

Executive Summary
for
Proposed Biodiesel-Based Products Manufacturing Unit

[5(f) Synthetic organic chemicals industry- Other synthetic organic chemicals and
chemical intermediates (located outside notified industrial area)]

**Proposal No: IA/MH/IND3/445287/2023; File No. IA-J-11011/359/2023-IA-II(I),
ToR Letter, dated 17th October, 2023**

Project Proponent

M/s. Al Hind Lubricants

at

**Gut no. 412, Village Usar, Post Uchat, Taluka Wada, Dist.
Palghar- 421312 (Maharashtra)**

Environment Consultant



M/s. SAGE (Sustainable Approach for Green Environment) LLP

Accredited under the QCI-NABET Scheme for EIA Consultant

NABET/EIA/2225/IA 0105

Valid up to September 22, 2025

205, Second Floor, Bhawani Industrial Estate, Hare Krishna Road
Opp. IIT Bombay Main Gate, Powai, Mumbai 400076

Monitoring Laboratory

ULTRA TECH,

([Lab. Gazetted](#) by MoEFCC & Accredited by NABL - QCI)

QCI -NABET Accredited EIA Consulting Organization

ISO 9001:2015 Certified Organization

Laboratory Address: Survey No. 93/A, Conformity Hissa No. 2, G. V. Brothers

Building, Bata Compound, Khopat, Thane (W) - 400 601. Maharashtra.

Contact:

Ph. No. +91-22-2547 4907/ +91-22-25476217

E-mail: lab@ultratech.in

Visit @ www.ultratech.in

Executive Summary

0.1 Project Description

Bio-fuel programme is a priority agenda for Government of India as well as most of the countries in the world. The project proponent (PP), M/s. Al Hind Lubricants proposes to establish Biodiesel production plant of 18000 KL/A capacity at Gut no. 412, Village Usar, Post Uchat, Taluka Wada, Dist. Palghar- 421312 (Maharashtra). The proposed land (area 2023.42 m²) which is already under possession is non-agricultural one and is located in industrial belt (Category D) with good infrastructure. As per the schedule to EIA Notification 2006, project falls under Synthetic Organic Chemicals 5 (f) and as per NABET accreditation project sector 21 and Category 'A' as project is located outside the MIDC area. The pre-feasibility report is prepared as a part of the application for obtaining Environmental clearance for the proposed project from Ministry of Environment, Forest and Climate Change (MOEF &CC).

The PP proposes to prepare the Biodiesel by the most widely used trans esterification reaction of methanol with non-edible vegetable oils (Ruchi Soya, Pat Anjali, Liberty oil) in the presence of sodium hydroxide catalyst. All these raw materials will be procured from local sources. The reaction is conducted at 40 °C for six hours batch time. Daily production of 64 KL is proposed. Glycerin crude is generated at the rate of 3600 KL/A as a byproduct in the reaction. Wastewater is not generated during biodiesel production in the scheme proposed by the PP since no biodiesel water washing step is envisaged. Domestic wastewater of about 800 litres/day will be generated which will be treated at the site in the proposed One Kl/day STP and recycled for green belt development. Solid hazardous oil contaminated wastes arising from spillage clean up actions will be disposed in a safe manner to authorized facilities. Air emissions during the biodiesel production are minimal and will be controlled using reflux reaction system. Biodiesel is a renewable energy source. It can be made from vegetable oils and fats. Biodiesel reduces the tailpipe emissions of CO, GHG, unburnt hydrocarbons, and other particular matter compared to conventional diesel and supports the cause of environment by reducing global warming. Government of India is encouraging the production of Biodiesel by a recent policy decision (2018) to achieve the target of 5% biodiesel (BD 5) in conventional diesel by 2030. Biodiesel is also used as boiler fuel and in DG sets. PP proposes to produce and sell the biodiesel keeping all these end uses in focus in local markets. PP has been authorized by MPCB to reprocess waste/spent oils and has the right experience to handle Biodiesel safely.

