

# **EXECUTIVE SUMMARY**

## **PROPOSED 60 KLPD MOLASSES AND SUGARCANE JUICE BASED DISTILLERY**

At Gat No: 3729/1 to 20, village Kameri, Taluka Walawa, Dist. Sangli, State Maharashtra.

## **M/S. MARUTI SHETKARI ASAVANI LIMITED**

Prepared by



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**EXECUTIVE SUMMARY****0.1 Introduction**

M/s. Maruti Shetkari Asavani Limited is a Public Limited Company. It is registered with Registrar of Companies, Pune on Dec 3, 1999. The proponent proposes to install a new distillery plant of 60 KLPD Molasses and Sugarcane Juice Based Distillery at Gat No: 3729/1 to 20, Village Kameri, Taluka Walawa, Dist. Sangli, State Maharashtra to produce 60 KLPD ENA/ RS/ AA and 3.2 KLPD Impure Spirit. As per EIA Notification dated 14<sup>th</sup> September, 2006 and as amended from time to time; this project falls under Category "A", Project or Activity 5 (g) ii [All molasses based distilleries  $\geq$ 60 KLPD], hence Environmental Clearance is required from MoEF&CC, New Delhi. The project has been considered in front of Expert Appraisal Committee (EAC) (Industry) for its First Technical Presentation (for ToR approval) on 8/12/2016. ToR Letter was issued by MoEFCC, New Delhi vide file no. J-11011/327/2016-IA II (I) on 25<sup>th</sup> April 2017 for the preparation of EIA / EMP Report.

**0.2 Project at a Glance****Table 1: Project Highlights and Environmental Settings**

Sr. No.	Particulars	Details
1.	Project proponent	M/s. Maruti Shetkari Asavani Limited
2.	Nature & size of the Project	Proposed new 60 KLPD sugarcane juice & molasses based distillery unit.
3.	Project location	Gat No: 3729/1 to 20, Village Kameri, Taluka Walawa, Dist. Sangli, State Maharashtra.
4.	Geographical Coordinates	17°00'19.40"N, 74°14'53.98"E
5.	Elevation	619 m
6.	Topo-sheet number	47 L / 05, 47 L / 01, 47 K / 04, 47 K / 08 of Survey of India
7.	Total area of plot	129503 sq. m.
8.	Greenbelt area	69303 sq. m.
9.	No. of working days	330 for only molasses or 150 days (molasses + sugarcane juice) and 180 days for molasses
10.	Nearest Village	Village Kameri at a distance of 1.62 km towards E
11.	Nearest River	River Warana at a distance of 10.48 km towards SW

12.	Nearest Road	NH 4 at a distance of 1.34 km towards E
13.	Nearest Railway Station	Bhilavadi Railway Station at a distance of 28.65 km towards E
14.	Nearest Airport	Pune airport at a distance of 178 km towards N
15.	Nearest Habitation	Village Kameri at a distance of 1.62 km towards E
16.	Nearest religious place	Vitthal Rukmini Mandir at a distance of 11.12 km towards NE
17.	Nearest Reserved forest/ Wildlife Reserve	None within 10 km radius of the project site
18.	Nearest National Park/ Sanctuary	None within 10 km radius of the project site
19.	Nearest Defence installation	None within 10 km radius of the project site
20.	Nearest CRZ	None within 10 km radius of the project site
21.	Nearest Historical site	Shree Ambabai Temple at a distance of 34.53 km towards SSW
22.	Nearest Archaeological site	Pohale Leni-Buddhist archaeological site at a distance of 24.41 km towards SSW
23.	Seismic Zone	Zone III, Moderate

### 0.3 Requirements for the Project

#### 0.3.1 Details of Product and raw material requirement

The details of product and basic raw material requirement for the proposed project are as given below in **Table 2** and **Table 3**.

