

# **Executive summary**

of Draft EIA report

## **Proposed Expansion of CI/SG Iron Casting of Cylinder Liners from 2450 MT/M to 5633 MT/M**

At Plot No. K-10, Additional MIDC, Village Kodoli, Dist. Satara.

## **M/s. Cooper Corporation Private Limited**

### **Environmental Consultant and Laboratory**



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# CONTENTS

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1	Introduction .....	1
2	Project Location .....	1
3	Salient features of integrated project.....	4
4	Process description .....	6
5	Description of the Environment.....	9
6	Anticipated Environmental Impacts .....	11
7	Environmental Monitoring Program.....	11
8	Additional Studies .....	12
9	Environmental Management Plan .....	12
10	Environment Management Cost.....	13
11	Project Benefits.....	14
12	Conclusion.....	14

## TABLES

Table 1	Environmental Settings .....	4
Table 2	Brief information of the project and environmental settings.....	4
Table 3	Observation of Environmental monitoring .....	9
Table 4	Anticipated Impacts .....	11
Table 5	Environmental monitoring schedule.....	11
Table 6	EMP for various environmental attributes.....	12
Table 7	Environment Management Cost .....	13

## FIGURES

Figure 1	Google image of the plot boundary.....	2
Figure 2	Master Layout .....	3
Figure 3	Process Flow Chart.....	8

# Executive Summary

## 1 Introduction

M/s. Cooper Corporation Private Ltd (CCPL) located at Plot No K-10 at Additional MIDC, Village Kodoli, Satara Maharashtra is proposing expansion of existing CI/SG Iron Casting of Cylinder Liners from 2450 MT/M to 5633 MT/M. At the K10 unit, the industry currently operates a CI/SG iron foundry with three induction melting furnaces, providing a total melting capacity of 2,450 MT per month. The industry's machine shop produces 2,600,000 no. of cylinder liners annually. Further industry proposes to expand its melting capacity to 5633 MT/M by adding four more induction melting furnaces from another unit (Plot No. L3 Unit, Kodoli, Additional MIDC, Satara) which is 1.0 km away from expansion site.

Industry has obtained consent to operate for 2450 MT/M of production of cylinder liner vide format no. 1.0/APAE Section /UAN No. 0000132321/CR/2207001098 dated 22/07/2023 valid upto 30.06.2024. Industry has applied for renewal of Consent vide MPCB-CONSENT-0000207220 Dated 23.04.2024.

## 2 Project Location

The proposed project will be located at plot No K-10 at Additional MIDC, Village Kodoli, Satara Maharashtra. Unit is geographically located at Latitude 17°39'16.05"N & Longitude 74°2'23.14"E situated around 705 m above MSL.

The land requirement for proposed industry unit is already in possession. Proposed expansion will be within existing factory premises. There are no Tropical Forest, Biosphere Reserve, National Park, Wild Life Sanctuary and Coral Formation Reserves within 10 km Influence Zone. However, Yavateshwar village mentioned in Western Ghats ESZ notification is falling in 10 km radius of the project site. Janai Malai Reserve forest patches near the project area. The proposed project is in MIDC area has better connectivity as through MIDC road networks.