0.1.1 History of the Project

M/s. Al Hind Lubricants is the project proponent (hereinafter 'Industry') and proposes to establish Biodiesel production plant of 18000 KL/A at Gut no. 412, Village Usar, Post Uchat, Taluka Wada, Dist. Palghar- 421312 (Maharashtra). The plot allotment letter is addressed in Annexure-2.1

Table 0.1: Salient Features of the Project

Name & Address of Company	Proposed Manufacturing Unit for Biodiesel Project by M/s. AI Hind Lubricants at Gut no. 412, Village- Usar, Post Uchat, Taluka Wada, Dist. Palghar-421312 (Maharashtra)		
Schedule of project as per EIA Notification, 2006	Synthetic Organic Chemical 5(f) and as per NABET accreditation project sector 21 , Category -A		
Category of Project	A		
Total Area Details	2023.42 m²		
	Area Statement		
	Sr. No.	Title	Area in Sq. m.
	1	Process Plant	370.88
	2	Storage Area	159.90
	3	Security Cabin	2.16
	4	Transformer	8.10
	5	Office	10.80
	6	Lunch Room	16.20
	7	Rest Room	16.20
	8	Change Room	16.20
	9	Toilet	1.62
	10	Road	554.12
	11	UGT	9.72
	12	ETP	8.64
	13	Cooling Tank (CT)	7.56
	14	STP	1.60
	15	RWH	8.00
	16	120 Kl Tank	13.85
	17	2 X 22 Kl Tank	5.73
	18	Green Belt	667.94
	19	Dg Set	3.95
	20	Open space	140.25
	Total		2023.42

Production Details	Total Biodiesel Capacity- 18000 KL/A																						
Water Requirement of Project	Proposed Water Requirement: 3 KLD Source of Water: Borewell																						
Wastewater generation per day	Total wastewater generation per day is 0.8 KLD																						
Power requirement of project	Source: Power transformer is already available Total Power requirement: 30 kW																						
Utility	Thermo Pack and DG Set																						
D.G. Set	Proposed capacity: 40 KVA Note: D.G. will only be used in case of power failure.																						
Fuel Requirement	<table border="1"> <thead> <tr> <th>S. No.</th> <th>Name of Fuel</th> <th>Quantity Required</th> <th>Caloric value (Kcal./kg)</th> <th>Source</th> <th>Distance & Mode of transportation</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>LD O</td> <td>432 KL/A</td> <td>10400</td> <td>Haresh Agencies, Patel & Co</td> <td>M/s Tanker and 130 Km</td> </tr> <tr> <td>2.</td> <td>LDO for DG set 40 KW (standby for 12 hours)</td> <td>0.5 KL</td> <td>10400</td> <td>Al Hind Lubricants</td> <td>Within plant, 0 km</td> </tr> </tbody> </table>					S. No.	Name of Fuel	Quantity Required	Caloric value (Kcal./kg)	Source	Distance & Mode of transportation	1.	LD O	432 KL/A	10400	Haresh Agencies, Patel & Co	M/s Tanker and 130 Km	2.	LDO for DG set 40 KW (standby for 12 hours)	0.5 KL	10400	Al Hind Lubricants	Within plant, 0 km
S. No.	Name of Fuel	Quantity Required	Caloric value (Kcal./kg)	Source	Distance & Mode of transportation																		
1.	LD O	432 KL/A	10400	Haresh Agencies, Patel & Co	M/s Tanker and 130 Km																		
2.	LDO for DG set 40 KW (standby for 12 hours)	0.5 KL	10400	Al Hind Lubricants	Within plant, 0 km																		
Stack Height Details	DG Set Stack: 3.5 m from roof of building																						
Raw material Requirements (593.96 Sqm build-up area)	Construction material	Quantity in MT	Source	Mode of transport	Distance from source in Km																		
	Aggregates	1158	Local vender	By truck	Nearest to site																		
	Sand	718	Local vender	By truck	Nearest to site																		

	Cement	277	Local vender	By truck	Nearest to site
	Steel	68	Local vender	By truck	Nearest to site
Manpower Requirement	During the construction phase: 20 workers During operational phase: 10 workers				
	Sr. No.	Particulars	Nos	Man Days (Each)	Total Days
	1	Construction Phase			
		Permanent Employees	0	0	0
		Temporary Employees	10	180	1800
		Total	10		1800
	2	Operational Phase			
		Permanent Employees	3	180	540
		Temporary Employees	7	330	2310
		Total	10		2850
Project Cost	1,45,000,00/-				
EMP Cost	Capital Cost: 21,68,000/- (21.68 lacs.) Recurring Cost/annum: Rs. 4,95,000/- (4.95 lacs)				

0.1.2 Justification of Project

Specialty chemicals industry is one of the most significant sectors of the chemical industry. It plays a vital developmental role by providing chemicals and intermediates as inputs to other sectors of the industry like Textile, paper, oil field chemicals, water treatment, sugar, paints, adhesives, pharmaceuticals, dye stuffs and intermediates, leather chemicals, pesticides etc. The proposed manufacturing activities will provide a growth opportunity for the already running business of the unit. Moreover, company has strong presence with leading local as-well-as international market. The unit & the products are well approved & registered with the customers. Demand of the products in foreign market is also significant, which will boost the export potential of the company as well as country.

