

## **Hydrogeochemistry of Yamama Reservoir Formation Water – West Qurna Oil Field- Southern Iraq.**

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### **Abstract**

Six formation water samples were collected from six wells sunk in Yamama reservoir formation water in West Qurna oil field. Temperature, pH, and electrical resistivity were directly measured on the spot. Then the collected samples were analysed for  $\text{Na}^+$ ,  $\text{K}^+$ ,  $\text{Ca}^{+2}$ ,  $\text{Mg}^{+2}$ , Fe total,  $\text{H}_2\text{S}$ ,  $\text{Cl}^-$ ,  $\text{CO}_3^{-2}$ ,  $\text{HCO}_3^-$ ,  $\text{SO}_4^{-2}$ , and Total Dissolved Salt (T.D.S). The formation waters under study are characterized by their acidic medium (pH=5.88) and thermal nature (97-115°C ) and low resistivity. The hydrochemical study suggests that the Yamama formation waters be of Na-Ca-Chloride type. This type of water reflects the marine origin and subjection to diagenesis processes, further more, the hydrochemical ratios indicate the expected west ward flow of Yamama formation water in West Qurna field, besides, the relative stagnant conditions favorable for hydrocarbon preservation.