Executive Summary

Environmental Impact Assessment

for

Enhancement in Production of Grain Based Distillery
(100 KLPD to 130 KLPD)
at
Plot No. B-1, M.I.D.C. Lonand, Taluka - Khandala, District - Satara
State - Maharashtra (India)

Project Proponent:

M/s. Privilege Industries Limited

HDIL Towers, III[rd] Floor, A Wing, Anant Kanekar Marg,
Station Road, Bandra (E), Mumbai-400051

Environment Consultant:

M/s. Sri Sai Manasa Nature Tech Pvt. Ltd.

(QCI/NABET Accredited Vide S. No. 140,Dated 15.06.2018 displayed on NABET website)
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EXECUTIVE SUMMARY

1.0 INTRODUCTION

Environmental Impact Assessment (EIA) is a process, used to identify the environmental, social and economic impacts of a project prior to decision-making. It is a decision making tool, which guides the decision makers in taking appropriate decisions for proposed projects. EIA systematically examines both beneficial and adverse consequences of the proposed project and ensure that these impacts are taken into account during the project designing.

1.1 Environmental Clearance

As per the Environmental Impact Assessment (EIA); Notification S.O. 1533, 14-09-2006 issued by MoEFCC, Government of India, the proposed Grain based distillery expansion project is categorized as Category – A project, which mandates obtaining prior Environmental Clearance from MoEFCC, GOI, NEW DELHI.

1.2 Terms of Reference

M/s. Privilege Industries Ltd.(PIL) submitted the application for Environmental Clearance as per the new notification along with prescribed Form1, proposed Terms of Reference for EIA study and pre-Feasibility report on the project in 3rd July 2018. The Expert Appraisal Committee considered the project and issued the Standard Terms of References vide letter no. IA-J-11011/381/2007-IA-II (I) on dated 5th August 2018 and prescribed Terms of References is incorporated in the EIA report.

1.3 Brief Description of Project

Privilege Industries Limited is proposing to expand the existing 100 KLPD production to 130 KLPD at existing premises i.e Plot No. B-1, M.I.D.C. Lonand, Khandala Mandal, Satara District in the State of Maharashtra. Total land is available with PIL is 8.0710 ha. No additional land is required for the proposed enhancement. The project location map is given in **Figure 1**, and 10 km study area map is given in **Figure 2**.

Product Details and Raw Material details

Particulars	Existing Quantity	Proposed Quantity	After Enhancement
ENA/RS/MS/AA	100 KLPD	30 KLPD	130 KLPD
Grain	260 TPD	50 TPD	310 TPD

Project Proponents

Privilege Industries Limited (PIL) was incorporated in 2005 with a vision to garner a reputation in excellence, innovation and consistency in the spirit and beverage industry. Distilling and Brewing are our forte and we have built a foundation on high quality, best practices and cutting edge technology. With passion and drive to succeed, coupled with some exquisite blends - the possibilities are endless.

PIL was incorporated with a dream to build a reputation for excellence, innovation and consistency in distilling and brewing. With the Indian spirits market on the threshold to soar multi-fold, for premium as well as mass market brands, it makes sense to launch our brands in market segments with the most potential. Continuing with PIL's custom of getting an early advantage, we took the challenge and got down to business.