0.2 Description of Environment

The study area is 10 km radial distance from center of project site. All the monitoring has been completed in various locations within the study area during the period of March 2023 to May 2023. The findings of the baseline environmental status on Land (Topography, Soil Quality, and Land Use Pattern), Micrometeorology (Temperature, Humidity, Rainfall, and Wind Speed), Air (Ambient Air

Quality- PM₁₀, PM_{2.5}, SO₂, NO_x, CO, HCl and VOC), Noise Level, Biotic Environment (flora, fauna & assessment of conservation aspects), and Socio-Economic conditions are presented in the report and interpreted with reference to Standards.

Table 0.2: Number of sampling location for Baseline Monitoring

Season	Period of collection		Number of monitoring locations						
	From	To	Meteorology (Nos.)	Ambient Air Quality (Nos.)	Surface Water Quality (Nos.)	Ground water Quality (Nos.)	Ground Water Level (Nos.)	Noise Level (Nos.)	Soil Quality (Nos.)
Summer	March 2023	May 2023	1	10	05	10	#Num#	08	10

0.2.1 Meteorological Parameters

Table 0.3: Meteorological details from March 2023 to May 2023

Sr. No.	Parameter	Min. Value	Max. Value	Mean Value
1	Temperature (°C)	17.5 °C	41.4 °C	28.6 °C
2	Wind Speed (m/s)	0 °C	8.6 °C	3.9 °C
3	Relative Humidity (%)	10 °C	100 °C	45 °C
4	Annual Precipitation	2458 mm		
5	Rainfall	Total rainfall (mm)	No. of rainy days	Average annual rainfall (mm)
		2.9	10	0
6	Predominant Wind direction	WSW to ENE		

0.2.2 Air Environment

The ambient air quality monitoring network of ten locations as per Standard ToR was designed based on the prominent wind direction as per the analysis of meteorological data (from secondary source). The sampling was carried out with twice a week frequency as per the NAAQS Notification of November 2009.

Core Zone: The study reveals that PM₁₀, PM_{2.5}, SO₂, NO_x, CO concentration was observed to be in the range of (62-97 µg/m³), (18-46 µg/m³), (5-18 µg/m³), (11-25 µg/m³), (0.2-1.9 mg/m³) during March 2023- May 2023 respectively.

Buffer Zone: The study reveals that PM₁₀, PM_{2.5}, SO₂, NO_x, CO concentration was observed to be in the range of (55-73 µg/m³), (20-28 µg/m³), (5-10 µg/m³), (8-19 µg/m³), (0.2-0.7 mg/m³) during March 2023- May 2023 respectively.

The Ambient Air Quality Monitoring was carried out for criteria pollutants only namely PM_{2.5}, PM₁₀, NO_x, SO₂ & CO which were found within the National Ambient Air Quality Standards (NAAQS) and standards prescribed by the CPCB during the monitoring period.

0.2.3 Noise Environment

The noise monitoring conducted at ten locations for 24 hr, once in a week and average hourly readings were recorded in the study area.

The minimum noise level recorded during the daytime was observed as 49.8 dB, whereas the maximum noise levels observed as 62 dB. The minimum noise level recorded during the nighttime was observed as 38.6 dB, whereas the maximum noise levels observed as 52.7 dB.

It should be noted that the noise levels during the day time as well as night time were observed to be under the prescribed standards by CPCB i.e. for Residential Area (55 dB & 45 dB for Day & Night respectively). 62 dB is noise level generated at project site only other than this all location shows the noise level within the prescribed standard.

0.2.4 Water Environment

Surface Water Study

The surface water resources in the study area as studied from the satellite imagery appear to be few in number, the Sampling location for Surface Water are Tansa River Upstream, Tansa River Downstream, pond Near project site, Pond Near Kudas, Pond Near Ghonsai are water bodies falls under 10 km radius of project site. The sampling locations for the water bodies were finalized after reconnaissance survey and consultation with the functional area experts from the respective areas.

Core Zone: The pH of samples was found to vary between 7.3–7.6. The concentrations of Total Dissolved Solids were in the range of 268 mg/l to 362 mg/l. The Chemical Oxygen Demand (COD) value was found to be in the range of 24 mg/l to 48 mg/l. Total Hardness was observed to be ranging between 156 to 192 mg/l. Heavy metals (Iron) was observed to be 0.06 mg/l.

