

ARTIFICIAL RECHARGE OF GROUND WATER

MD Ehtasham¹, Lukman Ali²

Department of civil engineering, Mahaveer Swami Institute, Sonipat,
Haryana (Ggsipu Dwarka) New Delhi

ABSTRACT: *The demand of water increase day to day in many desert regions around the world. Utilizable water is limited underground surface. To elongate nature replacement of groundwater reserves. This time water continually evaporates the oceans and other open water sources. Store the waters in flood duration. Maintain and improve the water quality in dry season. By sensitively we save the water like reuse, reduce and rain water save in dugs or in their roofs. Artificial ground water recharge is good steps for saving water in future generation. Artificial recharge can be many ways like ditch or furrow system, basins, water recharge wells. Save the water save the future.*

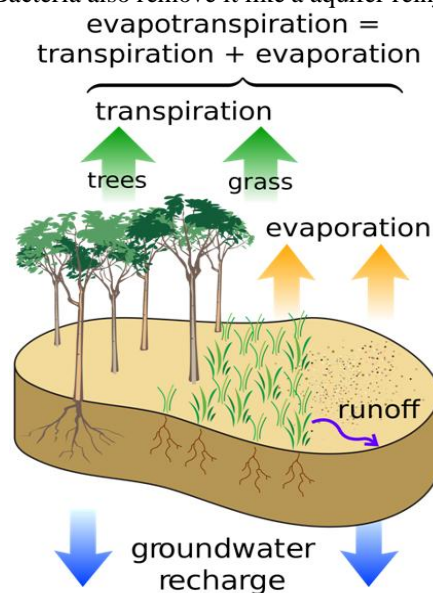
I. INTRODUCTION

Artificial recharge is the process by which the groundwater recharge is elongated at the rate much higher than those under natural condition of percolation.

Hydraulic process, where moves downward from surface water to ground water. This process usually occurs in the vadose zone below plant roots and, is often expressed as a flux to the water table surface.

Ground water is recharged naturally by rain and snow melt and to smaller extent by surface water. Sometime recharge human activities like logging, development etc. the artificial recharge to ground water ambition at increase of ground water reservoir by modifying the natural movement of surface water utilizing suitable civil construction techniques normally address to following issue.

- Remove impurities from sewage
- Bacteria also remove it like a aquifer reinjection.



II. CAUSES OF GROUNDWATER DEPLETION

The causes of low water present their many areas are also directly linked to the reducing cover and soil degradation.

Main regions are groundwater pumping system for irrigation and industrialization is main key issue associated with ground water use, pumping system is big drawback of water depletion.

Example: you have many more money and spent the money at a faster rate than your valet then deposit is collapse eventually.

Effect of groundwater depletion

- Reduced of water in reservoirs (like river, pond, stream, lake etc.)
- Increase the pumping system cost.
- Day by day fell down the of water quality.
- Aquifer growth is slow.

Identify the areas for artificial recharge

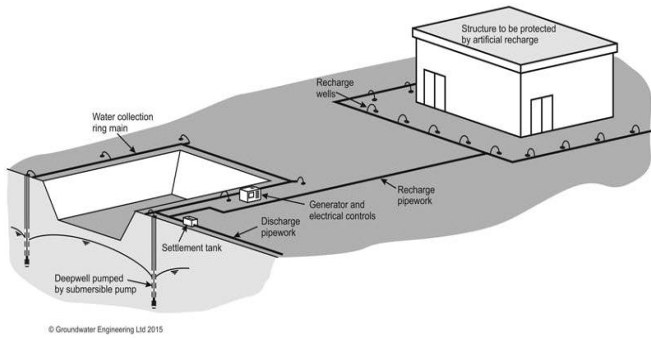
- Essential in terrains low natural ground water recharge.
- Where is rain irregular
- Water level is diminishing due to excess use of water.
- Where, hand pump and pump set are used a large quantity
- Ground water condition is very poor.
- Aquifer has already have been desaturated
- Ground water level is very low.

How to Recharge artificial groundwater

Artificial recharge by two types natural and artificially. By natural process is spontaneous method like dugs or human made dugs for any use of purpose but after rain water collect into it itself. By manmade is or other word artificial like ditch, channel, dam, basins etc. some are listed there.