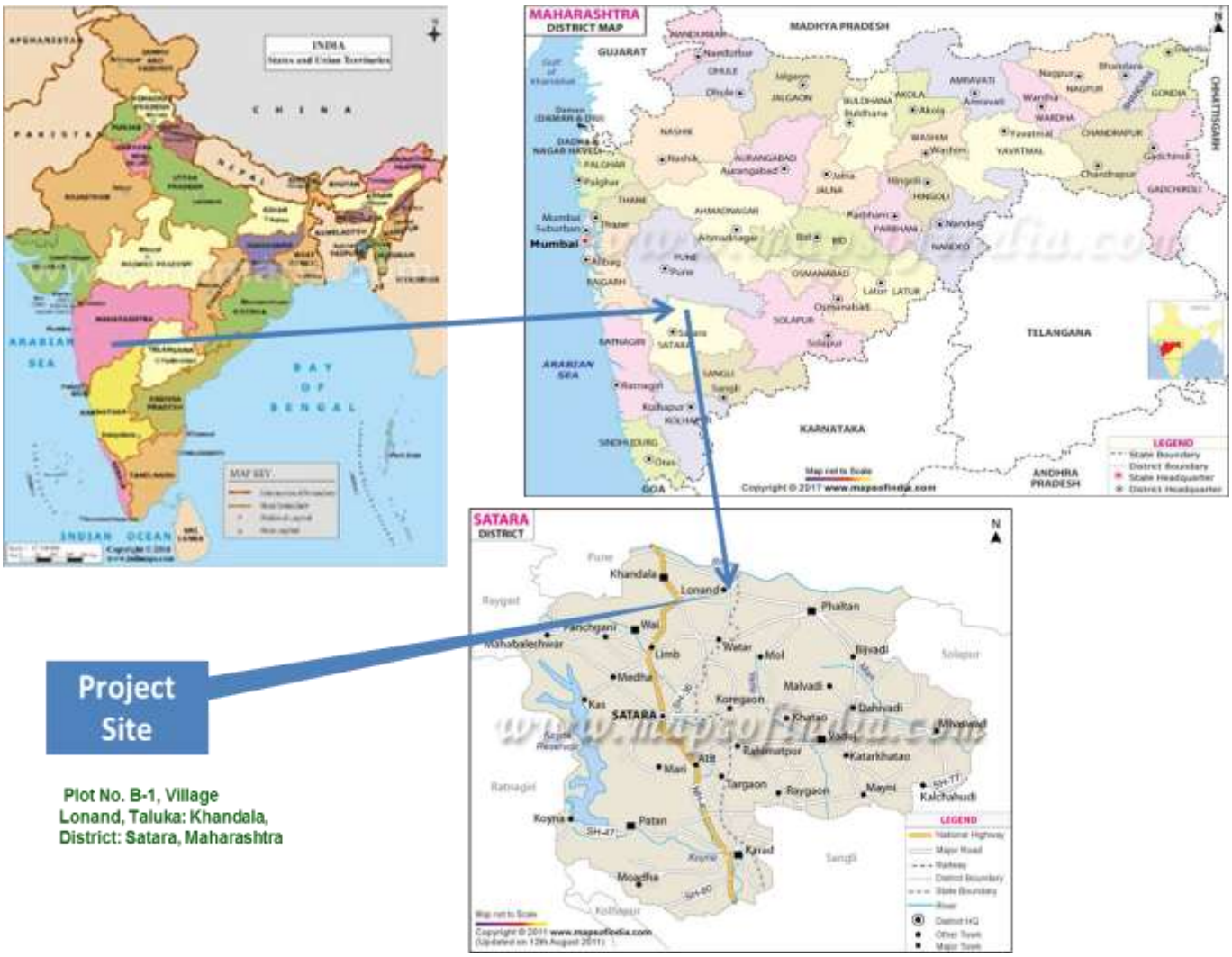


Figure 1: Project Location Map

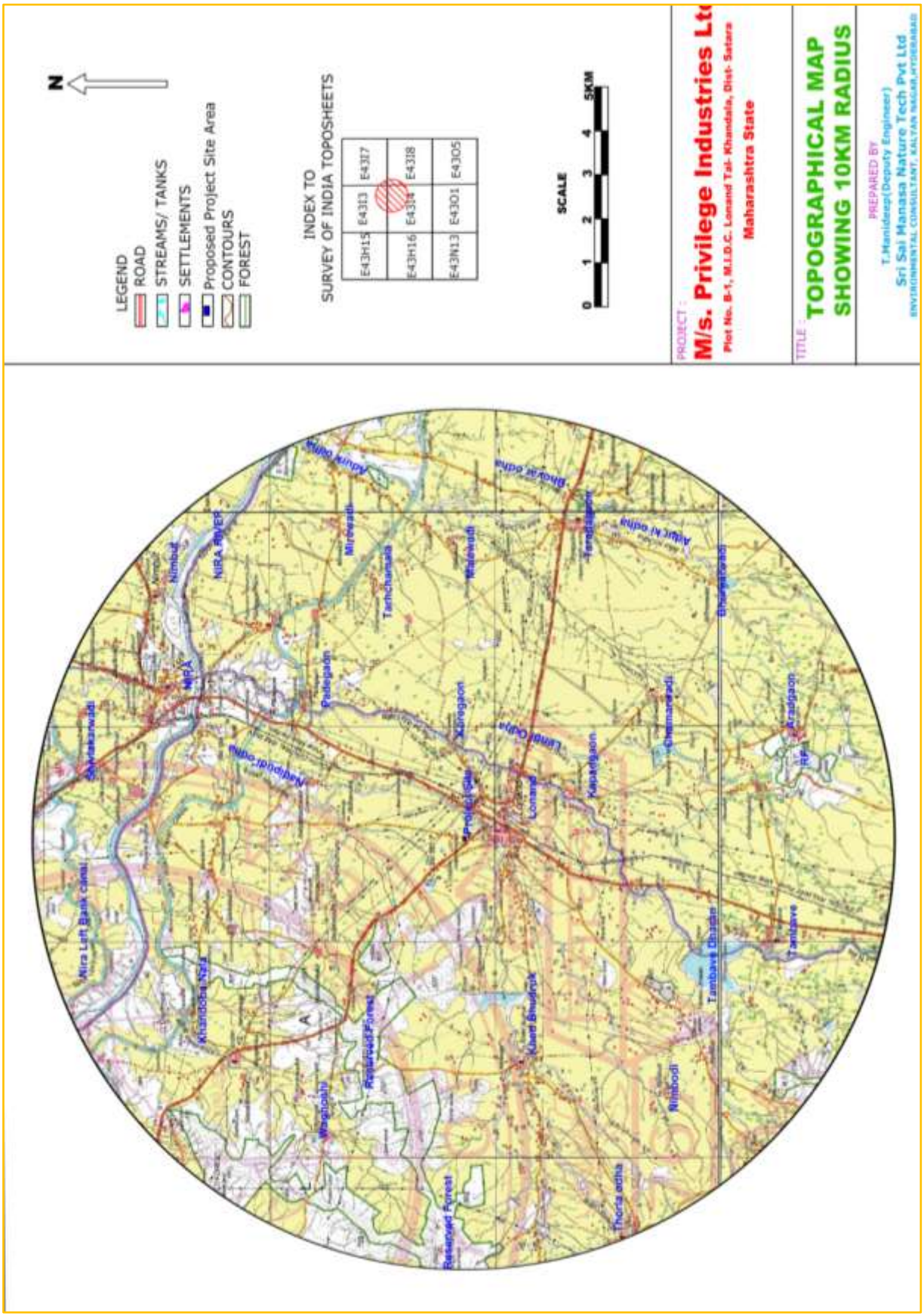


Figure 2: 10 KM Study Area Map of the Project Site

2.0 PROJECT DESCRIPTION

2.1 Raw Material Requirement

The raw materials required for the grain based distillery:

- Grains – Broken rice, Maize, Bajra, Jowar, barley etc.
- Enzymes and Chemicals
- Steam
- Water
- Fuel
- Power etc.

The working days of the plant are 330 days per year. The raw material requirement per day is given in **Table 1.**

Table 1: Raw Material

Description	Exiting	Proposed	Total
Grain	260 T/day	50 T/day	310 T/day
Land	80710.0 m^2	-	80710.0 m^2
Fresh Water	1150 KLD	-	1150 KLD
Fuel	80 TPD	50 TPD	130 TPD

2.2 Steam Balance

The Steam balance is given in **Table 2.**

Table 2: Steam Balance

Sr. No.	Description	Total
1	Liquefaction	110
2	Fermentation	5
3	Distillation	315
4	MEE	122
5	DDGS dryer	120
Total		**672**

2.3 Utilities

Water Requirement

The water requirement in the project will be for Process, cooling purpose, domestic consumption. The existing unit requires 1150 KLD of water and after enhancement water requirement will remain same. This requirement will be met from MIDC, Lonand.

Water Balance

Industrial waste water will be treated in MEE and ETP. The treated water will be used in process. Domestic waste water will be sent to the septic tank followed by soak pit. Zero Discharge norms will be followed.

