C.I.N: U01119PN2011PLC140015

VARDHAN AGRO PROCESSING LTD.

Office Address: 1049 Datt Chowk Pusesawali, Tal- Khatav, Dist- Satara, Pin- 415512

Site Address: Gut No. 644/1, A/P: Trimali, Tal- Khatav, Dist- Satara, Pin No. 415510

E-Mail ID- vardhanagro 1 @gmail.com

GST NO. 27AADCV7208F1ZC

Ref. No. VAPL/ADM/ 161 /2021-22

Date: 29/09/2021

To, The Member Secretory, Maharashtra Pollution Control Board, 3rd and 4th floor, Kalptaru Point Sion Circle, Sion (E), Mumbai 400022

> Sub : Application for Public Hearing to be conducted for our project Proposed Multifeed Distillery (RS/ Ethanol/ ENA/ Acetic Acid/ Oxalic Acid/ D.A) Unit of 45 KLPD Capacity By M/s. Vardhan Agro Processing Ltd., At Plot No. 641 & 644/1, Village Trimali, Taluka- Khatav, Dist. Satara, State Maharashtra

Ref : Terms of Reference (ToR) received from MoEF,CC, India , for preparation of EIA report for our project file No.SIA/MH/IND2/213754/2021, Dtd; 03.09.2021

Dear Sir,

This has been reference to the above mentioned subject, we have received the ToR, file no No.SIA/MH/IND2/213754/2021, Dtd; 03.09.2021 in the stander ToR the direction were given to conduct the public heading with respect to our expansion project, now in order to conduct the public hearing, we hereby submitting the relevant document to your profile,

Along with the Public Hearing application, Draft EIA report as per the generic structure given in in EIA notification and standard and specific ToR received from MoEF&CC and Executive summary in English and Local Language (Marathi) are closed separately

Sets of various documents, as mentioned above along with soft copies have been submitted for your further information and necessary action, also DD of rupees one lakh (Rs. 1,00,000/-) amount bearing '289625' no drown on SRO office MPCB, payable at Satara, dtd; 28.09.2021, towards the public Hearing charges as decided by the Govt. has been submitting herewith, Kindly requesting to conduct the Public hearing.

Please do the Needful, Thanking You

Yours Truly,

Managing Director For , M/s. Vardhan Agro Processing Ltd., At Plot No. 641 & 644/1, Village Trimali, Taluka- Khatav, Dist. Satara, State Maharashtra.







Executive Summary Draft EIA Report

Proposed Multifeed Distillery of capacity 45 KLPD at Gat No. 644/1, & 641at A/P- Trimali, Dist.- Satara, Maharashtra



Vardhan Agro Processing Ltd. (VAPL)

Gat No. 644/1, & 641at A/P- Trimali, Dist.-Satara, Maharashtra

EXECUTIVE SUMMARY

1. INTRODUCTION

M/s. Vardhan Agro Processing Ltd. (VAPL) is well established private khandsari and jiggery powder unit, which was registered under the Company Act 1956. Factory is established and started production of khandsari and jiggery in the year December 2017, which is located at Village Trimali, Tehsil- Khatav, Dist. Satara, State- Maharashtra. The proposed plant is within existing unit. The geographical location of the project site is at Latitude 17°31'51.94" N, Longitude: 74°17'15.90"E. Site is well connected with state highway connecting to Nearest Town Pusesawali (8 km). Nearest Railway station is also at Rahimatpur (15 km) and nearest Airport is Kolhapur at the distance of 110 km.

2. PROJECT DESCRIPTION

2.1 Salient Features of the Project

The proposed distillery of capacity 45 KLPD is proposed within the existing premises. The benefit of the sites is that the raw material and water availability is within the premises.

