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ABSTRACT

Nitrate exists in groundwaters naturally and/or due to human activities. Waters with high concentration of nitrate must be treated to prevent adverse health effects. Water samples were collected from 18 drinking water treatment plants in Riyadh, Gasseem and Hail regions for the purpose of evaluating the performance of those plants in nitrate removal. Results indicate that the concentration of nitrate in groundwater ranges between 2.9 and 84.8 mg/L and in the plants product water ranges between 1.2 and 45.2 mg/L, with removal rate of up to 69.2%. High nitrate removal occurs in plants with RO or ED processes. In general, RO process gave a better removal than ED process. It is recommended that continuous monitoring of plants performance be carried out particularly for those that are supplied with high nitrate groundwater.

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[Start, and Sawhny, 1980, Whelan, and Titamnis 1982]

[SASO, 1993] (- /) NO₃- /

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[Nolan, and Stoner. 2000, Spalding and Exner. 1993, Foster, et al. 1986, Milburn, et al. 1990, Levallois, et al. 1998, Donoso, et al. 1999, Pekny, et al. 1989].

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[Alabdulaaly et al, 2001]

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[APHA, AWWA, WEF, 1998]

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[Hindin, et al.1968] .

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[Sword, 1969 ; Takenaka, et al., 1975]

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