EXECUTIVE SUMMARY

1.0 Introduction

M/s. Veer Vallabh Green Bio Energy Private Limited is incorporated dated 14th September, 2023 with corporate identity number U19209PN2023PTC224014.

This is proposed Establishment of 207 KLPD Grain Based Distillery Plant to Manufacture RS/ENA/Impure Spirit/Technical Spirit/Absolute Alcohol/Ethanol and IMFL Bottling Plant along with 6 MW Co-generation Power Plant.

2.0 Project Location

The proposed project activity will be established at Gat No. 187, 189/1/1, 190, 193, 194, 195, 200, 201, 203, 204/1, 205/1, 205/1/2, 205/2, 208, 209 & 211/1, Nimgaon Khalu Village, Taluka Shrigonda, District Ahilyanagar, Maharashtra, India. Geographical co-ordinates of the project are latitude 18°30'10.36"N and longitude 74°34'54.91"E.

3.0 Project Description

As per EIA Notification which is published by MoEF&CC vide S.O. 1533 dated 14th September 2006 and its amendment till date; the proposed activity is falling under schedule 5(g) and 1(d) to be appraised at central level as category 'A' project.
The salient features of the proposed project are presented in **Table No. 1**.

Table No. 1 : Salient Features of Project

SN	Component	Details	
1.	Name & Address of Company	M/s. Veer Vallabh Green Bio Energy Private Limited Gat No. 187, 189/1/1, 190, 193, 194, 195, 200, 201, 203, 204/1, 205/1,205/1/2, 205/2, 208, 209 & 211/1, NimgaonKhalu Village, Taluka Shrigonda, District Ahilyanagar, Maharashtra, India.	
2.	Project Type	New	
3.	Schedule of project as per EIA Notification, 2006 & further amendments till date	5(g) & 1(d)	
4.	Category of Project*	'A'	
5.	**Project Area Details/Area Statement**		
	Particulars	**Area in Sq. m.**	**% of Total Plot Area**
a	Green Belt	46827	33.0%

b	Parking Area	21285	15.0%
c	Total Built-up Area (Ground Coverage)	51929.60	36.60%
d	Area Under Internal Roads	13441.98	9.47%
f	Open Space	8416.42	5.93%
	Total Plot Area	**1,41,900**	**100%**
6.	**Production Details**		
	Products:		
a	Rectified Spirit	205.96 KLPD	
b	Impure Spirit	1.035 KLPD	
	OR		
a	Extra Neutral Alcohol	186.3 KLPD	
b	Technical Spirit	20.7 KLPD	
	OR		
a	Absolute Alcohol / Ethanol	207 KLPD	
c	IMFL	17,200 Cases/Day	
d	Power	6 MW	
	By-Products:		
a	CO_2 Gas	158 Ton/Day	
b	DDGS	126 Ton/Day	
c	Fusel Oil	0.621 KL/Day	
7.	**Budgetary Estimation**		
a	Project Cost (INR)	234.02 Crores	
b	EMP Cost (INR)	Capital: 44.842 Crores, Recurring/Annum: 259.182 Lakhs	
c	CER Cost (INR)	Rs. 3.5103 Crores (1.5% of total project cost)	
8.	Operation Days	330 Days	
9.	**Power Requirement**		
a	Power Requirement	5.5 MW	
b	Source	In-house 6 MW Co-generation Power Plant (2*3 MW Turbines) 750 kVA D.G. Set (During power failure)	

10.	**Fuel Requirement**	
a.	Rice Husk/Briquette	76.6 Ton/day
b.	Coal	132 Ton/day
c.	High Speed Diesel	170 Lit/Hr
11.	**Details of Diesel Generator (D.G. Set)**	
	Capacity & No.	750 kVA x 1 No.
12.	**Boiler Details**	
a	Boiler Capacity	25 TPH & 20 TPH (CFBC Boilers)
b	Pressure	45 Bar 45.887 Kg/CM^2
c	Temperature	480 ^oC
d	Fuel	Coal, Rice Husk/ Briquette (for Boilers) and HSD (for D.G. Set)
e	APCD	ESP with 99.5% efficiency}
13.	**Stack Details**	
a	Boiler Stack (from ground level)	Combined stack of 60 meter height {APCD: 2 x ESP with 99.5% efficiency }
c	D.G. Set Stack	1 No. x 5.5 meter (above roof of the building)
14.	Man Power (Nos.)	Construction Phase: 100 Operation Phase- 100 (Skilled: 50 & unskilled : 50)
15.	**Water Requirement**	
	Particular	**Quantity**
	Water requirement Quantity & its Source	1st cycle (Distillery Operation) : 3694.63 CMD 2nd cycle (Distillery Operation): 692.58 CMD (**3.34 KL/KL**) Fresh Water requirement for other activity : 349.73 CMD Total Daily fresh water requirement: 1042.14 CMD Source- Irrigation department water supply Scheme Khadakwasala Irrigation Division, Pune; (An application has been submitted to irrigation department dated 10.07.2025 to get permission)
16.	**Effluent Generation**	

