Executive Summary of EIA

Baseline Study Period March 2022 to May 2022

Proposed 150 KLPD Sugar Syrup/ Molasses based Distillery

Sr. No. 612, Village Matori, Tal. Shirur Kasar, Dist. Beed, Maharashtra

Proposed by

M/s. Mohatadevi Sugar Mills and Agro Limited

Environmental Consultant and Laboratory

MITCON Consultancy & Engineering Services Ltd.
Environment Management and Engineering Division
Behind DIC Office, Agri College Campus, Shivajinagar,
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QCI-NABET, Lab NABL, MOEF & CC, OHSAS 18001:2007 approved

EXECUTIVE SUMMARY

1. Project in brief

Considering the requirements of fuel ethanol to be blended in petrol as per the National Biofuel Policy of Indian government and simultaneously increase in requirement of industrial and potable alcohol, M/s. Mohatadevi Sugar Mills and Agro Pvt. Ltd. has decided to install 150KLPD Sugar syrup/Molasses based distillery. M/s. Mohatadevi Sugar Mills and Agro Limited is a private limited company registered under the companies Act, 1946 (And its amendment of 2013) on 09.05.2001 having CIN No. U15424PN2001PLC016126 and registration number 016126. The factory will operate for 300 days in a year. The spent wash generated from molasses/sugar syrup based distillery will be concentrated in MEE and finally will be sent to incineration boiler. The industry will be a ZLD unit.

2. Project location

The proposed distillery will be located at Sr. No. 612, Village Matori, Tal. Shirur Kasar, Dist. Beed. The project site is geographically located at latitude 19°9'54.07"N and Longitude 75°26'59.47"E, at MSL 553m. There are no Eco-sensitive zones, Biosphere Reserves, National Parks and Wild Life Sanctuaries within 10 km study area of the project site.

Environmental setting of the project site is given in below table.

Table 1: Environmental Setting in and around the proposed Project site

Sr. No.	Particulars	Description
1.	Geographical Coordinates	Latitude: 19°9'54.07"N Longitude: 75°26'59.47"E
2.	Average altitude above MSL	554
3.	Toposheet number	47M/7, 47M/8, 47M/12
4.	Impact Habitation	Midsangvi: 2.46km towards West Matori: 1.62km towards East
5.	Nearest Railway Station/ Junction	Beed railway station: 40.37km towards South-East
6.	Nearest Airport	Aurangabad airport: 77.94km towards North
7.	Nearest IMD station	Beed MET station: 33.50km towards South-East
8.	Nearest Water body	Sina river: 1.56km towards South
9.	Nearest Road	National Highway 61: Adjacent to project site
10.	Nearest Highway	National Highway 61: Adjacent to project site
11.	Any Historical / Archaeological monuments	No
12.	Seismic Zone	Seismic Zone II

