities
- Assigning responsibilities for environmental performance
- Incorporating the performance criteria into the managerial standards
- Coordinating and reviewing the budget

Level 3:

Specific environmental criteria are incorporated into employee performance standards as appropriate. The program is integrated through 50% of the organization. The criteria for environmental decision-making are developed and identified as employee responsibilities

Level 4:

At this point, over 50% of the organization's decisions consider environmental criteria. The program is integrated through 75% of the organization with emphasis on encouraging teaming across divisions

Level 5:

The organization decisions consider environmental criteria when appropriate. The program is thoroughly integrated by assuming leadership through outreach

1.2 Environmental Stewardship and Sustainable Development

Level 1:

The organization evaluates the environmental impacts of its activities

Level 2:

The organization implements awareness programs to inform employees and stakeholders by providing orientation training

Level 3:

The organization identifies alternatives to high-impact activities by:

- Encouraging environmental action plans
- Providing "brown bag" speakers
- Creating promotional items

Level 4:

The organization develops procedures to evaluate environmental impacts of future activities by:

- Introducing Life Cycle Analysis and design for environmental concepts
- Providing outside speakers
- Sponsoring outside activities
- Holding an "Open House" for community
- Demonstrating its commitment whenever possible

Level 5:

Organizational decisions include appropriate environmental criteria to minimize impact by:

- Considering environmental impacts
- Participating in hearings and other activities

## PRINCIPLE 2: COMPLIANCE ASSURANCE AND POLLUTION PREVENTION

### 2.1 Compliance Assurance

#### Level 1:

The organization evaluates its activities and compliance history by:

- Developing a compliance group
- Reviewing organizational activities
- Assessing the compliance baseline

#### Level 2:

The organization communicates with the regulatory authorities, develops procedures to address compliance situations, and distributes them throughout the organization. This process includes:

- Introducing the compliance group to the regulators
- Developing compliance guidance
- Coordinating compliance efforts with regulators
- Communicating information on regulations and permits

#### Level 3:

The organization fully implements the compliance program, develops a program to track relevant legislation and regulations, and sees improved performance by:

- Tracking regulatory initiatives
- Addressing non-compliance conditions
- Tracking corrective action progress
- Establishing an environmental record keeping system
- Identifying problems and preventing non-compliance incidents
- Establishing a compliance management system that is integrated with the organization's Environmental Management System

#### Level 4:

The organization develops proactive and cooperative relations with regulators; non-compliance situations are reduced significantly through:

- Encouraging employee reporting
- Regular contact with regulators
- Procedures to elevate issues to upper management
- Use of pollution prevention as a primary management approach

#### Level 5:

Full organization compliance is sustainable. Contractors are included within the compliance program. The program:

- Sets "beyond compliance" performance goals
- Evaluates contractor performance
- Introduces risk assessment

### 2.2 Emergency Preparedness

#### Level 1:

The organization emergency response group evaluates its activities and vulnerability to natural disasters and accidents after identifying the hazards presented by organization activities and facilities

Level 2:

The organization develops procedures to address specific emergency response and distributes them throughout the organization. The process includes developing:

- Response procedures
- A disaster preparedness plan
- Hazard mitigation measures
- A preventive maintenance program
- A coordination program with authorities
- A communication plan

Level 3:

The organization has a trained functioning Emergency Response Team. This is accomplished by:

- Establishing an Emergency Response team
- Training the Emergency Response Team and other personnel
- Conducting regular exercises and periodic drills
- Identifying emergency resources

Level 4:

The organization implements medical monitoring for environmental program personnel as appropriate and inspects facilities periodically instituting, and in-house medical monitoring, where appropriate

Level 5:

All organization personnel are trained in emergency response procedures; full scale exercises are conducted at least annually

### 2.3 Pollution Prevention and Resource Conservation

Level 1:

The organization evaluates its waste generation and identifies major points of generation. It institutes a pollution prevention program that emphasizes source reduction.

Level 2:

The organization communicates its commitment to pollution prevention to all personnel and begins recycling programs (paper, aluminum, glass).

This effort includes:

- Energy conservation
- Recycling programs
- Encouraging the reuse of materials

Level 3:

The organization develops pollution prevention and conservation goals, implements employee suggestion procedures, and identifies alternatives to major generators. This effort includes:

- Toxic materials reduction programs
- Water conservation programs
- “Repair or Replace” programs

Level 4:

The organization encourages the reduced use of resources and identifies individuals contributing to the success of the program. Process improvements include:

- Affirmative procurement program
- Performance of life-cycle analysis
- Designing for the environment
- Product stewardship

Level 5:

The program is maintained throughout the organization and significant reductions in waste generation are achieved



## PRINCIPLE 3: ENABLING SYSTEMS

### 3.1 Training

#### Level 1:

The organization's training group identifies environmental training needs and where training is available by developing a "Core Curriculum"

#### Level 2:

The organization's training group identifies available outside training and develops in-house training where necessary. 20% of the organization is fully trained. The process includes:

- Identifying job-specific requirements
- Evaluating outside versus in-house training
- Training the trainers as necessary

#### Level 3:

50% of the organization is fully trained. A system to track fulfillment of training requirements is developed and implemented by establishing an in-house group to track training programs

#### Level 4:

75% of the organization is fully trained. Refresher training is developed and available; where appropriate. Continuing education is encouraged.

#### Level 5:

100% of the organization is fully trained. Refresher training is provided, computer-based and distance learning employed, when appropriate. The training programs are continually evaluated to:

- Obtain feedback on training
- Investigate alternate training methods

### 3.2 Structural Supports

#### Level 1:

The organization identifies and evaluates existing procedures and activities that have environmental aspects by reviewing organization's documentation

#### Level 2:

The organization develops new or revises existing procedures or activities identified as having environmental aspects, and eliminates or revises procedures found to cause barriers

#### Level 3:

The organization disseminates the new or revised procedures throughout the organization to raise awareness of issues; implementing staff is trained. Personnel are encouraged to provide input on procedures

#### Level 4:

The organization implements the new or revised procedures and begins the training of all staff, as appropriate to pursue integration of environmental program throughout the organization

Level 5:

All procedures are fully implemented and reviewed periodically to ensure they are current

3.3 Information Management, Communication, Documentation

Level 1:

The organization identifies line of communication, information needs and documentation procedures by:

- Assigning managerial responsibility
- Creating an in-house information management group
- Reviewing current capabilities
- Defining lines of communication
- Assigning environmental contact persons
- Developing a centralized filing system

Level 2:

The organization develops internal communications, an information management infrastructure and document control procedures to:

- Ensure compatibility
- Develop environmental information management procedures
- Identify key records and documents
- Develop in-house communication
- Enable working relationships
- Report completion procedures
- Maintain the Material Safety Data Sheets (MSDSs), etc.

Level 3:

The organization communicates with regulators and stakeholders and develops information gathering, manipulation, and management procedures by:

- Evaluating new information management projects
- Assigning a contact person for new projects
- Establishing a Resource Center
- Providing regular status updates
- Communicating with other organizations
- Developing a public outreach program
- Communicating with stakeholders
- Developing a distribution network
- Developing Quality Assurance (QA) and security procedures

Level 4:

The organization develops procedures for the use of information, provides avenues for employee input, and has a well-maintained records center.

The program includes:

- Using electronics networks
- Assessing validity of environmental data
- Securing data-handling procedures
- Maintaining an employee reporting system
- Encouraging employee input

Level 5:

The organization maintains effective communications, applies environmental information to decision-making and maintains thorough records by using Environmental Management System data in decision-making

## PRINCIPLE 4: PERFORMANCE AND ACCOUNTABILITY

### 4.1 Responsibility, Authority and Accountability

Level 1:

The organization identifies personnel with responsibility for environmental performance and assigns the corresponding authority to ensure environmental compliance

Level 2:

Managers who are assigned environmental responsibilities are given training and the authority to meet those responsibilities as detailed in policy statements defining this authority

Level 3:

All employees who are assigned environmental responsibilities are given the appropriated authority and training. This includes:

- Issuing clear statements of environmental responsibility
- Preparing a process to address authority conflict
- Developing a policy on accountability

Level 4:

Personnel are provided avenues to provide input and employees are held accountable for their environmental performance by developing an employee input and concerns program

Level 5:

The assignment of environmental responsibilities is reviewed periodically in light of personnel performance

### 4.2 Responsibility, Authority and Accountability

Level 1:

The organization identifies personnel with responsibility for environmental performance. It identifies organizational performance goals

Level 2:

Managers have environmental responsibilities clearly stated in their performance standards. In addition,

- Employees evaluation standards are developed
- Standards are publicized and organizational input solicited

Level 3:

Affected employees have environmental responsibilities clearly stated in their performance standards.

Level 4:

Personnel are evaluated based on environmental aspects of their performance standards. To accomplish this, procedures for evaluating performance are developed

Level 5:

The organization develops a program to recognize and reward personnel who perform environmental responsibilities exceptionally well. In addition, appropriate disciplinary mechanisms are also in place for non-conformance with organizational policy or procedures

## PRINCIPLE 5: MEASUREMENT AND IMPROVEMENT

### 5.1 Evaluate Performance

#### 5.1.1 Gather and Analyze Data

##### Level 1:

The organization identifies performance indicators, data needs, and standards of comparison by:

- Developing and reporting on performance indicators
- Developing an internal audit program

##### Level 2:

The organization develops procedures for gathering appropriate data and communicates them to management by:

- Defining assessment parameters
- Defining Quality Assurance (QA) objectives

##### Level 3:

Data-gathering and processing procedures are implemented throughout the organization by:

- Establishing an independent audit group
- Developing procedures to manage and use information from audits

##### Level 4:

Periodic evaluations of activities and operations, and data-gathering procedures are conducted to measure and assess performance to review and improve the program

##### Level 5:

Data-gathering is a continuous process; gaps in performance are identified and analysis conducted to identify their root cause(s)

#### 5.1.2 Institute Benchmarking

##### Level 1:

The organization evaluates its activities and sets goals for environmental performance by determining the most useful benchmarking areas

##### Level 2:

The organization identifies other organizations with similar activities and exceptional performance and initiates contact with them to develop a program of comparison

##### Level 3:

The organization evaluates performance of the target organization through the sharing of information (e.g., site visit) for comparison with its own

##### Level 4:

The organization identifies and implements based on its evaluation of other organizations. This requires developing methods to apply results of benchmarking and pursue further involvement with other organizations

##### Level 5:

The organization maintains ongoing “benchmarking cycles;” and becomes a target for benchmarking by others. The organization explores the possibility of mentoring other organizations.

