

EXECUTIVE SUMMARY

The environment has become a hot topic in Mexico. Air, water, and solid waste pollution is reaching critical levels. Many of the current environmental problems are attributable to the rapid urbanization of the Mexican population and an emphasis on economic development at all costs. Additionally, enforcement of environmental regulations has been patchwork to date.

These environmental problems are visible in day-to-day life: toxic industrial waste is deposited in municipal dumps; in an effort to reduce air emissions Mexico City car owners only drive their vehicles six days of the week; and water is increasingly polluted due to untreated industrial and municipal wastewater.

The 1991 closing of Pemex's Azcapotzalco refinery — one of the company's largest — signalled the government's intent to get tough on environmental degradation. Since that date, the federal government has undertaken a variety of environmental initiatives. This report focuses on developments in the field of industrial wastewater management.

Specific opportunities for Canadian companies in the wastewater management field are identified. Potential buyers represented in this report are concentrated in five industries: mining, pulp & paper, food & beverage, chemical & petrochemical, and autoparts.

In industrial wastewater, government action has focused on the development and implementation of water discharge norms. 33 norms, covering a wide variety of industries, have been established to date. An additional 12 norms are expected to be implemented in 1994. Each norm provides parameters within which water discharges from a specific industry or municipality must comply. In general, these norms are similar to Canadian wastewater regulations. The penalty for wastewater discharges exceeding specified parameters may be as stiff as plant closure.

Enforcement is based upon a zoning system which classifies towns, cities, and states by waste-

water treatment priority. For example, a factory located in zone one is likely to feel greater pressure from environmental protection authorities to treat water than a similar plant in zone four. In spite of this zoning system, the enforcement of discharge norms has been scattered. Only 28%¹ of companies pay water discharge taxes on excess pollution levels. Alarmingly, 69% of firms admitted that they don't currently comply with wastewater norms. Nevertheless, the majority of firms interviewed for this study expect wastewater enforcement to become more stringent in the near future.

There is a significant lack of resources for treatment of both industrial and municipal wastewater. Capacity exists for the treatment of only 25% of industrial effluent. As a result, almost 50% of Mexican BOD effluent remain untreated. To solve this problem, environmental authorities are pushing the private sector to invest in additional treatment plants.

72% of companies have expressed an interest in purchasing wastewater goods and services. Most companies are looking to buy advanced technology, as opposed to equipment components or services. Interestingly, recycling systems were also considered a probable future purchase by 39% of respondents. Whereas wastewater is purchased for legal benefit, most companies consider recycling equipment a money saving purchase. Given the high cost of water, recycling is expected to significantly reduce input costs.

Most Mexican companies consider foreign wastewater technology superior to domestic technology. This perception provides foreign vendors with an

Interesting Notes:

Industrial wastewater control is based upon effective enforcement. In turn, enforcement requires accurate and rapid chemical analysis. While there are over 5500 laboratories in Mexico, only 71 are licensed by SEDESOL to serve the entire industrial wastewater analysis market. Companies often wait significant time periods for wastewater discharge analysis. Opportunities may exist for Canadian companies in this field.

Through the course of this study, opportunities in municipal wastewater management also became apparent. Sources estimate that as much as \$US 3.0 billion will be spent on the construction of wastewater treatment plants on the U.S./ Mexico border alone. Canadian wastewater management firms may also wish to investigate this opportunity.

1. Wastewater statistics listed in this report refer to the results of a survey conducted with a sample base of 125 companies. For further information, please see the section entitled "Methodology".