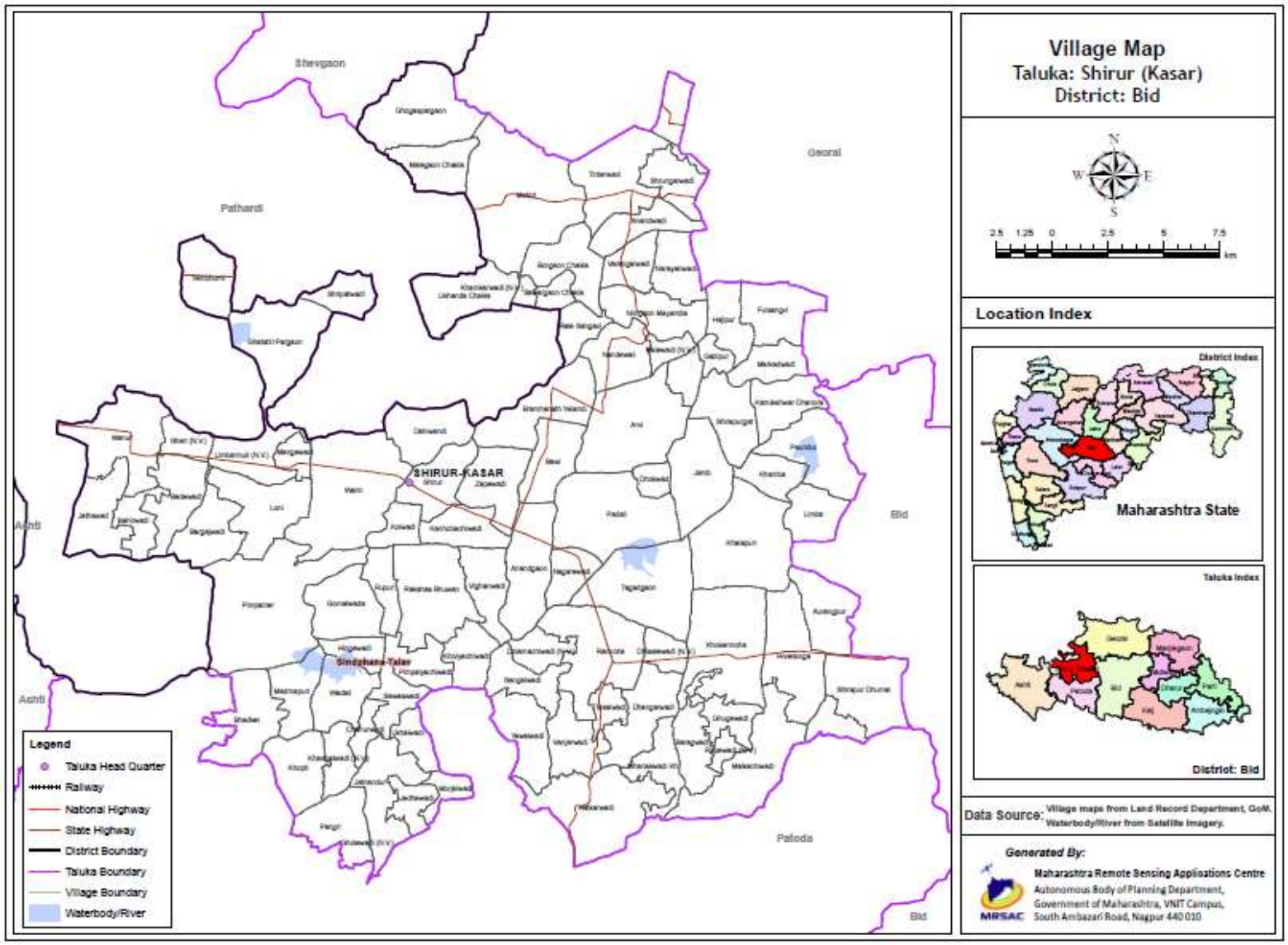

Figure 1: Map showing general location of the proposed project on MRSAC map

Figure 2: Google image of the Project Site with Boundary coordinates

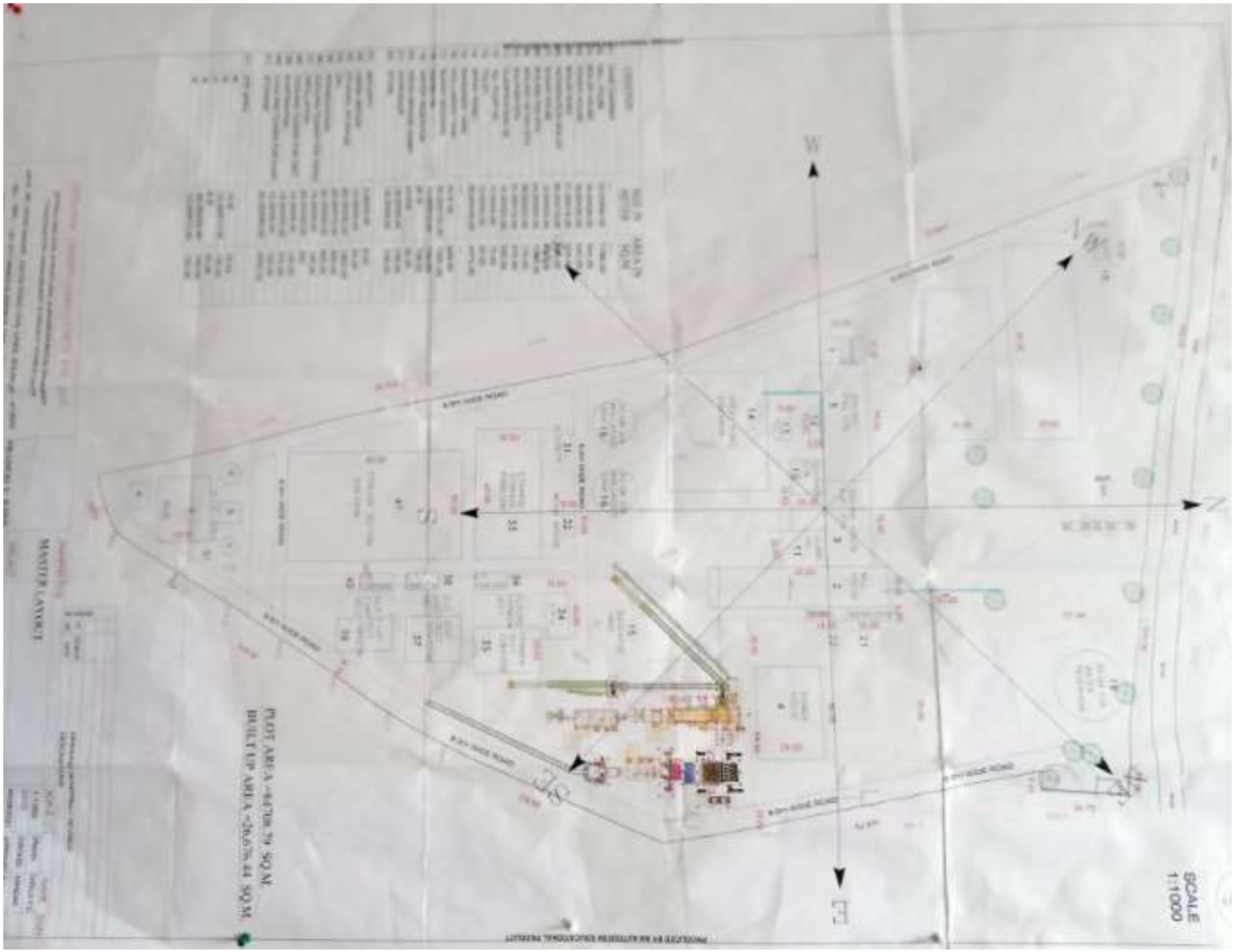

Figure 3: Plant layout

3. Project information in brief

Table 2: Salient features of integrated project

<table>
<tr><th>Particulars</th><th>Details</th></tr>
<tr><td>Project</td><td>Proposed 150 KLPD Sugar syrup/ Molasses based Distillery</td></tr>
<tr><td>Location</td><td>Sr. No. 612, Village Matori, Tal. Shirur Kasar, Dist. Beed</td></tr>
<tr><td>Screening category (as per SO 1533 as timely amended)</td><td>5 (g) – “Distilleries”
Category: “A” (>100 KLPD molasses based distillery)</td></tr>
<tr><td>Land Type of Project Site</td><td>Private land</td></tr>
<tr><td>Product</td><td>RS/AA/Ethanol of capacity : 150 KLPD
T.G Set of 3MW captive generation</td></tr>
<tr><td>Basic Raw Material</td><td>Cane syrup, B Heavy Molasses, C Molasses</td></tr>
<tr><td>Operation days</td><td>Distillery: 300 days</td></tr>
<tr><td>Total Plot Area</td><td>8.47Ha.</td></tr>
<tr><td>Green belt Area</td><td>2.79 Ha. (33% of total plot area)</td></tr>
<tr><td>Water requirement</td><td>Total initial water requirement: 1692 CMD
Fresh: 623 CMD
Recycle: 1070 CMD
Domestic: 9.8 CMD</td></tr>
<tr><td>Source of water</td><td>Godavari canal from Jayakwadi Irrigation department</td></tr>
<tr><td>Boiler</td><td>30 TPH with 3 MW TG</td></tr>
