

INDUSTRIAL SANITATION AND PERSONNEL FACILITIES

tamination of the water supply is direct or indirect cross-connection with a source of contaminated water. Other common causes are improper maintenance of drinking and cooking facilities and improper installation of plumbing facilities, permitting back-siphonage of used water.

The integrity of the drinking water system must be maintained throughout the plant. If there are piping systems containing water used for other purposes, such as sprinklers and fire hydrants or manufacturing processes, each should be clearly identified, particularly at outlets. There should be no direct connection between drinking water and other water systems. Long dead end runs of pipe which cannot be flushed or drained and which might serve as a reservoir for contaminated water should also be eliminated.

Plumbing

Fixtures and faucets should be installed to prevent back-siphonage of contaminated water if the pressure drops in the supply

line. Faucets and similar outlets should be at least 1 in. above the floodrim of the receptacle beneath. To prevent backflow into the drinking water supply, surge tanks and air gaps may also be required in the drainage lines from process equipment.

Open joints in underground supply lines into which ground water or water from leaky sewers can seep are another common source of contamination. This condition may arise where pipes are subject to vibration or corrosion and the joints between pipes open mechanically or the pipe sections crack. Codes usually prohibit sewer and drinking water lines to be installed in the same trench, unless the sewer line is placed at a much greater depth and a certain horizontal offset provided.

Frequently, contamination results when a system is opened for repair or the addition of new pipe and is not disinfected before being put back into service.

If the supply for sprinklers and fire hydrants is the same as that for drinking

TABLE 37-A
RECOMMENDED LIMITING CONCENTRATIONS OF CONTAMINANTS
IN DRINKING WATER

Undesirable Substance	Concentrations above which water should not be used if other sources are available (mg/L)	Dangerous Substance	Concentrations above which water supply should be rejected (mg/L)
Alkyl benzene sulfonate	0.5	Arsenic	0.05
Arsenic	0.01	Barium	1.0
Chloride	250	Cadmium	0.01
Copper	1	Chromium (hexavalent)	0.05
Carbon chloroform extract	0.2	Cyanide	0.2
Cyanide	0.01	Fluoride	See Table 37-B
Fluoride	See Table 37-B	Lead	0.05
Iron	0.3	Selenium	0.01
Manganese	0.05	Silver	0.05
Nitrate	45		
Phenols	0.001		
Sulfate	250		
Total dissolved solids	500		
Zinc	5		

From *Drinking Water Standards* U.S. Public Health Service 1962