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Microbial, chemical and physical properties of drinking water in Bushehr distribution network system

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ABSTRACT

Due to importance of drinking water quality in distribution network, this study was carried out to give a clear view of physical, chemical and microbial quality of drinking water of distribution network in Bushehr. In this cross-sectional descriptive study, 50 samples were taken from 10 stations of drinking water distribution network (5 times from every station). The mean values of physical, chemical and microbial parameters of drinking water in distribution network were as follows: turbidity (0.274 NTU), electrical conductivity (1,149.3 μS/cm), pH (7.12), total hardness (458), calcium hardness (390.9), magnesium hardness (68), alkalinity (171.5) mg/L $CaCO_3$, magnesium (16.95), calcium (156), residual chlorine (0.63), chloride (83.26), fluoride (0.48), iron (0.11), phosphate (0.053), nitrite (0.0026), nitrate (3.08), sulfate (728.4), TDS (577.66) mg/L, heterotrophic plate counts (HPC; 299.8 CFU/mL), total coliform (0) and fecal coliform (0). Results of the present study revealed that except TDS, sulfate, and HPC (14% of samples) the mean concentration levels of all examined parameters in drinking water of distribution network in Bushehr generally complied with the Iranian National Regulation (INR), EPA and WHO drinking water guidelines.

Keywords: Bushehr; Drinking water; Distribution network; Physicochemical and microbial quality

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