<tr><td>Stack details</td><td>Stack height: 58m with Electro Static Precipitator</td></tr>
<tr><td>Steam requirement</td><td>23.10 TPH</td></tr>
<tr><td>Steam generation</td><td>27.0 TPH</td></tr>
<tr><td>Fuel for Boiler</td><td>Spent Wash: 8.3 TPH
Bagasse: 9.6TPH</td></tr>
<tr><td>Power requirement</td><td>Operation phase: 3 MW (Own captive power plant)</td></tr>
<tr><td>Man-power requirement</td><td>During Construction: 150-170Nos.
During Operation: 150Nos. (skilled and unskilled)</td></tr>
<tr><td>Total project cost</td><td>139.15Cr.</td></tr>
<tr><td>EMP capital cost</td><td>6.5Cr.</td></tr>
<tr><td>CER Cost</td><td>2.78 Cr. (2% of project cost)</td></tr>
<tr><td>Total effluent generation</td><td>
<table>
<tr><th>Effluent Source</th><th>Molasses (CMD)</th></tr>
<tr><td>Conc. Spent wash</td><td>209</td></tr>
<tr><td>Process/Total condensate</td><td>718</td></tr>
<tr><td>Spent lees</td><td>225</td></tr>
<tr><td>Boiler/ Cooling Tower blow down</td><td>83.3</td></tr>
<tr><td>Misc.</td><td>1</td></tr>
<tr><td>Domestic</td><td>7.8</td></tr>
<tr><td>Total</td><td>1244.1</td></tr>
</table>
</td></tr>
<tr><td>CPU capacity</td><td>1100CMD</td></tr>
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STP capacity	10 CMD		
Solid & Hazardous Waste Generation	**Solid/Hz. Waste**	**TPD**	**Treatment & Disposal**
	Spent Wash TPH	1.2	Used as manure
	Bagasse ash TPH	0.2	Used as manure
	Yeast sludge	27	Factory farm
	CPU Sludge	2.00	Compost in own garden

