

Assessment of the Corrosion and Scaling Potential of Groundwater from an Area Affected by Industrial Activities

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The quality of groundwater resources can significantly influence the descaling and corrosion of water installations. The particular interest currently shown in the problems of corrosion and corrosion protection is due to the consequences of exceptional technical and economic significance of the destruction of metals in contact with groundwater. The most commonly used clues corrosion are Langelier saturation index (LSI), Ryznar stability index (RSI), Puckorius scaling index (PSI) and Aggression Index (AI) and Larson – Skold index (LRI) This study aimed to assess the corrosion and scaling potential of an area where industrial activities take place. Therefore, the corrosion and scaling potential of resources groundwater was investigated according to LSI, RSI, PSI, AI and LRI. The descriptive analysis was used to describe the basic characteristics of the data obtained in the study and to indirectly indicate the activity of the selected parameter in the groundwater samples. Descriptive analysis and interpolation technique Inverse distance weighted (IDW) were used to describe the basic characteristics of the data obtained in this study and the spatial variability of the indices. The results showed values of the indices LSI, RSI, PSI, LRI and AI between -0.22 and 8.29, -8.5 and 7.6, -6.94 and 9.82, 0.12 and 2.25, respectively 8.62 and 11.1 In this study, most water samples showed high scaling. 6.7% showed high corrosion. Salinity varied between 0.06 and 1.1 g / L, higher values being present in samples near areas with industrial activity. A high value of salinity was found in 17% of the analyzed groundwater. Although each of the corrosion indices depending on the circumstances can be used to describe the water quality, the correlation between them and the analysis of the chemical quality of the groundwater can give more reliable results.

References:

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