

## 14 ENVIRONMENTAL MANAGEMENT

### ANSWERS—QUIZ 1

1. a
2. b
3. a
4. d
5. d
6. A value chain is the process by which products (or services) are conceived, produced, marketed, distributed, used, and recycled or disposed.
7. Waste minimization can be accomplished by source reduction and recycling.
8. Source reduction is usually preferable to recycling because it has a lower total effect on the environment.
9. Principle 21 holds that although countries have the right to develop, they have a responsibility not to damage the environment outside their borders. This includes the oceans and Antarctica, as well as other countries.
10. Agenda 21 emphasizes the development of processes and procedures that achieve a balance between the needs of both present and future generations of life on the planet.
11. The SEC has required that publicly traded companies disclose in annual and quarterly financial statements estimates of environmental liability. The SEC's persistence has resulted in improved reporting from industry and an indication that companies are looking closely at their environmental liabilities.
12. The advantages to using analytic tools are as follows:
  - The financial approach is understood by corporate decision makers who might otherwise wrestle with environmental measurements presented in parts per million/billion.
  - Linking corrective action costs to the potential future cost of a problem allows rational choices based on cost-effectiveness between competing demands for limited corrective action funds.
  - By trying to measure impacts (or externalities) rather than outputs, the true cost of an environmental problem is captured. Impacts consider not only the cost of reducing outputs but the social costs to environmental receptors.

### ANSWERS—QUIZ 2

1. a
2. a
3. a
4. c
5. a
6. b
7. The most important U.S. environmental regulations are the following:
  - Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)
  - Resource Conservation and Recovery Act (RCRA)
  - Underground Storage Tank Regulations
  - Clean Air Act of 1990
  - Clean Water Act
  - Safe Drinking Water Act
  - Toxic Substances Control Act (TSCA)
  - Oil Pollution Act of 1990
8. A spill-reporting plan should detail the plant's procedures, telephone numbers of all agencies that should be notified, and who has the authority to report spills.
9. The Superfund Amendments and Reauthorization Act of 1986 covered emergency planning, community right-to-know, and toxic release reporting, among other notification requirements.
10. Some secondary regulations that may be of interest to the environmental manager include the Indoor Radon Abatement Act, the Lead-based Paint Poisoning Prevention Act, the Lead Contamination Control Act, and the Medical Waste Tracking Act, to name just a few.
11. Gap analysis is a determination of where an organization is relative to the requirements of ISO 14001.
12. The controversy over CERCLA or Superfund is due to its perceived cost/benefit ratio, that is, the costs of compliance and litigation have been staggering versus relatively modest cleanup of sites.
13. Carbon dioxide, chlorofluorocarbons, methane, and nitrous oxide, produced in quantity by industrialized nations over the last 200 years, gather in the atmosphere and absorb the infrared waves emitted from the earth. This may be causing global warming, which could turn arable land in the higher latitudes

into deserts and could melt polar icecaps, causing a rise in sea levels.

### **ANSWERS—CASE STUDY**

1. Environmental audits by outside consulting firms are sometimes used as the first step in determining what needs to be done to comply with regulations. An environmental consulting firm can be specifically contracted when there are serious concerns about compliance with environmental regulations and statutes. The consultants can perform a complete review of a company's compliance with all pertinent regulations, or they can focus on specific areas.
2. These audits often pay for themselves by reducing future compliance costs and avoiding costly penalties.
3. Because many corporate environmental issues are legal, companies need a close association with an appropriate attorney. Without such a relationship, the company may overlook key environmental data or legal facts that can plague it far into the future. An attorney can suggest preventive legal measures that will avoid problems that could prove costly both financially and in terms of corporate image and public relations.