Buffer Zone: The pH of sample was found 7.2. The concentrations of Total Dissolved Solids were of 292 mg/l. The Chemical Oxygen Demand (COD) value was found to be 32 mg/l. Total Hardness was observed to be 168 mg/l. Heavy metals (Iron) was observed to be ranging between 0.06 mg/l.

Ground Water Study

Core Zone: The pH of samples was found to vary between 7.3–7.6. The concentrations of Total Dissolved Solids were in the range of 356 mg/l to 402 mg/l. Total Hardness was observed to be ranging between 172 to 216 mg/l. Heavy metals was observed to be ranging between 0.02 to 0.06 mg/l.

Buffer Zone: The pH of samples was found to vary between 7.1- 7.3. The concentrations of Total Dissolved Solids were in the range of 278 mg/l to 387 mg/l. Total Hardness was observed to be ranging between 144 to 186 mg/l. Heavy metals was observed to be ranging between 0.02 to 0.06 mg/l.

0.2.5 Soil Environment

Core Zone: It is observed that the Soil texture is silty loam with sand, silt and clay percentage in the range of (5.2-7.5%), (68.8-82.2%) and (13.9-24.8%) respectively. Water holding capacity is observed in the range of 52.7-55.2%.

The concentration of Potassium and Sodium was found to be ranging between 16-28 mg/kg and 33-54 mg/kg respectively. The concentration of Calcium and Magnesium was found to be ranging between 81-121 mg/kg and 59-74 mg/kg respectively. The concentration of Available Phosphorous and Total Nitrogen was found to be ranging between 69-92 kg/ha and 256-284 kg/ha respectively.

Buffer Zone: It is observed that the Soil texture is sandy loam with sand, silt and clay percentage in the range of (5.1-5.7%), (78.4-79.8%) and (14.3-17.5%) respectively. Water holding capacity is observed in the range of 51.4-57.2%.

The concentration of Potassium and Sodium was found to be ranging between 23-39 mg/kg and 41-53 mg/kg respectively. The concentration of Calcium and Magnesium was found to be ranging between - 81-105 mg/kg and 59-69 mg/kg respectively. The concentration of Available Phosphorous and Total Nitrogen was found to be ranging between 77-98 kg/ha and 159-279 kg/ha respectively.

0.2.6 Biological Environment

Out of the total 131 species found in the study areas there are 32 herbs, 25 shrubs, 63 trees, 9 creepers and 2 small plants found in the study. None of the flora belongs to Schedule - I species as per IWPA, 1972.

During the present investigation, 81 bird species were recorded. The present study revealed presence of 81 species of birds belonging to 38 families. Out of these, 45 species were resident, 18 migrant, 18 local migrants' species were observed. Total 2 nos. of schedule - I species, Peacock and Forest Owlet was found in the study area. Total seven species of butterfly, 5 species of spiders were found in the study area.

Total 10 species of mammals were found in the study area, out of which the Indian Leopard falls under Schedule - I Category of the Indian Wildlife Protection Act, 1972.

Total 9 species of snakes were found in the study area out of which, Indian Rock Python falls in Schedule - I species.

Conservation Plan has been prepared for all the Schedule - I species and according 8.5 lacs have been allocated for the same which will be spend in co-ordination with forest department.

The proposed project activity does not pose any threat to any species of conservation importance also does not involve any sort of liquid or solid discharge/disposal on the ground or in the water bodies within the study area. Hence no adverse impacts are anticipated on the surrounding biotic environment.

0.2.7 Socio Environment

Data Interpretation:

Inquiries were made to the participants in order to gather their thoughts, perspectives, and goals concerning the project under consideration. Opinions are a crucial tool for understanding the current state of mind in individuals, groups, and communities alike.

54% of respondents were men and 46% were women, according to the sex breakdown of the sample. This result is consistent with the pattern of the sex structure of Indian household heads, which is dominated by men.

The average household size was found to be 4 members.

Education is one of the keys to success and development and as such, people pay much attention to their educational status. Most of the sample respondents interviewed had some kind of formal education. Nearly three fourth of the respondents had attained secondary education till 5th to 12th. Whereas 15 presents of the respondents have completed graduation also Post Graduation, 10 % of the respondents have education till primary (Class 1-5) as the formal education.

There were inquiries regarding the number of wage earners in the family, their sources of income, and their individual occupations. The majority of responders are private sector workers in the industries sector. A few people work for themselves as independent contractors in small businesses like fruit and vegetable stands and auto garages. Ten % of the working respondents are employed by the government in positions such as irrigation engineers, primary and secondary teachers, etc.

