IJARSCT
ISSN (Online) 2581-9429
International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
Impact Factor: 7.301
Volume 3, Issue 11, May 2023

Wastewater Management in Rural India

Mangesh Jadhav, Harsh Bhole, Ketan Kale, Om Gaikwad, Vaibhav Khandale, Sampat Nanaware
Pimpri Chinchwad Polytechnic, Pune, Maharashtra, India

Abstract: *Wastewater management is an important approach to protect water resources and it is defined as the collection, management, and reuse of wastewater. Collection network is one of important infrastructure, undesirable performance can lead to different problem of wastewater management.*

Keywords: Collection, Infrastructure, Waste Management.

I. INTRODUCTION

Water is most important thing in Environmental life. But water is made Odourful and smellful it is effective to human health. For the project Materials Required will be small plastic tank to store wastewater, Filter paper for Filteration of the wastewater. We will first make a base to execute the project on small scale, we will attach Pipes to the plastic tank. Plastic pipe is transferring wastewater all components of our model. Motor and filter paper clean the wastewater and muddy water and purified the water for drinking purposes.Make A Model of wastewater management I will used Plastic pipe, Plastic tank, Black paper, motor and batteries, because of make this model of wastewater management I will explain rural areas people how to manage our water in our home or villages and make a water is fresh and odourless and drinking purposes of clean and fresh water.

II. MATERIALS AND METHODS

2.1 Plastic Pipe

Plastic pipe system is used widely for the transportation of wastewater from the building to the wastewater treatment plant. This can be done by gravity sewer, pressure or vacuum sewer or by using domestic wastewater treatment tanks. Pipelinerehabilitation is also a common application. These pipes are used for collection of water, Filteration of water, Infiltration of water, retention of water, transportation of water and reuse of rain water.Their flexibility allows them to adjust to inevitable ground moment such as void collapses or even earthquakes.

2.2 Pump Stations

A Pump stations are used in waste water management for moving water through the different stages of treatment. According to the US EPA, Pump station capacities range from 76 lpm (20 gpm) to more than 378,500 lpm (100,000 gpm). Prefabricated pump stations generally have a capacity of up to 38,00 lpm (100,000 gpm). Usually pump stations include at least two constant speed pumps ranging in size from 38 and 78,000 lpm (10 to 20,000 gpm) each have a basic well level control system to sequence the pump during normal operation.

2.3 Plastic

Plastic has a good insulation and low thermal conductivity. Plastic has a good transparency and wear resistance.Plastic accumulates in the natural environment due to the durability and low recycling volume. Wastewater treatment plants (WWTPs) have been identified as important sources for the release of plastic into aquatic and terrestrial environment that may lead to further contamination summary of current knowledge on plastic pollution from WWTPs.

2.4 Chemical Wastewater Treatment

In this stage of wastewater treatment chemical process are used for wastewater treatment. To this end, Chemical compound are used to achieve legally prescribed water standard value. Chemical treatment in wastewater treatment includes neutralisation, disinfection, phosphate precipitation, nitrogen elimination and manganese removal.

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III. LITERATURE REVIEW

A review of the existing research articles was carried out by the authors and their study was analyzed for its innovativeness and perception. The views expressed by the various authors are included in the present study.

Pervez Alam et.al. [2014] proposed a solution in Jammu and Kashmir state for the growth of population at fast rate, lack of education poverty especially in rural areas as polluted environment to a great extent area. Here the paper gives the detail about the population of the area, the drainage detail water supply details and the ground water property recorded in the paper.

Dr. Amita Bhide [2011]- In this review paper author said as Maharashtra has historically been one of the highly metro states of India. The urban history of Maharashtra span over to blooms. Urbanization in the state has been effect by the in the north on one hand however the most significant, most effect, shaping the current form of urbanization in the state is the dependent impact which focus around the private port city.