**Table 2: Product Details**

Sr. No.	Product	Quantity (KLPD)
1.	Rectified spirit(RS)/ Extra Neutral Alcohol (ENA)/ Absolute Alcohol (AA)	60

**Table 3: Details of Raw Material Requirement**

Sr. No.	Raw material	Quantity	Storage Capacity	Source	Mode of Transportation
1.	Molasses	252 Tons	10000 MT X 3 No of tanks	Local Market	Tanker
2.	Crushed sugarcane + molasses	333 Ton + 144 Ton	Cane yard		Tractors/ Bullock cart
3.	Urea	55 kg/day	In gunny bags		Trucks
4.	Antifoaming agent	190 kg/day	Plastic Carboys		Trucks/tempo

5.	Di-Ammonium Phosphate (DAP)	40 kg/day	Plastic Carboys	Trucks/tempo
6.	Biocide	13 Liters/day	Plastic Carboys	Trucks/tempo
7.	Sodium-Meta-Bi-Sulfite	45 kg/day	Plastic Carboys	Trucks/tempo

### 0.3.2 Other Basic Resource Requirements for the Project

Other basic resource requirements for the proposed new distillery are as follows:

**Table 4: Resource Requirement**

Sr. No.	Particulars	Quantity	Source
1.	Land	129503 sq. m.	NOC from gram panchyat is obtained. Land agreement is attached as <b>Annexure</b> .
2.	Water	485 CMD	Warana River
3.	Electricity	1980	(Captive: T.G. set of 2 MW capacity)
4.	Fuel	Concentrated spent wash : 185 TPD Indian Coal: 56 TPD	Local market
5.	Steam	18 TPH	(Captive: 22.5 TPH boiler)
6.	Man power	100 Nos.	Local area
7.	Total cost	85.325	-
8.	EMP	9.35	-

## 0.4 Process Description

Alcohol will be manufactured by continuous fermentation process. The main steps in this operation are as follow:

- Feed preparation and weighing
- Dilution: Preparation of molasses for fermentation by appropriate dilution with water
- Fermentation: Production of alcohol from fermentable sugars in molasses solution with the help of yeast
- Distillation: Product recovery through distillation processes

