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ASSESSMENT OF SAFE DRINKING WATER: A CASE STUDY FROM JAFFNA MUNICIPAL COUNCIL

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Access to safe drinking water is essential to human life and wellbeing, and is a key issue in public health. Less than half the population of the Jaffna Municipal Council is supplied with piped water through stand posts from supply wells located at Thirunelvely and Kondavil. The objective of the study was to investigate the suitability of water for drinking in water supply by the Jaffna Municipality. Water supply wells at Thirunelvely new, old and Kondavil were tested for all physical, importance chemical and bacteriological characters during May 2007 to February 2008 at monthly interval and results were compared with Sri Lankan drinking water standards. Moreover another seventy five water samples in the Jaffna Municipality area were randomly selected from the private and public dug wells, tube wells and tap water. All tested supply wells had the problem of nitrate as N and it varies from 6.8 to 15.3 mg/l. The total alkalinity showed the temporal variation within the range of 250 - 950 mg/l. All physical parameters, pH, Electrical conductivity, chloride, total hardness, nitrite as N, total iron, phosphate, fluoride, and sulphate concentrations were below the permissible level of Sri Lankan standards in supply wells and had zero value of arsenic, manganese and the total coli form and E- coli. But water samples collected from the private and public dug wells, tube wells and tap water had above permissible level of electrical conductivity, chloride, nitrate as N, sulphate, total coli forms and E-coli. Frequent chlorination is imperative in other water sources to eliminative the problem of total coli form and E-coli. Supply wells could be used with monitoring and creation of buffer zone from agricultural activities can be considered as one option to minimize the problem of build up of nitrate N as early precaution measure.

Key words: water supply, Jaffna Municipality, groundwater quality.

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