ENVIRONMENTAL MANAGEMENT PLAN FOR HANDLING OF EDIBLE OIL WITHOUT SPILLAGE AND REMEDIAL MEASURES

The objective of the Environmental Management Plan (EMP) is to identify administrative aspects for ensuring that mitigation measures are implemented and their effectiveness is monitored. The EMP focuses on direct impacts, which are identified as having the potential to cause significant impacts on the environment and identifies:

- Specific measures that will be taken to prevent, reduce or manage the adverse environmental impacts during operation; and
- The level of environmental performance that will be expected during the operation.

ENVIRONMENTAL MANAGEMENT PLAN DURING OPERATION:

1. AIR ENVIRONMENT

There will be no continuous source, the sources of air pollutants are limited to the DG Sets and these sources will be intermittent in nature and would emit the exhaust gases containing NO_2, SO_2, and negligible quantity of particulate matters. The pollution control in DG sets is achieved by providing stack of appropriate height as per CPCB guidelines.

- **Fugitive Emission**

During loading of Edible oil and dispatch of the same by tanker Lorrie's fugitive emission will not occur. As the existing facility operates in a well proven leak prevention system, thus there is no source of emission from the transfer/loading operations.

2. WATER ENVIRONMENT

- **Wastewater Generation**

The water for domestic purpose is supplied by CMWSSB. For edible oil storage operation and transfer facilities, no process water will be required.

- **Wastewater Treatment & Disposal**

Sewage generated from toilets will be let out through CMWSSB sewer line.

- **Rain Water Harvesting**

Rain water harvesting pit have been constructed in the plant Admin Building.

3. NOISE ENVIRONMENT

- **Sources of Noise**

The sources of noise at storage terminal are limited to the pumps, DG sets and Movement of tank trucks.

- **Control of Noise**

The following measures are practiced for control and abatement of noise & vibration.

- The foundations of DG sets are provided with anti-vibration padding.
- The DG sets and pumps are designed to produce noise within the permissible limit and strict compliance of this will be ensured during procurement.
- The DG Sets have been provided with acoustic enclosures.
- Regular condition monitoring *e.g.* speed and regular preventive maintenance including schedule lubrication are being conducted for the moving vehicles to keep them in good condition and also to reduce vibration.

4. SOLID WASTE MANAGEMENT

Environmental management with respect to solid waste may be summarized as under:

- Practically, no solid waste shall be generated from Edible oil storage terminal.
- Spent Oil from DG sets shall be disposed of through TNPCB registered vendors.

- **Safety and Fire Fighting**

The main safety features associated with the storage terminal are as follows:

- The fire extinguishers are provided in site.
- Edible oil tanks have been provided with adequate Dyke walls.
- Approach roads of adequate width is provided and to avoid congestion and to have safe exit.
- All electrical fittings provided are flame proof and intrinsically safe.

SAFETY DURING LOADING

- **Materials**

Mild steel is acceptable for all Edible oils and fats though stainless steel is preferable.

- **Flexible Hoses**

All flexible hoses used to connect pipelines during loading and unloading must be of inert material, be suitably reinforced and be of such a length to make cleaning easy. Exposed ends should be capped when not in use. Couplings should be of stainless steel or other inert materials.

- Transfer hose and fittings shall be of a grade suitable for the type of oil product transferred and for the type of delivery.
- Transfer hoses shall be designed to withstand pressure of the shut-off head of the transfer pump or pump relief valve setting.

- **Cleaning**

- In addition to what has been said above, greatest care must be taken while cleaning and inspection that all residues have been totally removed.
- If detergents or alkali are used, all surfaces with which they have been in contact should be rinsed thoroughly with fresh water to ensure that no residues remain.

- **Maintenance**

Regular maintenance checks should be made, preferably as part of a properly planned maintenance programme. They should include all pumps regulated by thermostat for leakage; integrity of tank coatings; hoses and condition of tanks.

- **Others**

- There must be clear marking or identification systems for the pipelines and storage tanks.
- The condition such as cleanliness of storage tanks, road tankers should be inspected by a suitably qualified superintendent for every loading or unloading of oil and written reports provided.
- Any vehicle used in the transport or transfer of oil shall be in compliance norms.
- Maintain records demonstrating compliance with this subtitle.

