It must be kept in mind that methane in the presence of air is explosive at concentrations between 5 and 15 percent. However, a concentration above 15 percent is potentially hazardous as the gas may be quickly diluted by air movement to below 15 percent. Therefore, gas monitoring and control must be included in the planning, design, and operation of a sanitary landfill. This is necessary to prevent the lateral migration of methane to buildings, tunnels, manholes, sewers, or other enclosed spaces, where it would be an explosive and fire hazard, particularly if the surrounding soil is dry, well drained, channeled or cracked and the landfill cover material is a tight soil that does not permit venting to the atmosphere. The control of methane migration is discussed under Sanitary Landfill, this chapter.

Table 5-1 Approximate Composition of Residential Solid Wastes in 1977 and 1989

Component	Percent by Weight[a] 1977	1989
Food waste	17.0	7.9
Paper products	33.5	41.0
Rubber, leather, textiles, wood	7.8	8.1
Plastics	3.6	6.5
Metals	9.2	8.7
Glass and ceramics	9.9	8.2
Yard wastes	17.5	17.9
Rock, dirt, miscellaneous	1.5	1.6

Sources: *Environmental Quality—1979*. Supt. of Documents, GPO, Washington, D.C., pp. 256-309, and Jack Lewis, "What's in the Solid Waste Stream?" *EPA Journal*, March/April 1989, p. 16.

[a]Weights and percentages will vary with community, time of the year, and geography. For design purposes, make actual weighings. Figures do not reflect recycling.

The above figures do not include junked vehicles, water and sewage treatment plant sludges, waste oil, pathological wastes, agricultural wastes, industrial wastes, mining or milling wastes.

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