

Water Quality and pollutant control

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ABSTRACT

Fresh Water is a natural resource of fundamental importance without water, life is impossible. In many respects the properties of water are unique among all other liquids. As a solvent for organic and inorganic materials water has no parallel. When cooled below 40°C the density of water decreases till at 0°C ice forms which is higher than water. It forms a solid crust over water surface. The aquatic life continues safely under the ice sheet. The extraordinarily high specific heat of water requires large amounts of energy or its withdrawal to raise or reduce its temperatures. The properties of water, therefore, seem to be especially designed for the living organisms. No other liquid can replace it[1].

THE CHALLENGE TO UTILITIES:As an operator of a water or waste water utility you have a lot on your plate. Not only are you required to provide reliable and affordable water and waste water services you must also be compliant with a number of government regulations and ensure that your operations are sustainable. Water utilities require more efficient methods of engineering optimization of energy supply and contextualized compliance monitoring as they seek to expand availability of water to the general population at an affordable price[2].

1. Introduction

Water is needed almost all spheres of human activity. It is required for direct consumption or indirectly for washing, cleaning, transportation or even waste disposal. Important sector for human activity, which require water can be grouped as follow

- 1.Irrigation
- 2.Generation
- 3.Industries
- 4.Domestic requirement
- 5.Live stock management
6. Miscellaneous

According to 1970 survey about 3500 cubic kms of water are drawn for human use every year. Agriculture sector is the biggest consumer of fresh water. Water requirement have increased due to greatly increased due to rapid pollution growth, industrialization and agriculture. The shortage of water shall make many localities barren, devoid of life[3].

2. The Future Scenario

Future estimates of fresh water consumption provide a grim picture. According to an earlier estimate, by the close of the twentieth century the world agriculture should require 30% more water, while power generation sector and industries could draw as much as 15-16 times more water than they did in 1970. Domestic requirement for water should rise 9-10 times. While water drawn for live stock management could grow 3-4 times. The base figure of 1970. The demand of water navigation fisheries, hydroelectric power generation, and recreational activities shall also be double itself. It has been estimated that a total of 9.6 thousand cubic kilometers of water was drawn for human use in 2000AD and out of this enormous amount 48 thousand cubic kilometers was consumed irreversibly[4].

In the future, fresh water supply and demand situation appear to be pretty grim by the year 2025AD. It is estimated that we shall be drawing about 14.10 thousand cubic kilometers of fresh water out of which nearly 8.45 thousand cubic kilometers shall be irreversibly consumed. This will naturally be possible only by over drafts of huge quantities from our surface and ground water resources which have accumulated over long periods of time. With depletion of non renewable stocks adverse ecological consequences shall follow which will intensify as more and more water is drawn and our irreplaceable reserves dry up. This is high time we should start economy and reuse of water and take steps to recharge and replenish the ground water deposits along with steps to raise our surface storage capacity[4].

3. Water Pollution

According to some reports, 90% of the surface water in India is contaminated, causing serious water pollution in the rivers nationwide especially large ones, resulting from thin flow of domestic or industrial and agriculture effluent. Among the most polluting industries are sugar, distilleries, pulp and paper, synthetic fiber, dyestuff and textile dyeing and tanneries. There are large number of industrial estates across the country for example Kanpur(tanneries), Jetpur, Jodhpur, Thirpur(all textile dyeing), Salem(sago processing), Jeediimetla, Patancheru(pharmaceutical), Vapi, Ankaleshwar(chemical), Allapuzha(coir processing) Ludhiana and Jalandhar(electroplating and textile dyeing) etc, where cumulative discharges from the small scale industries have damaged the ground water resource to the point of no return.

4. Status of recipient bodies

Rivers such as Krishna, Godavari, Musi, Nakkaray, Pennar, etc, have been found to be polluted at different stretches, mainly due to industrial, domestic and agriculture waste polluted discharges. The Musi is the most polluted river.

The polluted stretches are mainly at locations where waste water from industries and habitations is being discharged into the rivers. At several places, the ground water too has found to be polluted, mainly due to industries and aquaculture firms.

5. Position on environmental protection and pollution control

POSITION IN BRIEF: Preserve the physical and chemical and biological integrity of the ecosystem with maximum protection of public health and the environment.

AIR QUALITY: Promote measures to reduce pollution from mobile and stationary sources.

ENERGY: Support environmentally sound policies that reduce energy grow the rates, emphasize energy conservation and encourage the use of renewable resources.

LAND USE: Promote policies that manage land as a finite resource and that in corporate principles of stewardship waste management promote policies to reduce the generation and depromote the reuse and recycling of solid and hazardous waste.

NUCLEAR ISSUES: Promote the maximum protection of public health safety and the environment[5].

6. Conclusion

The league supports the preservation of the physical, chemical and biological integrity of the ecosystem and maximum protection of public health and the environment. The leagues approach to environmental protection and pollution control is one of the problem solving. The inter relationships of air, water and land resources should be recognized in designing environmental safeguards. The leagues environmental protection and antipollution goals aim to prevent ecological degradation and to reduce and control pollutants before the go down the sewer, up the chimney or into the land fill.

The league believes that although environmental protection and pollution control are responsibilities shared by all levels of government, it is essential that the federal government provide leadership and technical and financial assistance.

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