House constitutes the most vital aspect of the basic needs of man and basic amenities form an integral part of the housing facility. All respondent using pakka type of house having cement concrete and tin shade.

Basic amenities are measured through the availability of drinking water facility, toilet, drainage, garbage disposal, electricity, cooking fuel etc. most of respondent using LPG Gas for cooking fuel Also some respondent use wood as a fuel (in rural area). Gram Panchayat provide drinking water in Gaothan area other area respondent are use own well water and Bore wall water for Drinking.

Availability of toilet is an important indicator of the sanitation. Most of respondent are using private own toilet facility.

Respondents cited the study area's road quality issue as the most urgent issue in the immediate vicinity. In addition, lengthy vehicles from MIDC and the industrial region generate traffic problems in the Gaothan area. But still the people were happy.

Inquiries concerning the attitudes, perceptions, and aspirations of the respondents regarding the project were made. Opinions are a crucial tool for understanding the current state of mind in individuals, groups, and communities.

Many respondents were aware of the project, which reflects that the project proponent has carried out regular consultation with the local peoples. Most of the respondents are in support of the project fully, but they need regular flow of information from the point person provided by the community as well as the project person regarding the progress of the project. Their only demand is to give the preference to local people for labour contractors, transporters and raw material suppliers etc. in construction phase and job opportunity in operation phase.

0.3 Anticipated Environmental Impacts and Mitigation Measures

Table 0.4: Summary of Impacts & Mitigation Measures during Construction & Operation Phase

Sr. No.	Environmental Parameters	Aspect Attributes	Impact	Proposed Mitigation Measures
A) Construction Phase				
1.	Air Quality	Minor dust emission from handling & transportation of cement/concrete/ stone aggregates.	Workers getting exposed to the dust pollution generated due to the construction activity can suffer from respiratory problems and prolonged exposure can lead to malfunctioning of lungs.	<ul style="list-style-type: none"> • Traffic management for loading & unloading of the materials. • Regular sprinkling of water on the working site, avoiding Cement dust emission, managing stockpiles. • Creating wind • Barrier for controlling the dust emissions.
2.	Noise Quality	Noise generated from construction equipment/machinery like spade, shovel, daber, drill, hammer, concrete mixer etc. Transportation of construction materials.	The impacts of high noise level can be temporary/Permanent hearing loss, Mental disturbance, increase in heart rate, Affecting worker's performance.	<ul style="list-style-type: none"> • Appropriate PPEs will be provided to the workers. • Implementation of traffic management. • Development of Green belt.
3.	Water Quality	Water used for construction activity mainly for concrete mixing, sprinkling etc.	Contamination of the soil at the project site.	<ul style="list-style-type: none"> • Proper surface water run off management would be implemented. • Storm water drain should be provided.
4.	Solid Waste Management	Construction wastes such as left off concrete, stone, aggregates, wooden piles, excavated material etc.	Unhealthy Work Conditions at project site.	<ul style="list-style-type: none"> • The solid waste generated in the construction phase would be disposed off through local Municipal Body. The excavated soil will be used for green belt development

Sr. No.	Environmental Parameters	Aspect Attributes	Impact	Proposed Mitigation Measures
				activities within the premises.
B) Operational Phase				
1.	Air Quality	<ul style="list-style-type: none"> • Operation of D.G set & gaseous emission from manufacturing process • Non-spontaneous emissions from transportation of raw materials & finished goods • Dust emission generated due to the handling and storage of the solvents & other raw materials 	<ul style="list-style-type: none"> • The Maximum Incremental concentration of PM – 1.29 ug/m³, NO_x – 14.4 ug/m³, CO- 1.69 ug/m³ • The health effects related to particulate matter are majorly respiratory, pulmonary injury & lung cancer etc. • Exposure to SO₂ & NO_x majorly leads to respiratory problems. • Carbon monoxide decreases the oxygen carrying capacity of the blood by reducing the hemoglobin. • The air emissions in long course of time may affect the immediate surrounding vegetation stature physically (leaf senescence, hampered growth etc.) & biologically thus may affect the overall surrounding ecology. 	<ul style="list-style-type: none"> • One D.G Set is provided with a stack height of 3.5 m above from the roof of building. • The roads within the premises will be concreted / paved to avoid the dust generation from day-to-day vehicular activity. • It will be ensured that all the vehicles used for transportation activity have a valid PUC (Pollution under Control) Certificate. • Proper servicing & maintenance of vehicles is carried out. Same practice will be continued in future. • Regular sweeping of all the roads & floors is being /will be done. • Development of the green belt along the plant boundary will help to capture the fugitive emission. • Industry to ensure that at no point of time the air emission • Concentrations do not exceed the prescribe standards.
2.	Noise Quality	<ul style="list-style-type: none"> • Operation of D.G set, Reactors, ancillary utilities & transportation activity. 	<ul style="list-style-type: none"> • The impacts of high noise level can be Temporary/Permanent hearing loss, mental disturbance increase in heart rate, decrease in workers performance due to psychiatric disorder, Workers developing 	<ul style="list-style-type: none"> • Acoustic enclosure will be provided to D.G set for attenuation of noise level during operation. • Isolation of high intensity noise generating equipment. • Appropriate traffic management to be

