

Water Quality Assessment and the Possibility of Using it for Drinking and Agriculture (Roudan, South Iran)

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ABSTRACT

Roudan sub-basin is part of the Bandar Abbas-Sadiq Basin in Hormozgan Province, about 80 km northeast of Bandar Abbas, in southern Iran. The purpose of this research is to investigate the chemical quality of water and to study the various parameters of the chemical quality of the water entering the reservoir of the proposed sites of the underground dam in the sub-basin of Roodan and finally determine the water quality of the river for agricultural and drinking purposes. In this study, the results show that surface waters of the area are suitable for agricultural and drinking purposes using Wilcox and Schuler scale.

KEYWORDS: Water chemical quality, Roudan sub-basin, Shooler diagram, Makran, Wilcox diagram.

INTRODUCTION

For use and determination of water quality for various uses, including agriculture, drinking, concentration of salts in different fluxes, the amount of anions and cations present in the water, which are important parameters in determining the chemical quality of water, are also evaluated. In this research, the results of chemical tests performed on the watershed area of the region were collected and analyzed. Changes in chemical parameters of water depend on factors such as geological formations within the catchment area, ion exchange of surface waters of the minister of land, as well as the river discharge regime. To this end, the quality of stations in the area of the collection plan has been analyzed and analyzed. The purpose of this study was to evaluate the chemical quality of water in the abovementioned plant, to study the various parameters of the chemical quality of the water entering the proposed sites, to evaluate the variation of salts in different discharges and, finally, to determine the water quality of the river for agricultural and drinking purposes. Roudan sub-basin is part of the Bandar Abbas-Sadiq basin in Hormozgan province, in southern Iran, about 80 km northeast of Bandar Abbas.

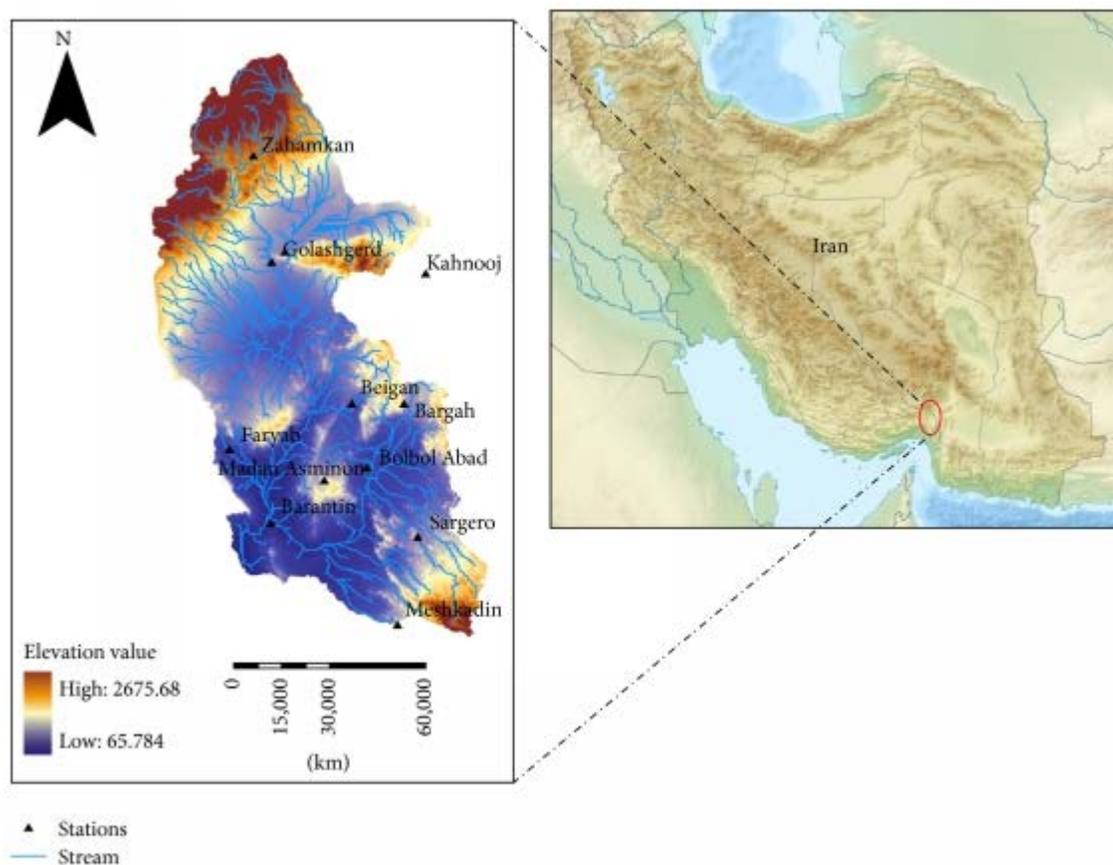


Figure 1: Visualization of meteorological stations and Roodan location.