- **Record Keeping**

The owner of a regulated substance storage facility shall maintain for 5 years at a location designated by the owner, and make available upon request by the Department or its certified inspectors, the following records:

- The customer's name, mailing address, and emergency contact number;
- Copies of operator training certificates; and
- Copies of the inspection records required in Regulation

OCCUPATIONAL HEALTH AND SAFETY

Transport, storage, and handling provide opportunities for spills or other types of releases with potentially negative impacts on soil and water resources. Their flammability and other potentially hazardous characteristics also present a risk of fire and explosions. Hazardous materials should be managed according to the guidance presented in the General EHS Guidelines. Occupational health and safety impacts during the Transfer of Edible oil storage are common to those of most large storage facilities and their prevention and control are discussed in the General EHS Guidelines. Occupational health and safety issues during the operational phase include:

- **Chemical hazards**
  a. Prevent leaks and spills of oils in the transfer line
  b. Ensure regular and proper maintenance of pipes and storage tanks to avoid leaks
  c. Establish procedures for maintenance, and train personnel to identify leaks and spill
- **Physical hazards**
  a. Confined space entry
  b. Electrical hazards o Risk of fire and explosion
  c. Noise

Safety is an important factor for all personnel working at the site, so prepare safety plan

- To provide necessary equipment, safety appliances and to ensure their proper use.
- To ensure that all safety factors are taken into account in operation
- To provide training in safety Equipments and fire extinguishers

- To notify regulations, instructions and notices in the common language of employees
- To prepare safety rules for the employees as per the safety policy.
- Post project monitoring of environmental parameters will be carried out at regular intervals.
- To allocate sufficient resources to maintain safe and healthy conditions of work

The working personnel shall be given the following appropriate protective Equipments during operations

- Rubber hand Gloves
- Industrial Safety Helmets
- Hand Operated Siren
- Industrial safety shoes with steel toe.

MITIGATORY MEASURES

The environmental mitigation measures for operation phases have been given below:

- Details of management plans and Implementation of the EMP.
- Expenditures for environmental protection measures.

ENVIRONMENTAL MANAGEMENT PLAN

The following mitigation measures shall be adopted

- Monitoring for various components of environment will be undertaken to ensure effective functioning of pollution control measures as well as to safeguard against any unforeseen changes in environment.
- Provision of air vents at roof tops of various Storage Tanks.
- It will be ensured that the tank farm will be maintained properly through proper housekeeping.
- Noise pollution will be controlled by proper maintenance & acoustic enclosure for pumps, compressors. Personal protective equipment for people working in high noise areas
- Adequate safety measures complying with the occupational safety manuals to prevent accidents / hazards to the workers.

- Pipelines will be protected from corrosion internally by injection of corrosion inhibitor.
- Adequate protection against stray current and interference will be provided.

EMP BUDGET PROVISIONS

The implementation of the pollution control and environmental monitoring and management programmes is the basis of mitigation of impacts. The environmental expenditures show commitment of the management on environmental front. The details of the expenditure on environmental measures are given in the **Table 1**.

Table 1 - Environmental Management Plan – Budget

S.No.	Description of item	Capital Cost (In lakhs)	Operational Cost (In lakhs/annum)
1	Environmental Monitoring	-	0.5
2	Safety measures	5	0.5
3	OHS Training	1	0.5
Total		**6**	**1.5**

Table 2 - Environmental Management Plan

Discipline	Potential	Probable	Mitigative Measures	Remarks
Air Quality	Increase in dust (PM) and gaseous pollutants in ambient air	Vehicular traffic	• Usage of Bharat-III/Euro-III compliant vehicles. • Motorable roads in the complex shall be paved to reduce dust emission. • Ensure operational procedures are adequately implemented and regularly reviewed so as to identify opportunities for continual improvement.	Use of well-maintained vehicles will be encouraged.
Noise	Increase in noise levels	Vehicular movement, pump house & DG sets operation	Equipment shall be designed to conform to noise levels prescribed by regulatory agencies	Green belt will also be developed in the terminal for attenuating the noise
Soil	Due to spill or leak during Loading to tanks	Human error while loading and unloading	• Provide regulations, instructions and notices in the common language of employee • Provide Adequate safety measures complying with the occupational safety manuals to prevent accidents hazards to the workers • spillages are prevented by advocating safe practices and the Edible oil tanks have been provided with adequate Dyke walls	• To allocate sufficient resources to maintain safe and healthy conditions of work • To provide training in fire fighting operations

Water Quality	Deterioration of quality of receiving water body, if any.	Due to Human error.	Provide adequate treatment and conditioning facilities for oil leak or spillage in soil.	During rainy seasons oily water are let out after removing the oil
Traffic	Increase of vehicle count in existing road	Additional vehicle movement	Provision of the proper parking area and evaluate impact of traffic density and vehicular emissions.	Proper roads will reduce the dust emissions to a great extent.
Solid waste	Impact on human health	Domestic usage	All solid waste will be segregated at source and will be given to authorized agents for recycling / composting.	-
Terrestrial Ecology	Impact on plant species	Vehicular movement & emissions from stack	It is proposed to develop green cover.	As emissions will be within limits, no active damage to vegetation is expected.
Fire and Safety	Accidents / disasters related to fire and safety	Domestic firing	Prepare DMP and implement DMP	• In case of Fire emergency nearby Fire station will be called and the fire extinguishers are available in the storage terminal to manage small fires. • Fire safety training will be conducted.