	Particulars	**Quantity (m^3/day)**
a.	Effluent in CPU	1247.067
b.	Effluent in ETP	488.48
17.	**Capacity & Treatment Scheme**	
a.	MEE Capacity	950 CMD
b.	CPU Capacity	1250 CMD
c.	ETP Capacity	500 CMD
18.	**Details of Effluent Load**	

a Effluent streams

SN	**Source**	**Quantity in CMD**
1.	Domestic	3.6
2.	Boiler Blowdown	38.4
3.	Cooling tower blowdown	256.1
4.	Spent wash	1370.31
5.	Spent Lees	238.767
6.	Sealing water from air blower Vacc. Pump, Scrubber	3.5
7.	DM Plant Reject	38.4
8.	CO_2 Bottling Plant	11.98
9.	IMFL Plant	140
	Total	**2101.057**

19. **Details of Hazardous Wastes**

SN	**Particulars**	**Category***	**UOM**	**Quantity**	**Method of Disposal/Management**
a.	Used/Spent Oil	5.1	KL/A	0.5	Disposal through MPCB authorized recycler

*Schedule I of The Hazardous and Other Wastes (Management and Trans boundary Movement) Rules, 2016.

20. **Details of Non-Hazardous Solid Wastes**

SN	**Particulars**	**Category***	**UOM**	**Quantity**	**Method of Disposal/Management**
a	Boiler ash	-	TPD	26.97	Will be used in in-house brick manufacturing unit
b	Yeast Sludge	-	TPD	31	Will be used as manure
c	Dry Waste	-	Kg/Day	15	Sale to authorized

					vendor
d	Wet Waste	-	Kg/Day	10	Will be used as manure
21.	**Details of Electronic Wastes (E-waste)**				
	Particulars	**Category***	**UOM**	**Quantity**	**Method of Disposal/Management**
a	Personal Computing: Personal Computers (Central Processing unit with input and output devices)	Schedule – IIB (Code: ITEW2)	Kg/Year	15	Sale to authorized CPCB recycler
b	Personal Computing: Laptop Computers (Central Processing unit with input and output devices)	Schedule – IIB (Code: ITEW3)	Kg/Year	8	Sale to authorized CPCB recycler
c	Printers including cartridges	Schedule – IIB (Code: ITEW6)	Kg/Year	6	Sale to authorized CPCB recycler
d	Telephones	Schedule – IIB (Code: ITEW12)	Kg/Year	2	Sale to authorized CPCB recycler
e	Cordless telephones	Schedule – IIB (Code: ITEW14)	Kg/Year	3.2	Sale to authorized CPCB recycler
f	Inverter	Schedule – IIC, (Code: ITEW25)	Kg/Year	55	Sale to authorized CPCB recycler
g	Video Cameras	Schedule – IIC, (Code: CEEW9)	Kg/Year	4	Sale to authorized CPCB recycler
h	Video Recorders	Schedule – IIC (Code: CEEW10)	Kg/Year	3	Sale to authorized CPCB recycler
i	Electric fans	Schedule – IIC (Code: LSEEW14)	Kg/Year	13	Sale to authorized CPCB recycler
			Total	**109.2**	

4.0 Description of the Environment

Primary baseline environmental monitoring studies in a 10 km radius of the study area were conducted through an NABL–approved laboratory from **March 2025 to May 2025.**

