

**GE8491:ENVIRONMENTAL SCIENCE &ENGINEERING**

# **ASSIGNMENT-1**

## **CASE STUDY ON ENVIRONMENTAL POLLUTION**

**SUBMITTED TO:**

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**SCIENCE & HUMANITIES DEPT.**

**ON,**

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**DONE BY,**

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# **EFFLUENTS TREATMENT AT MRL, CHENNAI.**

## **INTRODUCTION:**

- **MRL (Madras Refinery limited has taken steps in managing the effluents discharge efficiently.**
- **The MRL has two treatment plants designed to meet IS2490 quality control standards.**



**Effluents are said to be in form of wastes, chemicals, impure water, hazardous gases, etc. which gets mixed with fresh water sources, hence resulting in pollution of water. Such water is not deemed to be fit for animal or human consumption. Moreover, rendering soil becomes less fertile and even barren. It in turn does have cyclic effect of fauna and flora.**

**New plant for treatment facilities consists of:**

- **Cooling water treatment**
- **Treating sour and mercox water**
- **Treating floor wash and stream water to remove oil.**



## **Contaminants from above treatment facilities;**

### **1.Processes and utility stream:**

- **Oil & grease**
- **Hydrogen sulphide**
- **Phenols**
- **Acids & alkalis**

### **2. Storm and wash stream**

- **oil & grease**

### **3. General purpose stream**

- **Waste water**

## **BOLD INITIATIVES & MANAGEMENT TAKEN BY MRL**

- **MRL installed non-chromate type treatment to avoid chromium mixing with effluent.**
- **MRL also has installed tertiary treatment to treat secondary treated sewage of madras water supply and sewage board.**



# **TAJ TRAPEZIUM CASE**

## **INTRODUCTION:**

**The "Taj Mahal" is the "King of Emperor" amongst the world wonders. It is one of the most priceless national monuments and also a glorious reputation to the men's achievements in architecture and engineering.**



- **The chemical industries and refinery at Mathura are source of damage "Taj mahal".**
- **SO<sub>3</sub> came from the industrial react with moisture in atmosphere and from the "Acid Rain".**
- **This will make corroding effect on clean white marble.**
- **The judgement vigorously applied the "precautionary principle" and in may 1999, the Central Government constituted the Taj Trapezium.**



# **TEXTILE AND DYE INDUSTRIES**

**Around tirupur nearly,**

- **500 dying units**
- **195 bleaching units**



## **EFFECTS:**

**The dye effluent is highly toxic in nature as it contains high suspended solid, COD, dye and chemicals along with high concentration of heavy metals like Cu, Cd, Zn Ni and Pb. The dye effluent contaminates the surface and ground water, thereby, making it unfit for irrigation and drinking . The dye effluent contains certain chemicals that could be toxic, carcinogenic or mutagenic to living organisms**





# **CONTROL MEASURES:**

- Adopt the 3Rs of solid waste management: reduce, reuse and recycle. Inorganic materials such as metals, glass and [plastic](#); also organic materials like paper, can be reclaimed and recycled. This takes into account that the proven solution to the problem of proper waste management (especially in third world countries) is proper disposal (in waste bins for collection and not in the street where it could fall into drains), waste segregation and collection, and recycling.
- Start composting brown leaves in your yard and green scraps from your kitchen. It will reduce waste while improving your yard and garden soils.
- Reconnect with nature. Live green by using green power supplied abundantly and freely by wind and the sun. Hang your laundry to dry to minimize use of gas or electricity from your dryers. Enjoy fresh air from open windows to lessen the use of air conditioning system.
- Patronize local foods and goods. In this manner, transporting goods and foods prepared with GMOs which uses fuel from conventional energy sources will be minimized.
- Use eco-friendly or biodegradable materials instead of [plastic](#) which are made up of highly toxic substances injurious to your health.

**“One person alone cannot save the planet’s biodiversity, but each individual’s effort to encourage nature’s wealth must not be underestimated.”- United Nations Environment Programme (UNEP).**

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