

EXECUTIVE SUMMARY

FOR

Establishment of New Distillery of 30 KLPD

BY

M/s Agasti Sahakari Sakhar Karkhana Ltd.

**Village At/Post -Agasti Nagar, Tal - Akole, Dist -Ahmednagar,
Maharashtra**

EXECUTIVE SUMMARY

1. Introduction:

Project name and location is M/s Agasti Sahakari Sakhar Karkhana Ltd., Village At/Post –Agasti Nagar, Tal – Akole, Dist –Ahmednagar, Maharashtra.

2. Project Location:

The proposed project is located at Post –Agasti Nagar, Tal – Akole, Dist –Ahmednagar, Maharashtra Within 10 km Influence Zone, there is no Tropical Forest, Biosphere Reserve, National Park, Wild Life sanctuary and Coral Formation Reserve. The Pravara River (4 Km), City Karad (25 Km), Railway station and Tehsil Place Shirdi (70 Km), District place Sangamner (26.8 Km), State Highway- Kolhar Ghoti State Highway –SH 44 (3 Km) is at a sufficient, safe distance. The Clearance is obtained from Local Grampanchayat and hence will have public acceptability.

3. Production Details:

Products and capacities are:

S. No.	Product	Production			Unit	Category
		Existing	Additional	Total		
1	Sugar	2500	-	2500	TCD	5(j) Cat. B
2	Ethyl Alcohol <i>/Absolute Alcohol/Ethanol/ENA/ RS</i>	-	30	30	KLPD	5(g) Cat. A

The capacity of the proposed Molasses based distillery shall be 30 KLPD. For this the main and sole raw material is molasses. The yeast brings about the change. Some chemicals in small quantity are used for supporting propagation of the yeast and help to fermentation. Thus, the following raw materials will be used.

The raw material and utilities requirement with source of supply can be quantitatively stated as:

No	Raw Material	Quantity/day	Particulars
1.	Molasses	120 T	Self and vicinity.

2.	Sulfuric acid	110 lit	Used for keeping proper Environment for process. Available nearby market.
3.	Nutrients N, P	100 kg	
4.	Turkey Red Oil (TRO)	500 kg	

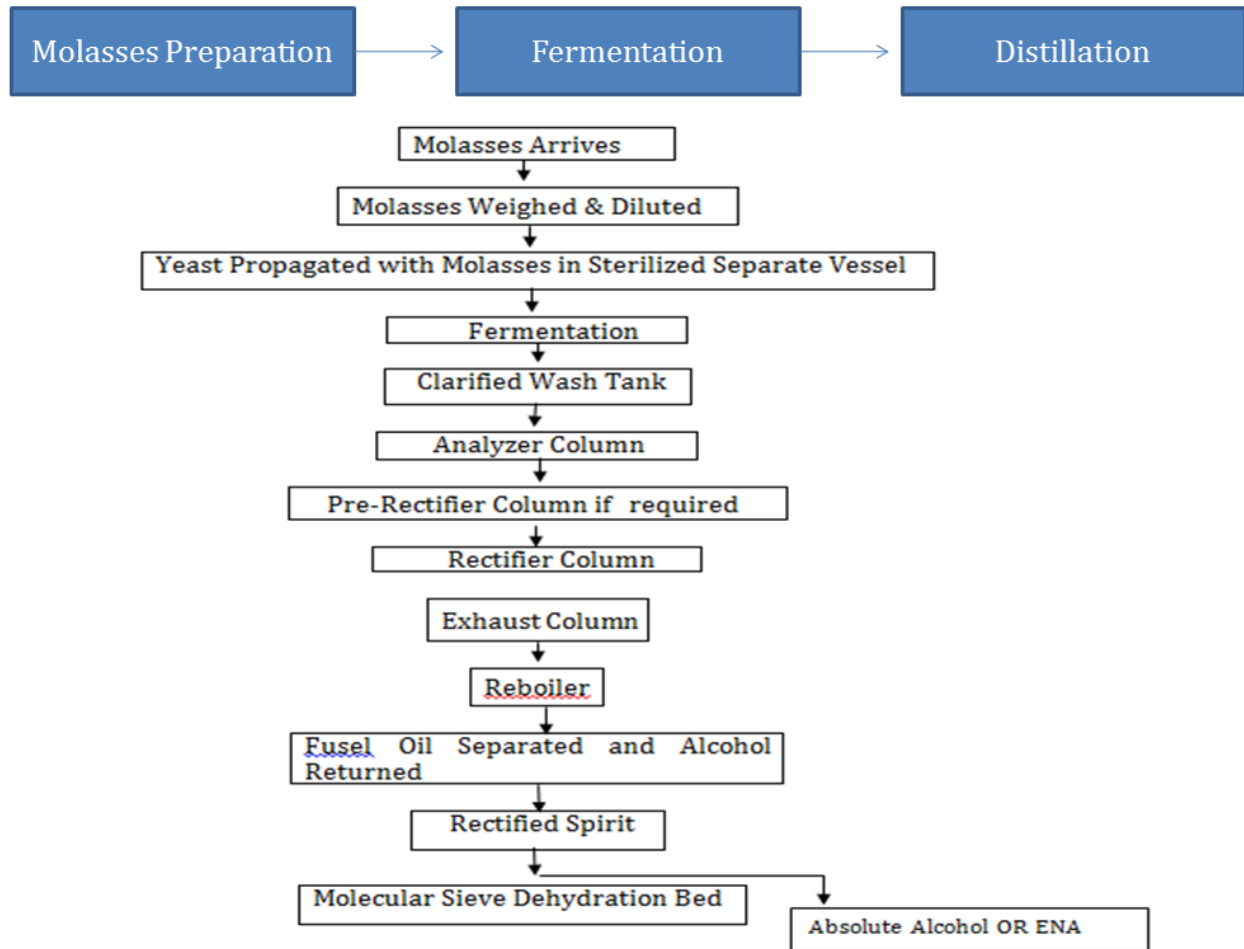
4. Utilities:

