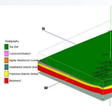
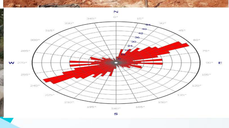
PLANNING & DESIGNING OF MONITORING SYSTEMS FOR MEASURING EFFICACY OF ARTIFICIAL GROUNDWATER RECHARGE

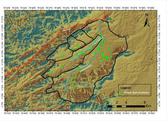
GEOVALE SERVICES





Objectives

- Analysis the existing intervention structures in terms of their efficacy
- Recommendations for new interventions structures for recharge / storage
- Create Aquifer Monitoring System to measure the efficacy of the intervention structures



Methodology

To assess the efficacy of the proposed and existing interventions, it would be important to have a detailed hydrological and hydrogeological map and aquifer characterization of the targeted sub-watershed which includes secondary data collection, gap analysis, collect additional primary data, comprehensive hydrogeological study at micro watershed level, design aquifer monitoring system.

Approach of Work

To design a superior Aquifer Monitoring System Geovale has adopted a particular work approach which will establish a knowledge set about the groundwater scenario of the study area and help to understand the clear picture of supply and demand side water budget of the particular watershed and respective micro watersheds.

Step 1
Divide Study area in to Micro Watersheds & Water Balance Study in each Sub Watershed

Step 2
Compare studies where intervention structure present and intervention structures not present

Step 3
Intra-watershed efficacy study by trend analysis

Step 4
Inter water shed efficacy study

Step 5
Propose new interventions, design aquifer monitoring system for existing and proposed interventions.

Existing Intervention Efficacy Measure

Supply Side Interventions
- Suitability of Location for Intervention
- Sustenance of Aquifer Water Level in Un-confined Aquifer
- Improvement in Water Quality Parameters
- Improvement in Dynamic Resource Availability

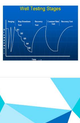
Demand Side Interventions
- Reduction in Number of Abstraction Structures
- Optimization of Crop Water Demand
- Implementation of Any Recommended Changes in Cropping
- Optimization of Water Usage in Various LULC Classes

An aquifer monitoring system would consider demand side water budget of the sub-watershed, considering every land-use type. The monitoring system would also consider the water balance between supply and demand side on a year on year basis.

An ideal monitoring system would be a centralized control system, where all the nodes of the water supply and the demand are monitored through use of sensors.

Hydrocensus
To know the supply & Demand side water budget and groundwater scenario

DRI Test
To know the infiltration rate of a particular soil type

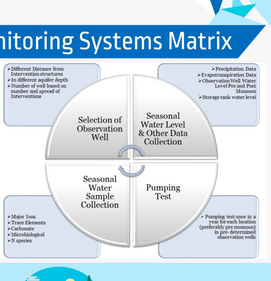


Pumping Test
To determine the aquifer potential

IOT
To monitor water level, quality at daily basis

Aquifer Monitoring Systems Matrix

"This is a CONCEPT, not a MADE EASY SOLUTION!"



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