## 5.2 Continuous Improvement

### Level 1:

The organization evaluates its performance to identify areas needing improvement

### Level 2:

The organization develops procedures to address prevent and correct substandard performance and communicates them to management by:

- Developing procedures to identify root causes
- Developing a program of comparison to other organizations

### Level 3:

The organization implements employee involvement measures to solicit input on improving performance through:

- Developing a lessons learned program, or publishing an environmental newsletter
- Encouraging employee suggestions
- Working to include improvement in the next planning cycle

### Level 4:

The organization fully implements periodic reviews of systems and performance and seeks out additional opportunities for improvement by:

- Developing methods to apply results of benchmarking and pursuing further involvement
- Conducting a review of procedures
- Reviewing and reporting improvements

### Level 5:

The organization shows significant improvement in addressing substandard performance situations and aggressively seeks to compare its performance to others by reviewing other management approaches for applicability.

# ISO-CEMP CROSSWALK

Taken from EMR Policy draft dated March 2001

## II. Scope of an Environmental Management Review

The scope of an EMR includes several disciplines or principles, which generally assumes that some form of environmental management program is in place at the facility. The seven EMR disciplines, or five Code of Environmental Management Principles, are based on key characteristics and elements of effective environmental management systems. There are a number of common elements for most all EMS models. For example, the Code of Environmental Management Principles for Federal Agencies (CEMP), developed in 1997 by EPA in response to Executive Order 12856 and in conjunction with representatives from 16 federal departments and agencies, includes management commitment, compliance assurance and pollution prevention, enabling systems, performance and accountability, and measurement and development. The ISO 14001 EMS standard includes environmental policy, planing, implementation and operation, checking and corrective action, and management review.

The seven EMR disciplines listed (along with the corresponding CEMP Principles and ISO 14001 Sections) are from Phase 3 of the *Generic Protocol for Conducting Environmental Audits of Federal Facilities*.<sup>1</sup>

EMR DISCIPLINE <sup>1,2</sup>	CEMP PRINCIPLE	ISO 14001 SECTION <sup>3</sup>
Organizational Structure	1	4.4.1
Environmental Commitment	1	4.2, 4.6
Formality of Environmental Programs	2 & 3	4.4.4, 4.4.6, 4.4.7, 4.5.3
Internal & External Communications	3	4.4.3
Staff Resources, Development and Training	3 & 4	4.4.2
Program Evaluation, Reporting & Corrective Action	3 & 5	4.5.1, 4.5.2, 4.5.4
Environmental Planning & Risk Management	2 & 3	4.3.1, 4.3.2, 4.3.3, 4.3.4

1. From the Generic Protocol for Conducting Environmental Audits of Federal Facilities (EPA 300-96-0128, 3<sup>rd</sup> Edition December 1996).

2. Environmental Protection Programs - the 8<sup>th</sup> Discipline, is part of the Generic Protocol (see #1 above), however, it has been removed from the EMR process because of regulatory compliance implications.

3. ISO 14001 Sections 4.4.5 and 4.5.3 apply to all seven EMR Disciplines.

While the wording of the EMR disciplines and the principles of CEMP and elements of ISO 14001 are not identical, the overlap, correlation and similarity are great. An EMR is a tool that can help facility personnel attain the CEMP and move toward conformance with ISO 14001. This is because an EMR will provide a review of the individual components of the facility's EMS, as well as provide the facility with information regarding areas for improvement of the EMS, feedback on the effectiveness of their systems, and bench marking their performance.

An EMR is not a full-fledged environmental management system audit. A full-fledged environmental

<sup>1</sup>This document (EPA Document No. 300-B-96-012 A&B) can be obtained by contacting U.S. EPA Federal Facilities Enforcement Office (FFEO) at 202-564-2461 or can be downloaded from FFEO's web site at [www.epa.gov/oeca/fedfac/fflex.html](http://www.epa.gov/oeca/fedfac/fflex.html).

management system audit would provide a thorough, systematic evaluation of all elements of a facility's implementation of an environmental management system. EPA does not envision conducting in-depth environmental management system audits which may require extended time at a given facility and significant resources depending on the size and type of facility. EPA envisions that an EMR may cover anywhere from one to seven disciplines, or their CEMP or ISO 14001 equivalents, depending on EPA resources and the needs of the facility. The determination of this need can be accomplished through consultations between EPA and the federal facility.

An EMR is based on a combination of staff interviews, pre-site visit document reviews and a site visit at the facility. Interviews are especially important in conducting an environmental management review. They provide the primary means of understanding the organizational relationships, roles and responsibilities, policies, and systems that form the framework for the management of environmental matters. More importantly, they often reveal differences in the actual versus the documented practices. Document review is important to verify the formality of the system and confirm interview information. A site-visit is necessary to verify EMS implementation and effectiveness.

Depending on the characteristics of the federal facility, such as the degree of sophistication of the environmental management program, the EMR could take place over the course of a day's visit or up to a week. Those participating may include representatives from the EPA Regional Federal Facility program, Headquarters and Regional technical assistance offices, other federal agencies, contractors, and/or state environmental agencies. As appropriate, EPA regional offices can conduct joint EMRs with their states, and should contact the appropriate state technical assistance program as part of the development process for an EMR.

Review Policy for Federal Facilities. Its purpose is to assist EPA Headquarters and EPA Regional personnel in conducting Environmental Management Reviews (EMRs). This document will outline key areas of performance that should be considered when EPA staff and contractors are conducting EMRs. The guidance refers the users of this guidance to the "*EPA Generic Protocol for Conducting Environmental Audits of Federal Facilities*" (EPA Document No. 300-B-96-012 A&B) for reference to expected performance criteria during the conduct of an EMR (performance objectives, key evaluative concerns, and criteria) and are therefore not restated within this guidance. The definition of an EMR as well as the scope of these reviews are discussed in Section II of the EMR Policy. This technical guidance will not define a specific technical approach to be followed in all circumstances. Instead, the guidance emphasizes the planning (Section II) and communications (Section III) aspects of the EMR process, and also provides discussion on the use of protocols and checklists during the EMR process (Section IV). These sections were developed to help ensure consistency in the quality of the work to be performed, and to ensure that the expectations between the EPA regions and the participating federal facilities on the outcome of the EMR process are one and the same.

To a great extent, the success of the EMR program will depend on the quality of the products and service provided to federal facility participants. For this reason, FFEO strongly recommends that EPA staff and EPA contractors participating in the EMRs are trained in environmental audit procedures, and especially in the techniques of auditing environmental management systems. To help ensure an appropriate degree of expertise, Section V of this guidance outlines training considerations (e.g., skills) needed by EPA staff and contractors.



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## ATTACHMENT B: ENVIRONMENTAL MANAGEMENT SYSTEMS

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This attachment contains the following sections:

- What is an Environmental Management System?
- Environmental Management Systems References and Internet Resources
- Basic EMS Worksheets
- ISO-Comparable EMS Worksheets

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### WHAT IS AN ENVIRONMENTAL MANAGEMENT SYSTEM?

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Many facilities in the public and private sectors are interested in improving their environmental management practices. Internationally, voluntary environmental management standards have emerged to bring expectations about environmental management and environmental performance into harmony. One of these efforts, conducted by the International Organization for Standardization (often known by its French acronym, ISO) has resulted in a series of international environmental management standards known as the ISO 14000 series. Many public agencies, including the Oregon Department of Environmental Quality, are promoting the ISO 14000 Environmental Management System series of standards as a tool for facilities to develop formal environmental management systems.

The ISO 14000 standards were developed through an international, consensus-based process. They consist of specifications and guidance documents on a variety of topics, including environmental management systems, auditing, labeling, performance evaluation, and life cycle assessment. Facilities can be certified to the ISO 14001 EMS standard through a formal third party audit process.

Many facilities have benefited economically by improving efficiency and reducing environmental risks throughout their environmental processes. An environmental management system (EMS) can help a facility address environmental issues proactively and comply with regulations.

Many facilities find that process mapping and other pollution prevention assessment tools can simplify development of an EMS. Process mapping can be used to identify environmental impacts of a facility's operations; materials accounting can help track and manage materials that flow through a facility; cost accounting tools help monitor costs associated with environmental management; and decision-making tools can help identify alternatives and solutions. Facilities that have developed a Toxics Use Reduction and Hazardous Waste Reduction (TURHWR) Plan under Oregon's TURHWR program may have already established a strong foundation on which to build an EMS. In addition, Oregon's TURHWR rules allow an EMS to substitute for a TURHWR plan.

The EPA has developed an excellent "how-to" implementation guide entitled "Environmental Management Systems: An Implementation Guide for Small and Medium-Sized Organizations" (NSF

International, Ann Arbor Michigan, 11/96). It is free and downloadable off the Internet at [www.epa.gov/owmitnet/wm046200.htm](http://www.epa.gov/owmitnet/wm046200.htm). Hard copies are also available from DEQ.

For more information about environmental management systems, visit the Internet Web sites listed in the following section. EPA also is developing a new EMS clearinghouse, located at [www.epa.gov/ems](http://www.epa.gov/ems).

## ❖ Green Permit Environmental Management Systems

The Green Environmental Management Systems (GEMS) Permits require implementation of an environmental management system, depending on the type of permit desired: a Basic EMS, ISO-Comparable EMS, or ISO-Conformant EMS.

### ❖ Basic EMS

A Basic EMS has the following characteristics:

*The EMS is centered on and driven by environmental impacts.* It includes a core set of planning activities that ensures a facility will:

- Identify operations and processes that impact the environment
- Evaluate impacts that are significant
- Set objectives and targets to reduce significant impacts
- Identify and implement activities to achieve identified targets

*The EMS promotes integration of environmental management and business functions* by integrating environmental management with other operations and overall management practices. For example, it should include:

- Environmental policies defined by top management

- Consideration of the effect of operating conditions and controls on targeted environmental impacts
- Implementation authorities, responsibilities and resources
- Periodic management review of environmental performance and other results

*The EMS provides for continual improvement* through the following:

- Specific timelines, authorities, and designated responsibilities for executing the plan
- Procedures to monitor compliance and correct or eliminate problems
- Periodic evaluation to assess progress and identify needed improvements
- Monitoring and evaluating activities related to targeted impacts

*The EMS can be verified easily.* It should ensure that activities and compliance with GEMS commitments can be verified objectively through documentation or other means.