- **Land:** The Company owns total 52.22 ha out of which for distillery required 6 ha land. The proposed project will be accommodated in the premises of existing factory.
- **Storages:** Existing 2 Nos. of Molasses storage tank having capacity 4000 T, now proposed 1 No. of tank with 4000 T capacity. Total 3 Nos. having 4000 T capacity each.
- **Water:** Fresh Water need daily is 400 m³. Permission of Irrigation Department is obtained. Water source is Pravara River
- **Pollution control Equipment:** distillery boiler: stack with ESP, Bag filter, ETP proposed
- **Waste Treatment:** Spent wash will be treated by Bio-methanation- evaporation – bio-composting. Plus, effluent stream treated by Bio-oxidation and tertiary treatment. ETP proposed.
- **Power:** 1MW power needed. Available through Govt. Electricity Board and own generation.
- **Fuel:** Bagasse, available with self and from the vicinity (if needed).
- **Man Power:** During construction: 120 peak, short duration, During operation: Distillery 69 Nos.
- **Total project cost:** Rs. 49.88 Cr. (distillery unit), Funds allotted for pollution control equipment will be Rs. 5.00 Crores and for O & M will be Rs. 2.00 Crores per year. Funds earmarked for CSR activity will be Rs. 1.25 Crores.

5. Manufacturing Process:

Distillery:

There are four major steps in preparation of alcohol. (a) Substrate (feed) preparation for fermentation, (b) Yeast propagation and continuous fermentation, (c) Multi-pressure distillation and (d) Dehydration of RS to anhydrous alcohol or purified to get ENA.



6. Water Generation:

This will generate three types of waste namely liquid, gaseous and solid. Responsible care of these will be taken.

- 1) **Liquid Effluent:** There will be four types of effluent. (a) effluent from cooling, boiler blow down, purging water, (b) effluent from vessel/floor washing, process, spent lees stream, (c) Condensate water from MEE and (d) Industrial highly polluted water (spent wash) from distillery

2) Gaseous Emission:

S. No.	Source	Pollutant	In-plant Measures	Control Equipment
1	Molasses Yard	SPM road dust, HC	Levelled Roads and land, rubber tire, slow speed. Less waiting	--

2	Boiler	SPM, CO, SO ₂	Feed Bagasse/husk more dry, also will be used methane. Improved quality of water	Dampers, ID Fan, CO ₂ meter, Fly-ash arrestor ESP, Light ash through very tall stack.
3	Fermentation	CO ₂	Tank covered	Collected and scrubbed
4	Distillation	HC	Closed circuit	
5	Spent-wash	HC, Heat	Heat Exchanger	(Not open to sky cooling)
6	Other effluents	H ₂ O, CO ₂	Closed transfer	Fully Aerobic regime.