Figure 1 Google image of the plot boundary

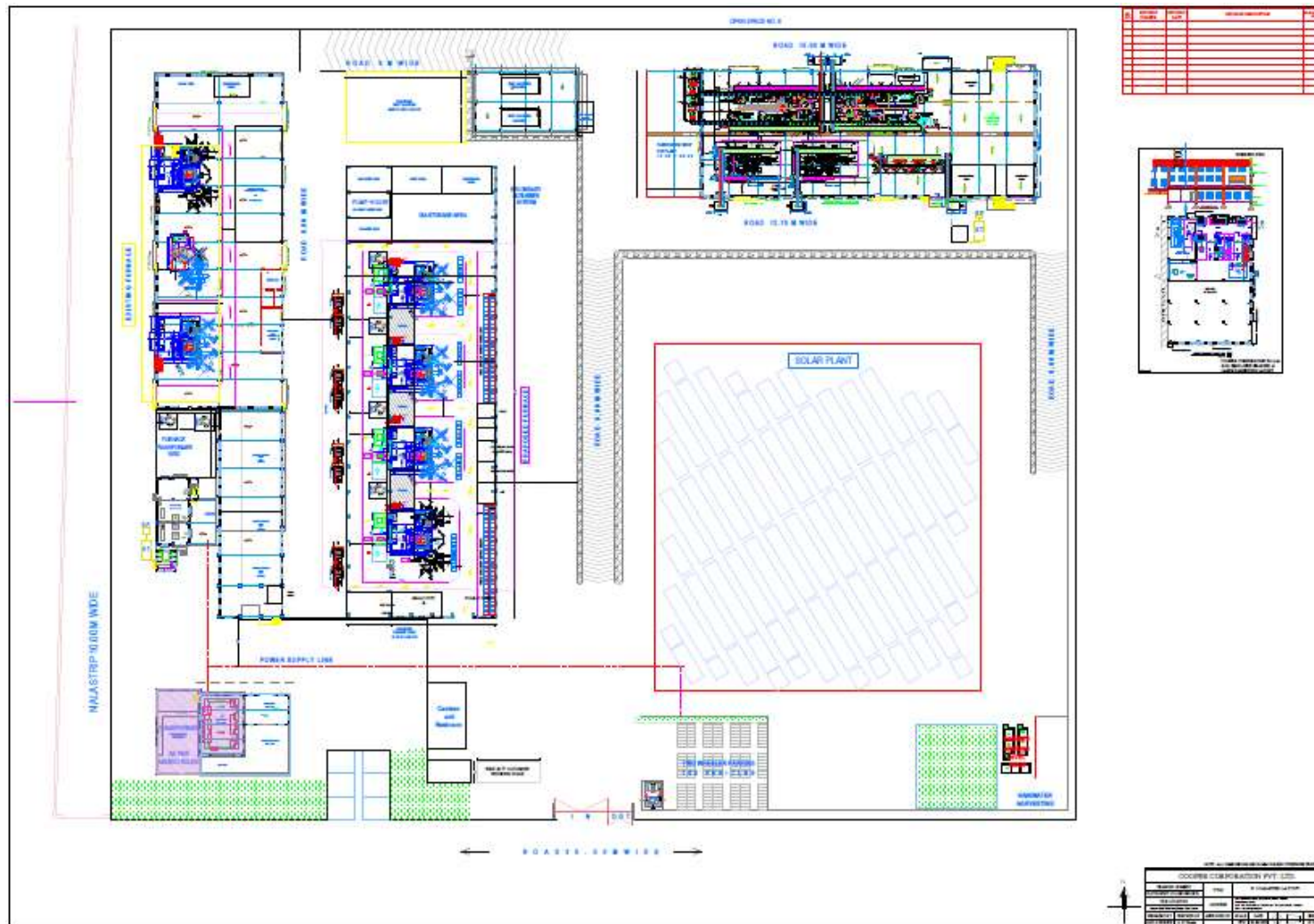


Figure 2 Master Layout

The Environmental Settings within the Study Area is given below

**Table 1 Environmental Settings**

#	Particulars	Description
1.	Project Location Geo-Coordinates	Latitude 17°39'17.38"N
		Longitude 74° 2'23.82"E
2.	Toposheet number	47G/14, 47K/12
3.	Impact Habitation	Khindwadi village @ 0.26 km towards ESE direction
		Karandwadi village @ 0.86 km towards ESE direction
4.	Nearest town	Satara @ 2.96 km towards NE direction
5.	Nearest Railway Station/ Junction	Satara Railway Station @ 4.30 km towards NE direction
6.	Nearest Airport	No any airport in 10 km radius of the project site
7.	Nearest IMD station	Satara MET station: 5.49 km towards NNW
8.	Nearest Water body	Krishna River : 3.060 km towards NE direction
		Urmodi River @ 5.03 km towards SW direction
		Canal @ 1.21 km towards NE
		Venna river @ 6.41km towards NNW direction
9.	Nearest Road	Degaon Rd. @ 0.26 km towards NE direction
10.	Nearest Highway	NH 48 @ 2.65 km towards Western direction
11.	Any Historical Place/ Archaeological monuments	Ajinkyatara Fort @ 4.60 km towards Western direction
12.	Ecological sensitive area / Reserve Biosphere within 10 km	- Yavateshwar village mention in Western Ghats ESZ notification is @ 9.05 km in NW direction
		- Janai Mali Reserve forest patches @ 1.55 km in SW direction
13.	Seismic Zone	IV
14.	Temp.	Min 4.8°C
		Max 42.6°C
15.	Average Annual rainfall	905.3 mm

