

# Potability assessment and distribution of trace elements in groundwater from Wanaparthy watershed, Upper Krishna River basin, South India.

S PAOLALSAM VAIPHEI

CSIR-National Geophysical Research Institute

Presenting Author: spvaiphei@gmail.com

A total of 58 groundwater samples were collected from commonly used hand-pump/bore wells, where it serves whole locality accessible for drinking and domestic uses. Groundwater is their main source of water due to scarce perennial rivers and semi-arid region. For better and precise study each sample is collected from within prepared grid map (5\*6 km<sup>2</sup>) from Wanaparthy watershed (rural area), South India. The trace elements dominance order are as follows: Zn highest with 38.67% > B > Ba > As > Hg > Cr > Ni > Cd lowest with 0.47%. Arsenic is found above permissible limit in some samples. Correlation ratio shows positive relation between TH with EC/TDS, which indicates the source of trace elements is primarily of chemical-reaction i.e., rock-water environment. Gently slope region have higher trace concentration comparatively to minimal slope where flow is almost negligible; reason could be gentle slope provides better flow and infiltration rate through structural deform features to reach the aquifer system. HPI shows maximum of samples fall into low class category (fig.1). Meanwhile MI classification, 36.21% with good water quality (fig.2) while 56.90% samples in slightly category with indicate margin line for future contamination if proper management are not well taken up. Source of trace concentration in groundwater is positive towards orogenic source (granitoid terrain), also as the area is devoid of industries. Thus, these results will provide clear picture of trace elements concentration and distribution map to the concern authority to take up right decision for better society and safety.

