Modular system for drinking water supply

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Solving

Solving the problem of ensuring the population's need for drinking water is met during wartime and other emergencies: is a mobile block-modular natural water treatment facilities, which are capable of rapidly and reliably providing areas affected by disaster with drinking water.

This equipment once manufactured will be transferred to the communal property of territorial communities free of charge.

productivity of cleaning system m3/h	productivity of cleaning system m3/day	meeting the needs of water consumption, people		
		minimum supply of drinking water (3 liters per day per person)	minimum supply of drinking water (25 liters per day per person)	minimum supply of drinking water (150 liters per day per person)
5	120	40 000	4 800	800
Cost	75 000 \$	per unit		



Description

The purpose of the mobile water purification system is to purify surface and underground water sources to provide water to the population, the military, industry, and communal facilities in cities and villages.

Since it is impossible to directly use natural water due to its quality indicators, our goal is to supply such equipment that allows the use of various natural sources of water for its further preparation and purification.

In the event of an emergency the mobile water purification system provides constant access to drinking water for 25,000 people at the rate of 5 liters per person.

The drinking water purification system mounted in a 20-foot container. The water purificator system is designed for three-stage purification of surface and underground water and consists of lighting, reagent purification and disinfection, and selective filtration. Chemical compounds used for water reaction correction and coagulation are dosed to the raw water line before the reagent treatment tanks. Purified water after filtration is safe for consumption.



Water from a surface source or artesian water is supplied to the container type water purification system by a specialized pump (submersible/self priming or borehole), which provides a supply capacity of at least 6 m3/hour.

The mode of water supply can be set as periodic, or constant. Inside the container, raw water is automacally collected, treated with reagents, disinfected, purified, and supplied with a capacity of up to 5 m3/hour and a pressure of up to 5 bar.

The purification and supply of water is possible 24 hours a day.

Features:

- •incoming water is taken from any source of water supply of varying levels of pollution;
- •the quality of the prepared water out from the water treatment system meets the requirements of Ukrainian State requirements 2.2.4-400-10 "Hygienic requirements for drinking water intended for human consumption";
- the productivity of the system is 5 m³/h of purified drinking water;
- energy consumption 10 kW/h.



The first technological stage is intended for the preliminary cleaning of water from suspended particles and coarse impurities, the size of which is more than 150-200 microns, by mechanical means and the organization of the dosing of cleaning and disinfection reagents.

The second technological stage provides reagent treatment and disinfection of water.

The third technological stage is pressure selective filtration. For mechanical cleaning, multimedium filtration units with synthetic filter material are used. For absorption purification of water from residual sodium hypochlorite content and from chlorine-derived organic water pollutants and hydrogen sulfide, absorption filtration units loaded with special filtering material are used.





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