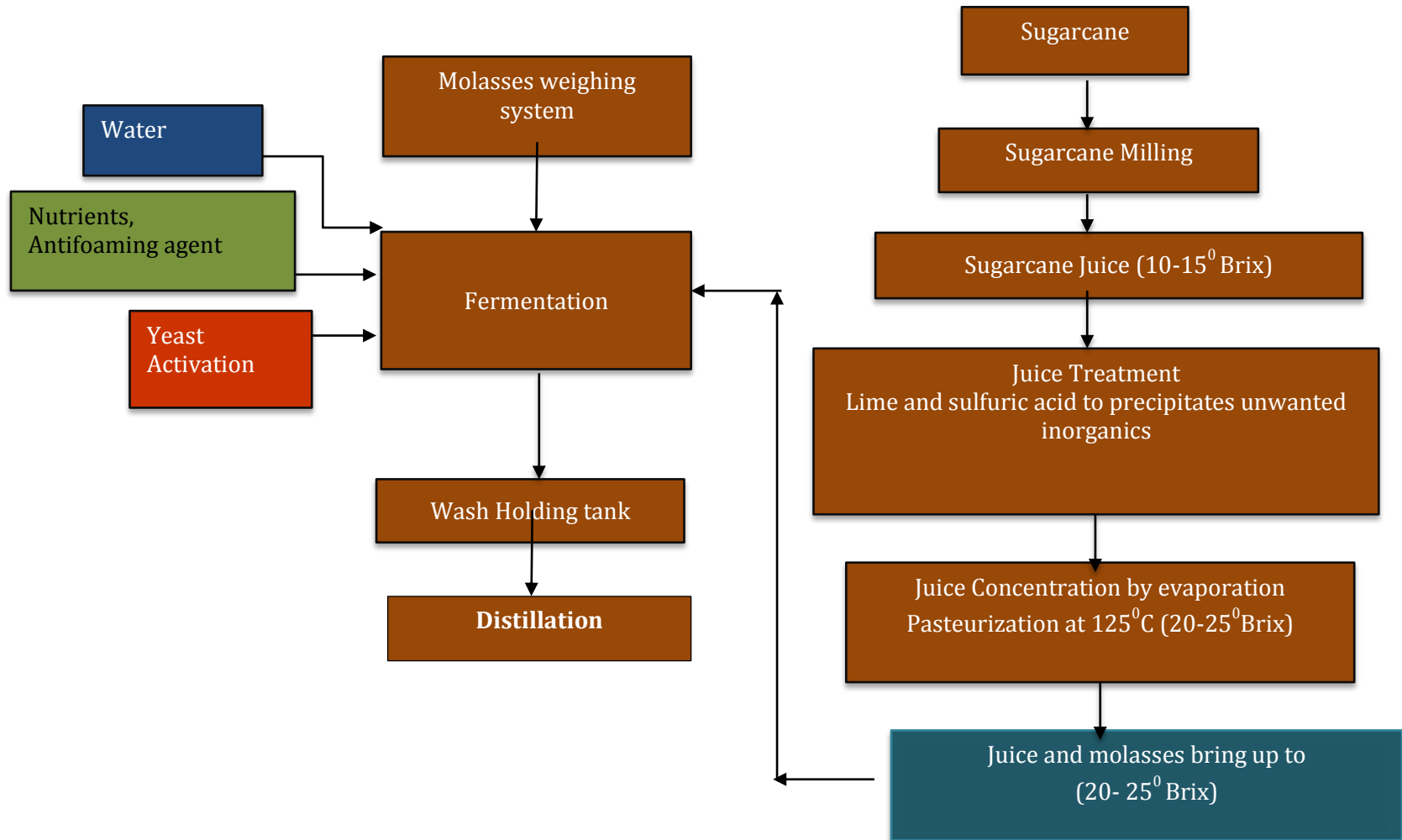


Figure 1: Process flow chart for Sugar Juice and Molasses Fermentation based Distillery operation

## 0.5 Description of the Environment

The study area as per awarded model TOR, 2015 is earmarked to be 10 km from the project site. The study period conducted was from March 2017 to May 2017.

**Table 5: Frequency of primary data collection**

Environmental Attributes	Frequency of monitoring	Parameters	Observed Results (March 2017- May 2017)
Meteorology	Microprocessor based Weather Monitoring Station Continuous hourly recording	Wind speed,	1.75 m/s
		Wind direction	West to East
		Max. Temp.	43.23°C
		Mini. Temp.	22.87°C
		Relative Humidity	44.60%
		Precipitation	-
Ambient Air Quality	8 Locations 24 hourly samples Twice a week for 3 months (in µg/m <sup>3</sup> )	PM10	22.3 to 37.7
		PM <sub>2.5</sub>	5.6 to 17.2
		SO <sub>2</sub>	2.6 to 13.2
		NO <sub>x</sub>	9.8 to 23.4
		CO	0 to 0.35
Water Quality (Ground & Surface)	Once in season at 10 locations (Physical, chemical and biological parameters)	Colour	All parameters are within limit except MPN count and E-Coli in surface water as well as ground water. Cadmium and lead in small amount is also found in the some GW samples.
		pH	
		TDS	
		COD	
		E-Coli	
Soil Quality	Once in season at 10 locations	Soil type and texture, Physico-chemical properties, NPK	Shallow black to reddish, pH is slightly alkaline in overall soil samples ranging from 6.40 to 7.90; soil secondary nutrient show good fertility. Heavy metal contamination signs not seen. Soil is medium fertile and shows medium water holding capacity.
Noise Quality	Once in season at 8 Locations (Noise levels in dB(A))	Average Day	46.7 to 55.2
		Average Night	32.9 to 44.1
Land use Pattern	One time visit of the study area for ground truthing	Identification & classification of land use	Most of the land is Agriculture and Built-up land followed by Mountain Area.
Geology and hydrogeology	Once in study period	Geology and hydrogeology of the study area	Deccan Traps are horizontally disposed thick piles of basaltic lava flows, which are apparently more or less uniform in composition. Each individual flow is a typical section, which varies from porous, weathered base to massive middle unit and

			becoming increasingly vesicular towards top.
Ecology	General in 10 km radial study area and data collected around the project site through field visits	Flora	<i>Peltophorum pterocarpum</i> , <i>Senna siamea</i> , <i>Mangifera indica</i> , <i>Acacia nilotica</i> <i>Samanea sama</i> etc.
		Fauna	Striped squirrel, Common mongoose, Garden lizard, Chameleon, Black drongo, Bramhani Maina, Cattle Egret, White throated kingfisher etc.
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 unsatisfactory, Power supply facility is available in almost villages and town, Drinking water sources is mostly from gram panchayat water supply also from wells and hand pump, Medical facilities in terms of primary health center and primary health sub centers in the rural areas are good.