The projects requirements are as follows:

- The land requirement for the proposed 45 KLPD distillery is approximately 11.49 Ha and is already in possession.
- Operational days of the distillery are 330 nos.
- The water requirement for the proposed distillery will be 1142 m³/day.
- The raw material required will be in the form of juice/ Syrup and molasses and Grain. The raw material required for distillery will be will be sourced from own sugar factory, Traders and nearby farmers.
- The total manpower requirement is 120 numbers out of which 45 will be skilled manpower and 75 numbers shall be unskilled.
- The source of steam will be from boiler of 15 TPH capacity.
- Salient Features of proposed Distillery is given below:

Sr.	Feature	Particulars
No.		
1.	Name and address	VARDHAN AGRO PROCESSING LTD.
	of the Company	At Gat No. 641 & 644/1, Village
		Trimali, Tehsil Khatav, Dist.
		Satara, State- Maharashtra
2.	Project	45 KLPD Multifeed Distillery
З.	Date of registration	December 2017
	Of	
	Sugar Factory	
4.	Working days per	330/Annum
	year	
5.	Products Alcohol	45 KLPD ENA/RS/ AA
6.	Main raw material	Juice/ Syrup/ C Molasses/ B Heavy
		Molasses and grain
7.	Man power	120 nos.
	requirement	
8. Total land area Total		Total Plot Area- 11.49 Ha., out of which
		for Distillery 2.81 Ha., Green belt
		development 1 Ha.
9.	Boiler capacity	15 TPH
10.	Boiler fuel	Bagasse (6.8 TPH) and Coal (3.5 TPH)
11.	Steam Requirement	1.5 Kg/cm2 gm (90%) and medium
		pressure
10		steam 3 – 3.5 Kg/cm2 gm (10%)
12.	Power requirement	The total power requirement for the
		proposed project will be approx. 1
		NW, which will be sourced from 14
10	· · · · · · · · · · · · · · · · · · ·	NW Cogen unit.
13.	water requirement	
	& source	
	Source	Irrigation Department
	Water requirement	1142 m3/day
14.	Investment on EMP	Rs. 5.65 Cr.
15.	Project Cost	Rs. 75 Cr.

2.2 Manufacturing Process

The process used for proposed expansion unit is Hi Ferm fermentation process is in batch mode followed by Multipressure Vacuum Distillation.

i. Molasses based distillery-

1) Fermentation

The purpose of fermentation is to convert the fermentable sugars into alcohol. The process is completed in following steps:

- Molasses handling and Distribution- This includes Screening of molasses, transfer to molasses receiving tanks, distribution to cell mass propagation, fermentation and sent to yeast activation section
- Yeast propagation- Yeast propagation section comprises molasses diluter and hygienically engineered yeast vessels equipped with heating, cooling and air sparging facility.
- **Pre-fermentation-** In the pre-fermenter vessel, molasses, process water, nutrients and additive are added for activation / growth of cell mass. Filtered air is sparged to repair the cell membranes and other cell components. Temperature is maintained at 30-32^OC. Cell mass is transferred to yeast activation vessel to build up cell mass required for fermentation.
- Fermentation- The purpose of fermentation is to convert the fermentable sugars into alcohol. The fermenter temperature is maintained at around 30 -32⁰C by forced recirculation flow through plate heat exchangers.

2) Distillation

This step is followed to purify the product of fermentation process. In VAPL proposed project the following products are harnessed.

- 1. Rectified Spirit (RS)
- 2. Extra Neutral Alcohol (ENA)

3. Absolute Alcohol

The VAPL has proposed the following Storage facility for RS & ENA:

- Rectified spirit : 1 tank of capacity 12 lakh litres.
- Impure spirit : 1 tank of capacity 1 lakh litres.
- Pure ENA : 1 tank of 12 lakh litres capacity.
- Impure alcohol (Technical alcohol): 1 tank of capacity 1 lakh litres.

ii. Juice to Ethanol Based Distillery

- Sugarcane is directly taken as per the availability of the cane area, which is being transported through trucks, or bullock carts, which is then weighed for records and then cut into specified sizes.
- These sizes are treated with lukewarm water treatment so as to give maximum outputs with lower contamination.
- The cane is further crushed in the mill in three phases in order to extract more juice percentage say about 95%. This juice is carried to the storage tank for further process. Before taking the juice into fermentation house a specific study of mass balance and chemical composition is studied. Few chemicals (activators) & nutrition are added to the juice to activate the juice and prepare for fermentation.
- The unwanted suspended material is then separated. The juice is then taken to the fermentation house for fermentation. Here it is kept in the fermentation process. By adding microorganisms" culture as per availability, the fermented juice is prepared for the further process. The water content in the fermentation column is reduced and thus the juice is prepared for distillation.
- The distillation column converts the juice by reducing the water content of it for getting rectified spirit /specially denatured spirit.
- First rectified spirit/special denatured spirit which is 94.68% alcohol, and rest is water is produced in the distillation column.
 In order to get Ethanol, which has to be nearly 100% pure and