### 3 Salient features of integrated project

**Table 2 Brief information of the project and environmental settings**

#	Particulate	Description			
1	Project	Proposed Expansion of CI/SG Iron Casting of Cylinder Liners from 2450 MT/M to 5633 MT/M			
2	Location	Plot No K-10 at Additional MIDC, Village Kodoli, Satara Maharashtra			
3	Land requirement	4.40 Ha.			
4	Project configuration		<b>Existing</b>	<b>Proposed</b>	<b>Total</b>
		CI/SG Iron Casting of Cylinder Liner (MT/M)	2450	3183	5633
		Water Soluble Die Coat (m <sup>3</sup> /month)	169	0	169
	Machining of CI casting (Nos./Y)	2600000	0	2600000	
5	Operational days	306 days			

#	Particulate	Description			
6	Raw materials	MS- Punching & Profile cutting, Pig iron, Ferro Silicon, etc.			
7	Water consumption		<b>Existing</b>	<b>Proposed</b>	<b>Total</b>
		Industrial fresh (CMD)	50	65	115
		Recycled (CMD)	2	3	5
	Domestic (CMD)	9	12	21	
8	Induction Furnace	Existing: - 3 Nos; Proposed: - 4 Nos. Total – 7 Nos.			
9	APC equipment	<b>Existing –</b> Dust collector with stack height of 15 mtrs. Scrubber followed by bag filter with stack height of 15 mtrs. <b>Proposed –</b> Dust collector with stack height of 15 mtrs. Scrubber followed by bag filter with stack height of 15 mtrs.			
10	Power consumption	<b>Existing:</b> 3500 kVA; <b>Proposed:</b> 4000 kVA <b>Total:</b> 7500 kVA			
11	D.G Set	<b>Existing:</b> - 200 kVA, 180 kVA, 40 kVA, 30 kVA <b>Proposed</b> 250 kVA * 2 Nos			
12	Fuel		<b>Existing</b>	<b>Proposed</b>	<b>Total</b>
		HSD (KL/Month)	1	1	2
13	Effluent	<b>Existing –</b> - 2.3 CMD effluent will be treated in 20 CMD ETP - 8.1 CMD domestic effluent will be treated in 25 CMD STP	<b>Proposed –</b> - 5.3 CMD effluent will be treated in existing 20 CMD ETP - 18.6 CMD domestic effluent will be treated in existing 25 CMD STP		
14	Man power	<b>Existing:</b> Construction Phase: 0 Nos Operation Phase: 280 Nos	<b>Proposed:</b> Construction Phase: 61 Nos Operation Phase: 140 Nos		
15	Total project cost	₹ 13.85 Cr.			
16	Total cost for EMP	₹ 1.13 Cr.			
17	Total cost for CER	₹ 0.139 Cr. lakhs (1% of total project cost as brownfield project)			

