

Lubricant contamination in Drinking water

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Introduction – Types of Lubricants

- **Lubricant is a substance, usually Organic, introduced to reduce friction between surfaces in mutual contact, which ultimately reduces the heat and function of transmitting forces.**
- **Types of Lubricants**
 - **Automotive oils - Engine Oils, Gear Oils, Transmission oils, Other oils (Preservative oils)**
 - **Industrial Oils – turbine oils, Hydraulic oils, gear oils, Refrigeration compressor oils**
 - **Greases**
 - **Synthetic oils**
- **Oils and grease are not soluble in water due to they are non polar compounds and suspend in water surface.**

Major causes for oil pollution of surface water in Sri Lanka .

- Chunnagam Power plant oil waste plant contaminate the wells in 4 Km radius



- Kelani river pollution by disposal of diesel from Coca cola factory in 2015 August.



- Discharge from service Stations



- Discharge from Refineries



- From Highways



- Household discharge

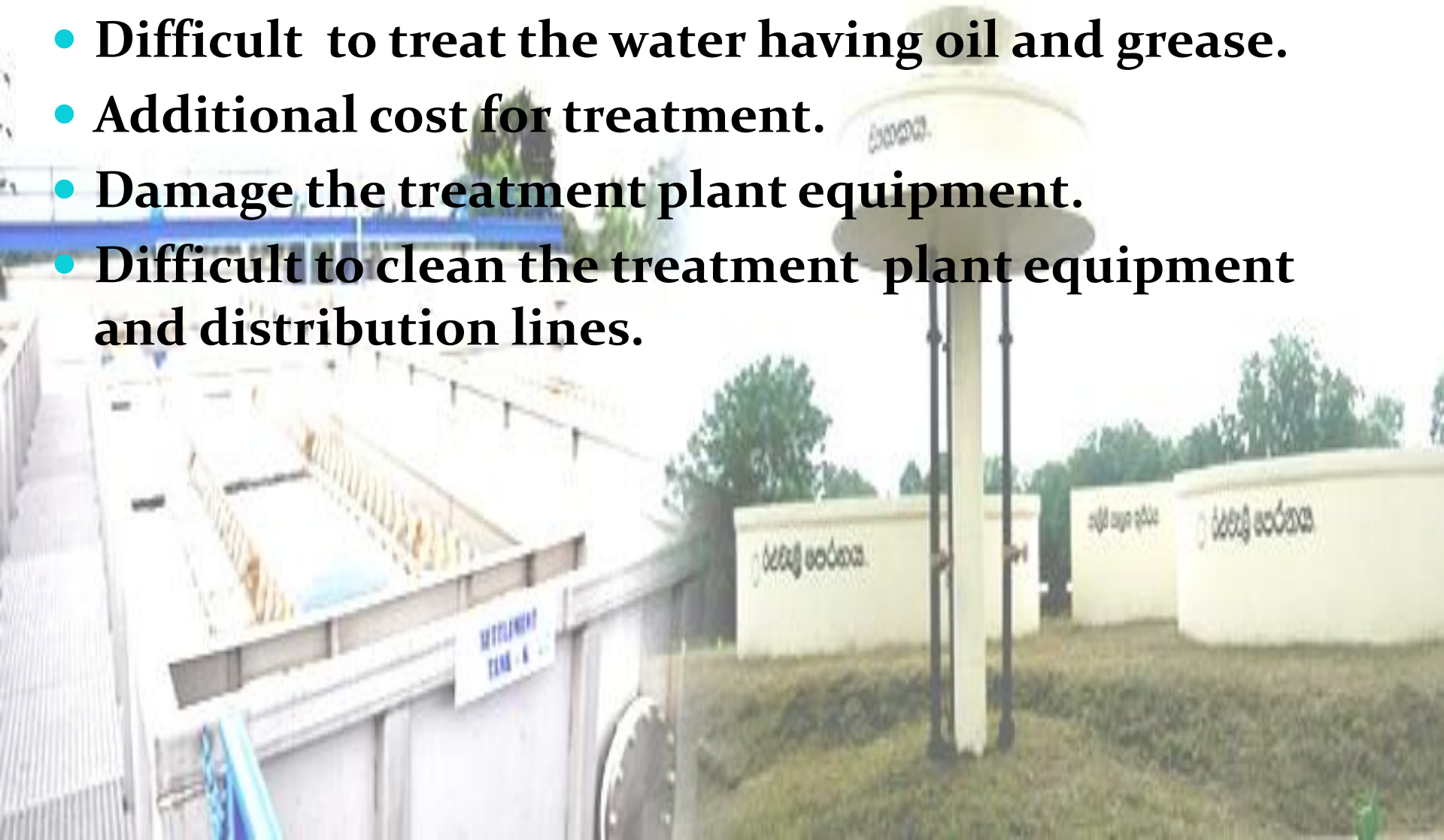


Environment effect

- Oil is less dense than water, so when oil spills, it spreads across the water surface which block the sunlight and oxygen to aquatic species (fish, worms, insects, shellfish, aquatic plants, birds etc).
- Form un-wanted taste and odour to the surface water.
- Disposal of sulfur contain petroleum product may contribute to acid rain.
- Economic loss such as fishing, tourist attraction.
- Effect Aesthetic and recreational activity.
- Removal cost very high and not that much easy.

Treatment Plant Issues

- Form unwanted taste and odour to the water.
- Difficult to treat the water having oil and grease.
- Additional cost for treatment.
- Damage the treatment plant equipment.
- Difficult to clean the treatment plant equipment and distribution lines.



Health effects

- **By direct contact with the skin** - An initial irritation will be obvious. Additionally, contaminants may be absorbed through the skin and enter the body
- **Short term exposure** : Lung irritation, Loss of memory, headache, vomiting, chest pain, lung problems, coughing skin rash, eye irritation, heart problem, DNA alteration, neurological impairment. stroma, stomach, endocrine toxicity.
- **Long term exposure** : skin cancer, lung cancer, liver cancer, hepatitis B, leukemia,
- Children get effect horrible rashes and sores on their skin bathing in water that is severely contaminated by oil.



Thank you....