### ❖ ISO-Comparable EMS

An ISO-Comparable EMS is one that performs the same functions as described in the ISO 14001 standard. Worksheets are included to help the facility evaluate its comparability.

Some basic elements of an ISO-comparable EMS include:

- Environmental policies
- Identification of environmental aspects
- Legal and other requirements
- Objectives and targets
- Environmental management system

- Structure and responsibility
- Training, awareness and competence
- Communication
- Documentation
- Document and operational control
- Emergency preparedness and response
- Monitoring and measurement
- Nonconformance and corrective and preventive actions
- Records and audits

- Management review

The worksheets include examples of situations where specific elements may be missing from the EMS, and the resulting impacts.

### ❖ ISO-Conformant EMS

An ISO-Conformant EMS is one that has been certified by an accredited registrar as meeting the ISO standard. An ISO-conformant EMS does not have to be verified by the agencies, except those components of the Green Permit program that are different from the ISO 1400s standard (such as the definitions, scope).

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## WEB SITES OF INTEREST

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The following resources provide general information on EMS's and state and federal programs. For more information, contact DEQ's Green Permits program at (503) 229-5946.

### **International Organization for Standardization (ISO)**

<http://www.iso.ch/welcome.html>

ISO developed the ISO 14001 series of standards, guidance documents and technical reports, including the ISO 14001 Environmental Management System standard.

### **American National Standards Institute (ANSI)**

<http://www.ansi.org/iso14000/index.htm>

ANSI coordinates the development of American National Standards and is one of five permanent members of the governing ISO council. ANSI distributes copies of the ISO 14000 standards.

### **National Database on Environmental Management Systems**

<http://www.eli.org/isopilots>

The National Database on Environmental Management Systems is a national effort to

evaluate the effectiveness of environmental management systems. This site is sponsored by the Environmental Law Institute, the University of North Carolina and the U.S. Environmental Protection Agency, in partnership with the Multi-State Working Group. The site contains the data protocols, data, public reports and other information on the database project. The site includes links to other ISO 14000 information on the Internet.

### **Multi-State Working Group on Environmental Management Systems**

<http://www.mswg.org>

(located on the State of Pennsylvania web page)

The Multi-State Working Group on Environmental Management Systems is a consortium of federal and state agencies, non-governmental organizations, industry representatives and academia that is examining the public policy implications of environmental management systems, particularly ISO 14001. Oregon is a member state. The site includes links to other ISO 14000 information on the Internet.

**NGO Working Group on ISO 14000**

<http://www.ecologia.org/iso14000/>

ECOLOGIA and the Community Nutrition Institute (CNI) have been concerned about the lack of non-governmental organization (NGO) participation in the ISO 14000 standard setting process and are working with other environmental NGOs to influence the process through the NGO Initiative: ISO 14000 project.

**EPA Office of Reinvention and Policy**

<http://www.epa.gov/reinvent>

The EPA is testing innovative approaches to environmental protection through a number of voluntary initiatives. The site provides links to the various projects, including Project XL.

**EPA Standards Network**

<http://es.epa.gov/partners/iso/iso.html>

This Enviro\$en\$e site contains answers to frequently asked questions about ISO 14000.

**EPA Environmental Management Systems Clearinghouse**

<http://www.epa.gov/ems>

**North Carolina Division of Pollution Prevention and Environmental Assistance**

<http://www.p2pays.org/iso/index.htm>

**Wisconsin Department of Natural Resources, Environmental Cooperation Pilot Program**

<http://www.dnr.state.wi.us/org/caer/cea/ecpp/ecpp.htm>

**Wisconsin Department of Natural Resources**

<http://www.dnr.state.wi.us/org/other/iso>

**European Union Environment Website**

<http://europa.eu.int/comm/emas>

Information about the Eco-Management and Audit Scheme (EMAS) and other environmental news and publications from Europe.

**Principles of Pollution Prevention**

<http://www.pollutionprevention.com>

A web page developed by Dr. Robert Pojasek to introduce principles of pollution, including process mapping, zero waste goals, and other methods to help facilities take a systems approach to achieve cleaner production and sustainable development goals. Distance learning tools are included.

**National Pollution Prevention Roundtable ISO 14000 White Paper**

<http://www.p2.org/iso.html>

The National Pollution Prevention Roundtable's white paper on ISO 14000 and its strengths and weaknesses in relation to pollution prevention.

## VERIFICATION WORKSHEET FOR A BASIC EMS

<i>Facility and Verifier Data</i>	
<b>Facility:</b>	<b>Date:</b>
<b>Verifier:</b>	<b>Date:</b>

### PURPOSE OF THE WORKSHEET

- To assist a facility to demonstrate that its EMS meets the criteria for a GEMS Participant Basic EMS.
- To assist verification that the EMS qualifies for a GEMS Participant Permit.
- To provide a record of verification.

### DEFINITION

A Basic EMS is driven by environmental impacts, helps integrate environmental and business functions, provides for continual improvement and is verifiable. It includes a commitment to achieving and maintaining regulatory compliance and to applying the pollution prevention hierarchy to the environmental management program. It is a tool to improve environmental performance of regulated activities and to excel in the management and reduction of regulated pollutants and toxic substances.

### USE OF WORKSHEET

1. Four pages of the **Worksheet** are filled in by the facility, one for each functional purpose (EMS element) of their Basic EMS.
2. The facility fills in the left-hand column of the first cell of each page by listing the elements of their EMS that relate to that functional purpose. They describe the purpose of each element and provide and/or reference documentation. (Some documentation may have to be reviewed at the facility site.)
3. The facility fills in the left-hand column of the second cell by describing the methods and activities that they have implemented to accomplish those purposes.
4. The Verifier completes the checklist on the **Verification Guidance** page by reviewing the facility information and other documentation and placing a check mark when the item is adequately represented.

NOTE: All check boxes need not be checked for an EMS to be in conformance. Judgement must be exercised as to what represents major or minor non-conformances. Several unchecked boxes for a clause would represent a non-conformance.

5. DEQ staff reviews the information and accompanying documents, fills in the “Notes” column, and assigns an Assessment Code, C, S, or N, based on an overall assessment of all the items of the EMS element.
6. The **Summary Worksheet** is used to compile the results of the verification.

**SUMMARY WORKSHEET**

**I. EMS CHARACTERISTICS AND SCOPE FOR A BASIC EMS**

This summary worksheet compiles results from individual verification worksheets for each clause of the Basic EMS standard.

<b>Facility:</b>	<b>Date:</b>		
<b>Verifier:</b>			
<b>Basic EMS Clause</b>	<b>Assessment C/S/N</b>		
<b>I. Centered on and Driven by Environmental Impacts</b>			
<b>II. Promotes Integration of Environmental Management and Business Functions</b>			
<b>III. Provides for Continual Improvement</b>			
<b>IV. Supports Verification</b>			
<b>TOTAL COUNT:</b>	<u>C</u>	<u>S</u>	<u>N</u>

I. EMS is centered on and driven by environmental impacts

This Column to be Filled in by Facility	This Column for Verifier Notes
<i>ELEMENTS – List elements of your EMS that serve the purpose described in this Basic EMS clause.</i>	
<i>IMPLEMENTATION – Describe the methods and activities that have been implemented.</i>	
Assessment Codes: C = In Conformance; S = Sufficiently In Conformance (Non-Conformances are minor); N = Not In Conformance	<u>Verifier Assessment Code</u>

## I. EMS is centered on and driven by environmental impacts

### VERIFICATION GUIDANCE

#### GEMS PARTICIPANT PERMIT EMS GUIDELINES CHECKLIST

- Does the EMS have a core planning activity to identify facility operations and processes that have an environmental impact relative to regulated activities and pollutants?
  - Does the facility have a procedure, and has that procedure been used, to identify legal requirements relative to emissions to air, releases to water, contamination of land, and waste management?
  - Does the facility have a procedure, and has that procedure been used, to identify the facility operations and processes that have an impact relative to those legal requirements, covering a variety of operating conditions?
- Does the EMS have a core planning activity to evaluate which impacts are significant?
  - Does the facility have a procedure, and has that procedure been used, to identify which environmental impacts have or could have a significant impact on the environment?
- Does the EMS set objectives and targets for reducing the facility's highest priority impacts?
  - Does the facility have a process, and has it implemented the process, for selecting its highest priority impacts and setting objectives and targets accordingly?
  - Do the objectives and targets demonstrate a knowledge and commitment to pollution prevention according to the hierarchy?
- Does the EMS select and implement activities to achieve identified targets?
  - Have program and action items been defined to achieve the applicable targets?
  - Has responsibility for achievement of applicable targets been designated to specific staff positions?
  - Have methods been defined to measure progress towards achievement of the targets?

#### PURPOSES

This element helps base actions and decisions about how to spend limited resources on a thorough understanding of environmental impacts. It also focuses activities on consistent performance goals, and grounds activities in a basis of fact. It also translates an understanding about where we are, what is expected of us, and where we want to be into actionable plans – “How are we going to get there?” – and forces consideration of who has what role in improving performance and what resources are needed.

#### IMPACTS OF ABSENCE

- Too narrow a consideration of environmental issues, not considering all legal requirements.
- An EMS that does not help a company maintain compliance.
- Schism between the EMS and the really important stuff.
- No long-term focus on improving performance.
- No accountability for achieving goals.
- Unattainable goals set for PR value.



**II. The EMS promotes integration of environmental management and business functions, including facility operations and overall organizational management.**

**This Column to be Filled in by Facility**

**This Column for Verifier Notes**

**ELEMENTS – List elements of your EMS that serve the purpose described in this Basic EMS clause.**

**IMPLEMENTATION – Describe the methods and activities that have been implemented.**

Assessment Codes: C = In Conformance; S = Sufficiently In Conformance  
(Non-Conformances are minor); N = Not In Conformance

Verifier Assessment Code

## II. The EMS promotes integration of environmental management and business functions, including facility operations and overall organizational management.