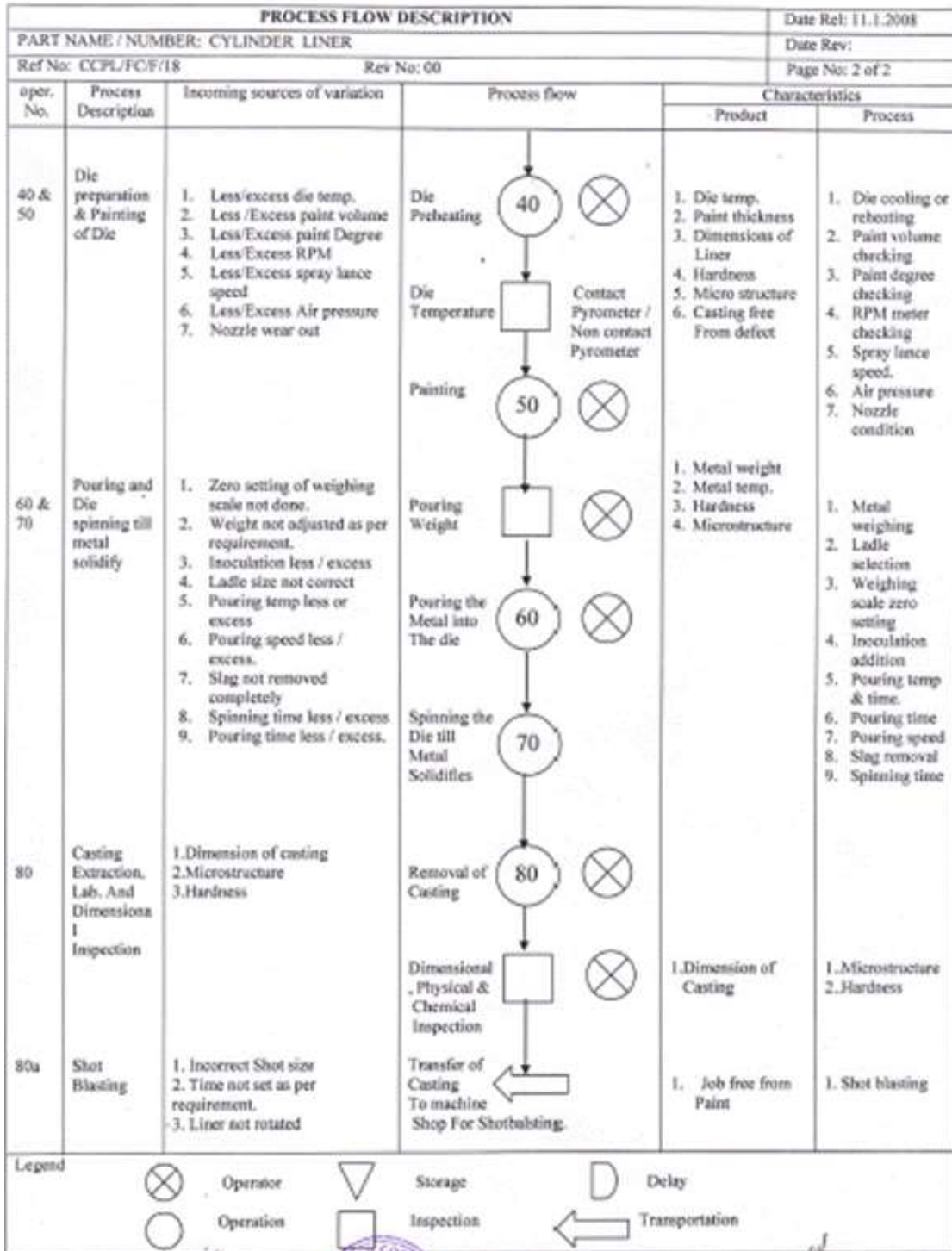
#### **4 Process description**

The process for CI/SG Iron Casting of Cylinder Liners begins with the inspection and storage of incoming raw materials. These materials are then transferred to the foundry shop for melting in the furnace, ensuring precise charge composition and temperature control. Automatic spectroscopic analysis is conducted to monitor and maintain the correct chemical composition and temperature. Molten metal is tapped from the furnace, with careful monitoring of tapping temperature and time, as well as accurate weighing and temperature checks. The molten metal is then held at the appropriate temperature before being poured into a preheated die. The die, having been evenly coated, is spun to ensure uniform solidification of the metal. Once solidified, the casting is extracted from the die and undergoes thorough dimensional and quality inspections to verify its dimensions, microstructure, and hardness. Finally, the casting is cleaned and finished through the shot blasting process. This streamlined and controlled process flow ensures the efficient production of high-quality cylinder liners that meet the stringent standards required for automotive and industrial applications.

Process Flow Diagram is given below



PROCESS FLOW DESCRIPTION				Date Ref: 11.1.2008	
PART NAME / NUMBER: CYLINDER LINER			Date Rev:		
Ref No: CCPL/FC/F/18		Rev No: 00		Page No: 1 of 2	
Oper. No	Process Description	Incoming sources of variation	Process flow	Characteristics	
				Product	Process
10	Melting	1. Material mislabeled 2. Charge composition	Incoming Materials (Circle) ↓ Receiving Inspection (Square) ↓ Material Hold Area (Inverted Triangle) ↓ Transfer to Foundry shop (Arrow pointing left) ↓ Melting in The Furnace (Circle 10) ⊗ ↓ Temperature, Automatic Spectroscopic Analysis (Square) ↓ Tapping (Circle 20) ⊗ ↓ Tapping Weight & Temp. (Square) ↓ Pouring Holding (Circle 30) ⊗ ↓	1. Chemical composition 2. Temperature	1. Charge weight 2. Alloy addition
20	Tapping	1. Tapping Temp. High/Low 2. Excess/Less tapping Time	Tapping (Circle 20) ⊗ ↓ Tapping Weight & Temp. (Square) ↓ Pouring Holding (Circle 30) ⊗	1. Metal Temp. 2. Metal weight	1. Tapping time
30	Holding	1. Holding Temp. High/Low 2. Excess Holding Time	Pouring Holding (Circle 30) ⊗ ↓	1. Metal Temp.	1. Holding Time 2. Inoculation Addition
<b>Legend</b> ⊗ Operator      ▽ Storage      D Delay ○ Operation      □ Inspection      ← Transportation					



