

EXECUTIVE SUMMARY

1.0 INTRODUCTION

M/s. Chincholi Sugar & Bioindustries Limited has obtained Consent for Establishment from KSPCB to establish a 3500 TCD sugar & 26 MW Co-generation power plant in Chincholi (village & taluka) Gulbarga district, Karnataka. The construction activity of sugar plant & Co-generation power plant are yet to be taken-up. Now it has been proposed to establish a 60 KLPD distillery in the proposed sugar & Power plant premises only to produce rectified spirit/ENA/Ethanol. Total land available for proposed plant is 216.0 acres (Survey Nos.19, 20,21/1,21/2,21/3,22,23,24,246/1247/1,248,249,250,239,240,245,246/2,247/2) .

Pioneer Enviro Laboratories & Consultants Pvt. Ltd., Hyderabad have prepared Draft Rapid Environmental Impact Assessment (DREIA) Report for the proposed distillery plant. The report contains detailed description of the following

- a. Detailed characterization of status of environment in the area of 10 km. radius from the proposed site for major environmental components including air, water, noise, soil, flora, fauna and socio-economic environment.
- b. Assessment of air emissions, liquid waste and solid waste from the proposed industry along with the noise level assessment.
- c. Environmental Management Plan (EMP) consisting of Air emission management, Waste water management, Noise level management, solid waste management, etc.

d. Terms of reference approved by the Ministry Of Environment & Forest, NewDelhi.

2.0 PROJECT DETAILS

2.1 RAW MATERIALS

S.NO.	RAW MATERIAL	SOURCE	REQUIREMENT	METHOD OF TRANSPORT
1	Molasses	In plant generation/purchase from other sugar plants.	256 T/Day	Inplant conveying system/Covered trucks

2.2 MANUFACTURING PROCESS

The rectified spirit will be manufactured by Yeast propagation, fermentation and distillation process. Continuous fermentation with yeast recycling will be adopted in the distillery plant. The spent wash generation will be restricted to 10 KL/KL of spirit production. The spent wash will be primarily treated in Anaerobic Digester followed by R.O. plant. Hence zero discharge will be implemented in the distillery plant as per CREP recommendations.

The rectified spirit will be pass through molecular sieves to dehydrate it and to produce Ethanol (Absolute Alcohol).

2.3 WATER ENVIRONMENT

2.3.1 WATER REQUIREMENT

Water will be required for the process, Soft water for cooling tower make – up and R.S. Dilution, softener regeneration water and for domestic purpose. The total water requirement for the plant is indicated below. Water requirement for the proposed distillery plant will be met from Mallu mani river situated at distance of 2 km for the site. A dedicated pipeline will be laid from the river to the site to transport the water .Water clearance letter has already been issued by govt. of Karnataka to draw 0.14 TMC of water from Mallu mani river.

The break-up of the total water requirement for the proposed distillery plants is indicated below.

WATER REQUIREMENT (DISTILLERY)

SECTION	REQUIREMENT IN CUM / DAY
Process water	516
Soft water for R.S dilution and Cooling tower make up	400
DM water for boiler & ENA plant	195
DM & softener regeneration	80
Domestic	10
Total	1201
R.O permeate to be recycled	300
Net water required	901

2.3.2 WASTE WATER GENERATION & CHARACTERISTICS

The total wastewater expected from the proposed distillery project will be 738 cum/day

WASTE WATER GENERATION (Distillery)

SOURCE	QTY. (CUM/DAY)
Spent wash	600
Cooling Tower blow down	50
DM plant & Softener Regeneration water	80
Sanitary waste	8
Total	738 cum/day

2.3.3 EFFLUENT CHARACTERISTICS

The characteristics of spent wash (Thin Slop), DM Plant regeneration water, cooling tower blowdown, boiler blowdown, softener regeneration waste water and sanitary waste water are shown below

CHARACTERISTICS OF SPENT WASH

S.NO.	PARAMETER	CHARACTERISTICS OF SPENT WASH
1.	pH	4.2 – 4.8
2.	Total Dissolved Solids	80,000-1,00,000 mg/l
3.	COD	70,000–1,20,000 mg/l
4.	BOD	45,000 – 55,000 mg/l

**CHARACTERISTICS OF SANITARY WASTE,
COOLING TOWER BLOWDOWN, BOILER BLOWDOWN**

S.N O.	CHARACTERISTICS	SANITARY WASTE WATER	COOLING TOWER BLOW DOWN	BOILER BLOW DOWN	DM plant & softner regenerat ion water
1.	pH	7.0 – 8.5	7.0 – 8.0	9.5 – 10.5	4.0-9.0
2.	T.D.S. (mg/l)	800 – 900	1000	1000	5000-6000
3.	B.O.D. (mg/l)	200 – 250	-----	-----	-----
4.	C.O.D. (mg/l)	300 – 400	-----	-----	-----

2.3.4 EFFLUENT TREATMENT PLANT

As per CPCB recommendations the spent wash generation is restricted to a maximum of 10 KL/KL of spirit production.