water free alcohol, further steps to remove the 6% of water is taken. It is not possible to remove remaining water from rectified spirit /specially denatured spirit by straight distillation as ethyl alcohol forms a constant boiling mixture with water at this concentration and is known as Azeotrope. Therefore, a special process for the removal of water is required for the manufacture of absolute alcohol.



During the fermentation, yeast strains of the species Saccharomyces Cerevisiae, a living microorganism belonging to class fungi converts sugar (Glucose, Fructose, Sucrose, Maltose or Maltotrioes) present in the molasses or sugar cane juice to alcohol. However, Saccharomyces Cerevisiae cannot use starch as such. To produce alcohol from starchcontaining raw materials such as grains or cassava etc. by fermentation, the starch has to first hydrolyze to glucose. Industrially, this conversion is accomplished by the cooking of starch slurry and use of enzymes to breakdown the polymers of glucose (Amylose and Amylopectin), Transformation of starch to glucose consists of Gelatinization (Cooking), Liquefaction and Saccharification. Chemically this transformation to alcohol can be approximated by the equation:

The overall transformation takes place into two steps:



As per the above reaction, 162 gm of starch produces 180 gm of glucose. Therefore, 1 MT of starch gives 1111.11 gm of glucose. 180 gm. of glucose on reaction gives 92 gm. of alcohol. Therefore, 1 MT of sugar gives 511.1 kgs of alcohol. The specific gravity of alcohol is 0.7934, therefore, 511.1 kg. of alcohol is equivalent to 511.1/0.7934 = 644.19 liters of Alcohol. During fermentation, other by-products like glycerin, succinic acids, etc also are formed from sugars. Therefore, actually, 94.5% of total fermentable sugars are available for alcohol conversion. Thus, one MT of sugar will give only $644 \times 0.945 = 608.6$ liters of alcohol, under ideal conditions theoretically. Similarly, one MT of pure starch should give 715.0 liters of alcohol under ideal conditions, theoretically (at 100 % efficiency and 100 % ethanol). Corn or sorghum contains about 62.0 % starch on a dry weight basis. Therefore, one MT of corn or sorghum can yield about 410 liters of Rectified Spirit.

For bringing out above biochemical reaction, we require proper and careful handling of yeast, control of optimum parameters like pH and temperature and substrate concentration and enzyme dose, which results into the effective conversion of starch to sugars and then to alcohol.

For propagation, yeast is developed in the laboratory from the pure yeast culture slant. In the first step, yeast is propagated in a test tube. Then it is transferred to a 500ml conical flask and propagated for 12 hrs. This is further transferred to 5 liters flask containing the sterilized medium. The pH of the medium is adjusted in the range of 4.5 and nutrients such

as ammonium sulphate or urea, di-ammonium phosphate, etc. are added. Each stage of development of yeast from test tube to 500ml and 500ml to 5 liters requires 24 hours.

On the plant, there are again 3 stages of propagation namely 100 liters, 500 liters and 5000 liters of culture vessels. All these vessels are designed so as to facilitate boiling medium in order to sterilize it and also cool to bring it to the proper temperature of 32 °C. Further stages of yeast propagation are done in tanks. i.e. Pre-fermenters, which requires about 8 hours in order to build up the necessary concentration of yeast cell mass. Finally, pre-fermenter is transferred in the fermenter. Simultaneously grain slurry is transferred to the fermenter.

Now a day, readymade active dry yeast is used directly in the prefermenters. Good quality of active dry yeast is available for use in the distillery. The yeast is manufactured under strictly controlled conditions. This yeast is useful to obtain a good yield of alcohol by fermentation



2.3 Pollution control measures

The major pollutant from the Distillery is the Spent wash.

