some wastewater effluents or run-off. These possibilities are discussed in the following paragraphs.

Water Pollution

Asbestos occurs naturally in ground formations, which can cause contamination of surface waters, rivers, and ground waters through erosion. Asbestos fibers can contaminate water systems as a result of leaching from asbestiform deposits or commercial applications. Contamination can also result from the disposal of asbestos waste, such as effluents that are discharged directly into water systems, emitted to the atmosphere, or disposed of in landfills and then later enter surface or ground waters. Further, during asbestos manufacturing and mining/milling processes, fibers are often released into surface waters by wastewater discharge, particularly from improperly disposed of effluents.

Insufficient data make it difficult to assess the potential for asbestos contamination of water systems, but some studies have shown that plants manufacturing asbestos paper products have the greatest potential for contamination of surface waters. This may be due to the large amounts of asbestos raw materials used and the wet processes associated with the manufacture of asbestos paper products. The manufacture of asbestos-cement pipe also involves wet processes that discharge asbestos effluents. However, the suspended solids that are collected in clarifiers are usually coated or encased in cement and tend to solidify. Consequently, when these fibers are transported to landfills they rebound in a cement matrix, making release of the buried fibers unlikely. Similarly, it is unlikely that asbestos products in land fills would release significant fibers that could penetrate any distance through soil unless substantial cracks and fissures were present [Exhibit No. 84–417, p. 290].

To the extent that manufacturers change to wet-processing methods, however, there is the potential for an increased use of water and a resultant increased amount of wastewater containing asbestos or increased amounts of suspended solids disposed of as waste. Lack of data makes it difficult to determine to what degree this will occur and if it would significantly affect the environment. Moreover, the potential for any such occurrence may be offset depending on the types of treatment facilities the manufacturers use. For example, many plants recirculate water from wastewater treatment facilities to the process, resulting in fewer effluents discharged.

In case where wastewater is discharged into local sewer systems, the regulation would not significantly affect the amount of fibers discharged. EPA's effluent limitations guidelines (40 CFR Part 427 in 39 FR: 526–7535, February 26, 1974; 40 FR:1874–1878, January 9, 1975; 40 FR:6444, February 11, 1975; FR:16172. April 25, 1975) include (1) standards of performance for all new point sources within specified categories of asbestos manufacture and (2) pretreatment standards for new plants discharging to municipal sewer systems. These limitations would serve to prevent the discharge of effluents, specifically suspended solids, into the environment without prior treatment. Moreover, the Federal Water Pollution Control Act Amendments of 1972 require that wastewater effluents be treated by the best practicable control technology (BPT) by December 31, 1977, and that the best available technology (BAT) economically achievable be used by December 31, 1983. The EPA effluent limitations establish the degree of effluent quality necessary to meet the BPT and BAT requirements. The BAT and pretreatment standards would essentially mean no discharge of process wastewater to navigable waters and no discharge of incompatible pollutants, respectively [Exhibit No. 84–420]. These requirements will not change as a result of the rule, and where they continue to be met, effluent quality will not be altered.

In construction, demolition, ship repair and brake repair operations, asbestos-containing products are frequently wetted down in order to reduce airborne fibers during the repair or tear out of materials. In so doing, the once airborne fibers become effluents in the wastewater runoff. To the degree that wetting down practices increase as a result of the revised rule, however, there would be a potential for increased amounts of wastewater run-off at these sites. In wet abatement activities, the potential for wastewater effluents can be reduced by using portable high-volume water filtration units. Similarly, as HEPA vacuums are used to clean up the worksite, asbestos fibers in the form of slurry would be properly captured and disposed of and would not contribute significantly to wastewater effluent. In these types of operations, both the current OSHA standard and EPA regulations [Exhibit No. 84–414] require work practices for the proper handling, sealing, storing, and disposing of any associated waste, debris, or wastewater. These regulations would not change as a result of the rule, and therefore, such operations would not necessarily contribute to any increase in the amount of pollutants present in wastewater run-off. The overall net contribution to water pollution from these wetting down practices, therefore, is generally not considered to be significant.

Solid Waste Disposal

Waste dumps are considered to be major sources of emissions, which can be a potentially serious source of nonoccupational exposure. Waste dumps have been shown to emit significant numbers of fibers that can be detected at considerable distances from the source [Exhibit No. 84–421, p. iii].

A major concern is that waste materials may be disposed of without concern for their airborne emission potential, and as a result, they may be disposed of in open, municipal waste dumps and treated like nonasbestos waste, creating a long-term source of emissions and exposures to unaware workers and others. Dumps and waste piles containing asbestos materials are frequently located in densely populated urban areas. It has been suggested that the population exposure in waste disposal areas near manufacturing plants may be comparable to the exposure experienced by the occupational population. Consequently, waste disposal practices and waste sites are areas of recognized concern.

Emissions of asbestos fibers can occur when the wastes are transferred to the dump and as the surfaces of the waste piles are eroded by weather conditions. Emissions may also occur during transfer operations where asbestos materials may be dumped, crushed, and spread, causing visible dust emissions. Emissions from asbestos manufacturing waste piles can occur during the transporting and discharging of asbestos waste from manufacturing/milling processes. These emissions can be controlled by using enclosures and gas-cleaning devices along transfer points of conveyor systems that move asbestos tailings and by using wetting-agents on the tailings as they are discharged [Exhibit No. 84–421]. Once asbestos tailings are dumped at the site, they can be covered with a protective seal or covering to control further emissions.

Emissions from product disposal may be of potential concern. Generally, however, asbestos-containing products are bound in some type of matrix such as cement, plastic, or asphalt. Once these types of products have been disposed of in landfills or waste sites, they usually do not release any significant amount of free asbestos fibers, unless they are crushed or