

EXECUTIVE SUMMARY

For

PROPOSED DISTILLERY 60 KLPD

By

**M/S KRANTIAGRANI DR. G. D. BAPU LAD
SAHAKARI SAKHAR KARKHANA LTD.,**

At Kundal, Tal. Palus, Dist. Sangli, Maharashtra

EXECUTIVE SUMMARY

This executive summary is prepared on the basis of what MoEF has prescribed for considering appraisal for granting Prior Environmental Clearance.

Project name and location is M/s Krantiagrani Dr. G. D. Bapu Lad Sahakari Sakhar Karkhana Ltd., at Kundal, Tal. Palus, Dist. Sangli, Maharashtra

Products and capacities are:

#	Product	Production			Unit
		Existing	New	Total	
1	Crystalline Sugar	5000	0	5000	TCD
2	Co-gen power	19.7	0	19.7	MW
3	Ethyl Alcohol	0	60	60	KLPD

Previously, we have obtained Environmental Clearance for sugar and co-gen unit in 2016, and that framework is obeyed in good faith.

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

#	Raw Material	Quantity/day	Remarks
1.	Molasses T	223	From own sugar plant and sugar factories in vicinity
2.	Nutrients N, P.- kg	160	From Sangli / Kolhapur market, by road
3.	Turkey Red Oil (TRO)- kg	150	

Utilities:

- Land: The Company owns 50.59 acre land. The proposed project will be accommodated in the premises of existing factory.
- Water: Water need daily is 280 m³. Permission of Irrigation Department is obtained. Water source is Krishna River.
- Power: 2000 kW power needed. Available through Govt. Electricity Board and own generation.
- Fuel: Coal 1700 Kg/hr and CSW 6717 Kg/hr, available with self and from the providers

Process description in brief, can be stated as:

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.

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) Sober effluent from cooling, boiler blow down, purging water, (b) Moderate 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:**

#	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	Quantity	Disposal	Remark
1	Colony	1 CuM	Own garden	Mixed
2	CPU	40 kg	Manure	Organic, Non-Haz
3	Office	1 CuM	Sales	Non-Haz.
4	Packing Sec.	0.5 CuM	Sales	Non-Haz.
5	Yeast Sludge	30 kg	On greening belt	Organic, and Non-Haz.
6	Ash	60 TPD	Sales	Takers available

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.

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

- Water pollution: This is Zero Liquid Discharge unit. No water is discharged from the site to surrounding area. The effluent is treated in CPU.
- Spent wash generated in proposed project will be used as fuel in incineration boiler along with coal.
- Air pollution: Air pollution control equipments 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 either for lubricating the carts or burnt in boiler along with bagasse. 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.
- 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.

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 firefighting equipment are provided throughout the factory premises. Workers are trained for safety and emergency cases.

Capital cost of proposed project is Rs. 80 Crores. Rs. 7.3 Crores are earmarked for environmental care for existing as well as proposed project. The estimated time for completion is one year. Production will be commenced only after obtaining all required permissions

The site is located at rural surroundings and is about 4 km from Railway Station (Kirloskarwadi) and 40 km from District place Sangli, 7 km from river Krishna, 4 Km from River Yerla, as crow flies in the midst of cane growing area but not itself a prime agricultural land. It is geographically located at 74°25'37.95" E longitude and 17°08'4.99" N latitudes. The premises is about 50.59 hectare and as much as about one-third of which is already planned to be brought under the honest green-belt and landscaping. The site is near SH 142 (Karad -Tasgaon). It is bounded by rural area.

There is no sensitive establishment in the vicinity such as health resort, hospital, archaeological monuments. However, the Map made available to us by **Chief Wildlife Conservator of Forest & Field Director, Kolhapur**, Govt. of Maharashtra, read as Yashwantrao Chavan Sagarshwar Wild Life Sanctuary is 1.7 Km. River Krishna and Yerla are respectively 7 and 4 km away. The normal wind direction is found to be favorable at this site. All villages are away but connected. All are provided with drinking water from wells or Government Water Supply Schemes RWS. Hence **TI** is not encroaching upon their supply.

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 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.

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. Coal storage is kept limited due to everyday consumption for own co-gen plant.

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.

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 equipments are also provided to workers and installed in the premises. Workers are also trained to avoid accidents during operation.

Issues raised during public hearing and response will be conveyed to MoEF.

Corporate Social Responsibility (CSR) Plan is being prepared as per Govt. Regulations. Suggestions received during Public Hearing 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

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

#	Occupation	Type of Evaluation	Frequency Pre-placement & Thereafter		
			For Age <30 every (years)	For Age 30-40 every (Years)	For Age 41-50 every (years)
1	Cane crushing area	Chest X-ray, Spirometry & vision testing	5	4	2
2	Sugar Process area & Co-generation Area	Chest X-ray, Spirometry & vision testing	5	4	2
3	Main Control Room	Far & Near Vision, colour vision and hearing test	5	4	2
4	Ash & Bagasse handling area	Chest X-ray, Spirometry, vision & Hearing testing	5	4	2
5	Noise prone area	Audiometry	Annually		

Post project monitoring will be carefully done and six-monthly report will be displayed.

#	Facet	Stations at	Parameters	Frequency
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1	Surface water	One upstream One downstream One nalla	BOD, pH, SS, TDS, Colour	H-Y
2	Groundwater	One up-gradient Two down-gradient near the lagoon & compost yard	BOD, pH, SS, TDS, Colour	H-Y
3	AAQ (Ambient Air Quality)	Three directions @ 120 degrees, one of it especially covering the spot indicated by mathematical modeling	RSPM, SO ₂ , NO _x	H-Y
4	Noise	Three directions @ 120 degrees, as may be advised by MPCB	Decibel	H-Y day and night

Above mentioned facets will be monitored regularly and compliance reports will be submitted regularly to MoEF (Regional Office), CPCB (Zonal Office) and SPCB (Regional Office).

Cooperation will be extended to all Government Authorities and nearby neighbours with transparency.