By percolation tank: it is artificially created surface water pot, submerging in its reservoirs a highly permeable land so that surface runoff is made to percolate and recharge the ground water storage.

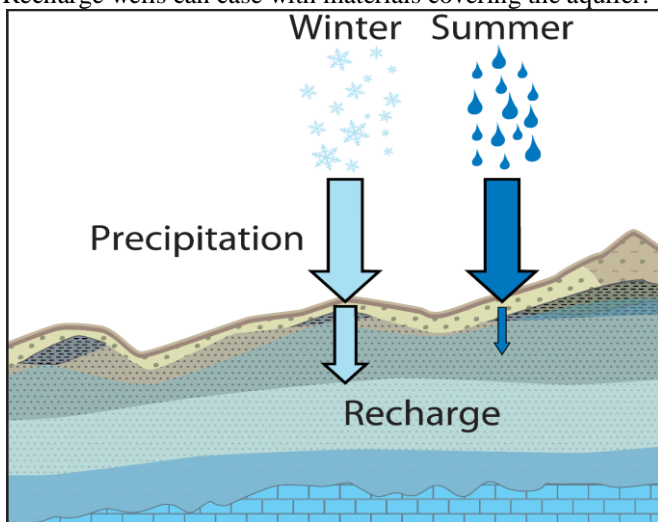
Percolation tank should be located on fractalated and weathered rock for speedy recharge. In case of alluvium the port formations are ideal for locating.



Percolation tank

Recharge well: - it is a surface groundwater recharge technique used to directly discharge water into deep water-bearing zones.

Recharge wells can case with materials covering the aquifer.



Flooding: - rain falling is more the scale then river water is overflow and water is reach in the residential areas is called the flood. and pond, dugs and small place are fully of water and water infiltrated and ground level is charge.

Flood temporary increases river bed permeability by moving clay.



Flood water

Furrow method: - in areas with irregular topography, shallow, flat-bottomed and closely spaced ditches or furrows provide maximum water from sources streams or canal. It is depending the permeability of the soil.

*and other sources are also important way like to dam, barrage etc.

III. PRECAUTION OF WATER BY HUMAN

- Fix the plumbing avoids the leaks in pipes. Do you know a leaking the pipe at home 10 litres?
- You can also conserve water by changing high discharge ones.
- Use water mannerly.
- Reuse water for gardening
- Conserve rainwater on your roof
- Educate the people

Advantage

- To improve the quantity of exiting groundwater through dilution.
- Conservation and storage of excess surface water for future requirements.
- To remove bacteriological and other impurities from sewage and waste water by natural filtration.
- So that water is suitable for re-use
- Land above reservoir can be utilized.
- To enhance the ground water yield in depleted aquifer due to urbanization.
- In us 51% of water used for drinking and 43% used for irrigation.

Disadvantage

There is potential for contamination of the groundwater from injected surface, runoff water. Especially agriculture. Groundwater recharge may not be economically feasible unless significant volumes can be injected into an aquifer. When water traps construction time soil and vegetation cover damage and environment also affected.

IV. CONCLUSION

Artificial storage of water on the land, like dam, reservoirs, weirs barrages etc. major problems is generated by ecological, environmental, and social problems generated. These problems avoid by artificial recharge, has been used for many years in over world. We are serious to prevent water for future generation. Without water we can't imagination of life. I requested to all human on the planet please save the water. please please please.....

ACKNOWLEDGEMENT

I am thankful to MR KUSHAL SHARMA, Mahaveer Swami institute and Technology Sonipat. Valuable support, cooperation, and motivation provided to me during the writing of research paper for constant inspiration and blessing.

For the side of parents who encouragement advice and helped us in our work.

REFERENCES

- [1] Richard W. Healy [estimating ground water recharge, Cambridge university press]
- [2] Srinivasan [Regional estimation of base flow and groundwater recharge]
- [3] Custodio E. and Llamas [National Research council]
- [4] H. Hashemi [Hydro Earth system]
- [5] Takashi Asano [Artificial Recharge of ground water]
- [6] Spandre R. [university of Pisa, Italy]

Bibliography

MD EHTASHAM

BRACH: CIVIL

COLLEGE: MAHAVEER SWAMI INSTITUTE &
TECHNOLOGY

UNIVERSITY: GURU GOVIND SINGH INDRAPARASTH
DWARKA, DELHI HOBBY: WRITING AND CRICKET

