

A REVIEW OF HYDROCHEMICAL ASSESSMENT AND GIS MAPPING OF GROUNDWATER IN RURAL AND URBAN AREAS OF LUCKNOW

Mohammad Adil Khan¹, Kamal Nabh Tripathi¹

¹M.Tech Student, Department of Civil Engineering, BBD University, Lucknow.

²Assistant Professor, Department of Civil Engineering, BBD University, Lucknow.

Abstract - Lucknow being capital city of most populated province of India is confronting enormous populace weight. This has prompted overexploitation of normal assets and among them water is most important common asset basic for human survival and biological system. This examination screens ground water quality, relating it to arrive use/land spread and home veil of various water quality parameters are readied by utilizing geographic data frameworks (GIS). Base guide was readied by Overview of India toposheets on 1:50,000 scale. Geographic Information System (GIS) based analysis has been carried out to find out the quality of groundwater for drinking and irrigational purposes. Potassium concentration is found to exceed the maximum allowable limits in 62.82% of samples. Based on the study, it was found that most of the samples are suitable for irrigation purpose.

Key Words: ground water, Lucknow, water quality list, urban and rural spread, Hydro-chemical, Irrigation, Heavy metals, GIS.

1. INTRODUCTION

Water is the most significant common asset, which shapes the center of natural framework. As of late there has been generally speaking improvement in different fields, for example, agribusiness industry and urbanization in India. This has led to increment in the interest of water supply which is met for the most part from misuse of groundwater assets. Hydro-chemical think about is a valuable device to recognize the reasonableness of the groundwater. The physical parameters thought about in the present examination are shading, scent, turbidity and temperature. The concoction parameters thought about are hydrogen particle focus (pH), explicit conductance (EC), complete broke up solids (TDS), all out hardness (TH) and every significant cation and anions. Different laborers in our nation had completed broad investigations on water quality have contemplated groundwater science of shallow aquifers in the beach front zones of have finished up that groundwater present in the shallow aquifers are poor in quality and past consumable point of confinement according to the standard set by WHO. Ground water is one of the incredible common asset in the biosphere. The groundwater is used in Delhi for both

residential and farming purposes, where we focused on its capacity to furnish ranches and little rustic networks with straightforward supplies generally efficiently, in nearness to the clients and ordinarily without the requirement for complex treatment. In the rustic territories, agribusiness is the primary wellspring of job of the populace and ground water is the major wellspring of water system. Overwhelming reliance of ground water assets for water system reasons for existing is apparent from the increment in number of cylinder wells in the district. About 90% of the rustic populace in India is fundamentally reliant on untreated surface or ground water and about 30% of the individuals' need in urban regions is met by groundwater. Because of the inaccessibility of surface water at numerous spots, groundwater is the main exchange wellspring of good quality water in rustic territories. While access to savoring water India has expanded over the previous decade, the gigantic unfavorable effect of dangerous water on wellbeing proceeds. It is evaluated that 21% of transferable maladies in India is water related. The accessibility of this significant common asset has been underestimated expanding ground water use and contamination age have crossed as far as possible in numerous parts, because of quick changing area use design. Land filling is as yet the most widely recognized approach to arrange civil also, mechanical squanders. Ensuing filtering of lethal contaminants through these landfills likewise prompts broad tainting of ground water at numerous spots.

2. LITERATURE REVIEW

After the study of various paper related to hydro-chemical assessment and GIS mapping of groundwater in rural and urban area of Lucknow and conclusion is given below;

[1] A. Verma¹ (2014)

They studied the level of nitrate and nitrite pollution in the ground water of rural areas of Lucknow.

[2] M.K Singh¹ (2017)

In this study the quality and quantity of water supply is of vital significance. Fresh water which is a precious and

limited vital resource needs to be protected, conserved and used wisely by man. But unfortunately, such has not been the case, as the polluted lakes, rivers and streams throughout the world testify. According to the scientists of National Environmental Engineering Research Institute, Nagpur, India, about 70 % of the available water in India is polluted. Happily, there has been acute realization of the need for pollution control among the public, the government and industries. Most countries have come to a stage of recognizing water pollution as a problem and laws to prevent it have been passed. In India the water (Prevention and control of pollution) act was first enacted in 1974 and has been amended from time to time to make it more and more stringent.

[3] V. Rai¹ (2014)

In this study they testified the Fluoride concentration in the drinking water of Lucknow.

[4] A. Verma¹ (2013)

In this study they evaluated the ground water quality of Lucknow by using remote sensing and geographic information systems. He reported that in the residential areas, the drinking water is highly polluted with high population density as compared to sub urban areas which are having less population density and comparatively better quality of water.

[5] K.P Singh¹ (2007)

In this study they reported the hydrochemistry of wet atmospheric precipitation over an urban area in northern Indo-Gangetic plains.

3. CONCLUSION

Based on above talk, it might be finished up that underground water quality in the investigation region is having high connection with the land use. The drinking water is exceptionally dirtied in the local locations with high populace thickness. The water nature of Sub urban territories having less populace thickness and develop territory are having nearly better nature of water. Hence, some successful measures are desperately required to upgrade the drinking water quality by a successful administration plan. the area of the investigation centers that if appropriate arranging and measures are definitely not taken then soon this will inundate the edges of the city where at present the water quality is still great.

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