- Biomethanation unit: The spent wash from the ethanol plant will be passed through bio-methanation process to generate bio-gas and reduce the BOD / COD to the targeted levels and converts the sugar-rich biomass into methane. Futher the CO2 & Sulphur will be recovered from this unit. Which will in turn reduce the air pollution.
- Multieffect Evaporator: The spent wash after bio-methanation will be passed through a 5 stage multiple effect evaporator system to concentrate the solid to 10%. Hence it will be a totally zero discharge spent wash treatment. By means of incineration.
- Incinaration: The reduced quality of spent wash will be sent to incineration in the boilers.

3. EIA STUDY

Amplenviron Pvt. Ltd., Hyderabad has been entrusted the task of carrying out EIA/EMP studies in order to obtain regulatory clearances from SEIAA, Maharashtrafor the proposed 45 KLPD Distillery. The EIA studies were carried out for various environmental components so as to assess the anticipated adverse impacts due to the proposed facilities and to suggest suitable mitigation measures.

TOR has been issued for the preparation of the EIA report vide F.No. SIA/MH/IND2/213754/2021 dated 3rd September 2021. Considering the points in TOR the EIA report is prepared as per the EIA notification dated 14th September 2006 of the Ministry of Environment & Forests, New Delhi (MoEF).

Two broad types of methodologies viz. Field Surveys Methodology and Impact Assessment Methodology were followed for the above studies.

To get the idea of existing environmental conditions the survey the 10 Km radial area from project site is selected and the data collection is carried out for air & Noise quality at 8 locations, water quality at 8 locations, soil quality in 8 locations. The Ecological study is also carried out for 6 locations.

4. CURRENT ENVIRONMENTAL STATUS

4.1 Topography

• The existing site has plain topography and does not require cutting or filling.

4.2 Climate & Rainfall

- The climate of the district represents hot summer and general dryness throughout the year except during the south-west monsoon season, i.e., June to September.
- The mean minimum and mean maximum temperature is 8.5°C and 42.5°C respectively.

• The normal annual rainfall in the study area 842.80 mm

4.3 Air Quality

- The Air Quality are studies in the 8 locations including upwind and downwind direction
- The PM10, PM2.5, SO2 and NOx level are within permissible limit

4.4 Water Quality

4.4.1 Surface Water

• All the parameters are within permissible limit of IS 10500.

4.4.2 Ground Water

- The ground water level in the study area in premonsoon season are within 10 m.bgl.
- In post monsoon season water levels of 2-5 m. bgl is seen in the study area.
- Ground water level fluctuation >4 m.bgl during pre and post monsoon season. Observing the long term trend there is a rise in water level 0.2 to 0 m/yr.
- The Ground water quality in the study area is within permissible limits of IS10500.

4.5 Seismology

- Project area falls in Seismic Zone III.
- It suggests that the area is a moderately affected Zone.

4.6 Soil Types

- The soil type of the study area is Clay loam.
- \bullet The soil quality analysis shows that the electric conductivity ranges from 182 to 305 $\mu mhos/cm$ which is within the normal range.
- The soils are non acidic, as the pH ranges from 7.15 to 7.86 the soil is neutral in nature.

4.7 Minerals

• No major Minerals found in the study area.

4.8 Ecological Status

- Flora- The prominent plant in the study area is Gulmohor, which is found commonly near the road side. Babul was a common tree near the villages and on the hedge of agricultural field. The commonly found trees are Bahava, Bor, Tamrind, Samdi, Karanj, Acacia auriculaeformis, Neem, Peepal, Vad, Teak, Sheesham, Mango, Palas, Aniar etc.
- Fauna- No forest area comes under the study area. The Mammals found in the study area are Five Striped palm squirrel, Common / Indian Mongoose, Common Indian Hare, Indian Field Mouse, House mouse, House Shrew. Some reptiles like water snakes, monitor lizards and common lizards were also observed near village boundary. The dominant birds in the study area are House crow, Owl, Asian koel, Common Myna.