### VERIFICATION GUIDANCE

#### GEMS PARTICIPANT PERMIT EMS GUIDELINES CHECKLIST

- Does the EMS include an environmental policy defined by top management?
  - Does the facility have an environmental policy?
  - Has top management played a central role in defining or approving the environmental policy:
  - Does the environmental policy include a commitment to maintaining regulatory compliance?
  - Does the environmental policy include a commitment to the pollution prevention hierarchy?  
1. Source Reduction (highest priority) 2. Recycling 3. Treatment 4. Disposal
- Does the EMS consider operating conditions and controls and their effect upon targeted environmental impacts?
  - Has the facility identified the operating conditions that have an impact on the targeted environmental impacts?
- The EMS should identify specific authorities, responsibilities and resources needed for implementation.
  - Are roles, responsibilities and authorities clearly defined and communicated throughout the organization?
  - Have the necessary human, financial and technological resources been defined and provided?
- Does the EMS provide for periodic management review of system results and environmental performance?
  - Is there a periodic process for management review that involves top management?
  - Have issues identified in management review been pursued?

#### PURPOSES

This element represents a statement of management's intent for the EMS and clarifies values. It says "How good do we intend to be?", sets direction for development of the EMS, sets expectations of stakeholders, and guides employees in the absence of other explicit direction. It also applies policies, targets and activities directly to specific operating conditions, and points to the need to monitor and maintain operational control systems. It makes it clear who is responsible for what, and provides the authority and resources to carry out the responsibilities.

#### IMPACTS OF ABSENCE

- Purpose and intent of the EMS is unclear, resulting in an EMS that isn't aligned with management's intentions.
- No evidence that management stands behind environmental policies may cause cynicism, both internally and externally.
- Inability to reliably meet performance goals because the processes and operations that impact performance are not identified and controlled.
- An EMS that is disconnected from senior management and from the realities of the business.
- Lack of accountability for achieving goals and completing corrective actions.

**III. The EMS provides for continual improvement of the system and environmental performance.**

**This Column to be Filled in by Facility**

**This Column for Verifier Notes**

**ELEMENTS – List elements of your EMS that serve the purpose described in this Basic EMS clause.**

**IMPLEMENTATION – Describe the methods and activities that have been implemented.**

Assessment Codes: C = In Conformance; S = Sufficiently In Conformance  
(Non-Conformances are minor); N = Not In Conformance

Verifier Assessment Code

**III. The EMS provides for continual improvement of the system and environmental performance.**

**VERIFICATION GUIDANCE**

**GEMS PARTICIPANT PERMIT EMS GUIDELINES CHECKLIST**

- Does the EMS create specific timelines, authorities and designated responsibilities for plan execution and activity implementation?
  - See verification step II. C above.
  - Are timelines for plan execution clearly defined?
  - Are timelines for activity implementation clearly defined?
- Does the EMS create procedures to routinely monitor compliance, and correct or eliminate problems (i.e. through root cause analysis)?
  - Has the facility established procedures to monitor and measure on a regular basis the performance of processes, systems and equipment that effect compliance-based environmental impacts?
  - Have the procedures been followed?
  - Has the facility established procedures for investigating, analyzing and correcting problems that arise?
- Does the EMS periodically assess progress towards the targets and identify needed system improvements?
  - Has the facility established procedures or schedules for monitoring performance relative to improvement targets?
  - If the facility fails to achieve a target, are the causes and needed improvements identified?

**PURPOSES**

This element makes it clear what needs to be done by when and assures an effective sequence of work. It also requires that commitments to regulatory agencies and the public are taken seriously and that the organization takes primary responsibility in monitoring their performance to meet the agreed conditions. It ensures that appropriate resources are applied to identify and correct problems.

It also assures that activities achieve targeted improvement, or that changes are instituted if improvement falls short of targets.

**IMPACTS OF ABSENCE**

- No accountability for when the plan and activities should be carried out.
- Guesswork in management and maintenance of environmental compliance systems.
- Problems that are hard to fix don't get fixed.
- Problems are repeated over and over.
- Guesswork in monitoring and reporting environmental improvement.
- Falling short of a target is not identified.

**IV. The EMS supports verification by incorporating documentation or other means that can demonstrate to a third party that the system conforms with the Basic EMS Standard.**

<b>This Column to be Filled in by Facility</b>	<b>This Column for Verifier Notes</b>
<b>ELEMENTS – List elements of your EMS that serve the purpose described in this Basic EMS clause.</b>	

<b>IMPLEMENTATION – Describe the methods and activities that have been implemented.</b>	
---	--

Assessment Codes: C = In Conformance; S = Sufficiently In Conformance  
(Non-Conformances are minor); N = Not In Conformance

Verifier Assessment Code

**IV. The EMS Supports Verification by incorporating documentation or other means that can demonstrate to a third party that the system conforms with the Basic EMS standard.**

**VERIFICATION GUIDANCE**

**GEMS PARTICIPANT PERMIT EMS GUIDELINES CHECKLIST**

- What means were used to demonstrate that the EMS was in conformance with this standard:
  - Documentation of the EMS planning process
  - Records that planning activities took place
  - Documentation of the outcomes of planning activities
  - Written policies, procedures and timelines
  - Documentation of the assignment of roles and responsibilities
  - Records of implementation actions
  - Records of results and outcomes of implementation actions
  - Documentation of standard practice and schedules for monitoring activities
  - Records of monitoring activities
  - Document control procedures, including records of changes to documents and assurance that the current document is the one made available
  - Other: \_\_\_\_\_
- Were means available to verify that the EMS was in conformance with each clause of this standard? Which clauses were not third-party verifiable due to lack of means to do so?
  - \_\_\_\_\_
  - \_\_\_\_\_
  - \_\_\_\_\_
  - \_\_\_\_\_
  - \_\_\_\_\_

**IMPACT OF ABSENCE**

- Inability to verify that the EMS has been properly implemented.

**VERIFICATION WORKSHEETS FOR AN ISO 14001 COMPARABLE EMS**

<i>Facility and Verifier Data</i>	
<b>Facility:</b>	<b>Date:</b>
<b>Verifier:</b>	<b>Date:</b>

PURPOSE OF THE WORKSHEETS

- To assist the facility in demonstrating that their EMS is comparable to an ISO 14001 EMS.
- To assist verification that the EMS qualifies for a GEMS Achiever or GEMS Leader Permit.
- To provide a record of verification.

DEFINITION

An ISO 14001 Comparable EMS is functionally equivalent to an ISO 14001 EMS. Each ISO clause has a corresponding element(s) in the facility’s EMS that serves the same purpose. The facility’s EMS, however, may use different implementation methods.

USE OF WORKSHEETS

7. One **Worksheet** page is used for each ISO 14001 clause.
8. The facility fills in the left-hand column of the first cell of each page by listing the elements of their EMS that are comparable to the ISO clause. They describe the purpose of each element. They also provide and/or reference relevant documentation. (Some documentation may have to be reviewed at the facility site.)
9. The facility fills in the left-hand column of the second cell by describing the methods that their EMS has implemented to achieve the purposes of that element.
10. The Verifier completes the checklist on the **Verification Guidance** page by reviewing the facility information and other documentation and placing a check mark when the item is adequately represented.

**NOTE: All check boxes need not be checked for an EMS to be in conformance. In an ISO 14001 certification audit unchecked boxes would be considered “potential non-conformances”. However, judgement must be exercised as to what represents a major or a minor non-conformance. Several unchecked boxes for an ISO clause would represent a non-conformance.**

11. The Verifier fills in the right-hand column, including an Assessment Code, C, S, or N, based on an overall assessment of all the items of the EMS element.
  12. The **Summary Worksheet** is used to compile the results of the verification.
- NOTE: Use Basic EMS Verification Worksheets for GEMS Participant Permits.

## SUMMARY WORKSHEET FOR AN ISO COMPARABLE EMS

This summary worksheet to be completed by verifier. It compiles results from the individual verification worksheets.

ISO Clause	Is this a Critical Element?	Assessment C/S/N		
4.2 Environmental policy	Y			
4.3.1 Environmental aspects	Y			
4.3.2 Legal and other requirements	Y			
4.3.3 Objectives and targets	Y			
4.3.4 Environmental management programs	Y			
4.4.1 Structure and responsibility				
4.4.2 Training, awareness and competence				
4.4.3 Communication	Y			
4.4.4 EMS documentation				
4.4.5 Document control				
4.4.6 Operational control				
4.4.7 Emergency preparedness & Response				
4.5.1 Monitoring and measurement				
4.5.2 Nonconformance and corrective and preventive action				
4.5.3 Records				
4.5.4 Environmental management system audit	Y			
4.6 Management review	Y			
<b>TOTAL COUNT:</b>	<u>C</u>	<u>S</u>	<u>N</u>	
<u>ARE ANY CRITICAL ELEMENTS NON-CONFORMANT (Y/N)?</u>				



## 4.2 Environmental policy

**Purpose of ISO Clause (in ISO's Words):**

To state intentions and principles in relation to overall environmental performance.  
 To provide a framework for action and for setting environmental objectives and targets.

**Clarification of Purpose:**

Statement of management's intent for the EMS, clarifies values. Says "How good do we intend to be?" Sets direction for development of EMS. Sets expectations of stakeholders. Guides employees in absence of other explicit direction.

**Methods Specified by the ISO Clause:**

- Top management shall define the organization's environmental policy and ensure that it:
- a. Is appropriate to the nature, scale and environmental impacts of its activities, products and services;
  - b. Includes a **commitment** to continual improvement and **prevention of pollution\*\***;
  - c. Includes a **commitment to comply with relevant environmental legislation and regulations**, and with other requirements to which the organization subscribes;
  - d. Provides the framework for setting and reviewing environmental objectives and targets;
  - e. Is documented, implemented and maintained and communicated to all employees;
  - f. Is **available to the public**.

\*\* GEMS adheres to the pollution prevention hierarchy and EMSs shall be evaluated in terms of the USEPA definition of pollution prevention (see OAR 340-014-0105).

This Column to be Filled in by Facility	This Column for Verifier Notes
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**ELEMENTS:** List elements of your EMS that achieve the same purpose as this ISO clause. Reference documentation.