Land Requirement

PIL has acquired 80710.0Sq.m of land in MIDC Lonand. The proposed enhancement activity will be established within the existing plant area only. The land breakup details are presented in **Table 3.**

Table 3: Land Break-up Details

S No	Particular	Existing (Sq.m)	Proposed (Sq.m)	After Enhancement (Sq.m)
1	Plant Area	35299.62	-	35299.62
2	Greenbelt	26725.00	-	26725.00
3	Parking and Open Area	18685.38	-	18685.38
	Total	**80710.00**		**80710.00**

Power Requirement

The existing power requirement is 4.0 MW and no additional power will be required for proposed enhancement. The power will be sourced from the Captive Thermal Power Plant.

Man Power Requirement

M/s. Privilege Industries Pvt. Ltd. is already having man power of 235 nos where 110 are direct employees and 125 Indirect employees. There will be an additional employment of 20 man power.

2.4 Technology and Process Description

The manufacturing process is shown in **Figure 3.**

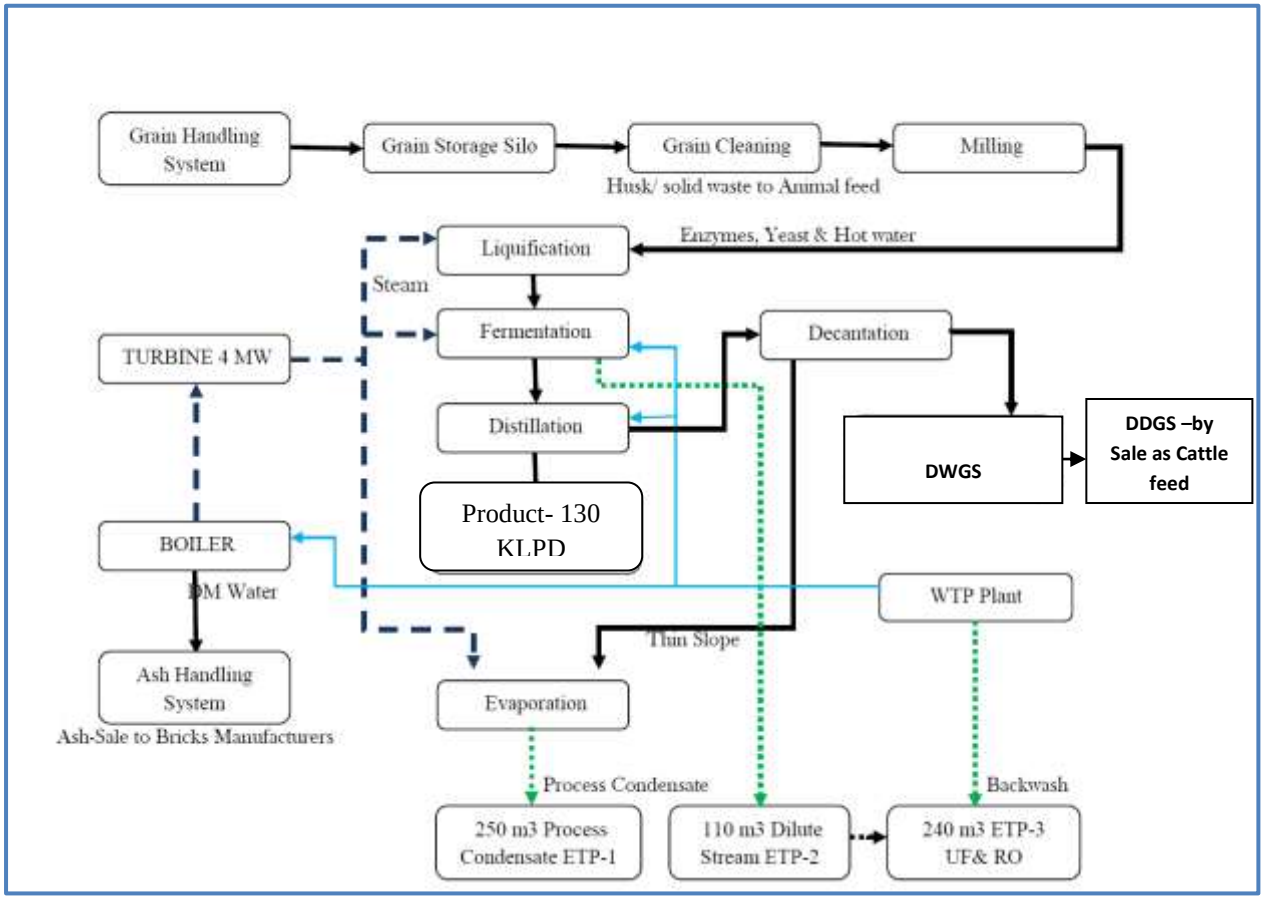


Figure: 3 -Manufacturing Process of Grain Based Alcohol

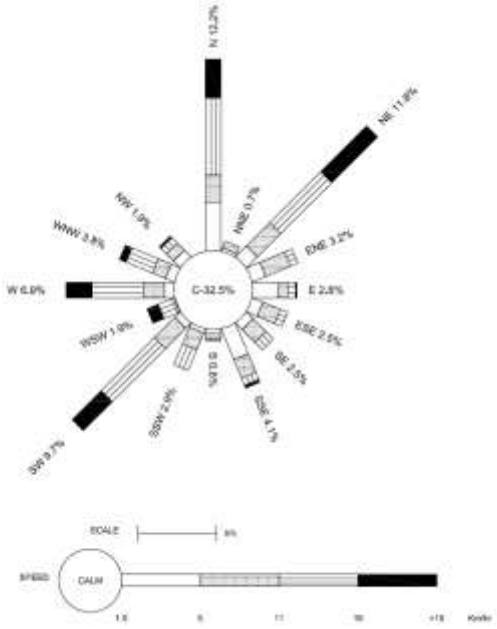
3.0 BASELINE ENVIRONMENTAL STUDIES

Baseline environmental studies were conducted in the proposed project area and in the area within 10 km radius from the proposed expansion project area to assess the existing environmental scenario in the area. The baseline environmental quality data for various components of environment, viz. Air, Noise, Water, Land were monitored during March to May 2018 in the study area covering 10 km around the Plant area.

