Water characteristics of Al-Tharthar and AL-Habbaniya Lakes and their effects in the water characteristics of the Euphrates River

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Abstract

The research aims at characterizing the water of AL- Tharthar and AL-Habbaniya Lakes and their suitability for human uses, and their effects on the characteristics of waters of the Euphrates River. Eight sites were identified, three of which in the AL- Tharthar Lake and three in Al Habbaniya Lake and two in the Euphrates River by using a (GPS). Samples were taken from three depths in each of the sites for three times. The total samples were (72). The analysis of nine properties shows the following:

1-The values of pH within AL- Tharthar and AL-Habbaniya lakes were within the limits of the standards for human drinking use. 2 - The rates of electrical conductivity (EC) in the water of AL- Tharthar and AL-Habbaniya lakes were within the slight degree of compliance for irrigation purposes, and might for drinking by all livestock and poultry. 3- The average concentration of total soluble salts (TDS) in some locations was slightly higher than the maximum allowable limit for human drinking, and in some other sites was within the allowed values for the same purpose. 4 - There were coliform in AL- Tharthar and AL-Habbaniya Lakes and the Euphrates River. It needs to be removed in case of using water for human drinking. 5- The average concentrations of heavy metals (lead, cadmium, chromium, mercury, manganese)were below the level of detection and calculation of all samples in the search. 6 - AL- Tharthar and AL-Habbaniya Lakes increased the amount of total soluble salts (TDS) in the water stored in it. 7- Water of AL-Tharthar and AL-Habbaniya Lakes affected the water of the Euphrates River leading to the increase in the rate of (pH) and thus changed the water quality concerning the permissible limits for all uses by simply increasing the upper limits allowed for drinking and irrigation, and increasing in the rate of electrical conductivity (EC) and total soluble salts (TDS) rate without changing in suitability for different uses.