4.1 Topography, Land use & its Classification

The elevation of the region varies from 418 m to 529 m. The physical setting of study area shows a relatively planar pattern with patches of higher elevations as well as lower elevations. Patches in the North Eastern and South Western region shows a relatively higher elevation feature. The river patch going across the center shows a lower elevation region. This elevation pattern also affects the drainage pattern of the region. The region is occupied by rivers and odhas. The area shows a variation of approximately 11 m-41 m from North East to South West and approximately 7 m-32 m from North West to South East

Land Use of Study Area

Total five major land use/land cover classes were demarcated in the study area following Level I classification, furthermore level II & level III classification were also adopted as per the requirement of **MoEF & CC** in the study area. A thematic map of 1:50,000 scale was generated incorporating these classified categories considering the area of the project.

Core Land Use

Within the 10 km radius study area, five of the six NRSA-TR-LU&CD-01-90 LU/LC classes are present (Table 2A, Figure 5A). Barren Land is predominant, covering 69.11% (21,712 Ha), followed by Agricultural Land comprising mainly croplands (7,674 Ha; 24.43%). Built-Up Land spans 1,685 Ha (5.36%), and Waterbodies occupy 345 Ha (1.10%). Forest (Vegetation) and Others classes are absent in land cover, though Reserve Forest areas exist under the Land Use category.

The region has good connectivity through Baramati–Kashti Road, State Highway-67, and major railway corridors including the Central Railway and South Central Railway lines

4.2 Soil Environment

The Shrigonda region forms part of the Deccan Plateau and is characterized by predominantly flat to gently undulating terrain developed over ancient Deccan Trap lava flows. The area is dominated by black cotton soils, known for their fertility and excellent moisture-retention capacity. Alluvial soils are also present in patches along river and stream courses.The district features six principal soil types—Kali (deep black cotton soil), Morand (medium black soil with higher lime content), Khardi (shallow sandy soil), Bardi (red, gravelly soil), Kachchar (loose alluvial soil), and Wardi (shallow red clayey soil). These soil characteristics are favorable for agriculture and are also suitable for project construction activities as well as greenbelt development around the site.

4.3 Air Environment

Ambient Air quality for criteria pollutants viz. PM_{10}, $PM_{2.5}$, NOx, SO_2 and CO was monitored at ten locations in study area.

Particulate Matter (PM_{10})

The study reveals that maximum concentration was observed in the range of 59-68 µg/m^3. The highest 24-hourly concentration was recorded at sampling location A7. At the same time minimum concentration was observed in the range of 41-55 µg/m^3. Average concentration of PM_{10} ranged between 50 to 61 µg/m^3. The highest average concentration of particulate matter PM10 recorded at location A7 due to presence of national highway, habitation and industries at south side of the location. It should be noted that the concentration of PM10 was not observed to be exceeding the standards prescribed by the CPCB.

Particulate Matter ($PM_{2.5}$)

The major source of $PM_{2.5}$ is said to be the combustion of fossil fuels and vehicular emissions etc, present within study area. The maximum concentration was observed in the range of 27 to 39 µg/m^3 during the study period, maximum concentration was recorded at location A7 whereas, the minimum concentration was observed in the range of 15-35 µg/m^3. Minimum concentration was recorded at project site (A1). The average concentration of $PM_{2.5}$ was observed in the range of 25 to 30 µg/m^3.

Sulphur Dioxide (SO_X)

High level of SO_X in ambient air indicates the presence of combustion of fossil fuel in the vicinity. The ambient air monitoring results indicate that the highest concentration of SO_X is observed at A7. The average concentration of SO_X recorded during the study period ranged between 6-19 µg/m^3.

Oxides of Nitrogen (NOx)

The various forms of Nitrogen in NO, NO_2 and N_2O are collectively called as Oxides of Nitrogen. The maximum 24 hourly value of NO_X was recorded at the monitoring location A7. The average concentrations were in the range of 7-16 µg/m^3.

Carbon Monoxide (CO)

The anthropogenic source of CO is due to incomplete combustion of fuel majorly in absence of air.
The maximum concentration of CO observed during the study period at A7 (1.9 ug/m^3), whereas minimum concentration was observed at A1 (0.1 ug/m^3).

Additional Parameters

Monitoring results of additional parameters viz. Lead, Benzene, Benzo (a) pyrene, Arsenic, Nickel and Ozone was below detection limit. The maximum concentration of Ammonia was 18 µg/m^3 and minimum was 12 µg/m^3.