3.1 Meteorology & Ambient Air Quality

Summary of the Meteorological Data Generated at Site

Summary of Site Specific Wind Pattern



3.2 Ambient Air Quality Status

The status of ambient air quality within the study area was monitored for the period of March to May 2018 at 8 locations including the Plant area and in nearby villages. Total 8 sampling locations were selected based on the meteorological conditions considering upwind and downwind directions. The levels of Respirable Particulate Matter (PM_{10}), Fine Particulates ($PM_{2.5}$), Sulphur Dioxide (SO_2,) and Oxides of Nitrogen (NO_X) were monitored. The minimum and maximum values of monitoring results are summarized in **Table 4.**

Table 4: Summary of Ambient Air Quality Results

Name of Village (s)	PM_{10} (µg/m^3)			$PM_{2.5}$ (µg/m^3)			NOx (µg/m^3)		
	Max.	Min.	98th %	Max.	Min.	98th %	Max.	Min.	98th %
Project Site	81.3	57.3	80.0	41.1	32.1	41.0	29.7	20.1	29.7
Padegaon Village	76.3	63.1	75.8	42.3	32.5	42.3	28.0	18.0	28.0
Andori Village	65.9	50.8	65.3	39.7	30.7	39.7	25.8	18.3	25.7
KhedBhudruk	71.3	50.2	70.4	37.6	30.1	37.6	28.0	20.2	28.0
Nimbodi Village	68.5	55.6	67.9	37.8	28.5	37.7	24.0	18.0	24.0
Tambave Village	71.3	58.6	70.8	39.6	31.5	39.0	30.4	20.1	30.3
Chamarwadi Village	64.9	55.4	64.9	35.8	22.8	38.0	25.2	18.9	25.2
Lonand	77.6	52.5	76.1	39.8	28.6	39.7	28.0	18.2	27.9
Standards	**100**			**60**			**80**		