Sr. No.	Environmental Parameters	Aspect Attributes	Impact	Proposed Mitigation Measures
			Tinnitus due to high level of noise exposure on regular basis.	<p>implemented.</p> <ul style="list-style-type: none"> • Green belt developed around the company premises will acts as a noise barrier. • Appropriate PPE should be provided to workers.
3.	Water Quality	<ul style="list-style-type: none"> • Effluent from manufacturing process. • Domestic wastewater 	<ul style="list-style-type: none"> • Indiscriminate/ accidental release/discharge of effluents if finds its way to surrounding soils, surface /ground water may lead to contamination of the same there by affecting the overall ecology & agricultural productivity. 	<ul style="list-style-type: none"> • Generated sewage initially will be treated in septic tank & its overflow shall be treated in ETP with other process effluent. • Effluent stream segregation will be done for treatment. • The treated waste water will be totally reused to achieve a Zero Liquid Discharge.
4.	Solid Waste Management - Hazardous & Non-Hazardous Waste	<ul style="list-style-type: none"> • Sludge generated from the ETP operation. • Spent Oil 	<ul style="list-style-type: none"> • Unscientific handling may affect the health of workers coming in direct contact with the hazardous waste and may lead to skin allergies/rashes/burns etc. and indiscriminate/accidental disposal of hazardous waste if finds its way to surrounding soils, surface/ground water may lead to contamination of the same there by affecting the overall ecology & agricultural productivity. 	<ul style="list-style-type: none"> • Hazardous wastes generated from effluent treatment process such as ETP sludge will be buried in the premises. • Used oil will be recycled and reused.

0.4 Environmental Monitoring Programme

0.4.1 Post Project Monitoring Parameters & Frequency

Table 0.5: Post Project Monitoring Parameters & Frequency

Sr. No	Particulars	Pollution Source	Pollutant Characteristics	No. of Samples per year	Frequency	Period
1	Ambient Air	Air Emission	CO, SO ₂ , NO _x , PM ₁₀ , PM _{2.5} , etc.	16	Intermittent / Periodic	Quarterly
2	Work Place DG Set Stack	Stack Emissions	CO, SO ₂ , NO _x , SPM	4	Intermittent / Periodic	Quarterly
3	D.G Set, ETP, Work Place Area	Sound	Noise Level dB (A)	24	Intermittent / Periodic	Quarterly
4	Effluent/Sewage Treatment Plant	Untreated & Treated Effluent	pH, O&G, TDS, TSS, COD, BOD & Bioassay specific to project	24	Intermittent / Periodic	Monthly
5	Hazardous Wastes	ETP sludge, Spent Oil, Spent Solvents	H.W. characteristics	--	As per the requiremen t of CHWTSDF providers	Once in a Year
6	Real Time Emission Monitoring – Connected to CPCB/MPCB	Air Emission	SO ₂ , NO _x , PM, CO, CO ₂ , etc.	--	Continuous	--
7	Continuous Effluent monitoring System with Flow meter, IP Camera – Connected to CPCB/MPCB	Treated Effluent	pH, TDS, TSS, COD, BOD, Flow, etc.	--	Continuous	--

0.4.2 Budget & Procurement Schedule

On regular basis, Environment Management Cell shall inspect the necessity & availability of the materials, technologies, services & maintenance works. The Cell shall made appropriate budget for the purpose. Regular record review for change in financial requirement of environment management shall be done and appropriate budgetary provisions shall be made. Along with other budgets, budget for environmental management shall be prepared and revised regularly up on requirement.