4.9 Socio-economic Aspects observed in the Study Area

The socioeconomic status of the study area as per census 2001 is tabulated below:

- Average size of household is 5
- Number of female is 943 per 1000 males
- SC population is 20.1 % whereas the ST population is 0.9%.
- 74% people are literate
- Workforce percentage ranges from 28.7-67%.
- Primary education facility, PHCs and post office
- Pucca & kaccha roads and bus facility is present
- Handpump or wells are used for Drinking water

5. ENVIRONMENTAL IMPACTS

Major impact due to the project will be on water use and water quality. However the other parameters are not affected much. However each parameter is covered in this section.

5.1 Impact on Water Use

The water requirement of the project is $1142 \text{ m}^3/\text{day}$. Water will be

drawn from irrigation Department. The permission is already obtained for water drawl. Therefore, the impact on this parameter will be negligible.

5.2 Impact on Water Quality

Nominal quantity of water will be used during construction period. Stagnant pools of water would promote breeding of mosquitoes and generally create unsanitary conditions. However, adequate arrangements would be made to ensure proper drainage of wastewater from the construction sites. During operation the ETP (biodigester) will be provided to treat the spent wash generated after that Multi Effect Evaporation and incineration is done. This will be achieving 'Zero Discharge' plant to meet the guidelines of MoEF. The domestic effluent will be treated into STP followed by Gardening. In addition, rainwater harvesting will be proposed. Total roof water is collected in the reservoir having capacity 7000m3 and the water is used for process & gardening. This would help in minimizing the negative impact on ground water environment; rather develop a better water environment in longer perspective.

5.4 Impact on Land Use Pattern

There would be very insignificant impact of the proposed project on the land use pattern as VAPL has already possess the required land in factory premises. The land required for construction will be minimized by proper planning and time scheduling of construction activities. Domestic effluent will be sent to soak pit followed by septic tank inside the project premises.

5.5 Impact on Soil

This impact would be confined principally to the plant site and thus would be of localized nature. During the construction stage proper drainage system will be constructed for the waste water generated during construction period which will be discharged into low land areas

and accumulation of water will be avoided. During operation phase the soil will not be affected due to any operation. However, any percolation of any contaminates into ground water will be prevented by constructing suitable storage facilities.

5.6 Impact on Air Environment

There will not be significant impact on the air quality as the boiler used will be biogas fired of the 15 TPH capacity with the stack height of 30 mts. During construction the air quality will be impacted due to fugitive dust emission. During construction and operation phase regular upkeep and maintenance of vehicle will be done to check the air pollution level under control. To reduce the fugitive dust emission regular sprinkling of water at the construction site is suggested.

5.7 Noise Environment

Noise would be an inevitable by-product of the operation. NSAIL will take all mitigation measures to control noise pollution by means of adopting paved roads and Proper study foundation provided for all the machines and equipments. Green belt plantation will act as noise buffer.

5.8 Impact on Ecology

The impact of construction activities would be primarily confined to the project site which is already in possession of proponent. As stated earlier, the land is principally agricultural in nature in the surrounding areas the impact on ecology will be very minor. Unit has already created a green belt of 33% of total plot area. and proposing to plant more trees which will restore the ecology of the study area alongwith increase in aesthetic beauty.

5.9 Impact on Demography & Socioeconomics

• Impact on Demography

The peak workforce strength during construction would rise-up to hundred persons. Though the technical persons and skilled labors

would by and large, be imported from outside the study area, bulk of the labor force would comprise of unskilled and semi-skilled workers, a substantial number of whom would presumably be recruited from the surrounding areas itself.

Operation of the unit will require an appreciable quantum of skilled and semi-skilled workforce which, would have to be imported from outside the study area.

Impact on Socioeconomic conditions

Construction of any major industrial project invariably results in socioeconomic changes. The influx of material and money lends to change the economic status of the community. Markets, workshops and commercial centers would develop in the area.

Growth Dynamics and Stress Areas

It has been observed that people always have a propensity to settle at locations where civic amenities as transportation, postal service, educational institutions, drinking water, market, medical treatment, electricity etc. are easily available within a short distance, as well as the working place being within a reasonable distance.