Name of Village (s)	SO_2 ($\mu g/m^3$)			Carbon Monoxide (CO) mg/m^3		
	Min.	Max.	98th %	Min.	Max.	98th %
Project Site	18.3	12.2	18.2	<0.50	<0.50	<0.50
Padegaon Village	19.9	12.4	19.3	<0.50	<0.50	<0.50
Andori Village	17.9	12.4	17.7	<0.50	<0.50	<0.50
KhedBhudruk	20.0	16.3	20.0	<0.50	<0.50	<0.50
Nimbodi Village	17.9	12.5	17.7	<0.50	<0.50	<0.50
Tambave Village	17.8	10.3	17.6	<0.50	<0.50	<0.50
Chamarwadi Village	17.5	10.1	17.0	<0.50	<0.50	<0.50
Lonand	17.5	10.5	17.5	<0.50	<0.50	<0.50
CPCB Standards	**80**			**4.0**		

From the above results, it is observed that the ambient air quality with respect to PM_{10}, $PM_{2.5}$, SO_2 and NOx at all the monitoring locations was within the permissible limits specified by CPCB.

3.3 Ambient Noise Levels

Ambient noise level monitoring was carried out at the 8 monitoring locations; those were selected for ambient air quality monitoring. The monitoring results are summarized in **Table 5.**

Table 5: Summary of Ambient Noise Level Monitoring Results [Leq in dB(A)]

S. No	Name of the place	Category of Area/zone	Day Time In Leq dB (A)	Night Time In Leq dB (A)	CPCB Standards (Day time)	CPCB Standards (Night time)
1.	Project Site	Industrial	69.3	60.3	75dB (A)	70dB (A)
2.	Padegaon Village	Residential	54.2	46.8	55dB (A)	45dB (A)
3.	Andori Village	Residential	54.6	45.4	55dB (A)	45dB (A)
4.	KhedBhudruk	Residential	54.9	44.1	55dB (A)	45dB (A)
5.	Nimbodi Village	Residential	53.8	42.9	55dB (A)	45dB (A)
6.	Tambave Village	Residential	53.5	43.2	55dB (A)	45dB (A)
7.	Chamarwadi Village	Residential	54.0	43.6	55dB (A)	45dB (A)
8.	Lonand	Commercial	58.7	48.7	65dB (A)	55dB (A)

3.4 Surface and Ground Water Resources & Quality

Surface Water

pH is observed in the range of 7.89 to 8.24 and conductivity varied from 396 to 820 μmhos/cm. Chloride and Sulphate were observed to be in the range of 49.98-102.47mg/l and from 22.11-42.60mg/l respectively. The heavy metal contents are found to be negligible. Water quality is excellent but it is not potable due to presence of coliform. It can be used for drinking purpose after installing bacteriological treatment devices at individual or at community level.

Ground Water

Sampling was carried out at 8 locations during the study period. Sampling and analysis was carried out, as per standard methods and frequency of the sampling was thrice/stations. The summary of the results are presented below: pH in ground water sample was observed to be in the range 6.98 to 8.03 while conductivity was observed in the range of 652- 1157μS/cm. The value of alkalinity and hardness were observed in the range of 132 – 160 mg/l and 158 to 170 mg/l respectively. Whereas the heavy metals were found to be within the limits.

3.5 Land use Land Cover classification

The Land Cover classes and their coverage are summarized in **Table 6**.

Table 6: LU/LC Classes and their Coverage in SQ. km of 10 km Radius)

S. No.	Class	Area (Ha)
1	Water Body	835.63
2	Settlement	768.56
3	Barren Land	3694.14
4	Open scrub	3407.23
5	Fallow land	7410.68
6	Agriculture Land	15290.56
	Total	**31406.8**

3.6 Soil Quality

Sampling was carried out at 8 locations during the study period. The summary of the results are presented that pH in soil sample was observed in the range 6.40 to 8.97 while bulk density was observed in the range of 1.16 -1.36 g/cc.

3.7 Biological Environment

Rare and Endangered Flora in the Study Area

The IUCN Red List is the world's most comprehensive inventory of the global conservation status of plant and animal species. It uses a set of criteria to evaluate the extinction risk of thousands of species and subspecies. These criteria are relevant to all species and all regions of the world. With its strong scientific base, the IUCN Red List is recognized as the most authoritative guide to the status of biological diversity. **Among the enumerated flora in the study area, none of them were assigned any threat category, by RED data book of Indian Plants.** (Nayar and Sastry, 1990) and Red list of threatened Vascular plants (IUCN, 2010; BSI, 2003).