3) Solid waste:

Waste	Qty	Treatment	Disposal
Canteen	20	Pit Composting	Own Garden
Colony	60	Pit Composting	Own Garden
ETP Sludge	50	Bio – Composting	Sales
Office	5	Pit Composting	Own Garden
Packing Section	3	Pit Composting	Own Garden
East Sludge	92	Segregation	Sales
Ash	3000	Collection	Brick kiln

4) Hazardous waste:

S. No.	List of Processes Generating Hazardous Waste	Waste stream		Remark Please vide Note
38	Cleaning of barrels which have held chemical substances	38.1	Chemicals containing residues from barrel cleaning	No. 1 below
		38.2	Sludge from waste-water purification	
41	Waste treatment processes e.g. distillation, separation and concentration technique.	41.4	Distillation residue from the work-up of contaminated halogen-free organic solvents	No. 2 below

44	Every action relating to and every use of lubricating and system oil	44.1	Spent oil	No. 3 below
		44.2	Other spent lubricating and system oil	

Note 1: The number of barrels containing Turkey Red Oil is small, as the substance is not a raw material. It is merely an anti-foam agent. These are on returnable basis to suppliers. So it can be said for the yeast supplement substances, like nutrients, which comes in bags only.

Note 2: The activity is bound to remain inside, as no organic solvents are involved anywhere in the line of process reaction or work-up.

Note 3: Not being an Engineering Industry, use of oil-grease, lubricants, or hydraulic/ system oil is extremely limited. The steps like fermentation, distillation do not involve any rotating machines, hence it is not applicable. Recovered and used for lubricating cane carrying carts.

Handling of solid waste is considered, which is limited in volume. Some of it is already proposed to be used for good cause to serve as raw material or fuel or as manure. Hazardous waste is only in the form of limited waste oil and can be used after separation either for lubricating the carts or burnt in boiler along with baggasse. Ash is useful both for brick-making as well as for farming, and hence, much in demand. Thus, this leads to conservation of natural resources.

Responsible measures are taken for mitigating the impact on the environment with proper discharge and disposal.

7. Baseline Monitoring Details:

Description of Environment: The area around the proposed Distillery Plant is being surveyed for physical features and existing environmental scenario. The field survey and baseline monitoring has been done from the period of February to April 2017

We have conducted baseline monitoring for Air, water, soil & noise for various locations within 10 Km.

Air – : 9 locations, results within the prescribed limit.
Surface Water : 10 locations, results are found to be satisfactory.
Ground Water : 9 locations, results are found to be satisfactory.
Soil : 9 locations
Noise : 9 locations, results within the prescribed limit.

Baseline Environmental Studies were conducted at 9 locations during February to April 2017 and the data submitted indicated: PM₁₀ (69 µg/m³ to 57 µg/m³), PM_{2.5} (33 to 29 µg/m³), SO₂ (21 to 15 µg/m³) and NO_x (27 to 19 µg/m³), CO (1.2 to 0.7 mg/m³) and hydrocarbon like methane (1.10 ppm to 4.92 ppm), non methane (less than 5 ppm) The results of the modeling study indicates that the maximum increase of GLC for the proposed project is 62.48 µg/m³ with respect to the PM.

Baseline environmental data – air quality, surface and ground water quality, soil characteristic, flora and fauna, socio-economic condition of the nearby population is obtained by monitoring. Quality of surface water, ground water, air is found to be within limit and satisfactory. Soil characteristics are also agreeable. There are no eco-sensitive areas and endangered species of flora & fauna within 10 km area. People in study area are mainly dependant on agriculture. For improving their status and avenue for livelihood, industries like this are required.

