

# Impact of Human Activities on Groundwater Quality in Thailand

Nattida SAMHONG<sup>1</sup>

Department of Groundwater Resources, Ministry of Natural Resources and Environment,  
Ngamwongwan Road, Lat Yao, Chatuchak, Bangkok 10900, Thailand.

Corresponding Author(s): nattida.sh@gmail.com

## ABSTRACT

Groundwater contamination occurs when man-made products such as landfills, industries, domestic activities, sewage pipelines, leaking underground storage tanks, improperly managed manufacturing operations, illegal dumping, defective septic systems, wells without proper seals, etc. get into the groundwater and cause it to become unsafe and unfit for human use. Moreover, materials from the land's surface can move through the soil and end up in the groundwater. For example, pesticides and fertilizers can find their way into groundwater supplies over time. In addition, it is possible for untreated waste from septic tanks toxic chemicals from underground storage tanks, and leaky landfills to contaminate groundwater. Even though contamination can also occur from naturally occurring mineral and metallic deposits in rock and soil such as salinity and naturally occurring heavy metals.

There are more than 3,000 groundwater-contaminated sites from human activities at risk in Thailand but only 67 sites are monitored by the Department of Groundwater Resources (DGR). As a result of these found groundwater quality analyses of 5 sites were rich in heavy metals and Volatile Organic Compounds (VOCs) which were detected as leachate both in surface water and groundwater. However, some areas were stopped working by a court. The trend of toxic wastes has decreased but DGR has continued to monitor frequently. To monitor the groundwater quality in high-risk areas, DGR has been drilling to find sources of contamination and to determine the contaminants extension around the affected sites as well as creating plans, models, and guidelines for restoring contaminated groundwater resources. DGR not only tries to solve these problems by notifying people but also supplies clean water sources to local people in the affected area.

**Keywords:** Groundwater Quality, Groundwater Contamination, Toxic wastes, Volatile Organic Compounds