4.4 Noise Environment

Ambient noise levels were monitored at eight (8) locations in the study area during the study period.

Industrial Zone

The minimum noise level was recorded during the day time at N1, whereas the maximum noise level was observed at location N2 while during night time minimum noise level recorded at N1 and maximum at N2

Residential Zone

The minimum noise level was recorded during the day time at location N7, whereas the maximum noise level was observed at location N4, while during night time minimum noise level was recorded at N7 and maximum at N5. Noise levels are under the prescribed standards by CPCB.

4.5 Ground Water Environment

The results revealed that concentrations of various parameters amongst all the samples were in the range of pH – 7.4 to 8.0, Total Dissolved Solids – 314 to 490 mg/l, Sulphates –37 to 62 mg/l, Total Hardness –170 to 276 mg/l, Nitrate – 0.6 to 1.2 mg/l, Bicarbonate -162 to 260 mg/l, Calcium – 38 to 59 mg/l, Sodium – 32 to 64 mg/l, Potassium 0.7 to 1.8 mg/l, Magnesium – 20 to 32 mg/l, COD - BDL, BOD - BDL, whereas concentrations of Arsenic, Lead, Cadmium, Iron, Chromium, Mercury, Nickel & Zinc are BDL. Total Coliforms, Fecal coliform wrere BDL & E. Coli were absent in all samples

4.6 Surface Water Environment

Surface water samples were derived from four locations, Analysis results revealed that pH values amongst all samples is in the range of 7.4-7.6 i.e. slightly alkaline water. Total Hardness concentration varied in the range of 114 mg/l to 232 mg/l & maximum concentration was recorded at SW4, Total Dissolved Solids concentration varied in the range of 202 mg/l to 372 mg/l whereas maximum concentration was recorded at SW4 & minimum concentration was recorded at SW3. Electrical Conductivity was found in the range 312 to 586 µS/cm. The concentrations of Dissolved Oxygen in the range of 5.4 to 5.8 mg/lit, The concentration of BOD in the range of 2.1 to 3.1 mg/lit & COD were found in the range of 12 to 32 mg/l whereas the concentrations of Phosphates in the range of 0.37 to 1.38 mg/l, Nitrite in the range of 0.01 to 0.016 & Ammonical Nitrogen results were BDL in all samples.

Concentrations of elements such as Calcium, Sodium & Potassium were found in the range of 22 to 51 mg/l, 24.2 to 39.2 mg/l and 1.4 to 1.9 mg/l respectively. Heavy metals viz. Lead, Cyanide, Iron, Chromium, Cadmium, copper, Zinc & Nickel were below detection limits in all samples.

4.7 Biotic Environment

Based on the field survey, a total of 123 plant species were recorded different habitats within the project area. These included 66 trees, 15 shrubs, 25 herbs, 10 climbers, and 7 grasses. The site is notably rich in species such as Azadirachta indica, Tamarindus indica, Mimusops elengi, Peltophorum pterocarpum, Samanea saman, Acacia catechu, Anogeissus latifolia, Diospyros melanoxylon, Butea monosperma, Dalbergia sissoo, and various Ziziphus species. Faunal diversity consisted of 14 butterfly species, reflecting a healthy butterfly population, along with 6 dragonflies and damselflies, 12 insect species, and 41 bird species, mostly associated with wetlands and grasslands. The survey also recorded 2 amphibian species, 4 reptile species, and 7 commonly occurring mammal species.

4.8 Socio-Economic Environment

Table No. 2: Summary of Socio-Economic Aspects

Parameter	**Details**
No. of States	1 (Maharashtra)
No. of Districts	2 (Ahilyanagar & Pune)
No. of Tehsils	3 Shrigonda, Karjat (Ahilyanagar, Daund and Shirur (Pune)
No. of Villages / Towns	31 (including Daund C.T. and Municipal Council area)
Total Households	29,210
Total Population	1,42,888 (Male: 73,694; Female: 69,194)
Child Population (0–6 yrs)	17,306 (Male: 9,229; Female: 8,077)
Scheduled Caste Population	21,238 (Approx. 14.9% of total population)
Scheduled Tribe Population	4,990 (Approx. 3.5% of total population)
Average Literacy Rate	79–80% (Male: 85%; Female: 71%)
Main Occupation	Cultivators and Agricultural Labourers (Primary Sector)
Total Workers	1,15,826 (Main: 62,515; Marginal: 50,517)
Worker Participation Rate (WPR)	45–50% of total population
Average Sex Ratio	915 females per 1,000 males
Child Sex Ratio (0–6 yrs)	836 females per 1,000 males
Predominant Languages	Marathi, Hindi, and regional dialects (Ahirani & Bhil variants)