8. Anticipated Environmental Impact and mitigation measures:

- **Water pollution:** This is Zero Liquid Discharge unit. No water is discharged from the site to surrounding area. The effluent is given physico-chemical treatment. Then this water is combined with Moderate effluent which is treated with equalization, neutralization, aeration, secondary clarifier and tertiary treatment.
- Spent wash generated in proposed project shall be used as for composting.
- **Air pollution:** Air pollution control equipment like ESP, ID Fan, dampers. Stack of appropriate height installed.
- **Solid waste:** Handling of solid waste is considered, which is limited in volume. Some of it is already proposed to be used for good cause to serve as raw material or fuel or as manure. Hazardous waste is only in the form of limited waste oil and can be used after separation a either for lubricating the carts or burnt in boiler along with bagasse. Ash is useful both for brick-making as well as foe farming, and hence, much in demand. Thus, this leads to conservation of natural resources.

- **Noise:** Sturdy foundation provided for machines, personal protective equipment like ear plugs given to workers, tree belt as sound barrier around factory and sides cladding.
- **Green Belt:** for proposed project 2 ha land will be provided.
- **Socio-Economic Environment:** The construction of the proposed project is expected to provide temporary indirect employment to a good number of skilled and unskilled workers. The project will contribute to the socio-economic development of the area at the local level in turn reducing migration for employment. Hence the proposed project will have positive impact on the socio-economic environment.

Likely impact of the project on air, water, land, flora-fauna and nearby population is kept very minimal. The emissions in air are controlled by air pollution control equipment like efficient ESP, dampers, ID Fans and tall Stack. Air modeling is done to study Ground Level Concentration. The incremental concentration is very small and resultant concentration is well within limit. As this is ZLD, surface or ground water is not polluted. All waste water generated is treated and recycled. There are no endangered species of flora-fauna in study area. Monitoring will be done regularly to keep a watch.

In case of hazardous operation, safety systems are incorporated. There is risk of fire while preparation and storage of alcohol. The study is done for pool fire and appropriate fire fighting equipment are provided throughout the factory premises. Workers are trained for safety and emergency cases.

Identification of hazards in handling, processing and storage of hazardous material and safety system are provided to mitigate the risk. There is risk of fire while preparation and storage of alcohol. The study is done for pool fire and appropriate fire-fighting equipment are provided throughout the factory premises. Workers are trained for safety and emergency cases. Precautions suggested by Factory Inspectors, MPCB and Experts are taken into account while preparing the Disaster Management Plan for the factory. Baggasse storage is kept limited due to everyday consumption for own sugar plant.

Emergency preparedness plan in case of natural or in plant emergencies is handled. Disaster management cell and plan is prepared to tackle man-made and natural disaster. People in this cell

are trained to face emergency cases. Safety equipment are also provided to workers and installed in the premises. Workers are also trained to avoid accidents during operation.

Corporate Social Responsibility (CSR) Plan is being prepared as per Govt. Regulations. Following activities will be incorporated in the CSR Plan. Major facets are given below.

#	Particulars
1	Education and Boarding for children of Workers
2	Seminars and training for farmers
3	Health camp, medical facilities
4	Tree plantation and providing saplings
5	Women empowerment
6	Vocational training for youth
7	Funds for facilities in village and surrounding area
8	Funds to Chief Minister/Prime Minister Relief Fund

Suggestions given in Company Act, 1956 and its amendments will also be taken into account. The fund allocation will be finalized after discussion with society, SPCB and Revenue authorities

9. Occupational Health

Occupational Health Measures are taken. For the present, it is found that the situation is within Permissible Exposure level (PEL). In order to maintain the same, what measures the company has adopted to keep them within PEL so that health of the workers can be preserved is mentioned. For future work, namely exposure specific health status evaluation of worker, we propose to conduct health evaluation on a pre-designed format for chest X rays, Audiometry, Spirometry, Vision testing (Far & Near vision, colour vision and any other ocular defect), ECG during pre placement and periodical examinations as per Factory Act & Rules. This will be for future working when alcohol manufacturing is involved, with an aim of maintaining OHS standards as per OSHAS/USEPA. Plan and fund allocation to ensure the occupational health & safety of all contract and casual workers is separately earmarked

10. Project Benefits:

It is seen that the Project is aimed to fulfill the objective of Sustainable Development. It will certainly improve social status.