4. Process Description

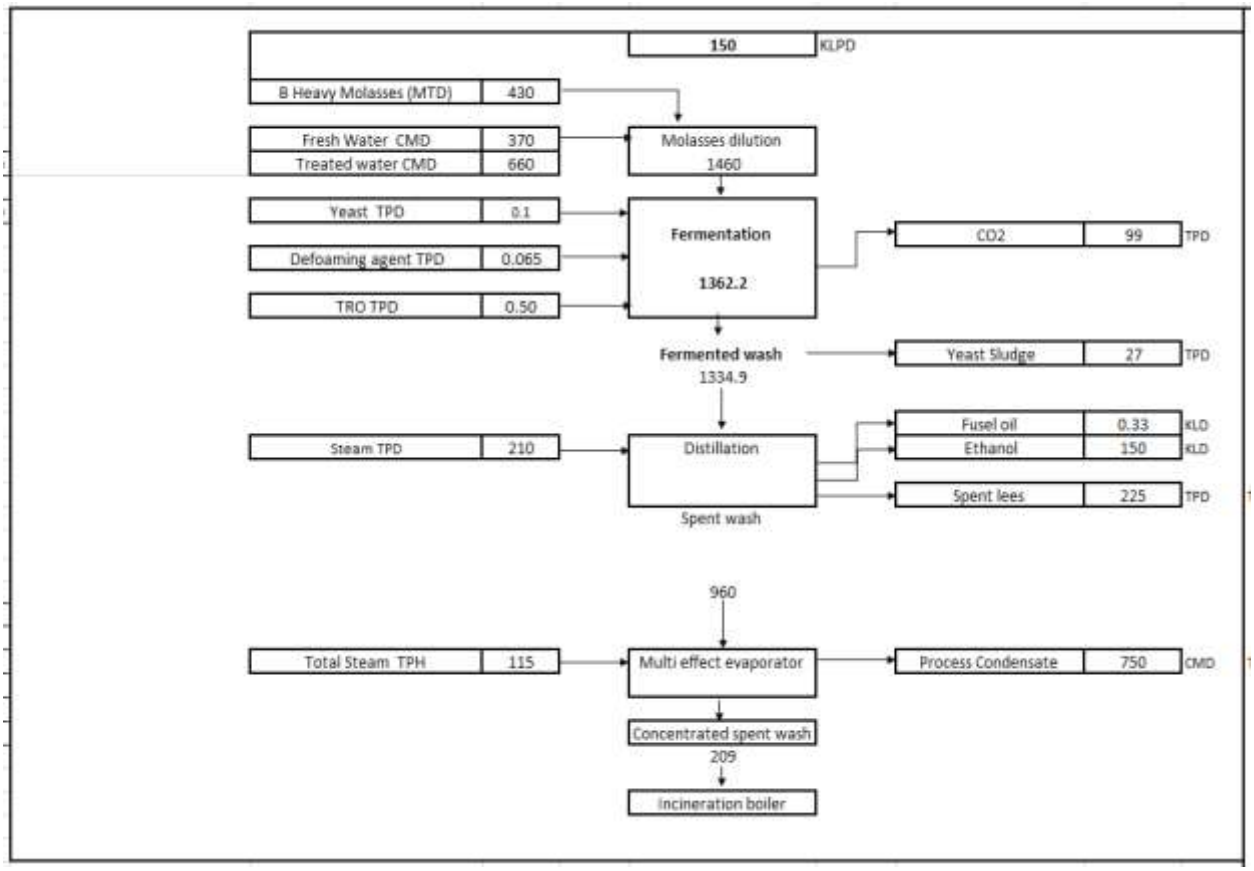

Figure 4: Manufacturing flowchart for molasses based distillery

5. Description of the environment

The study area is as per approved ToR vide File No. IA-J-11011/197/2022-IA-II (I) dated 21.06.2022. The baseline study was carried out from 1st March 2022 to 31th May 2022 within 10km radius. Baseline study has been conducted as per EIA Manual of the MoEF&CC and methodologies mentioned in Technical EIA Guidelines Manual for Distilleries by IL&FS Ecosmart Ltd., approved by MoEF&CC.

Table 3: Baseline monitoring parameters and frequency

Attribute	Parameters	Frequency	Methodology adopted
Ambient Air Quality	As per the NAAQS dated 16th	9 Locations – Nearby impact zones	PM10 / PM2.5: Gravimetric method

	November 2009: PM2.5, PM10, SO2, NOx	Upwind (2 no.) Crosswind (4 nos.) Downwind (2 nos.) Core (1 no.)	SO2: Modified West and Gaeke Method. (IS: 5182, Part II) NOx: Jacobs and Hochheiser Method. (IS 5182 Part VI)
Meteorology	Wind Speed, Wind Direction, Temperature, Relative Humidity and Rainfall	Microprocessor based Weather Monitoring Station – For Study Period Continuous hourly recording.	Monitoring data for primary data IS: 8829. Secondary data like average annual meteorological data was collected from IMD – Beed
Noise Level	Noise Level in dB(A)	1 Locations – project site 8 locations – nearby village	IS: 4954 as adopted by CPCB.
Water Quality	Physical, Chemical, and Biological parameters	8 Locations – Ground Water Water was not observed in the river– Surface Water	Standard methods for Examination of Water and Wastewater' published by American Public Health Association (APHA)
Soil	As per BIS standards	8 Locations–impact zone Once during study period	BIS specifications
Land use pattern	Land use for different categories	Once in a study period Secondary Data	Based on satellite imagery LISS –III and area calculation for statics generation. Ground truth study/ Field survey
Ecology	Existing terrestrial and aquatic flora and fauna	Once in a study period General in 10 km radial study area	Data collected around the project site through field visits. Listing of floral and faunal species.
Socio – economic aspects	Population, sex ratio, income, education, amenities etc.	Once in a study period	Based on data collected from the year 2021 Census Abstract.
