

# Dubai plans reservoir of treated water

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Safely treated waste water could be the answer to Dubai's need for having an underground water reservoir for meeting any fresh water crisis.

Diminishing natural groundwater is a serious threat to fresh water security in the arid region where desalination plants are the major source of water supply. Environmental experts have always highlighted the need for underground water reservoirs citing that cities here would have only a few days of water if desalination plants are damaged due to any reasons.

Last year, Abu Dhabi started working on underground reservoirs. Now, Dubai is exploring ways to make use of safely treated and good quality sewage water for recharging ground water, which, in the long run, will help make an emergency reservoir of underground water.

A feasibility study to reuse treated sewage water for this purpose is part of a latest joint venture undertaken by the Dubai Municipality with global engineering and construction company Hitachi Plant Technologies Ltd (HPT), part of Japan's Hitachi Group.

The municipality has announced that an agreement for a pilot project was signed between the two parties represented by Director of Sewage Treatment Plant Department at DM Mohammed AbdulAziz Najm and CEO, Board Member, and Director-General of the Middle East Regional Headquarter of HPT Ltd Hidenao Kawai.

If the pilot project becomes a success, the 182.5million cubic metre of sewage water generated annually in Dubai could pave the way for replenishing the aquifer. If this water can be injected into the ground, it can help build a back-up reservoir to meet threats to fresh-water supply through desalination plants.

As per the agreement, Membrane Bio-Reactor (MBR) system developed by HPT will be used to biologically remove the nutrients in the waste water to achieve an optimum level of water quality which will make treated sewage water highly safe for use in various industrial usages. In the second phase, the project will investigate the possibility of using the treated water in aquifer recharge.

According to Najm, the one-year-long project will initially focus on biologically eliminating the nutrients like nitrogen and phosphorous from the sewage water to acquire highly safe water that can be used for industrial and agricultural purposes. On an average, he said, Dubai generates half a million cubic metres of sewage water per day.

"We are already using treated water for irrigation of farms, parks, DM projects, football fields, golf courses etc," he said.

Mohammed Abukaff, an environmental expert with DM, said about 70 per cent of the waste water is already being reused after treatment. "The rest of it is diffused to the sea after purification according to the World Health Organisation's criteria. But, our attempt is to make 100per cent use of the waste water." He pointed out that saving ground water was important for facing any disaster or water crisis.

Manager of HPT (MENA), Dr Basseem Osman said the DM-Hitachi research will be conducted at an experimental station on the premises of DM's wastewater treatment plant in Aweer. He said investigating the performance of the MBR system with extreme BNR (Biological Nutrient Removal), which will meet upcoming water quality regulations in the UAE, will begin by the end of April. The temporary plant will process 20 cubic metres of sewage water per day