

# E&P Environmental Management

## Environmental Issues | E&P Environmental Management

Exploration and production operations involve a variety of relationships, from company and contractor partnerships, and joint ventures, to dealing with other stakeholders such as government and the public.

There is a need for a systematic approach to management of health, safety and environmental (HSE) issues.

General corporate management principles are:

- Define corporate strategies and environmental objectives
- Adopt health, safety environmental management system
- Pursue technical cooperation and capacity building
- Develop partnerships and communications
- Initiate prevention and cleaner production techniques
- Develop and maintain accident preparedness
- Ensure proper assessment, evaluation and planning of projects
- Training
- Review and audit

Some company environmental management tools related to the exploration and production process

Activity	Environmental management requirement
Desk study: identifies area with favourable geological conditions ⇩	Establish environmental management system Environmental profile
Aerial survey: if favourable features revealed, then ⇩	Environmental profile
Seismic survey: provides detailed information on geology ⇩	Preliminary environmental assessment/review Environmental training Operational procedures*
Exploratory drilling: verifies the presence or absence of a hydrocarbon reservoir and quantifies the reserves ⇩	Preliminary environmental assessment/review or Environmental impact assessment Environmental training Environmental monitoring Operational procedures*
Appraisal: determines if the reservoir is economically feasible to develop ⇩	Preliminary environmental assessment/review or Environmental impact assessment Environmental training Environmental monitoring Operational procedures*
Development and production: produces oil and gas from the reservoir through formation pressure, artificial lift, and possibly advanced recovery techniques, until economic reserves are depleted ⇩	Environmental impact assessment Environmental training Environmental monitoring Environmental audit Waste management Operational procedures*
Decommissioning and rehabilitation may occur for each of above phases.	Site assessment Implementation of site restoration plan Environmental monitoring Operational procedures*

Health and safety management planning must demonstrate that:

- A systematic and structured approach to managing health and safety will be adopted;
- Controls are in place to reduce risks to as low as reasonably practical
- Staff are adequately trained;
- Equipment is maintained in a safe condition.

A Permit to Work (PTW) system must be developed.

The PTW will ensure that all potentially hazardous work is carried out safely and ensures effective authorization of designated work, effective communication of the work to be carried out including hazards involved, and safe isolation procedures to be followed before commencing work.

Design and operation measures to manage principal risks to occupational health and safety are provided in the Company General HSE Guidelines.

Commitment to and demonstration of continual improvement in performance is vital in ensuring that management is effective and maintained.

Monitoring and auditing show how well an operation performs and provide a measure of effectiveness.

It is also important to consider how the HSE management system applies with respect to contractors, suppliers and consultants.

In an industry where much of the service and field- work is carried out by non-company personnel, it is important to ensure effective communication, monitoring, auditing and reporting links with the suppliers of services.

Surveillance of operations is not the only mechanism to be considered and the criteria for choosing suppliers, checking of their own environmental record and of their own internal management systems, and incorporation of their activities in company reports are important considerations if the total management system is to function.

---

**Environmental management in oil and gas exploration and production, UNEP Technical Publication**