CHEMICAL QUALITY

Based on the results of chemical analysis of water in hydrometric stations, parameters such as maximum corrected values, minimum recorded values, average values recorded and standard deviation for anions and cations, as well as dry amounts (T.D.S) and sodium adsorption ratio (S.A.R) have been calculated.

Classification of water for Agricultural

Agricultural quality assessment has been proposed in terms of agriculture, which, based on the majority of them, is based on the total amount of soluble salts and their ionic composition. In this study, the Wilcox classification (1955) has been used to determine the quality of water for use in agriculture (irrigation). In this classification, the two factors of salinity (EC) and conservation (SAR) are the criterion. The results of the water quality assessment of the two stations are presented in Fig. (2) Examining this figure shows that surface waters are located in two stations in the class (C2S1).

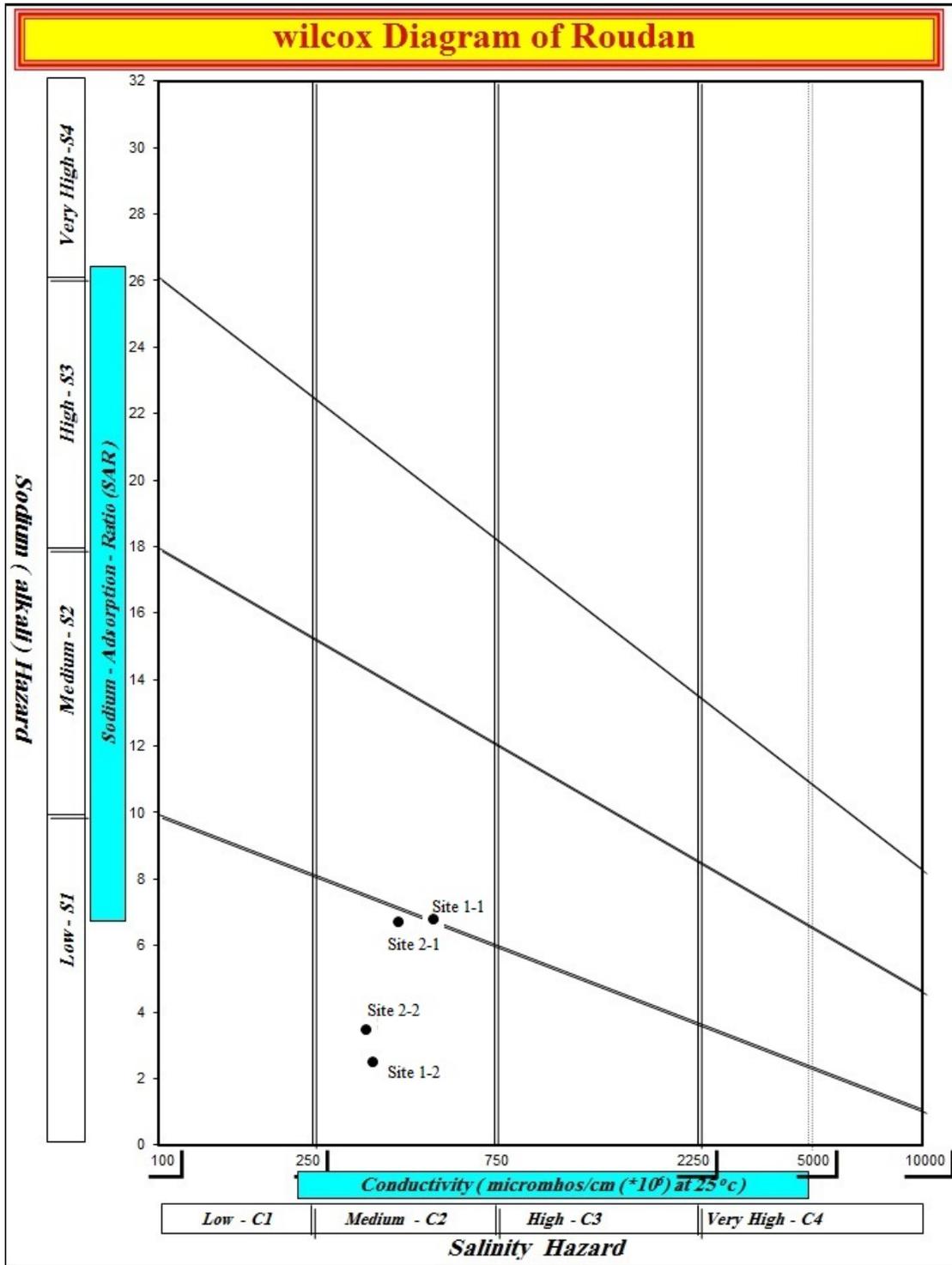


Figure 2: Wilcox-surface water diagram on proposed sites

Classification of water for drinking

Quality standards for drinking water are different in different parts of the world and even in different cities, but one of the most common methods for classifying waters in terms of drinking is using the Schuler diagram. Using the results of the water analysis of the proposed sites, the Schuler diagram illustrates the water quality of the area in terms of drinking. The results of water analysis are presented in Fig. (3), which, given the above, can be said that surface water is acceptable.