PREPARED BY



For Cooper Corporation Pvt. Ltd.  
 (Automated Signatory)

APPROVED BY

Figure 3 Process Flow Chart

## 5 Description of the Environment

The guiding factors for the present baseline study are as per the requirements prescribed by the guidelines given in the EIA Manual of the MoEF&CC and ToR approved by State Level Expert Appraisal Committee (SEAC), Maharashtra. Baseline Study was carried from March 2024 to May 2024.

**Table 3 Observation of Environmental monitoring**

Environment al Attributes	Frequency of monitoring	Parameters	Observed Results
Meteorology	Microprocessor based Weather Monitoring Station Continuous hourly recording	Max. Temp.	42.6 °C
		Mini. Temp.	4.8 °C
		Relative Humidity	51-73 %
		Precipitation	Annual avg. 905.3 mm
Ambient Air Quality	10 Locations 24 hourly samples Twice a week for 3 months (in µg/m <sup>3</sup> )	PM <sub>10</sub>	<b>PM<sub>10</sub></b> : 63.21 to 84.95 µg/m <sup>3</sup>
		PM <sub>2.5</sub>	<b>PM<sub>2.5</sub></b> : 24.24 to 34.56 µg/m <sup>3</sup>
		SO <sub>2</sub>	<b>SO<sub>2</sub></b> : 6.06 to 24.79 µg/m <sup>3</sup>
		NO <sub>x</sub>	<b>NO<sub>x</sub></b> : 10.20 to 35.32 µg/m <sup>3</sup>
		CO	<b>CO</b> : 0.63 to 1.82 µg/m <sup>3</sup>
Water Quality (Ground & Surface)	8 no. of locations – Ground water 4 no. of locations – Surface water (Physical, chemical and biological parameters)	<b>Parameter</b>	<b>Ground water:</b>
		pH	<b>pH</b> : 7.02 to 7.49
		TDS	<b>TDS</b> :189 mg/lit - 374 mg/lit
		Total Hardness:	<b>Total Hardness</b> : from 85.3 mg/lit to 158.1 mg/lit.
		Chlorides	<b>Chlorides</b> : 15.1 mg/lit – 51.3 mg/lit. Copper, Manganese, Zinc, Nickel and Hexavalent Chromium was below detectable limit at all the locations.
		PH	<b>Surface Water:</b>
		DO	• <b>pH</b> : 7.12 to 7.32
		BOD	• <b>DO</b> : 4 mg/lit to 5.7 mg/lit
COD	• <b>BOD</b> : 3-15 mg/lit • <b>COD</b> : 10-29 mg/lit		
Soil Quality	Once in season at 10 locations	Soil type and texture, Physio-chemical properties, NPK	Black loamy clay. Soil is medium in fertility, good water holding capacity, heavy metal contamination signs not seen.
Noise Level		Day	61.2 dB(A) - 66.2 dB(A)

<b>Environmental Attributes</b>	<b>Frequency of monitoring</b>	<b>Parameters</b>	<b>Observed Results</b>
	Once in season at 8 Locations (Noise levels in dB(A))	Night	39.2 dB(A) - 41.5 dB(A)
Land use Pattern	One time visit of the study area	Identification & classification of land use	Most of the land is agricultural land followed by Built up
Geology and hydrogeology	Based on secondary data	Geology and hydrogeology of the study area	Basaltic lava flows, the ground water in deccan trap basalt occurs mostly in the upper weathered and fractured parts down to 20-25 m depth, alluvium occurs in small areas.
Ecology	General in 10 km radial study area and data collected around the project site through field visits	Flora & Fauna	During the brief survey total 168 species of flora, in faunal diversity 100 species of birds, 7 Mammals, 5 reptile and 10 Fresh water fish species were recorded. As per Indian Wildlife Protection Act, 1972 (as amended up to 2022; IWPA), out of total four Schedules, Floral and Faunal species are protected in Schedule I-IV. During the field survey 7 species (Pavo cristatus, Panthera pardus, Vulpes bengalensis, Hystrix indica, Ptyas mucosa, Naja naja, Daboia russelli) listed under Schedule I of the Act. There is Western Ghat ESA (Yavateshwar village) @ 9 km from the project site.
Socioeconomic Data	General in 10 km radial study area and data collected around the project site through field visits	Socio-economic characteristics of the affected area	Sanitation facilities are satisfactory, Power supply facility is available in almost villages and town, drinking water sources is mostly from ground water. Medical facilities in terms of primary health center and primary health sub centers in the rural areas are good.