--	--

**IMPLEMENTATION:** Describe the methods that are implemented to achieve the purpose of this clause.

--	--

Assessment Codes: C = Comparable or In Conformance; S = Sufficiently Comparable (Minor non-conformances may exist); N = Not Comparable or Not In Conformance	<b>Verifier Assessment Code:</b>
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## 4.2 Environmental policy

### VERIFICATION GUIDANCE

#### GEMS PERMIT GUIDELINES

**GEMS ACHIEVER (Tier II):** The environmental policy should embody:

- Achieving and maintaining compliance with regulatory requirements
- Applying the pollution prevention definition and hierarchy when setting goals and targets and implementing environmental impacts
  1. Source Reduction (highest priority)
  2. Recycling
  3. Treatment
  4. Disposal
- Excelling in performance relative to all regulated pollutants and activities.
- A strong commitment to achieving superior performance relative to all site-based environmental aspects that are determined to have significant impacts, including both regulated and unregulated environmental impacts.

**GEMS LEADER (TIER III):** In addition to the provisions in Tier II, the environmental policy should embody a strong commitment to:

- Providing environmental leadership for their industry and/or the community
- Addressing life cycle and/or sustainability impacts of their activities, products and services.

#### PURPOSE

Statement of management's intent for the EMS, clarifies values. Says "How good do we intend to be?" Sets direction for development of EMS. Sets expectations of stakeholders. Guides employees in absence of other explicit direction.

#### IMPACT OF ABSENCE

- Purpose and intent of EMS is unclear resulting in an EMS that isn't aligned with management's intentions.
- No evidence of management standing behind environmental policies causes cynicism, both internally and externally.
- Stakeholders' expectations not set, causes misunderstandings and mistrust.

### 4.3.1 Environmental aspects

**Purpose of ISO Clause (in ISO's Words):**

To identify the elements of an organization's activities, products or services that can interact with the environment.

**Clarification of the Purpose:**

Base actions and decisions on how to spend limited resources on thorough understanding of environmental impact. Ensures consideration of who are the stakeholders and what do they think is important, and what decisions do we make that have an environmental impact. Also should result in a recognition that activities, products, and services have many environmental impacts beyond those that are regulated.

**Methods Specified by the ISO Clause:**

The organization shall:

- a. Establish and maintain procedure(s) to **identify the environmental aspects** of its activities, products and services that it can control and over which it can be expected to have an influence,
- b. **Determine those that have or can have significant impacts on the environment.**
- c. Ensure that the aspects related to these significant impacts are considered in setting its environmental objectives.
- d. Keep this information up-to-date.

<b>This Column to be Filled in by Facility</b>	<b>This Column for Verifier Notes</b>
--	---------------------------------------

**ELEMENTS:** List elements of your EMS that achieve the same purpose as this ISO clause. Reference documentation.

--	--

**IMPLEMENTATION:** Describe the methods that are implemented to achieve the purpose of this clause.

--	--

<b>Assessment Codes:</b> C = Comparable or In Conformance; S = Sufficiently Comparable (Minor non-conformances may exist); N = Not Comparable or Not In Conformance	<b>Verifier Assessment Code:</b>	
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## 4.3.1 Environmental aspects

### VERIFICATION GUIDANCE

#### GEMS PERMIT GUIDELINES

**GEMS ACHIEVER (TIER II):** The aspect/impact analysis should include:

- A thorough examination of regulated and unregulated site-based environmental impacts.
- A determination of which site-based aspects have a significant impact on the environment, taking into consideration local, regional and global environmental conditions.
- A consideration of stakeholder input in identifying and determining the significance of environmental impacts.
- The analysis of aspects should address the operational provisions of the regulation or permit (e.g. training, maintenance, etc.).
- A provision for reexamining this analysis and keeping it up-to-date based on new understandings about environmental conditions or impacts.

**GEMS LEADER (TIER III):** In addition to the provisions in Tier II the aspects/impacts analysis would include some of the following elements:

- An examination of all environmental impacts of activities, products and services throughout their life cycle.
- Some form of life cycle analysis, either quantitative or qualitative, that addresses all life cycle stages including resource extraction, premanufacturing processing and transportation, manufacturing, distribution, packaging, use, and disposal/recycling.
- An analysis of activities, products and services that do or may potentially impact future environmental sustainability
- An examination of the literature on sustainability for definitions and concepts and to identify activities, products and services that are perceived to have sustainability impacts.
- A determination of which life-cycle or sustainability impacts are most significant for the environment, taking into consideration local, regional and global conditions.
- A provision for reexamining this analysis and keeping it up-to-date, including incorporating new scientific and management knowledge about environmental conditions and impacts.
- A requirement that suppliers provide information on environmental performance (optional: requires adoption of a formal environmental management system).

#### PURPOSE

Base our actions and decisions on a thorough understanding of environmental impact. Forces consideration of who are our stakeholders and what do they think is important, and what decisions do we make that have an environmental impact. Also forces recognition that our activities, products, and services have MANY environmental impacts other than those that are regulated.

#### IMPACT OF ABSENCE

- Fixing unimportant or convenient problems while higher impact issues go unaddressed.
- Too narrow a consideration of environmental issues.

### 4.3.2 Legal and other requirements

**Purpose of ISO Clause (in ISO’s Words):**

To identify and have access to legal and other requirements that are applicable to its environmental aspects

**Clarification of Purpose:**

Ensures that the EMS recognizes legal responsibilities and is a tool to fulfill them. Ensures that the EMS explicitly recognizes other commitments, such as environmental initiatives of a parent company, (such as Responsible Care).

**Methods Specified by the ISO Clause:**

The organization shall:

- a. Establish and maintain a procedure to identify legal and other requirements
- b. Establish and maintain a procedure to have access to legal and other requirements

<b>This Column to be Filled in by Facility</b>	<b>This Column for Verifier Notes</b>
--	---------------------------------------

**ELEMENTS:** List elements of your EMS that achieve the same purpose as this ISO clause. Reference documentation.

--	--

**IMPLEMENTATION:** Describe the methods that are implemented to achieve the purpose of this clause.

--	--

<b>Assessment Codes: C = Comparable or In Conformance; S = Sufficiently Comparable (Minor non-conformances may exist); N = Not Comparable or Not In Conformance</b>	<b>Verifier Assessment Code:</b>	
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## **4.3.2 Legal and other requirements**

### **VERIFICATION GUIDANCE**

#### **GEMS PERMIT GUIDELINES**

**GEMS ACHIEVER AND GEMS LEADER (ALL TIERS):** In order to adequately assure compliance with legal and other requirements, check that GEMS Achiever and GEMS Leader facilities have:

- A procedure to identify all applicable federal, state and local legal requirements, including all permit conditions, and to keep the information updated.
- A record of any other requirements that the facility, or the parent company, have committed to that apply to the facility, including voluntary industry codes of practice, contracts, customer commitments, or internal requirements.
- A record of GEMS Permit guidelines and requirements that the facility, or the parent company, have committed to that apply to the facility.
- Accessibility to the terms and conditions of these legal and other requirements.
- A process for keeping this information up to date including periodic review, update and communication as appropriate.

#### **PURPOSE**

Ensure that the EMS recognizes legal responsibilities and is a tool to fulfill them. Also ensures that the EMS explicitly recognizes other commitments, such as environmental initiatives of a parent company.

#### **IMPACT OF ABSENCE**

- An EMS that does not help a company maintain compliance.
- Schism between the EMS and the REALLY important stuff.
- Poor compliance.

### 4.3.3 Objectives and targets

**Purpose of ISO Clause (in ISO's Words):**

To set an overall environmental goal for the organization to achieve

To set a detailed performance requirement that needs to be met in order to achieve the objectives.

**Clarification of Purpose**

Focuses activities on consistent performance goals. Grounds activities in a basis of fact. Distills all the above into "what are we going to do?" Sets up Environmental Performance Evaluation. Ensures that views of interested parties and business realities are considered.

**Methods Specified by the ISO Clause:**

The organization shall:

- a. Establish and maintain documented environmental objectives and targets at each relevant function and level within the organization
- b. Consider the legal and other requirements
- c. Consider its significant environmental impacts
- d. Consider its technological options and financial, operational and business requirements
- e. Consider the views of interested parties
- f. Establish objectives and targets consistent with environmental policy, including commitment to pollution prevention.

**This Column to be Filled in by Facility**

**This Column for Verifier Notes**

**ELEMENTS:** List elements of your EMS that achieve the same purpose as this ISO clause. Reference documentation.

**IMPLEMENTATION:** Describe the methods that are implemented to achieve the purpose of this clause.

**Assessment Codes:** C = Comparable or In Conformance; S = Sufficiently Comparable (Minor non-conformances may exist); N = Not Comparable or Not In Conformance

**Verifier Assessment Code:**

### 4.3.3 Objectives and targets

#### VERIFICATION GUIDANCE

#### GEMS PERMIT EMS GUIDELINES

ALLGEMS PERMITS: The following elements are required for both GEMS Achiever and GEMS Leader facilities:

- A procedure for establishing Objectives and Targets for the different functions and levels of the organization.
- Documentation of the objectives and targets.
- Objectives and targets that are consistent with the environmental policy.
- Objectives and targets that have considered the views of interested parties.
- Objectives that address:
  - Significant environmental aspects                       Legal and other requirements
  - Technological, financial, operational and business requirements       Targets that are quantified where possible
- Targets that provide detailed performance requirements to achieve the objectives.
- A procedure to update the Objectives and Targets based on audits and management review.

#### TIER II: GEMS Achiever Permit facilities should define:

- Objectives and targets that, if achieved, will assure that the facility achieves superior environmental performance for site-based aspects that have significant impacts, including both regulated and unregulated impacts. For example:
  - Energy conservation                       Water conservation                       Material use conservation
  - Toxic use reduction                       Carbon emissions                       Hazardous waste reduction
  - Solid waste reduction                       Reuse & recycling                       Employee commuting
  - Land use                       Habitat conservation                       Landscape management
  - \_\_\_\_\_                       \_\_\_\_\_                       \_\_\_\_\_

#### TIER III: GEMS Leader Permit facilities should define:

- Objectives and targets that, if achieved, will assure that the facility provides industry leadership in applying sustainability principles to activities, products and services.
  - Life cycle assessment                       Supply chain management                       Product life extension
  - Design for environment                       End of life product mgmt.                       Environmental labeling
  - Industry mentoring                       Industry codes & BMP                       Habitat restoration
  - \_\_\_\_\_                       \_\_\_\_\_                       \_\_\_\_\_

#### PURPOSE

Focuses activities on consistent performance goals. Grounds activities in a basis of fact. Distills all the above into “what are we going to do?” Ensures that views of interested parties are considered.

#### IMPACT OF ABSENCE

- EMS degenerates into series of anecdotes about “wins”.
- No long-term focus on improving performance.
- No way to show improved performance.



