

METHODS USED FOR DISPOSAL OF INDUSTRIAL WASTE

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Abstract

India is now third largest garbage generator. India like many other countries in the world suffers from poor waste management. Current methodology in our country cannot manage with the volumes of waste generated by an increasing waste from the small and medium scale industries and this impacts the environment and health of public. Many of small scale and medium scale industries directly dump their waste, more often toxic and hazardous, in open spaces and nearby water sources. In past few decades many cases of critical and permanent damage to environment by their industries have come out.

The challenge and obstacles are significant but so are the opportunities. This research paper will help us to know the methods used for disposal of industrial waste. The small and medium scale industries units are not under strict scrutiny of authorities. This research paper will help us to know the methods which are used to manage the industrial waste.

Keywords

Industrial waste, Waste management

Introduction

The generation of huge quantity of solid and liquid, in industrial sector such as sugar, pulp and paper, fruit and food processing, Starch, distilleries, dairies, tanneries, slaughter houses, poultries, etc is due to booming industrialization. In spite of pollution control measures requirements, the industries dumped there wastes on land or discharged into water bodies, without proper treatment, and thus become a massive source of environmental pollution and health hazards.

Industrial waste

According to The Environmental Protection Act (1990) Industrial waste is defined as “The waste from a factory, or from any premises used for, or in connection with provision of public transport; public supply of gas, water, electricity or sewerage services; or provision to the public of postal or communication services”. In simpler terms, industrial waste can be classified in the waste generated from a manufacturing process, and no longer in use; this can be any waste products generated in, for example factories, mills and mining operations, to name just a few. Commercial and industrial waste can appear in a number of different forms; solid, liquid or gas.

Classification of Industrial Waste

In a broader sense, industrial wastes could be classified into two types.

1. Hazardous industrial waste
2. Non-hazardous industrial waste

1. Hazardous Industrial waste

Hazardous waste may cause danger to health or environment, either alone or when in contact with other wastes, it may be in solid, liquid or gaseous form.

Hazardous waste includes products that are combustible, flammable, irritant, harmful, toxic, carcinogenic, corrosive, infectious, or toxic to reproduction.

2. Non Hazardous waste

Non-hazardous or ordinary industrial waste is generated by industrial or commercial activities, but is similar to household waste by its nature and composition. It is not toxic, presents no hazard and thus requires no special treatment. It includes ordinary waste produced by companies, shopkeepers and trades people (paper, cardboard, wood, textiles, packaging, etc.).

Objectives

- i. To learn about waste management methods used for disposal of industrial waste.
- ii. To study about the waste management methods in India.

The research paper is based on information collected from secondary sources after the detailed study. An attempt has been made to present comprehensive study of methods used for disposal of Industries waste.

Waste Management

The collection, transportation and disposal of garbage, sewage, and other waste products is known as Waste management. The waste materials is managed to avoid its adverse effect over human health and environment. The methods for the management of waste may differ for developed and developing nations. For urban and rural populations, industrial and residential areas it does differ as well. The management of waste in metropolitan and rural areas is general responsibility of the local government. While the waste that is produced by the industries are managed by the industry itself, in case it is non-hazardous.

Thousands of small scale and bigger units dump their waste, more often toxic and hazardous, in open spaces and nearby water sources. This has resulted in serious and permanent damage to the environment.

Legislation under the Environmental Protection Act (EPA) 1986, MoEF has issued several notifications to tackle the problem of hazardous waste management. These include: ☐

- Municipal Wastes (Management and Handling) Rules, 2000, whose aim was to enable municipalities to dispose municipal solid waste in a scientific manner. ☐
- Hazardous Wastes (Management and Handling) Rules, 1989, which brought out a guide for manufacture, storage and import of hazardous chemicals and for management of hazardous wastes. ☐
- Biomedical Waste (Management and Handling) Rules, 1998, were formulated along parallel lines, for proper disposal, segregation, transport etc. of infectious wastes. ☐
- Hazardous Wastes (Management and Handling) Amendment Rules, 2000, a recent notification issued with the view to providing guidelines for the import and export of hazardous waste in the country.

In spite of the fact that more than a decade has passed since the time limit for implementation of the rules ran out in December 2003, yet there are cities which have not initiated any measures at all. Given the lack of in-house capability of municipal authorities and paucity of resources, there have been successful attempts to outsource certain services and resort to private sector/NGO participation in providing SWM services such as door-to door collection, street sweeping, secondary collection of waste, transportation of waste, composting of waste and power generation from waste and final disposal of waste at the engineered landfill.

Yet, the present capacity of municipalities in India to manage the privatization process is quite limited. There is need for developing in-house financial and managerial capability to award contracts to private sector and monitoring services provided by the private operator since the onus of ensuring proper service delivery and compliance of standards lies with the local bodies.

Industrial Waste disposal methods carried out in India:

- **Incineration-** Incineration means combustion of waste to convert them into residue and gaseous products. The solid wastes are burnt at a high temperature. This process reduces the solid waste by 20-30%. This method is mostly adopted by the country which does not have space for landfill.
- **Landfills-** This is the most popular form of waste disposal method. The wastes which cannot be reused or recycled are buried in the land. A layer of soil is added after each

layer of garbage. Once the landfill is done, this land is declared as unsuitable land for construction for 20 years. This process is becoming less these days because of the less space and strong presence of methane and other gases causes many contamination problems.

- **Recycling-** Recycling is converting the discarded product into the new product. The reason behind recycling of waste is to reduce energy resources, reduce the landfills, reduce water and air pollution which is caused due to combustion and dumping of waste into water bodies.
- **Biogas generation-** The waste which is degradable such as food items, animal waste and industrial waste are sent to bio-degradation plant. In bio-degradation plants, with the help of bacteria, fungi and other biological means they are converted to biogas. Biogas is used as fuel and the residue is used as manure.
- **Vermicomposting-** Vermicomposting is a process in which earth worms are used for degradation of organic matter which results in nutrient-rich manure. Worms take the organic matter as feed and digest them then the excretory materials or the by-product of digestion are given out by worms makes the soil nutrient rich, thus enhancing the growth of fungi and bacteria.

Conclusion

We have observed pile of Industrial Waste is not the responsibility of local bodies. The industries simply dump their waste in roadside and water bodies. Industries have to be sensitive towards the environment because this may cost them at the initial stage but in long run it is beneficial for them. Government has initiated many incentives if the industries take initiatives towards waste management. Through joint efforts of SPCBs, local bodies and the industries, a mechanism could be evolved for better management.

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