Therefore, some migrated people would settle in the peripheral zone.

6. ENVIRONMENTAL MANAGEMENT PLAN

6.1 Construction Phase Environment Management

a) Site Preparation

The development of site for erections of plant structure, office building & other allied activities shall require careful management planning as the construction activities will be located in plain barren land owned by the project proponent. Care will be taken to control the dust nuisance that would be created by excavation, leveling and transportation activities so that impacts on the various components of environment would be minimized.

b) Noise

Though level of construction activities shall not be very high, still some specific sources of noise like welding, transportation, movement of earth movers, tractors, concrete or asphalt mixing etc. will be carried out in a controlled manner. Neither the plant nor the construction workers should be exposed to excessive noise levels.

c) Construction Equipment and Waste

Transport vehicles as well as transport routes will be properly maintained during whole construction phase to minimize smoke / dust emission from vehicle exhausts and unpaved roads. Composite solid wastes including metal scrape, earthwork, other wastes, getting generated in construction process will be disposed off in safe manner. Certain hazardous waste materials, though the requirement of such materials shall be small, will be stored safely and be disposed off properly.

6.2 Operational Phase Environment Management

a) Water Environment & Management

Irrigation water shall be used for the plant operation and generation of waste water & discharge should be maintained as per the MoEF current guidelines. The followings are to be strictly followed to meet the requirement:

- Multi effect evaporator will be used to reduce the spent wash generation from about 7 liters / liter of ENA to 700 ml of ENA in order to reduce pollution. Reduced spent wash will be burnt as boiler fuel.
- All sewage will be collected in a common septic tank and treated in an STP and will be reused for Landscaping/Green belt development.
- The record of input water every day for quantity will be recorded by installing water meters and periodically of quality will be ascertained.
- Measures will be adopted to segregate the storm water drain from effluent.
- Water conservation is to be accorded high priority in every section of the factory by avoiding wastage of water.
- Record of wastewater returned back to process and to gardening, both thequantity will be kept by installing water meters.
- The water balances will be regularly updated and that should be made available to all concerned members of Environment Management Cell.

Water Pollution & Control Facilities

The major contributions of pollution in a proposed expansion of distillery is aqueous effluent i.e, spent wash. The air pollution is mostly from Boiler stacks. Other sources of pollution are solid waste & noise.

Effluent Treatment Scheme for the Distillery Unit

The effluent treatment scheme for the Distillery Unit will be first treated in Anaerobic digester out of which Biogas generated will be used as a fuel to the Boiler. The treated spent wash is further led to multi-effect evaporator to reduce the volume of spent wash from the

distillery. The concentrated sludge from the multieffect evaporator will be used as boiler fuel.

b) Air Environment Management

To minimize the impact due to the proposed project operations the following steps would be initiated:

- The emission characteristics should also be monitored regularly.
- Green belt to trap dust being emitted from fuel combustion and /or fugitive sources and also attenuate the other gaseous pollutants.
- The control of fugitive emission such as hydrocarbons from DG sets, process units/storage, the following measures are recommended:
 - Proper maintenance and clearing of the roads inside the plant
 - Raw materials trucks should be covered to stop dust emission
 - Monitor the consented parameters at ambient air quality monitoring station.
 - Monitor the work zone at various stations to satisfy the corporate requirements for health and environment.

c) Noise Environment

The following precautionary measures are to be adopted in the proposed project

- Insulate/enclose all the noise sources to avoid occupational exposure to the workers and to minimize the generation of excess noise level.
- Monitor the ambient and work zone noise level to conform the stipulated norms.
- Noise attenuation devices such as ear mufflers must be provided to the workers in the high noise exposure areas.

d) Biological Environment

Special attention is given to maintain green belt in and around the factory premises. 33% of green belt is proposed within premises of unit. Around 10,000 nos of trees are planned to be planted in factory premises and 10,000 outside the premises. Suitable tree species will be planted in the green beltwhich will act as a noise barrier and would also reduce the air pollution & improve the aesthetic backdrop of the site. As far as possible, the species should beindigenous and locally available Species would be planted.

e) Land Environment

However, the construction of green belts, parks, would largely offset the change to the existing landscape and would provide visual comfort. The improved economy of the area is expected to cause increased outputs to agriculture, trade and commerce. As unit will implement zero wastewater discharge methodology, there would be no impact due to any wastewater disposal on land.

f) Occupational Safety & Health

All precautionary methods will be adopted by the company to reduce the risk of exposure of employees to occupational safety and health hazards.