5.0 Anticipated Environmental Impacts and Mitigation Measures

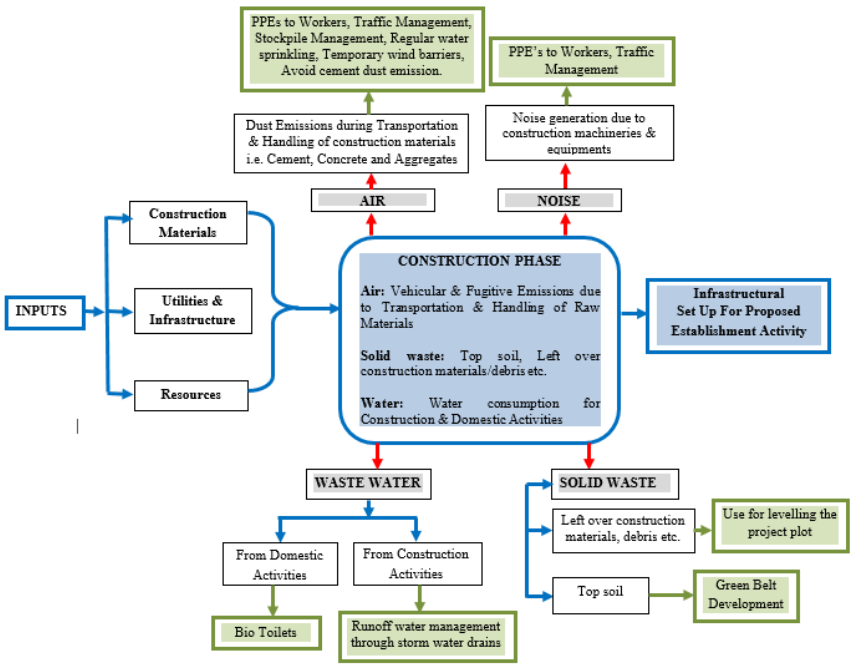

Figure 1A: Impact and Mitigation Measures during Construction Phase

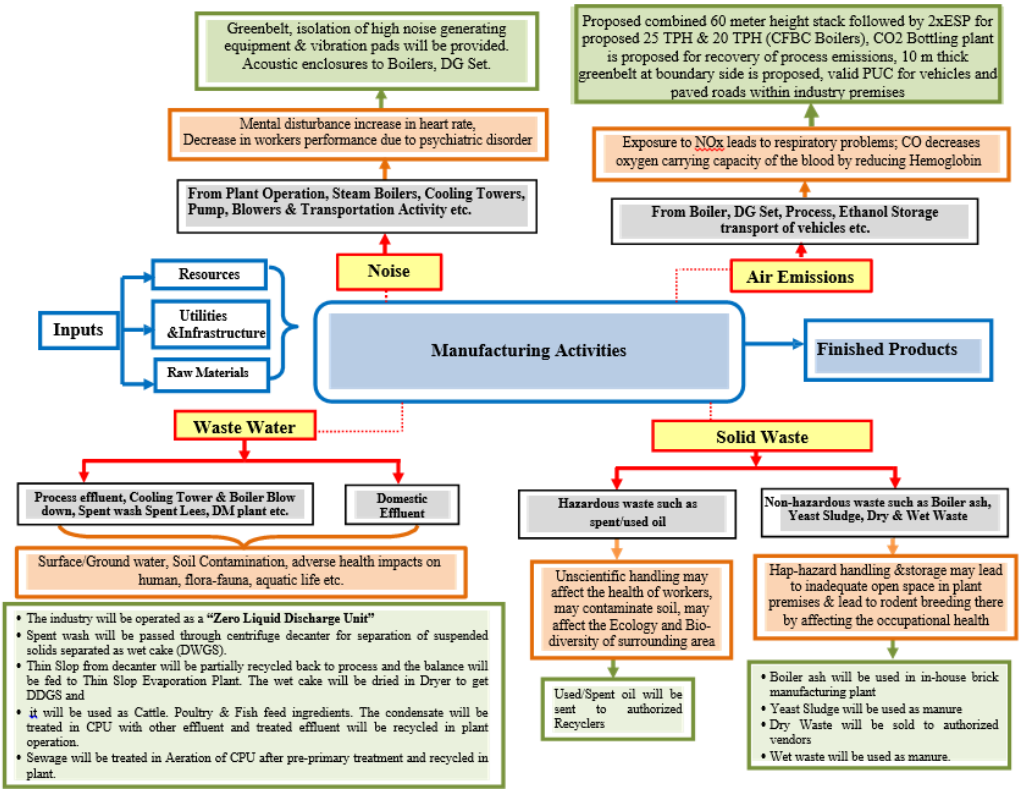

Figure 1B: Impact and Mitigation Measures during Operation Phase

6.0 Quantitative Risk Assessment and Mitigation Measures

Quantitative Risks for the proposed project have been assessed based on ALOHA for tank storage. Based on the unsafe distances plotted in ALOHA software output, the MCLS (Maximum Credible Loss Scenario) for the proposed plant is identified for Ethanol & the anticipated effect distance is 53 m from Ethanol PESO area within the project plot. The scenario considered for assessing the impact by cumulative risk assessment was taken from Toxic area of vapour cloud (Direct Source- Leakage in Ethanol Pipeline considered).

7.0 Disaster Management Plan

The Disaster Management Plan will be implemented in consultation with the District Administration to ensure health and safety during untoward incidents.

In view of handling of processes in the industry, On-site Emergency Plans are essential and hence has been prepared for the industry. Additionally, recommendations for and Off-site shall be provided to

the District Administration. During the operational phase, the surrounding population shall be made aware of safety precautions to be taken in case of any emergency due to the overall project activity.

8.0 Occupational Safety & Health Management

The Project Proponent shall continue to strictly adhere to the rules of the Factories Act 1948 & the Maharashtra Factories Rules, 1963 regarding the occupational health facilities to be provided to the company's workers.

- The industry will provide decontamination facilities for the workers. The health records of the workers will be maintained.
- For continuous development, the company will continue to train & educate the operators and workers on the environment, health & safety rules & regulations, procedures and measures.
- Periodic medical check-ups will be carried out to ensure the health status of all workers.