CONCLUSIONS

The results of the analysis of the quality of the chemical on the water of the proposed sites have been analyzed and according to the Wilcox diagram of surface water for agricultural use in class (C2S1), suitable for agriculture and using the results of the analysis of the Shuler diagram Water quality is good for drinking and in good flood times it is acceptable, due to the ophiolite environment.

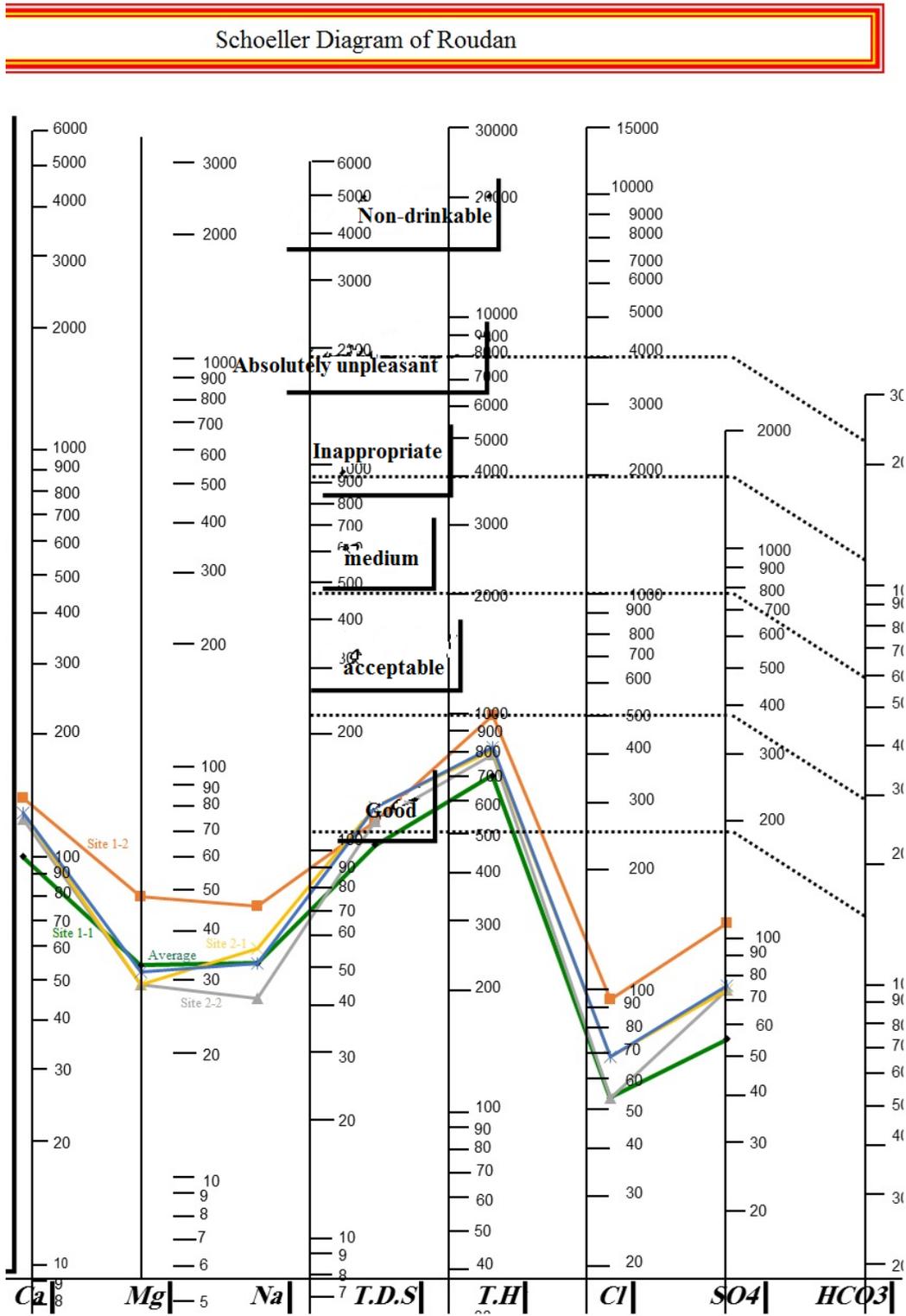


Figure 3: Surface water slurry diagram on proposed sites

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Editor's note.

This paper may be referred to, in other articles, as:

Tahereh Khorrami and Peyman Rezaei: "Water Quality Assessment and the Possibility of Using it for Drinking and Agriculture (Roudan, South Iran)" *Electronic Journal of Geotechnical Engineering*, 2018 (23.01), pp 315-320. Available at ejge.com.