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Data Article

Data on trend changes of drinking groundwater resources quality: A case study in Abhar



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ABSTRACT

The data of this study was to determine the groundwater quality trend changes in Abhar city (Iran) during one decade (2002–2016). In the first and end year of the study period, the Mean \pm SD of total hardness (as calcium carbonate, mg/l), electrical conductivity (as micromhos/cm) and total dissolved solid in the first and end year of the study period were 192.69 ± 56.83 , 235.25 ± 84.73 and 606.21 ± 194.69 , 744.55 ± 288.52 and 348.79 ± 106.81 , 464.71 ± 183.52 respectively. On the basis of Pearson correlation coefficient, the ascending trend of some parameters concentration with time was significant at the level of 95% of confidence limits ($\alpha \leq 0.05$).

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Specifications Table

| | |
|----------------------------|---|
| Subject area | Chemistry |
| More specific subject area | Describe narrower subject area |
| Type of data | Table, Figures, Charts |
| How data was acquired | The required data were collected from the results recorded in the water in the Water and Wastewater Company of Zanjan province during the years 2002–2016 |
| Data format | Raw, Analyzed |
| Experimental factors | All water samples in polyethylene bottles were stored in a dark place at room temperature until the metals analysis |
| Data source location | Abhar, Zanjan province, Iran |
| Data accessibility | Data are included in this article and supplement file excel |

Value of data

- Determination of the physical and chemical parameter including EC, pH, TDS, TH, Ca^{2+} , Mg^{2+} , HCO_3^- , Na^+ , K^+ , Cl^- and SO_4^{2-} in ground water was investigated in Abhar rural area, Zanjan province, Iran.
- Continuing the ascending trend of the parameters concentration and declining the quality of water resources and incompatibility with Iranian drinking water standard can lead to significant health risks.
- Tracking the trend changes, investigating the reasons and preventive measures are important

1. Data

Data presented here deal with monitoring of physical and chemical including pH, Na^+ , Ca^{2+} , Mg^{2+} , K^+ , EC, TDS, HCO_3^- , SO_4^{2-} , Cl^- , and TH as in Abhar County, Zanjan Province, Iran. Fig. 1 shows the study area and the sampling points. A summary of Water quality characteristics and correlation of the parameters with fluoride are presented in Tables 1 and 2 respectively. Charts 1–10 show trend in some parameter in the years (2002–2016)

2. Experimental design, materials and methods

2.1. Study area description

Abhar is the capital of Abhar city in Zanjan province in Iran. Abhar city is located in Zanjan province at UTM coordinates of $X = 49.25\text{--}48.35$ east longitude and $Y = 36.45\text{--}35.50$ north latitude. The climate of the study area is semiarid, and the precipitation is 300 mm per year. Also the air's highest and lowest temperatures are 38°C and -5.15°C , respectively, with an annual average of 12.7°C (Fig. 1).

2.2. Data collection

The required data were collected from the results recorded in the water in the Iran Water resources management Company during the years 2002–2016. In this study, 750 samples were analyzed by descriptive and analytical statistics (correlation coefficients) in 15 years (Table 3). The important major cations and anions in water samples were analyzed following a standard method (APHA 2008) [1–12].

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