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(57) Abstract :

The stand-alone integrated water treatment system (100) is a comprehensive solution featuring a pre-treatment module (104) to remove large particles, a filtration module (106) for finer contaminant removal, a disinfection module (108) to neutralize pathogens, and a distribution module (110) for supplying clean, potable water (112) to communities. The pre-treatment module employs mesh filters or sedimentation tanks, while the filtration module utilizes activated carbon and membrane filters. The disinfection module offers a choice between chlorine and ultraviolet light disinfectants. The distribution module ensures reliable water supply through a network of pipes, pumps, and storage tanks. This modular system is versatile and adaptable, catering to diverse water sources and contaminants, delivering safe water to underserved communities.

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