The budget shall include provisions for:

- Installation of real time sensors, online effluent monitoring, flow meter and web camera etc.
- Environmental Monitoring Program
- Operation & Maintenance of environmental Technologies/Equipments
- Laboratory works for Environmental management activities
- Emergency purchase of necessary material, Equipments, tools, services, protective equipment.
- Greenbelt development
- Social & Environmental Welfare & Awareness programs/training & Health related issues.
- Annual Environmental Audit

Table 0.6: Budget for Environmental Monitoring Plan

Sr. No.	Description	Location	Parameters	Frequency	Nos. of Samples / Year	Unit cost of the sample	Total Cost Rs./Year
1	Air Emissions	Near manufacturing area, three locations outside the plant area at an angle of 120° each, covering upwind and downwind directions.	<u>Ambient Air Monitoring:</u> = Particulate Matter (PM ₁₀), Particulate Matter (PM _{2.5}), SO ₂ , NO ₂ , Ammonia, CO, up to 24 Hrs.	Quarterly	16	10,000/ -	1,60,000/ -

Sr. No.	Description	Location	Parameters	Frequency	Nos. of Samples / Year	Unit cost of the sample	Total Cost Rs./Year
		D.G. Shed (1 No. proposed)	<u>D.G. Stack Monitoring:</u> :- Temperature, Velocity, Flow Rate, Total Particulate Matter, SO ₂ & NO _x .	Quarterly	4	3,500/-	14,000/-
2	Noise Level	Near Main Gate, Near Manufacturing area, Near DG area, Near Boiler	<u>Ambient Noise Level Monitoring:</u> :- Spot Noise Level Measurement at three different locations at Day & Night Time.	Quarterly	24	500/-	11,000/-
3	ETP	Inlet & Outlet	<u>Sample Analysis:</u> - pH, COD, BOD, TDS, TSS, Chlorides, Sulphates, Phenolic compounds	Monthly	24	3,500/-	84,000/-
4	Soil	Near ETP	pH (10% aq	Half	2	10,000/	20,000/-

Sr. No.	Description	Location	Parameters	Frequency	Nos. of Samples / Year	Unit cost of the sample	Total Cost Rs./Year
		area	Solution), Moisture, Bulk Density, Electrical Conductivity , SAR, Water Holding Capacity, Organic Matter, Total Organic Carbon, Sodium as Na, Potassium as K, Copper as Cu, Iron as Fe, Manganese as Mn, Boron as B, Calcium, Magnesium, Total Nitrogen, Total Phosphorus, Available Phosphorus, Available	yearly		-	

0.5 Additional Studies

0.5.1 Risk Assessment Summary

- From the Risk Assessment studies conducted, it would be observed that by and large, the risks are confined within the factory boundary walls.
- Based on these studies company has been proposed to plan its facility sitting as well as location of operator cabin, open area, etc.
- Induction safety course to be prepared and trained all new employees before starting duties in plant.

Recommendations:

- Mobile shall be strictly prohibited without any exceptions.
- Emergency procedures should be well rehearsed and state of readiness to be achieved.
- Use of mechanical equipment & tools that easily generate sparks in operation should be prohibited.
- In case of any leakage, evacuate staffs at the leakage affected area and guide them to a safe place; prevent entry of unnecessary personnel into the affected area; and isolate ignition source. Personnel for emergency treatment should stop leakage in a safe manner.
- Safe operating procedure to be prepared for hazardous processes and material handling process.
- Flameproof lighting arrangement shall be provided.
- Windsocks to be provided at prominent location and way to assembly point signage's to be display
- Training of all the employees for fire-fighting and use of safety apparatus must be conducted regularly. Mock drills should be conducted at regular intervals keeping liaison with local administration and fire-fighting facilities available in the area.
- Adequate Firefighting equipment's to be provided and maintained. Also, ensure that personnel are trained to use them in case of a major accident event.

0.5.2 Occupational Health Measures

The objective of Occupational Health Environment is to provide safe working environment to the employees of the company. Good occupational health management keeps workers physical conditions healthy or non-deteriorating in work environment which keeps the worker physically and psychologically sound. It results in

- High productivity
- Improved work efficiency
- Work satisfaction
- Less medical expenses toward employees thereby less recurring cost.
- The company has planned all the necessary control measures to prevent air pollution, water

pollution and degradation of soil in the project surrounding areas.

- Since all the pollution control measures are planned. Minor accidents, noise, poor ventilation and accidental chemical exposure are the only possible occupational health hazards from the manufacturing activities.
- For the prevention of it, the company will educate the operators and workers for the safety rules, procedure & preventive measures and to use personnel protective measures.

The company has provided budgetary allocation of Rs. 2,55,000/- for purchase of Personal Protective Equipment's (PPEs) for 20 no. man power & other occupational safety related aspects of workers as a part of Occupational Health & Safety measures.

