The relationship of land use and groundwater quality in Choushui River Alluvial Fan, Taiwan

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Date: 2018/10/04

Abstract

Choushui River Alluvial Fan is located on the west coast of Taiwan. Groundwater is a major supply of water resource in this area. A long-term groundwater quality survey in Choushui River Alluvial Fan has revealed obvious contamination of the groundwater in some areas, with measured concentrations of groundwater quality parameters in excess of the acceptable levels regulated by Taiwan Environmental Protection Administration. The connection between groundwater and landscape above it supports the premise that groundwater quality may be affected by the overlying of land uses. The objectives of this study are to investigate the relationship of land use on groundwater quality in Choushui River Alluvial Fan. Factor analysis is applied to 15 groundwater quality parameters and 9 land use categories around the wells. The result of this study indicated that groundwater quality is influenced by different land uses and natural processes, and provide a basis for evaluating current land use practices and adopting new measures to prevent or control groundwater pollution.