Zisan Aslam, Yawar Mushtaq Raina, Irfan Mohiuddin [2015]-In this review papr author said as Water overstress physically, chemically as well as biologically is known as Wastewater. Pitch away process of solid waste and its management has been leading environment problem for most of the cities in India especially in Rural India to make people aware about the level of poison in wastewater and to be suggest the way of management of wastewater which will result in throw away of domestic sewage without any danger to human health, a study on characteristics of wastewater in Rajouri Town, Jammu and Kashmir was connected.

Rohit Ashok Mohite, Lalitkumar Kishor Joya[2021]-In this review paper author said as Mumbai has the fourth largest pollution in the world (12.4 million resident, 2011 of India) this results is a lot of regular traveller flow from nearby towns, such as NaviMumbai and thane, resulting in wide range of services Mumbai has invested in expanding basic services to make pollution is need such as water supply soil waste disposal and wastewater collection and management in order to make it's growing needs.

IV. BENEFITS OF WASTEWATER MANAGEMENT

Wastewater management is an essential aspect of industry operations, especially in aiming to protect the health of various ecosystems. Properly treated wastewater can be a reliable water source for many purposes. Good wastewater management maximizes the reusing of water for sustainability and nature preservation.

4..1 Water Clarification:

Clarification is a vital step in a wastewater treatment process. It involves removing suspended solids via gravity settling, which provides a clear liquid effluent. The secondary function of water clarification is to remove scum or floating matter that accumulated on the water surface.

4.2 Waste Reduction:

Through the management of waste water, the amount of waste that is usually released into the environment is reduced thus improving environment health. By doing the so the government in turn reduces the health risks associated with environmental pollution and reduces the water loss include through water pollution.

4.3 Energy Production:

The sludge collected during the treatment process is itself treated because its content large amount of biodegradable material. It is treated with anaerobic bacteria in special fully in closed digester heated to 35 degrees Celsius an area where these anaerobic microorganisms thrive without any oxygen.

4.4 Protect Environment:

Wastewater contains a lot of waste material including chemical component. The water released from industrial sector, it contains a harmful chemical, which can be fatal to leave it wide open out there. In such condition, the industrial water

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treatment plant will remove the harmful ingredients and chemical components from the water. This way, two things will happen. First, you can reuse the water for personal or industrial use. Second, you can help in minimizing environmental pollution too.

V. OBJECTIVE OF WASTEWATER MANAGEMENT

Wastewater management is very necessary for the above-mentioned reason. It is more needed for the reduction of biodegradable organic substances in the environment: organic substances such as carbon, nitrogen, phosphorus, sulphurin organic matter need be broken down by oxidation into gases which is either released or remains in solution.
Recycling and Reuse of water: Water is a scarce and finite resource which is often taken for granted. In the last half of the 20thcentury, population has increased resulting in pressure on the already scarce water resources. Urbanization has also changed the a grariannature of many areas.
Population increase means more food has to be cultivated for the growing population and agriculture as we know is by far the largest user of available water which means that economic growth is placing new demands on available water supplies. Thetemporal and spatial distribution of water is also a major challenge with ground water resources being over drawn (National Academy, 2005). It is for these reasons that recycling and reuse is crucial for sustainability.

VI. METHODOLOGY

- Discussion with Guide
- Selection of Topic
- Collection of Research Paper
- Synopsis Writing
- Literature Review
- Collection of Material
- Testing of Material
- Comparison of Result
- Report Preparation
- Submission

VII. CONCLUSION

The conclusion of this wastewater treatment project is that it has been successful in improving the quality and safety of the water. The treatment process is effective in removing pollutants and contaminants from the water, resulting in a significantly improved water quality that meets regulatory standards and is safe for environment use. The conclusion of this wastewater treatment project is that it has been successful in improving the quality and safety of the water. The treatment process is effective in removing pollutants and contaminants from the water, resulting in a significant wastewater management is that it is essential for maintaining a healthy environment, preserving natural resources, and preventing water pollution. It can have significant impacts on the environment, public health, and the economy. Proper wastewater management is essential for protecting our natural resources and maintaining sustainable development.

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