Geology and Hydrogeology	Lithological types, drainage basins, etc.	Once in a study period	Field observations in 10 km study area and from secondary data from authenticated sources like GSI, SoI, etc.
Vehicular Traffic	No. of vehicles PCU Count	Once in a study period	IRC 64-1990 guidelines

6. Anticipated Environmental Impacts

Anticipated environmental impacts due to operation of the proposed project are given in below **Table 4**

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 factory 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 as the rural economy will get a big boost due to purchase of large quantity of molasses, sugar etc.
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.	Particulate	Parameters	Method of sampling/monitoring	Number of location	Frequency
1.	Ambient air quality	PM_{10}, $PM_{2.5}$, SO_2, NOx, VOC	24 hours continuously (As per NAAQS)	Four locations (CPCB/MPCB guidelines)	Monthly
2.	Stack gas	PM, SO_2 and NOx	Online monitoring system	One stack	Monthly
3.	Work place	$PM_{2.5}$, SO_2, NOx, O_3	IS 5182 (as per factory act) (STEL &TWA)	Two locations (near process area) One location (outside process area near vent)	Monthly
4.	Waste water	pH, EC, TDS, O&G, SS, COD, BOD, Chloride etc. As per BIS: 10500	Composite sampling	Inlet & outlet of CPU	Monthly
				Online Monitoring machine at CPU	Daily
5.	Surface water and ground water	pH, EC, TDS, SS, COD, BOD, Chloride, E coli etc.	Grab sampling As per BIS: 10500	3 location Ground water and 1 location Surface water	Half yearly
6.	Solid waste	pH, EC, metal, NPK	Grab and Composite sample	Two location	Half yearly
7.	Soil	N, P, K, moisture, EC, heavy metals etc.	As per BIS standards	Three location	Half yearly

8.	Noise	Noise levels	IS: 4954-1968 as adopted by CPCB	Three location (Day & Night)	Monthly
9.	Green belt	Survival rate of plants and shrubs	Observation	In and around the plant site	Monthly
10.	Occupational health	Health and fitness check-up of employees	-	All worker	Yearly/ twice a year
11.	Emergency preparedness	Fire and Safety	-	Mock drill records	Monthly

8. Additional Studies

The following Additional Studies are to be done in reference to the awarded Terms of References issued by MoEF&CC, New Delhi.