## 6 Anticipated Environmental Impacts

**Table 4 Anticipated Impacts**

Environmental Facets	Anticipated Impacts
Air Environment	Probable increase in concentration of air pollutants due to process, fugitive and utility emissions.
Water Environment	Generation of industrial & domestic wastewater.
Land Environment	Impacts on land due to improper disposal of hazardous/ solid waste.
Ecological Environment	Positive as greenbelt of appropriate width will be developed and maintained by the company in the area. No impacts are envisaged on aquatic flora & fauna as there will be zero effluent discharge outside the plant premises.
Social Environment	Overall development of the area in respect of the infrastructure development, educational growth, health facilities etc.
Economic Environment	Positive impacts on economy of the region and the country as the Alcohol will be exported and revenue generation.
Noise Environment	Minor increase in noise level within the project area.
Occupational Health & Safety	Major health hazards are identified in worst case scenario.

## 7 Environmental Monitoring Program

**Table 5 Environmental monitoring schedule**

Sr. No.	Particulars	Parameters	Number of location	Frequency
1	Ambient air quality	PM <sub>10</sub> , PM <sub>2.5</sub> , SO <sub>2</sub> , NO <sub>x</sub> , VOC	Three locations (CPCB/ MPCB guidelines)	Quarterly
2	Stack gas	PM, SO <sub>2</sub> and NO <sub>x</sub>	All stacks	Quarterly
3	Work place	PM <sub>2.5</sub> , SO <sub>2</sub> , NO <sub>x</sub> , O <sub>3</sub>	Two locations (near process area) One location (outside process area near vent)	Quarterly
4	Waste water	pH, EC, TDS, O&G, SS, COD, BOD, Chloride etc. As per BIS: 10500	Inlet & outlet of ETP	Quarterly
5	Surface water and ground water	pH, EC, TDS, SS, COD, BOD, Chloride, E coli etc.	3 location Ground water and 1 location Surface water	Yearly
6	Solid waste	pH, EC, metal, NPK	Two location	Yearly
7	Soil	N, P, K, moisture, EC, heavy metals etc.	Three location	Yearly
8	Noise	Noise levels	Three location (Day & Night)	Quarterly

9	Green belt	Survival rate of plants and shrubs	In and around the plant site	Quarterly
10	Occupational health	Health and fitness check-up of employees	All worker	Yearly
11	Emergency preparedness	Fire and Safety	Mock drill records	Six Monthly

## 8 Additional Studies

The following Additional Studies were done in reference

- Public Consultation
- Risk Assessment

## 9 Environmental Management Plan

Following mitigation measures shall be adopted by factory to minimize the impact of project on the surrounding environment.

**Table 6 EMP for various environmental attributes**

<b>Environmental Attributes</b>	<b>Mitigation Measures</b>
Air Quality Management	<p><b>Process Emission</b></p> <ul style="list-style-type: none"> <li>- Dust Collectors, Bag filters shall be provided. Operation of DG sets will be done only in case of power failure &amp; stack height has been provided as per the CPCB norms.</li> <li>- The whole process is carried out in closed condition so as to avoid any chances of other emissions.</li> </ul> <p><b>Utility Emission</b></p> <ul style="list-style-type: none"> <li>- All the D.G. sets are standby arrangement for use during power failure.</li> <li>- Adequate stack height provided.</li> </ul> <p><b>Fugitive Emission</b></p> <ul style="list-style-type: none"> <li>- Dust Extractor installed at loading-unloading section to minimize the PM emission at the site.</li> <li>- Dust suppression on haul roads being done at regular intervals.</li> </ul>
Water & Wastewater Management	<ul style="list-style-type: none"> <li>- Domestic effluent generation will be 19 m<sup>3</sup>/day; it is treated in STP of 25 m<sup>3</sup>/day. Treated effluent is used in greenbelt development. Industrial effluent around 5 m<sup>3</sup>/day treated In 20 CMD existing ETP and will be reused in scrubbing.</li> </ul>
Noise Management	<ul style="list-style-type: none"> <li>- Acoustic enclosures provided for all utilities to attenuate the noise.</li> <li>- Free flow of traffic movement has been maintained. Ear muffs shall be used while running equipment of the plant.</li> <li>- Proper maintenance, oiling and greasing of machines at regular intervals shall be done to reduce generation of noise.</li> <li>- Greenbelt shall be developed around the periphery of the plant to reduce noise levels.</li> </ul>