- Job rotation will be done.

9.0 Post-Project Environmental Monitoring Plan

Post-project environmental status will be evaluated as per the Environmental Monitoring Plan framed in EIA along with additional parameters suggested if any Statutory Clearances/Permissions and frequency of environmental attributes, including monitoring locations, will be as per the guidelines provided by MoEF&CC/CPCB/MPCB. Monitoring has been carried out by third-party laboratories that NABL and/or MoEF&CC accredit.

10.0 Environmental Management Plan

Conduction of Environmental monitoring programme as per plan, periodic reviews & audits will be carried out for effective environmental management. Project Management and the EHS department will ensure the overall effective implementation of the management plan.

Systems will be in place to ensure compliance of all environmental statutory requirements & obligations and it will be ensured.

Company has allocated 44.842 Cr for environmental pollution control measures & environment management plan activities of proposed activity, which is 19.16 % of the proposed project cost.

11.0 Project Benefits

The following benefits are expected from the proposed project:

- This project will have local specific positive social and economic benefits.
- Some of these would be direct benefits of long term nature.
- The project will generate revenue for the state government.
- The project will create direct/indirect employment at various downstream & upstream ends and largely for local people.

12.0 Corporate Environment Responsibility (CER) Action Plan

The industry will fulfil its obligations under Corporate Environment Responsibility (CER) as per the MoEF&CC Office Memorandum F.No. 22-65/2017-IA.III dated 30th September, 2020. As per the directive, the CER activities will form an integral part of the Environmental Management Plan (EMP).

A budget provision of 1.5% of the total project cost amounting to INR 3.5102 crores has been allocated for the implementation of these need-based CER initiatives in the project study area.