## 0.6 Anticipated Environmental Impacts

Anticipated environmental impacts due to operation of the proposed distillery are given in below **Table 6.**

**Table 6: 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/ soild 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 Ethanol imported will be reduced 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.

## 0.7 Environmental Monitoring Programme

Details of the environmental monitoring frequency, which will be undertaken for various environmental components, are given below in **Table 7**.

**Table 7: Post Project Monitoring**

Environmental Facets	Parameter	Frequency of Monitoring	Methodology
Drinking water	To monitor quantity of water consumption of Warana River.	Daily in-house monitoring.	IS 10500 : 2012
Fresh water for Industrial Use	pH, EC, TDS, BOD, COD, Oil & Grease, Total Hardness, Total Alkalinity, Ammonia, Nitrite, Nitrate, Phosphate, Sulphate, Chloride (additional parameters as per condition of EC by MoEFCC and Consent Order by MPCB, if required/mentioned)	Quarterly 3rd party monitoring.	Standard methods for examination of water and wastewater analysis published by American Public Health Association.
Industrial wastewater	All parameters as per Consent order of MPCB as well as condition of EC, if mentioned.	Monthly 3 <sup>rd</sup> party monitoring for wastewater	Standard methods for examination of water and wastewater analysis published by American Public Health Association.
Ambient Air	PM <sub>10</sub> , PM <sub>2.5</sub> , SO <sub>2</sub> , NO <sub>x</sub> , CO, VOC (Additional parameters, if required, as per consent order issued by MPCB & EC issued by MoEFCC)	Quarterly for 2 stations within premises (in downwind direction)	As per relevant sections of IS 5182.
Workplace monitoring	Noise, VOC, Temperature Level	Quarterly in all plant area	NOISH
Stack monitoring	PM, SO <sub>2</sub> , NO <sub>x</sub> , CO (Additional parameters, if required, as per consent order issued by MPCB & EC issued by MoEFCC)	Monthly 3 <sup>rd</sup> party monitoring	As per relevant sections of IS 5182.
Noise monitoring	Noise levels in decibels	Monthly in-house monitoring at Spinning area, other plant area, utility area, GG room and factory boundary walls for day & night. Monthly at one location in nearest	Noise meter



		human settlement & at nearest forest area for day & night.	
Occupation health Checkups program	As per factory act & other statutory provisions (pre-employment & postemployment).	Yearly during project operation period.	--

## 0.8 Additional Studies

The following Additional Studies were done in reference to the awarded Terms of References issued by MoEFCC, New Delhi vide file no. J-11011/327/2016-IA II (I) on 25<sup>th</sup> April 2017.

- Public Consultation
- Risk Assessment for storage and handling of alcohol and mitigation measure due to fire and explosion and handling areas.

## 0.9 Project Benefits

The Distillery project of M/s Maruti Shetkari Asavani Limited will generate a fair amount of direct, indirect and induced employment in the study region. The project proponent will dedicate approx. 2.5% of project cost for the Corporate Social Responsibility (CSR) activities which will be utilized for various physical and social infrastructure developmental programme such as roads, educational facilities, sanitation facilities, medical facilities, welfare activities, cultural programme etc. There will be direct employment opportunity for 50-60 Nos. of contractual workers and 100 Nos. of skilled and unskilled workers. Further, indirect employment in various forms i.e. transportation, refreshment stalls, daily commodity shops, etc. will also add in the employment potential of the proposed project. The proposed project will adopt Zero Liquid Discharge technology. Therefore, it will be beneficial to environment also due to no effluent discharge on land or water body. Greenbelt development within the premises will help in improving the diversity of faunal species and also will cleanse the air off the pollutant.