Solid & Hazardous Waste Management	<ul style="list-style-type: none"> <li>- Spent oil generated will be minimal quantity.</li> <li>- Process dust is disposed to nearest CHWTSDF.</li> <li>- Other waste is sell to authorized recycler/processor</li> </ul>
Traffic Management	<ul style="list-style-type: none"> <li>- The trucks carrying raw material &amp; fuel shall be covered to reduce any fugitive dust generation.</li> <li>- Good traffic management system has been developed and implemented for the incoming and outgoing vehicles so as to avoid congestion on the internal and public roads.</li> </ul>
Green Belt Development / Plantation	<ul style="list-style-type: none"> <li>- Plantation has been done as per Central Pollution Control Board (CPCB) Norms.</li> <li>- Native species shall be given priority for Avenue plantation.</li> </ul>
Corporate Environment Responsibility	<ul style="list-style-type: none"> <li>- An amount of INR 13.85 lakhs (1 % of total project cost) will be allocated for CER activities in the coming 2 years which will be utilized on the basis of requirement.</li> </ul>
Occupational Health & Safety	<ul style="list-style-type: none"> <li>- Company shall monitor the health of its worker before placement and periodically examine during the employment</li> <li>- Health effects of various activities and health hazard if any observed shall be recorded and discussed with the health experts for corrective and preventive actions need to be taken by the industry</li> <li>- All safety gear shall be provided to workers and care shall be taken by EMC that these are used properly by them. All safety norms shall be followed</li> </ul>

## 10 Environment Management Cost

**Table 7 Environment Management Cost**

A	Construction phase (with Break-up)	Capital Cost	O & M (Annual)
		(Amount in lakhs)	
1	Air Monitoring	5	10
2	Environmental monitoring	—	3
3	During site preparation	5	0
4	Noise and solid waste management	2	0
5	Water and waste water	0	3
6	Occupational health	5	2
7	Greenbelt development	5	3
	<b>Total (A)</b>	<b>22</b>	<b>21</b>
Sr. No.	Attributes	Capital Cost for Expansion (Lakhs)	O&M (Lakhs/year)
<b>Operation Phase (with Break-up)</b>			

1	Environmental Monitoring	0	5
2	Waste water	0	15
4	Occupational Health	15	5
5	Gardening	5	3
6	Solid Waste	10	5
7	Rain Water	20	3
9	CER	13.85	0
10	Air & Noise pollution	50	30
	<b>Total (B)</b>	<b>113.85</b>	<b>66</b>
	Total (A+B)	<b>135.85</b>	<b>87</b>

## 11 Project Benefits

- Enhances production from 2,450 MT/M to 3,183 MT/M, meeting higher market demand.
- Contributes to the economic growth of the MIDC region, attracting further investments.
- Creates new jobs for both skilled and unskilled labor during construction and in the long term.
- Strengthens market position by catering to larger orders and expanding market share.
- Offers advantages such as better logistics, transportation networks, and proximity to suppliers and customers.
- Incorporates energy-efficient technologies, reducing operational costs and environmental impact.
- Supports local infrastructure, healthcare, and education through CSR/CER activities.
- Ensures timely and reliable delivery of products by optimizing the supply chain.
- Aligns with the company's long-term growth strategy, providing a foundation for future expansions.

## 12 Conclusion

- Zero liquid discharged is proposed with efficient mitigation measures implemented.
- Air emissions through stack will be controlled by APCM.
- Loss of vegetation and habitat will not be attributed.
- Personal protective equipment's, safety precautions, emergency plan & disaster management plan shall be in place to avoid the environment hazards.