

Groundwater overdraft and the impact of artificial recharge on groundwater quality in a cone of depression, Jining, China

## **Abstract**

Abstract.

Groundwater overdraft has led to cone of depression formation in Jining City, China. This paper investigates spatial groundwater overdraft severity by an index and Geographic Information System (GIS) method, and impact of artificial recharge on groundwater quality, by a 3-D groundwater flow finite difference numerical model code MODFLOW, and a solute transport model code MT3D. Hydrogeological and anthropogenic factors were evaluated. Groundwater concentration of chloride ions and total hardness (THD) as a result of artificial recharge were evaluated. The hydro-geochemical formation of the aquifer and recharge water quality greatly impact the groundwater quality. The recharge water must be within high groundwater quality standards.

Authors.

[Basil T.I. Ong'or](#) & [Shu Long-Cang](#)