## 0.10 Environmental Management Plan

Following mitigation measures shall be adopted by Maruti Shetkari Asavani Limited to minimize the impact of project on the surrounding environment:

**Table 11.8: EMP for various Environmental Attributes**

Sr. No.	Activity	Impact identification	Mitigation measures
1.	Manufacturing process	<b>Resources consumption</b> Ground water extraction causes exploitation of ground water. <b>Air emissions</b> Boiler stack releases air pollutant like	<ul style="list-style-type: none"> <li>• Rain water harvesting will be implemented</li> <li>• Air pollution control equipment like electrostatic precipitator and dust collectors will be installed.</li> </ul>

	<p>PM (10, 2.5), SO<sub>x</sub> and NO<sub>x</sub> may causes loss of vegetation, health effect on community residing nearby like respiratory, allergic diseases, Asthma, lung disease etc.</p> <p><b>Waste water</b> Waste water from boiler blow down, cooling tower blow down, steam and process condensate, Spent lees from distillation. Ground water and soil pollution if directly disposed of on the land. Surface water pollution if it disposed of into water body. Disposal of untreated wastewater causes health effects on community, change in physical and chemical properties of soil and water which ultimately affects organism present.</p> <p><b>Noise generation</b> Noise due to Boiler operation and during operation of other machineries equipment. Occupational health hazardous can be faced by operators and other staff whoever working in that area.</p> <p><b>Solid waste generation</b></p> <ul style="list-style-type: none"> <li>• Yeast sludge</li> <li>• Ash (Fly and bottom ash)</li> <li>• Other hazardous/ non-hazardous waste like empty containers, batteries etc.</li> </ul> <p><b>Social environment</b></p> <ul style="list-style-type: none"> <li>• Employment generation</li> <li>• Development of road due to proposed project</li> <li>• No rehabilitation and resettlement required, hence no negative impacts</li> <li>• No change in land use hence no negative impacts</li> </ul>	<ul style="list-style-type: none"> <li>• Waste water will be treated in condensate polishing unit.</li> <li>• Treated water will be recycled back into the process.</li> <li>• Spent wash will be concentrated in MEE and burn in incineration boiler.</li> <li>• Noise will be concise in the working area only.</li> <li>• PPEs will be provided to operators/workers to avoid the occupational health hazards</li> <li>• Yeast sludge is no hazardous and can be used as manure.</li> <li>• Ash will be sell to brick manufacturer</li> <li>• Disposal of hazardous waste to CHWDF/ sold to authorize buyers if any.</li> <li>• No negative impacts are anticipated. Overall positive impact and CSR activities will be planned by the project proponent.</li> </ul>
<p>2. Transportation of raw material and product</p>	<p>Major pollutant during transportation is dust and other fugitive emissions, which causes health effect and loss of vegetation of nearby area due to deposition of dust on the leaves of trees.</p>	<ul style="list-style-type: none"> <li>• Use of vehicles meeting the statutory norms related to emission.</li> <li>• Use of vehicles with PUC certificates</li> <li>• Proper traffic management</li> <li>• Tar road will be developed hence; no major dust emission is anticipated.</li> </ul>
<p>3. Handling and storage of raw material</p>	<ul style="list-style-type: none"> <li>• Risk of accident due to leakage/explosion of chemicals which directly affect health of working staff.</li> <li>• Risk associated with fire due to storage of fuel and Alcohol. If accident</li> </ul>	<ul style="list-style-type: none"> <li>• PPEs will be provided to operators/workers to avoid the occupational health hazards.</li> <li>• Firefighting facility as per norms.</li> </ul>

arises, factory staff gets trapped in the fire. • All safety measures will be undertaken to avoid accidents

## 0.11 CONCLUSION

- Proposed project does not attract rehabilitation and resettlement of people, since the proposed site is open and vacant.
- Proposed project does not anticipate any adverse impacts on environment.
- Production process is environmentally safe as ZLD is proposed with efficient mitigation measures implemented.
- Air emissions through stack will be controlled by ESP.
- Loss of vegetation and habitat will not be attributed.
- Workplace/ operation hazards, which will be minimized by providing personal protective equipment's, safety precautions, emergency plan & disaster management plan.
- Consequently, impacts on air, water, land and ecological environments are insignificant and the socio-economic benefits are predominantly positive.
- Thus, overall project features, process, potential of pollution, pollution prevention measures and environmental management plan proposed by proponent illustrates that proposed project will not have any considerable impacts on environment as well as on socio-economic & ecological conditions of the project area. Therefore, proposed project is environmentally safe.