Also, M/s. Al Hind Lubricants will carry out the health check-up of all employees on regular basis for which budgetary annual allocation of Rs 85,000/- is made. The pulmonary and exposure specific health test of 20 people shall be carried out with six monthly frequencies for the workers getting exposed in such area.

0.6 Project Benefits

0.6.1 CER Activity

Since the project comes outside the MIDC area therefore Public Hearing (PH) will be applicable. However, for development & improvement in socio economic aspects of the surrounding area, M/s. Al Hind Lubricants have made provisions for fixed budgetary allocation to be spent as Corporate Environment Responsibility as per the MoEF & CC guidelines (O.M. dated 01/05/2018). The company has allocated 2.0 % of the total project cost viz. **1.45 Crore** for CER activity expenditures to be spent within a period of 5 years. As per the needs identified in socio economic studies in surrounding villages, project proponent will spend total amount of **2.90 lakhs** as CER Activity. CER Summary addressed in **Error! Reference source not found.**

Table 0.7: CER Action Plan Summary

Sr. No.	Activity	Budgetary Provision (Lakhs)
1	Donation of 1 Clinical laboratory Refrigerator to Primary Health Care (PHC), Kudus.	1
2	Donation to Kille Mahuli Gramin Vidyalaya for computer, water filters, sports kit, Wheel chair for especially abled students	1.9
	Total	2.9

0.7 Environmental Management Plan

0.7.1 EMP Cost & Budgetary Allocation

The proposed capital investment of the Environmental Pollution Control Measures is envisaged to be **INR 21.68 Lakh** and the recurring cost for Environmental Pollution Control Measures is around **INR 4.95 Lakh per year**.

Table 0.8: Environmental Management Budget

Sr. No	Pollution Activity	Mitigation Measures/Details	Responsibility in Organization	Total Capital cost (In Rs. lacs)	Total Recurring cost (Rs. Lacs/yr.)	Purchase / Implementation Schedule
1	Air pollution	Provision of stack for DG Set	EHS Team	1.9	0.13	During commissioning and operation phase
2	Water Pollution	online continuous monitoring for effluent as per CPCB guidelines.	EHS Team	2.0	0.15	During commissioning and operation phase
3	Noise pollution	Acoustic encl./ Anti-vibration pads to DG & pumps	EHS Team	1.00	00.40	During commissioning and operation phase
4	Occupational health	Medical check-up, Health insurance policy, Medical staff charges, First aid facilities consumables, In-house first aid room, Other infrastructure and Equipment	HR/Admin/ EHS Team	2.55	0.85	During commissioning and operation phase
5	Rain water harvesting	Roof top rain water harvesting	EHS Team	00.50	00.15	From construction

Sr. No	Pollution Activity	Mitigation Measures/Details	Responsibility in Organization	Total Capital cost (In Rs. lacs)	Total Recurring cost (Rs. Lacs/yr.)	Purchase / Implementation Schedule
						phase
6	Green belt	667.94 sq. m. of greenbelt development area with 170 nos. of trees potholes digging, saplings, labour cost, fertilizers, drip irrigation facility & maintenance etc.	HR/ EHS Team	0.60	02.50	Before commissioning activity.
7	Hazardous waste	Segregation & Storage of Waste, Disposal to CHWTSDF site.	EHS Team	1.00	0.10	During commissioning and operation phase
8	Environmental monitoring and management	Regular monitoring of ambient environmental conditions & pollution control equipment's.	EHS Team	3.23	0.22	During commissioning and operation phase
9	Implementation of recommendation of LCA	Installation of solar panels	EHS Team	5.00	0.35	Within one year after getting EC
10	Implementation recommendation HAZOP/Risk Assessment	Provided flame proof electrical in flammable solvent /gases handling area, Fire hydrant system with fire	EHS Team	1.00	0.10	During commissioning and operation phase.

Sr. No	Pollution Activity	Mitigation Measures/Details	Responsibility in Organization	Total Capital cost (In Rs. lacs)	Total Recurring cost (Rs. Lacs/yr.)	Purchase / Implementation Schedule
		<p>water runoff collection system, Personnel Protective Equipment (PPE) especially SCBA (Self Contained Breathing Apparatus) etc. Fire hydrant system, providing sprinkler & fire alarm system, process interlocks as per new HAZOP recommendation.</p>				
	Sub Total			18.78	4.95	--
11	Corporate Environmental Responsibility (CER)			2.90	--	--
	Final Total			21.68	4.95	--