Water Quality Assessment of Qazvin River Using NSFWQI Index for Water Quality Classification

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Abstract

Introduction: Nowadays Water pollution is one of the most important problems in the world and environmental concerns are the major sources of surface water. Shahrood River is one of the most important rivers in Qazvin province. Materials and Methods: Sampling was done in two seasons of November 96 (winter) and July 97 (summer) during two times and three replications from 7 stations including Taleghan, Alamoot, RajaeeDasht, Razmian, Loshan, Loshan 1 and 2. Qualitative parameters included: DO, pH, Total Solids, BOD, Turbidity, Temperature, Phosphate, Nitrate and Fecal Coliform. The data were determined using NSFWQI and water quality index of each river section measured. Results: The results showed that the mean TDS was 180.66 to 329.33 mg/l, pH 8.01 to 8.55, BOD 0 to 2.8 mg/l, DO 5 to 7.5, Coliform 1618.33 to 27300, and Turbidity of 0.73 to 114.9 NTU in summer the TDS 184.66 to 451mg/l, pH 7.73 to 8.55, BOD 0 to 1 mg/l, DO 9 to 13.7, Coliform 162/33 to 1653/333, And the Turbidity is 0.72 to 262.66 in winter. Conclusion: The water quality status of summer in station 1 was good in other stations moderate and in winter season station 1 and 4 were in good range and in other stations was moderate. As a result, Shahrood River water is good and medium quality and due to lower water quality of homes, agricultural lands near the river are also causes of increased Nitrate and Phosphate in winter due to agricultural and urban effluents around the river. As a result, river water is somewhat suitable for drinking and needs purification and the Industrial agents around the river have no effect on the water quality.

Keywords: Shahrood River, Water Quality, NSFWQI.

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