### 4.3.4 Environmental management program(s)

**Purpose of ISO Clause (in ISO's Words):**

To achieve the organization's objectives and targets

**Clarification of Purpose:**

Translates an understanding about the facility (where we are, what is expected, and where we want to be) into action plans – "How are we going to get there?" Should result in consideration of who has what role in improving performance and what resources are needed.

**Methods Specified by the ISO Clause:**

The organization shall:

- a. Establish and maintain program(s) for achieving objectives and targets
- b. Include designation of responsibility for achieving objectives and targets
- c. Include means and time-frame by which they are to be achieved
- d. For new developments and new or modified activities, products or services, the program(s) shall be amended where relevant

<b>This Column to be Filled in by Facility</b>	<b>This Column for Verifier Notes</b>
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**ELEMENTS:** List elements of your EMS that achieve the same purpose as this ISO clause. Reference documentation.

--	--

**IMPLEMENTATION:** Describe the methods that are implemented to achieve the purpose of this clause.

--	--

<b>Assessment Codes:</b> C = Comparable or In Conformance; S = Sufficiently Comparable (Minor non-conformances may exist); N = Not Comparable or Not In Conformance	<b>Verifier Assessment Code:</b>	
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### 4.3.4 Environmental management program(s)

#### VERIFICATION GUIDANCE

#### GEMS PERMIT EMS GUIDELINES

**ALLGEMS PERMITS:** The following elements should be present for both GEMS Achiever and GEMS Leader facilities:

- Programs that are consistent with the objectives and targets and the facility's GEMS Permit.
- Assignment of responsibility for achieving objectives and targets at each function and level of the facility.
- A means for achieving the objectives and targets, including methods and resources.
- A designated time frame.
- A procedure for modifying the program based on:
  - Audits of progress toward targets.
  - New developments or new or modified activities, products or services.
- A procedure for monitoring progress toward the objectives and targets
- Pollution prevention initiatives as a preference to pollution control activities.

#### PURPOSE

Translates an understanding about where we are, what is expected of us, and where we want to be into actionable plans – “How are we going to get there?”. Forces consideration of who has what role in improving performance and what resources are needed.

#### IMPACT OF ABSENCE

- Unattainable goals set for PR value.
- No accountability for achieving goals.
- Goals established but no real way to achieve them.
- Insufficient resources to achieve goals.

### 4.4.1 Structure and responsibility

**Purpose of ISO Clause (in ISO's Words):**

To facilitate effective environmental management through assignment of roles, responsibilities and provision of resources.

**Clarification of Purpose:**

Makes it clear who is responsible for what, and that adequate resources will be provided.

**Methods Specified by the ISO Clause:**

The organization shall:

- a. Define roles, responsibilities and authorities and document and communicate to the organization's employees
- b. Management shall provide resources essential to the implementation and control of the EMS, including human resources, specialized skills, technology, and finances
- c. Top management shall appoint a specific management representative who assures that the EMS is established, implemented and maintained and reports to top management on performance of EMS and needed improvements.

**This Column to be Filled in by Facility**

**This Column for Verifier Notes**

**ELEMENTS:** List elements of your EMS that achieve the same purpose as this ISO clause. Reference documentation.

--	--

**IMPLEMENTATION:** Describe the methods that are implemented to achieve the purpose of this clause.

--	--

Assessment Codes: C = Comparable or In Conformance; S = Sufficiently Comparable (Minor non-conformances may exist); N = Not Comparable or Not In Conformance

**Verifier Assessment Code:**

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## **4.4.1 Structure and responsibility**

### **VERIFICATION GUIDANCE**

#### **GEMS PERMIT EMS GUIDELINES**

ALL GEMS PERMITS: The following elements should be present for both GEMS Achiever and GEMS Leader facilities:

- Clearly defined roles, responsibilities, and authorities.
- Roles, responsibilities, and authorities have been communicated throughout the organization.
- Human, financial and technological resources essential to the implementation and control of the EMS have been provided.
- A management representative has been appointed who is responsible for implementation and maintenance of the EMS.
- A management representative has been appointed who is responsible for reporting to top management.

#### **PURPOSE**

Makes it clear who is responsible for what, and that adequate resources are available.

#### **IMPACT OF ABSENCE**

- No accountability for EMS activities.
- The Environmental Professional is responsible for anything that has anything to do with the environment but has no true authority or resources. They carry a big club called “fines and jail” but other than invoking that club they are ignored.

### 4.4.2 Training, awareness and competence

**Purpose of ISO Clause (in ISO’s Words):**

To ensure the capability of personnel, especially those carrying out specialized environmental management functions.

**Clarification of Purpose:**

Ensure that people have the necessary training and background to fill their roles in the EMS successfully, whether they are the President, an Environmental Professional, a Production Worker, or a Janitor.

**Methods Specified by the ISO Clause:**

The organization shall:

- a. Identify training needs
- b. Require that all personnel whose work may create a significant impact upon the environment to receive appropriate training
- c. Establish and maintain procedures to make its employees or members at each relevant function and level aware of:
  - the importance of conformance with policy and procedures and requirements of the EMS
  - the significance of environmental impacts of their work activities and benefits of improved personal performance
  - their roles and responsibilities in the EMS
  - the potential consequences of departure from specified operating procedures
- d. Personnel performing tasks that can cause significant impacts shall be competent on the basis of education, training and/or experience

This Column to be Filled in by Facility	This Column for Verifier Notes
<p><b>ELEMENTS:</b> List elements of your EMS that achieve the same purpose as this ISO clause. Reference documentation.</p>	
<p><b>IMPLEMENTATION:</b> Describe the methods that are implemented to achieve the purpose of this clause.</p>	
<p><b>Assessment Codes:</b> C = Comparable or In Conformance; S = Sufficiently Comparable (Minor non-conformances may exist); N = Not Comparable or Not In Conformance</p>	<p><b>Verifier Assessment Code:</b></p>

## 4.4.2 Training, awareness and competence

### VERIFICATION GUIDANCE

#### GEMS PERMIT EMS GUIDELINES

**ALL GEMS PERMITS:** The following elements should be present for both GEMS Achiever and GEMS Leader facilities:

- A determination of what job function may have a significant environmental impact.
- An identification and evaluation of training needs for all employees whose job functions may have a significant environmental impact, and delivery of appropriate training.
- An identification and evaluation of training needs for all contractors whose duties may have a significant environmental impact, and delivery of appropriate training.
- General awareness training for all employees and managers that addresses the environmental policy and the organizations environmental impacts.
- Training and awareness activities for all employees that address the types of environmental impacts appropriate to the facility's Tier.
- Periodic refresher training.
- A method of determining that employees have the appropriate education, training and experience to perform tasks for which they are responsible which can cause significant environmental impact.

#### PURPOSE

Ensure that people have the necessary training and background to fill their roles in the EMS successfully, whether they are the President, the Environmental Professional, a Production Worker, or the Janitor.

#### IMPACT OF ABSENCE

- Unqualified people. Leads to poor execution and potentially to environmental emergencies.
- Repeated dissatisfaction about people's performance. No one succeeds. Assumption becomes that the people are dumb, or lazy, or don't care.

### 4.4.3 Communication

**Purpose of ISO Clause (in ISO's Words):**

To ensure effective internal and external communication regarding its environmental aspects and EMS

**Clarification of Purpose:**

Ensures broad internal communications, and that communications from external stakeholders are recognized and responded to. Also ensures that an explicit, consistent policy regarding external communications is followed.

**Methods Specified by the ISO Clause:**

Organization shall establish and maintain procedures for:

- a. Internal communication between the various levels and functions of the organization
- b. Receiving, documenting and responding to relevant communication from external interested parties
- c. Consider processes for external communication on significant environmental aspects and record decisions.

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## 4.4.3 Communication

### VERIFICATION GUIDANCE

#### GEMS PERMIT EMS GUIDELINES

**ALL GEMS PERMITS:** The following elements should be present for both GEMS Achiever and GEMS Leader Permit facilities:

##### Internal Communication:

- A procedure for internal communications between various functions and levels of the organization related to the EMS and environmental aspects.
- An assignment of responsibility for reviewing, updating and overseeing implementation of the internal communication procedure.
- Examples of communications that have occurred between functions and levels of the organization.

##### External Communication:

- A procedure for providing two-way dialogue regarding environmental performance that proactively encourages public inquiries and comments.
- Mechanisms to discuss environmental policy, annual performance report, environmental aspects and significant impacts, and establishing objectives and targets with stakeholders.
- A mechanism for receiving, documenting, considering and responding to communications received from stakeholders.
- Examples of external communications that have been received, documented, considered and responded to.

**GEMS LEADER PERMITS:** The external communication program for a GEMS Leader Permit facility should, in addition to the above, include:

- A procedure to communicate with appropriate stakeholders regarding impacts that may occur beyond the site, e.g. life cycle impacts of products or services.
- Procedures to establish and maintain understanding, constructive dialogue and partnership with significant stakeholders.

##### Reporting:

- A procedure for reporting environmental performance annually to DEQ in satisfaction of GEMS reporting guidelines.
- (OPTIONAL BUT RECOMMENDED) A procedure to prepare an annual Environmental Performance Report for distribution to stakeholders.

#### PURPOSE

Ensure free internal communications, and that communications from external stakeholders are recognized and responded to. Also ensures that an explicit, consistent policy regarding external communications is followed.

#### IMPACT OF ABSENCE

- Poor internal communication. Right hand doesn't know what left is doing. People don't know who to ask if they have questions or concerns.
- Frustrated stakeholders because their attempts at communication are not dealt with effectively.
- Views of interested parties not considered when setting O&T. (Note that 4.3.3 says that views of interested parties must be considered when setting O&T. It is difficult to consider this input if we don't know we have any.)



### 4.4.4 Environmental management system documentation

**Purpose of ISO Clause (in ISO's Words):**

To describe the core elements of the EMS and their interaction

To provide direction on where to obtain more detailed information on the operation of specific parts of the EMS

**Clarification of Purpose:**

Makes the EMS intelligible. Creates an EMS that is durable and robust: survives personnel changes, rapid growth, downsizing, time, etc. Provides objective basis for audit. Should result in agreement on how the EMS works. Ensures accountability. Creates the mechanism for capturing lessons learned – a way to hold the gains. Ensures analysis of process and an understanding that many processes and people have a role in the EMS.