3.8 Socio-economic Environment

Information on socio-demographic status and the trends of the communities in the 10 km radius was collected through primary social survey and secondary data from census 2011 & village directory 2011. Summary of the socio-economic status of the study area is given in **Table 7.**

Table 7: Population Details

S.No.	Demographic Parameters	District Details No.s & %	10 km Radius Area Details
1	States	Maharashtra	
2	District	Satara	
3	No. of Taluka	11	1)Khandala 2) Phaltan
4	No. of Total Villages	216	30
5	Total No. of Households	6,53,735	15,873
6	Total Population	1506843	60807
7	Sex ratio Male Female	 15,10,842(50%) 14, 92,899(50%)	 38,126 (51%) 36656(49%)
8	Scheduled castes	3,23,236(10.76%)	8,072(10.79%)
9	Scheduled Tribes	29,635(0.98%)	1,085(1.45%)
10	Literate	9,17,709(74.09%)	56,195 (75.15%)
11	Main Worker	13,54,947(87.41%)	31,493(91.89%)
12	Marginal Worker	1,70,540(12.58%)	5,184(8.11%)
13	Non Worker	9,82,757(58.15%)	2,78,26(54.50%)

4.0 MITIGATION MEASURES

4.1 AIR Pollution Control Measures

Following measures will be taken to control air/fugitive pollution during operation:

- Stack height would be approx.. 50 m for gaseous emission confirming to the CPCB norms. D. G. Sets, stack height of 3.0 m above the roof level will be maintained.
- Stack emission level will be kept within permissible limit by installation of ESP and online stack emission monitoring will be done.
- Ambient air quality and stack emission would be regularly monitored and effective control exercised, so as to keep limits on stack emission loads would be met honestly at all the time.
- In order to avoid fugitive emissions from different sources, water will be sprayed. Also the roads within the premises will be concreted to prevent dust emission.

- The ambient air monitoring will be carried out regularly in the work zone and surrounding areas, to check that ambient air levels of the contaminants, are well below the stipulated norms.
- Green belt around the periphery and within premises will be developed which will help in attenuating the pollutants emitted by the plant.

4.2 Water Quality Management

The proposed project would be based on "Zero Liquid Discharge" (ZLD)

4.3 Noise Pollution Control

Various components of industrial operations will cause some amount of noise, which will be controlled by proper maintenance and compact technology.

i. Time to time oiling and servicing of machineries will be done.
ii. Acoustic enclosure for Turbine and D.G. sets will be provided.
iii. Green belt development (plantation of dense trees across the boundary) will help in reducing noise levels in the plant as a result of attenuation of noise generated due to plant operations, and transportation.

4.4 Greenbelt Development and Plantation

About 33% of the plant site will be developed as green belt.

4.5 EMP and CER Details

Details of environment management plan are given in **Table 8** and **CER in Table 9.**

Table 8: EMP Budget

S. No.	Item	Recurring Cost /Annum(Lac)	Capital Cost (Lac)
1	Air Pollution Control	130	400
2	Water Pollution Control	45	1455
3	Noise Pollution Control	0.15	3
4	Environment Monitoring and Management	2	3
5	Occupational Health	5	10
6	Green Belt	2.75	10
7	Safety Management	0.5	10
8	Laboratory and chemicals	30	3
	Total	**215.4**	**1894**

Table 9: EMP Budget

Activity Identified(under Proposed Expansion)	ESC Budget (Lakhs)
Drinking Water facility in nearby Villages	10.0
Health Checkups to nearby Villages	10.0
Vocational Skill Development programmes	10.0
Plantation in surrounding villages	7.5
Total	**37.5**

5.0 CONCLUSION

As discussed, it is safe to say that the project is not likely to cause any significant impact on the ecology of the area, as adequate preventive measures will be adopted to contain the various pollutants within permissible limits. Green belt development around the area will also be taken up as an effective pollution mitigative technique, as well as to control the pollutants released from the premises of the project.
