

PART B

**PRINCIPLES OF
ENVIRONMENTAL
TECHNOLOGY**

As mentioned in the introduction, this part consists of 4 chapters: Water Pollution Problems, including Water Resource Problems, Air Pollution Problems, Solid Waste Problems, and Examination of Pollution.

In connection with each environmental problem, the source of pollution will be given. All technological methods will be mentioned with special emphasis on their principles and an overall evaluation of their environmental consequences.

Principles and processes are marked in the text as in Part A.

Selection of methods will be discussed with reference to the principles mentioned in Part A. Environmental technology is often based upon the same processes as found in nature for elimination of pollutants; in this case, reference to the natural process already mentioned in Part A will be given.

After each chapter there is a list of questions or problems, which to a certain extent are linked with material presented in Part A.

Generally there are 4 principal methods for solving pollution problems:

- A. To reduce the amount (energy and/or material) discharged by use of alternative technology. It may often be necessary to enforce the use of alternative technology by legislation. For example, reduction of sulphur in fossil fuel and lead in gasoline.
- B. To recycle or reuse waste products. This method is very attractive from an environmental point of view, as a resource and an environmental problem are solved simultaneously. For example, recovery of chromium from waste-water and production of animal feed from slaughterhouse waste.
- C. To decompose the waste to harmless components. For example, biological treatment of municipal waste-water.
- D. To remove the waste for harmless deposition at another location. For example, use of domestic waste as a soilconditioner.

All 4 methods are not equally applicable to all environmental problems, but they will be mentioned because it is significant in environmental technology to be receptive to new and non-traditional solutions. The relationship between environmental issues and the other serious problems mankind is facing - shortage of resources, the energy crisis and ever-increasing population growth - make it absolutely essential to seek new ways.