**Methods Specified by the ISO Clause:**

Organization shall establish and maintain information in paper and electronic form to:

- a. Describe the core elements of the EMS and their interaction
- b. Provide direction to related documentation.

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## 4.4.4 Environmental management system documentation

### VERIFICATION GUIDANCE

#### GEMS PERMIT EMS GUIDELINES

**ALL GEMS PERMITS:** The following elements should be present for both GEMS Achiever and GEMS Leader facilities:

- Written or electronic information that covers all clauses of the standard:
  - Describing the requirements of the management system and their interaction
  - Cross-referencing related documents

#### PURPOSE

Makes the EMS intelligible. Creates an EMS that is durable and robust: survives personnel changes, rapid growth, downsizing, time, etc. Provides objective basis for audit. Forces explicit agreement on how the EMS works. Ensures accountability. Creates the mechanism for capturing lessons learned – a way to hold the gains. Forces analysis of process and an understanding that many processes and people have a role in the EMS.

#### IMPACT OF ABSENCE

- Constantly re-inventing the wheel.
- Poor accountability. “I thought that was YOUR job!”, or “I thought we did that every OTHER month!”
- Figuring out a better way to do things but there’s no real way to implement the change. Everyone goes back to the old ways.
- Audits degenerate into “I don’t think you’re doing it right!”, or “I don’t like the way you do it!”.

### 4.4.5 Document control

**Purpose of ISO Clause (in ISO’s Words):**

To control documents required by the EMS.

**Clarification of Purpose:**

Creates a mechanism to change processes, ensures that everyone who needs to know does know, and provides a way to “hold the gains”. Eliminates confusion about what is the current right way to do things. Provides a way for the appropriate people to control the process so that practice and results don’t change spuriously.

**Methods Specified by the ISO Clause:**

Organization shall establish and maintain procedures for controlling all documents required by the Standard, to ensure that:

- a. All documents can be located
- b. All documents are periodically reviewed, revised as necessary and approved for adequacy by authorized personnel
- c. The current versions of relevant documents are available at all locations where operations essential to the effective functioning of the EMS are performed
- d. Obsolete documents are promptly removed from all points of issue and points of use, or otherwise assured against unintended use
- e. Any obsolete documents retained for legal and/or knowledge preservation purposes are suitably identified.

Documentation shall be legible, dated (with dates of revision) and readily identifiable, maintained in an orderly manner and retained for a specified period.

Procedures and responsibilities shall be established and maintained concerning the creation and modification of the various types of document.

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## 4.4.5 Document control

### VERIFICATION GUIDANCE

#### GEMS PERMIT EMS GUIDELINES

**ALL GEMS PERMITS:** The following elements should be present for both GEMS Achiever and GEMS Leader facilities:

- A document control procedure, such that documents:
  - Can be located
  - Are periodically reviewed, revised and approved
  - Have current versions available at essential locations, with no obsolete versions.
- EMS documents that are managed according to the procedures and are legible, identified, and dated.
- Obsolete version are retained for reference and are suitably identified.
- An assignment of responsibility for the creation and modification of documents.

#### PURPOSE

Creates a mechanism to change processes, ensures that everyone who needs to know does know, and provides a way to “hold the gains”. Eliminates confusion about what is the current right way to do things. Provides a way for the appropriate people to control process so that practice, and therefor results, don’t change spuriously.

#### IMPACT OF ABSENCE

- Confusion about “Do we STILL do it this way? I thought we changed it last week!”, or “I have two procedures and don’t know which one is right”, or “This note on the wall has been changed 6 times. What the heck am I supposed to follow?”
- Documents become “dead”.

### 4.4.6 Operational control

**Purpose of ISO Clause (in ISO’s Words):**

To ensure that operations, activities, and goods and services used by the organization that are associated with the identified significant environmental aspects are controlled so that they:

- a. Are carried out under specified conditions, and
- b. Do not lead to deviations from the environmental policy and the objectives and targets.

**Clarification of Purpose:**

Provides operational consistency. Ensures that the “hands-on” processes that directly control environmental impacts and the achievement of environmental goals are appropriately controlled. Also ensures that the facility recognizes its position of authority in controlling “subcontractors” and exercise appropriate controls with them.

**Methods Specified by the ISO Clause:**

Organization shall identify those operations and activities that are associated with the identified significant environmental aspects in line with its policy, objectives and targets.

Organization shall plan these activities, including maintenance, in order to ensure that they are carried out under specified conditions.

Organization shall:

- a. Establish and maintain documented procedures to cover situations where absence could lead to deviations from the environmental policy and objectives and targets.
- b. Stipulate operating criteria in the procedures
- c. Establish and maintain procedures related to the identifiable significant environmental aspects of goods and services used by the organization and communicate relevant procedures and requirements to suppliers and contractors.

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## 4.4.6 Operational control

### VERIFICATION GUIDANCE

#### GEMS PERMIT EMS GUIDELINES

ALL GEMS PERMITS: The following elements should be present for both GEMS Achiever and GEMS Leader facilities:

- An identification of those operations and activities that are associated with its identified significant environmental aspects.
- Documented procedures that stipulate operating criteria and controls for identified operations in consideration of the need to prevent deviations from the environmental policy, objectives and targets.
- Procedures related to significant environmental aspects of goods and services it uses

GEMS LEADER PERMITS:

- Procedures to communicate procedures and requirements related to significant environmental aspects to relevant suppliers and contractors.
- Examples of communications with suppliers and contractors.

#### PURPOSE

Provides operational consistency. Ensures that the “hands-on” processes that directly control environmental impacts and the achievement of environmental goals are appropriately controlled. Also ensures that we recognize our position of authority in controlling “subcontractors” and exercise appropriate controls with them.

#### IMPACT OF ABSENCE

- See 4.4.5, above, but applied to working details rather than macro EMS processes. An unstable system.
- Differences in performance operator to operator, shift to shift, month to month.
- Inability to reliably meet performance goals because the processes and operations that impact performance are not identified and controlled.
- Changes in performance due to uncontrolled changes of materials or of supplier performance.

### 4.4.7 Emergency preparedness and response

**Purpose of ISO Clause (in ISO’s Words):**

To identify potential for and respond to accidents and emergency situations.  
 To prevent and mitigate the environmental impacts that may be associated with them.

**Clarification of Purpose:**

Ensure that the operation is prepared for reasonably foreseeable emergencies, can prevent them wherever possible, can deal with these situations effectively, and mitigate the effects.

**Methods Specified by the ISO Clause:**

Organization shall:

- a. Establish and maintain procedures to identify potential for and respond to accidents and emergency situations.
- b. Establish and maintain procedures for preventing and mitigating the environmental impacts that may be associated.
- c. Review and revise, where necessary, its emergency preparedness and response procedures, in particular, after the occurrence of accidents or emergency situations.
- d. Periodically test such procedures where practicable.

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**Verifier Assessment Code:**

## 4.4.7 Emergency preparedness and response

### VERIFICATION GUIDANCE

#### GEMS PERMIT EMS GUIDELINES

**ALL GEMS PERMITS:** The following elements should be present for both GEMS Achiever and GEMS Leader Permit facilities:

- A defined set of responsibilities, a management structure and a plan for emergency response to accidents and emergencies.
- Procedures to identify potential accidents and emergency situations.
- Procedures to respond to accidents and emergency situations.
- Procedures that address prevention and mitigation of environmental impacts associated with accidents and emergencies.
- A training program that includes specific provisions for skills in emergency preparedness for appropriate individuals.
- Procedures for periodic review and revision of emergency preparedness.
- If any accidents or emergencies have occurred, a review of procedures following the occurrence.
- Periodic drills or exercises to test the implementation of the procedures.

#### PURPOSE

Ensure that the operation is prepared for reasonably foreseeable emergencies, can deal with these situations effectively.

#### IMPACT OF ABSENCE

- Events that could or should be minor turn into major emergencies.



### 4.5.1 Monitoring and measurement

**Purpose of ISO Clause (in ISO’s Words):**

To monitor and measure the key characteristics of operations and activities that can have a significant impact on the environment.

To track performance, relevant operational controls and conformance with the organization’s environmental objectives and targets.

To periodically evaluate compliance with relevant environmental legislation and regulations.

**Clarification of Purpose:**

Ensures that performance measurement is based on sound metrics and that metrology processes are reliable and sound. Requires that commitments to stakeholders (such as permit conditions) are taken seriously and that the organization takes primary responsibility in monitoring their performance to meet the agreed conditions, rather than waiting for stakeholders to call. Also ensures that goals are real because the facility must establish consistent ways to demonstrate that it is meeting them or not.

**Methods Specified by the ISO Clause:**

Organization shall:

- a. Establish and maintain documented procedures to monitor and measure, on a regular basis, the key characteristics of its operations and activities that can have a significant impact on the environment.
- b. Track performance, relevant operational controls and conformance with the organization’s environmental objectives and targets
- c. Calibrate and maintain monitoring equipment, and retain records of this process according to the organization’s procedures

Establish and maintain a documented procedure for periodically evaluating compliance with relevant environmental legislation and regulations.

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## 4.5.1 Monitoring and measurement

### VERIFICATION GUIDANCE

#### GEMS PERMIT EMS GUIDELINES

**ALL GEMS PERMITS:** The following elements should be present for both GEMS Achiever and GEMS Leader Permit facilities:

- Documented procedures to monitor and measure on a regular basis key characteristics of operations and activities that can have a significant impact on the environment.
- Monitoring and measurement records that track performance, operational controls and conformance with the organization's objectives and targets.
- Performance measures that provide a clear and quantified measure of environmental performance in context with past performance.
- (OPTIONAL, BUT RECOMMENDED) Performance measures that provide a clear and quantified measure of environmental performance in context with similar facilities within the industry sector.
- Monitoring and measurement records that track operational controls
- Requirements and procedures to calibrate and maintain equipment designed to monitor and measure the key characteristics of its operations and activities that can have a significant impact on the environment.
- Records of this process.
- Documented procedures for periodically evaluating compliance with laws and regulations.
- Evidence of the evaluation of compliance.

#### PURPOSE

Ensures that performance measurement is based on sound metrics and that metrology processes are reliable and sound. Requires that commitments to stakeholders (like permit conditions) are taken seriously and that the organization takes primary responsibility in monitoring their performance to meet the agreed conditions, rather than waiting for downstream neighbors to call. Also ensures that goals are real because we must establish consistent ways to demonstrate that we are meeting them or not.