Pre & post medical check-ups will be done of all the employees. Employees will be regularly examined and the medical records will be maintained for each employee.

Pulmonary function test and periodical medical check up shall be done once in every year. The following tests will be conducted for each worker:

- Lung Function Test
- Radiology X-ray
- Pulmonary Function Test
- Audometric Test
- General clinical examination with emphasis on respiratory system

Pre-employment examinations

Periodical medical examinations at the time of employment an after completion of employment.

For the safety of workers, personnel protective appliances like hand gloves, goggles, aprons, ear mufflers, nose mask etc. will be provided. Nose mask will be provided at places, where there is possibility of dust generation. In high noise generation areas ear mufflers will be provided for the workmen. Proper ventilation system will be provided in the process area.

g) Socio-Economic Welfare Activities

The operators and workers are to be trained in various aspects of ESH (Environment, Safety and Health). The managers and officers involved in Environment Management Cell shall undergo refresher workshop and up-gradation of information on various environmental issues.

The management of unit shall help in promoting the activities related to environmental awareness in nearby villages. The proponent shall help in promoting local people for livelihood commensurate with their will, skill and abilities. Many other welfare measures will be taken from time to time.

h) Risk Assessment- Storage & Transportation RS/ENA

The proposed project will produce RS/ENA which is a flammable liquid. Leaving aside earthquake, cyclone, lightning, flood, arson, war and sabotage, the possible emergencies that can arise in the proposed project are:

- Release of ENA due to Failure of vessels, failure of pipelines, failure of processequipment.
- Specific failures like accidental spillage during handling.
- Consequential fires involving the flammable materials.

Mitigation Measures- The following mitigation measures are adopted

- Avoid breathing vapors & use of Self Contained Breathing Apparatus.
- Fire fighters should wear proper protective equipment.
- Spark & Leak arrestors will be provided at proper places.
- During Transportation the electrostatic charges should be prevented to avoid the explosion.

6.3 EMP Cost

The VAPL has proposed to incur the following one time and recurring cost for the EMP measures.

No.	Particulars	Amount in Rs. Lakhs	
One Time Installation Cost			
1.	Air Pollution Control System	35.00	
2.	Noise Control System	10.00	
3.	Green Belt Development	12.50	
4.	Environment Monitoring and Management	15.00	
5.	Water Pollution Control System (E.T.P.)+Multi-effect Evaporator	420.00	
6.	Incinerator Boiler	600.00	
	Total	1092.50	
Recurring Cost (per annum)			
1.	Environment Monitoring	10.00	
2.	General maintenance of ETP/ Multi-effect Evaporator	35.00	
3.	Greenbelt maintenance	11.25	
4.	Occupational Health	2.50	
5.	Environment Management	5.00	
Total		63.75	

EMP Cost for Expansion unit

7. Environmental Monitoring

Environmental Monitoring is a tool to check the implementation of the Environmental Management Plan. It involves formation of a committee involving experts in various fields as well as Govt. officials for checking the implementation of the environmental management plan. The following monitoring plan is suggested for the project. The regular Environmental monitoring will be carried out to check the impact of the project on air, water, soil noise quality. Effluent from the distillery will also be monitored.

8. Project Benefits

The Expansion of distillery will have overall positive impact owing to the following benefits due to the project.

- The captioned project will have major socioeconomic benefits including Employment generation, Infrastructure Development
- The benefits also include the socio-economic welfare measures viz. Advanced Soil Testing Laboratory Facility, Sugarcane Development Schemes.
- R & D facility plan including cane plantation Programme, encouraging reward for highest yield programme.
- Provision of Educational facilities.
- The proponent has allocated a total of Rs 9 crores for the socioeconomic welfare of the people in the study area.