## MINING INDUSTRY

Mexico has traditionally been an important producer of a wide variety of minerals, including such materials as silver, copper, manganese, and iron ore. Total industry sales in 1990 exceeded $US 3.6 billion. The sector is highly dependent on export earnings, with over 42% of production sold abroad.

The industry is dominated by five private sector conglomerates, each controlling a series of smaller mining companies. The conglomerates are: *Industrias Peñoles SA de CV*, *Grupo Industrial Minero Mexico SA de CV*, *Corporación Industrial San Luis SA de CV*, *Empresas Frisco SA de CV*, and *Compañía Mineral Autlan*. Although the five conglomerates only control 44 of the 6000 Mexican mining companies, their total assets exceed $US 4.5 billion. The conglomerates also manage most of the larger mineral deposits in Mexico. In general, 2.4% of all companies are classified as "large" and control 82% of Mexico's mining exports. The average export volume of these firms is $US 8.5 million.

Revenue concentration within the industry results in a high proportion of relatively small firms. Sales of wastewater equipment to such companies will be more difficult, as they are often reticent to commit to a large "non-productive" investment. Additionally, before a sales pitches to such companies can be made, the buyer will need to be educated about wastewater equipment. Lead times may be extensive.

In 1990, 59% of total mining production focused on non-ferrous industrial metals. In turn, 8.4% of production centred on steel related metals and minerals, 14.2% on non-metallic minerals, and 18.4% on precious metals. Technologies that focus on the treatment of water polluted by non-ferrous metals will have a substantially larger market.

Production volumes in the Mexican mining industry rank on a global scale. Mexico ranks as one of the top three producers of silver, bismuth, cadmium, antimony, celestite, fluorite, and graphite. Although Mexican production is less than the Canadian equivalent, a substantial market exists nevertheless.

A large number of foreign mining companies are active in the Mexican market, controlling a total investment of over $US 500 million. Companies from Canada, Japan, United States and Germany are particularly active. Examples include Noranda, Placer Dome, Cominco, Mitsubishi, and Metalgeschaft. However, foreign ownership of mining deposits is still limited to a maximum of 49%. Additionally, in some strategic areas such as sulphur, potassium, and phosphorous, foreign participation can be limited to 34%. In either case, legal mechanisms allow nominal control by foreign companies.

### Norms & Enforcement:

No water discharge norms have yet been developed for the extraction of minerals. However, industry representatives are working with authorities to develop such regulations. The first norm, expected by the end of 1994, regulates the construction of drainage ditches used in the process of mineral extraction. The norm will not include specific pollution parameters such as BOD.

### Perspectives:

Significant growth is expected. Only 20% of Mexican territory has been surveyed for mineral deposits.

### Target Market:

Over 6000 companies operate in the mining industry. However, the industry is dominated by 5 mining consortiums. An additional 139 companies are classified as "large."

Between 1990 and 1994 over $US 2.1 billion has been invested in the Mexican mining industry. 41% of investment for that period focused on new projects, while 34% focused on capacity and efficiency improvements. This second category also includes money programmed for environmental projects; in 1992 $US 13.4 million was spent on environmental protection and preservation.

High investment levels reflect the opportunities available in the Mexican mining industry. Industry experts estimate that only 20% of the country has been surveyed in sufficient detail to enable the exploitation of mineral resources. As more territory is surveyed the total number of commercially usable mineral deposits is expected to rise. Given the relative isolation of new mineral deposits, each new development will require its own wastewater treatment facility.