#### IMPACT OF ABSENCE

- EMS is disconnected from reality.
- "Seems to me that we got a lot better at recycling this year. Gee, must be maybe a 50% increase? Maybe even 60%!"
- "It's OK if that thermometer goes a little over the limit because it always reads a few degrees high."
- "I use my finger to measure temperature of process waste water."
- "We know when we exceed BOD limits because the guy next door complains."

**4.5.2 Nonconformance and corrective and preventive action**

**Purpose of ISO Clause (in ISO’s Words):**

To handle and investigate nonconformance  
 To mitigate any impacts caused  
 To initiate and complete corrective and preventive action.

**Clarification of Purpose:**

To ensure that appropriate resources are applied to restore the EMS to a state of conformance, especially when a problem is recurring or resists standard methods. Corrective action fixes the problem while preventive action prevents it from recurring. Ensures that “fixed” problems stay fixed. Preventive action creates an EMS that is proactive rather than reactive.

**Methods Specified by the ISO Clause:**

Organization shall:

- a. Establish and maintain procedures for defining responsibility and authority for handling and investigating nonconformance, taking action to mitigate any impacts caused and for initiating and completing corrective and preventive action
  - b. Implement and record any changes in the documented procedures resulting from corrective and preventive action.
- Corrective and preventive action shall be appropriate to the magnitude of problems and commensurate with the environmental impact encountered.

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## **4.5.2 Nonconformance and corrective and preventive action**

### **VERIFICATION GUIDANCE**

#### **GEMS PERMIT EMS GUIDELINES**

**ALL GEMS PERMITS:** The following elements should be present for both GEMS Achiever and GEMS Leader Permit facilities:

- Procedures and designation of responsibility for investigating and handling non-conformance from the EMS, including identification of the cause.
- Procedures for corrective and preventive action.
- A process to evaluate the environmental impact of a non-conformance and assess the appropriateness of the corrective and preventive actions.

#### **PURPOSE**

To ensure that appropriate resources are applied to restore the EMS to a state of conformance, especially when a problem is recurring or resists standard methods. Causes “fixed” problems to stay fixed. Preventive action creates an EMS that is proactive rather than constantly reactive.

#### **IMPACT OF ABSENCE**

- Repeated performance problems or recurring compliance violations.
- Problems that are hard to fix don’t get fixed.
- An audit program with ineffective corrective action falls apart very quickly because of cynicism.

### 4.5.3 Records

**Purpose of ISO Clause (in ISO’s Words):**

To demonstrate conformance to ISO 14001.  
 To support implementation and operation of the EMS.  
 To record the extent to which planned objectives and targets have been met.

**Clarification of Purpose:**

The EMS’s memory. It allows the EMS to learn from the past. Proof that things happened as planned, or didn’t. Fulfills certain regulatory requirements. Provides evidence for audits.

**Methods Specified by the ISO Clause:**

Organization shall establish and maintain procedures for identification, maintenance and disposition of environmental records, including records of training and audits and reviews.  
 Records shall be legible, identifiable and traceable to the activity, product or service involved.  
 Records shall be stored and maintained in such a way that they are readily retrievable and protected against damage, deterioration or loss.  
 Their retention time shall be established and recorded.  
 Records shall be maintained to demonstrate conformance to the requirements of the standard.

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## **4.5.3 Records**

### **VERIFICATION GUIDANCE**

#### **GEMS PERMIT EMS GUIDELINES**

**ALL GEMS PERMITS:** The following elements should be present for both GEMS Achiever and GEMS Leader Permit facilities:

- Procedures to identify, maintain and dispose of environmental records.
- Legible and identifiable records for training, audits results and management reviews.
- Mechanisms for record storage and retrieval.

#### **PURPOSE**

The EMS's memory – allows EMS to learn from the past. Proof that things happened as planned, or didn't. Fulfills certain regulatory requirements. Provides evidence for audits.

#### **IMPACT OF ABSENCE**

- Inability to quickly locate records required by law, such as training records or waste manifests.
- "I don't remember if I closed that valve last week or not."
- "Who approved this shipment?"
- "How often do we really check the toxics vault?"
- "How much IPA have we bought this year?"
- "Have we told the supplier that we need low sulfur diesel fuel or not?"

### 4.5.4 Environmental management system audit

**Purpose of ISO Clause (in ISO's Words):**

To ensure that periodic environmental management system audits are carried out.

**Clarification of Purpose:**

Demonstrates management's commitment to have an EMS with integrity. Ensures congruence between documented procedure and actual practice. It is the main feedback mechanism to assure management and third party stakeholders that things are actually happening as planned. Helps EMS improve through constant and repeated review.

**Methods Specified by the ISO Clause:**

Organization shall establish and maintain procedures for periodic EMS audits to be carried out.

1. To determine if the EMS conforms to planned arrangements for environmental management, including ISO requirements
2. To determine whether it has been properly implemented and maintained
3. To provide information on the results of audits to management.

Audit program and schedule shall be based on the environmental importance of the activity concerned and the results of previous audits.

Audit procedures shall be comprehensive and cover the audit scope, frequency and methodologies, as well as the responsibilities and requirements for conducting audits and reporting results.

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## 4.5.4 Environmental management system audit

### VERIFICATION GUIDANCE

#### GEMS PERMIT EMS GUIDELINES

ALL GEMS PERMITS: The following elements should be present for both GEMS Achiever and GEMS Leader Permit facilities:

- A program and procedure for periodic EMS auditing.
- Audit procedures that cover:
  - Audit scope
  - Frequency and schedule
  - Methodologies
  - Responsibilities for conducting and reporting results
- Audits of a scope sufficient to measure conformance with the requirements of the EMS.
- Provision of information to management regarding results of the audit.
- Audit procedures that are appropriate to the environmental importance of the activity.

#### SURVEILLANCE AUDIT GUIDELINES

An ISO 14001 registered facility is expected to receive an external surveillance audit on generally an annual basis by their registrar. The ISO Guidelines (ISO/IEC Guide 62, 1996) read: “The certification/registration body shall carry out periodic surveillance and reassessment at sufficiently close intervals to verify that its organizations whose EMS are certified/registered continue to comply with the certification/registration requirements. Note: In most cases it is unlikely that a period greater than one year for periodic surveillance would satisfy the requirements of this clause.”

Surveillance audits should have an “external” element by one of the following:

1. Be performed by a qualified auditor who is independent from the company, and holds no conflict of interest relative to the company
2. Be performed by a qualified auditor who may be from within the company, but is independent of the organizational unit which is covered by the EMS
3. Be performed by an internal auditor, but such that audit reports and findings are provided to DEQ for review, who may at their option perform on-site verification.

The following surveillance procedures should be present for both GEMS Achiever and GEMS Leader facilities:

- A program for periodic surveillance audits that meets the above guidelines.
- Procedures for providing information to DEQ in the annual report regarding results of the audit(s) and associated corrective actions.

#### PURPOSE

Demonstrates management’s commitment to have an EMS with integrity - “We insist on congruence between documented procedure and actual practice.” The main feedback mechanism to assure management that things are actually happening as planned. Helps EMS improve through constant and repeated review.

#### IMPACT OF ABSENCE

- Documented “EMS” that is not implemented in practice.
- Practice that diverges from documented procedure over time.
- Cynicism because of knowledge that the documents are only for show.
- Documented procedure that reflects “best practice” but actual practice that doesn’t.



### 4.6 Management review

**Purpose of ISO Clause (in ISO’s Words):**

To ensure the EMSs continuing suitability, adequacy and effectiveness.  
 To ensure that the necessary information is collected to allow management to carry out this evaluation.

**Clarification of Purpose:**

Adjusts the EMS based on changes in business conditions, what works and what doesn’t, internal audit findings, etc. Also is usually the mechanism for focusing management attention on environmental performance metrics and progress on environmental programs.

**Methods Specified by the ISO Clause:**

Organization’s top management shall, at intervals that it determines, review the EMS to ensure the EMSs continuing suitability, adequacy and effectiveness.

The management review shall ensure that the necessary information is collected to allow management to carry out this evaluation.

The review shall be documented.

The review shall address 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 continual improvement.

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## **4.6 Management review**

### **VERIFICATION GUIDANCE**

#### **GEMS PERMIT EMS GUIDELINES**

**ALL GEMS PERMITS:** The following elements should be present for both GEMS Achiever and GEMS Leader Permit facilities:

- A documented management review process that involved top management.
- Designated intervals for management review.
- Documentation of reviews that have occurred.
- Evidence that changes to policy, objectives and other EMS elements were addressed in light of audit results and/or changing circumstances.

#### **PURPOSE**

Adjusts the EMS based on changes in business conditions, what works and what doesn't, internal audit findings, etc. Also is usually the mechanism for focusing management attention on environmental performance metrics and progress on environmental programs.

#### **IMPACT OF ABSENCE**

- An EMS that is disconnected from senior management and from the realities of the business.
- Lack of accountability for achieving goals and completing corrective actions.

**Draft**  
**SUMMARY SHEET / ACTION WORK SHEET**  
**for a CEMP-Comparable EMS**

(\* List objective evidence or “crosswalk” with ISO and use verification guidance/worksheets in the EMS Guide.)

<b>CEMP Principle</b>	<b>Assessment Level (1-5) or In Place / Revision / Gap Needed</b>	<b>Objective Evidence*</b>	<b>Objective Evidence Needed</b>	<b>Action Owner/ Phone #</b>	<b>Date Revised</b>
1 Management Commitment	/ /				
1.1 Obtain Management Support					
1.1.1 Policy Development					
1.1.2 System Integration					
1.2 Env. Stewardship and Sustainable Development					
2 Compliance Assurance and Pollution Prevention					
2.2 Emergency Preparedness					
ETC.					
2.3 Pollution Prevention and					

Resource Conservation					
ETC.					

**Draft**  
**SUMMARY SHEET / ACTION WORK SHEET**  
**for an ISO-Comparable EMS**

<b>ISO Element</b>	<b>Assessment Code C / S / N or In Place / Revision / Gap Needed</b>	<b>Objective Evidence Needed</b>	<b>Action Owner/ Phone #</b>	<b>Date Revised</b>
4.2 Environmental Policy	/ /			
4.3.1 Environmental Aspects				
4.3.2 Legal and other requirements				
4.3.3 Objectives and Targets				
ETC.				