- Public Consultation
- Risk Assessment

9. Project Benefits

- Creation of job opportunity and other business activity will improve the economy and attitude of the public towards education and health. This may result in the creation of additional education and health care facilities in the surrounding rural areas.
- Entire project is proposed to be set up based on the stand-alone commercial viability of the project.
- Proposed distillery is aimed to improve the technical efficiency of the unit in terms of waste recycle, steam utilization and power consumption.
- The proposed project will be beneficial in generating various employment opportunities for skilled as well as unskilled individuals. The factory will prefer nearby local people for employment.
- CO2 generated during fermentation process will be captured and bottled and sold. Hence, the process will be carbon free.
- The project proponent will dedicate approx. 2% of project cost i.e. INR 139.15 crore for the Corporate Environment Responsibility (CER) activities, which will be utilized for various physical and social infrastructure developmental programme such as Lighting by LED bulb/ solar panels, distribution of laptops, table and chairs in schools etc. in the nearby rural areas.

10. 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

Activity	Description	Responsibility	Record	Cost in Lakhs
Water pollution management	• Domestic fresh water for employees • Sprinkling of water to suppress dust • Sewage generated from construction activities • Commissioning of CPU and STP • Spent wash generation • Spent wash storage lagoon	Process manager/ Distillery manger/ Environment Officer	• Monitoring of flow rate to CPU & STP • Analysis of characteristics of effluent to access performance of CPU • Record of STP & CPU performance. • Record of third party laboratory analysis • Regular inspection record, control & necessary maintenance	300
Air pollution management	• Commissioning of ESP • D.G set emissions • Release of VOC and gases in ambient air		• Ambient air monitoring record. • Emissions from the stack will be monitored continuously • Record of ESP performance • Regular inspection, control & necessary maintenance	200
Noise pollution management	• No night time vehicular movement • No honking at night • PPE's to employee's		• Noise generation record • Record and supervision of PPE's provided • Silencers and mufflers of the individual machines will be regularly checked • Record of entry and exit of vehicular movement	
Solid waste management	• Bagasse and spent wash ash in storage area		• Records of generation of solid waste	15

Activity	Description	Responsibility	Record	Cost in Lakhs
	• STP, CPU and Yeast sludge in manure • Spent oil recycling		• Supervision of storage and disposal solid waste • Monitoring ash dust and suppression by water sprinkling • Record of transport vehicles carrying solid waste.	
Greenbelt development	• Tree plantation in tiers and along the road with native and thick canopy forming plants		• Record of number of trees planted • Supervision on survival rate ensuring healthy and dense greenbelt • Record of irrigation facility	25
Rainwater harvesting and storm water drainage management	• Roof top rain water harvesting facility • Paved and unpaved area rain water harvesting • Drainage lines • Harvested water storage tank and pits		• Record of harvested rainwater. • Supervision and maintenance of installed system • Monitoring of rainwater system to avoid mixing of effluent into storm water • Monitoring and supervision of drainage lines • Record of flow of harvested rain water in storage tank and pits • Record of recycling of rain water for various industrial activities	35
Occupational Health and Safety	• Safety norms for the storage of the chemicals & products		• Record and supervision of PPE's provided • Record of all safety signs	50

Activity	Description	Responsibility	Record	Cost in Lakhs
	• Supervision of safe working of the employees • PPE's e.g. safety helmet, goggles, gumshoes, ear plugs, mask etc. will be provided to the workers • First aid facilities shall be made available • Firefighting equipment • Disaster management plan		• Record of First aid kits • Record of medical check up • Record, supervision and maintenance of firefighting equipment's • Supervision and record of good house keeping • Record of near miss report • Record of any accident or disaster in factory • Record of medical professionals, nearby police station, collector with name and phone numbers. • Supervision of working of alarm for emergency	
CER	• Allotment of 2.7 Cr. fund for CER activities in nearby needy villages	Chairman/Managing Director /Process manager/ Distillery manger/ Environment Officer	• Separate record of CER activity carried out year wise • Record of fund allocated and spent on CER activities • Record of name and activities of the villages	278