The spent wash will be primarily treated in Anaerobic Digester. The Biogas will be used as fuel in the boiler. The primarily treated spent wash will be treated in R.O Plant. The permeate will be recycled into the process and R.O. Rejects will be Bio-composed to produce organic Manure using press mud from sugar plant. Hence zero discharge will be implanted as per CREP recommendations.

2.4 AIR ENVIRONMENT

In the proposed distillery project, there will be one boiler (biogas / coal based) of 20 TPH capacity for steam generation. The height of the boiler stack will be 42 m. Bag filters will be provided to 20 TPH boiler in the proposed distillery plant to bring down the SPM concentration to less than 150 mg/nm³.

2.5 SOLID WASTE

The following table shows that the generation & method of disposal of Solid Waste.

S.NO	SOLID WASTE	QUANTITY (TPD)	DISPOSAL
1.	Yeast sludge	4.0	This will be utilized in Biocomposting process
2.	Ash	31.5	Ash generated will be given to bricks manufactures/ used in bio-composting..

3.0 PREDICTION OF IMPACTS

3.1 PREDICTION OF IMPACTS ON AIR QUALITY

The emissions of concern from the boilers of the proposed project will be SPM, SO₂ and NO_x. The SO₂, NO_x and SPM emissions from the boiler stacks will be 12.6 g/s, 0.5 g/s and 0.5 g/s respectively.

For the purpose of prediction of Ground Level Concentrations the emissions from the 20 TPH are considered. ATDM software is applied for prediction of GLCs. It is observed that the maximum predicted incremental rise in SO₂ concentration after commissioning of project

will be 2.9 $\mu\text{g}/\text{cum}$, max. Predicted incremental rise in NO_x will be 5.3 $\mu\text{g}/\text{cum}$ and that of SPM will be 1.20 $\mu\text{g}/\text{cum}$ at a distance of 925 m from the origin stack in the downwind direction.

These predicted results when added to the maximum baseline concentration are well within the National Ambient Air Quality Standards for residential areas even after commissioning of the proposed project. Hence there will not be any adverse impact on air environment due to the proposed project.

3.2 PREDICTION OF IMPACTS ON NOISE QUALITY

The major noise generating sources are compressor and Boiler. The Ambient Noise levels will not exceed the standards prescribed by MOE&F, GOI vide Notification dated 14-02-2000 under the Noise pollution (regulation & control) Rules, 2000 i.e. 75 dBA during day time and 70 dBA during night time. Extensive greenbelt proposed to be developed will further mitigate the noise levels.

3.3 PREDICTION IMPACTS ON WATER QUALITY

The primary treated effluent from anaerobic digester will be treated in R.O. plant. Permeate will be recycled and the rejects will be taken for bio-composting to achieve zero discharge as per CREP recommendations. Water quality will be regularly monitored and the reports will be submitted to MOEF& KSPCB.

3.4 PREDICTION OF IMPACTS ON SOCIO ECONOMIC ENVIRONMENT

The project creates employment to about 100 persons once the proposed plant is commissioned and for 300 persons during construction stage. Unskilled and semiskilled workers are to be drawn

from the local areas. Priority will be given to local people for unskilled/Semiskilled jobs.

4.0 BASELINE DATA

Baseline data has been collected on ambient air quality, water quality, noise levels, flora & fauna and socio-economic details of the people within 10 km. radius of the proposed project site.

4.1 AMBIENT AIR QUALITY

Ambient air quality was monitored for RPM, SPM, SO₂ & NO_x at 5 stations for one season as per MOEF guidelines. The following are the concentrations of various parameters at all the monitoring stations.

RPM	-	19.8-33.9 µg/m ³
SPM	-	77.1-103.4 µg/m ³
SO ₂	-	5.8-8.5 µg/m ³
NO _x	-	6.9-9.8 µg/m ³

4.2 WATER QUALITY

Ground water samples were collected at 5 locations and analysed for various physico - chemical parameters. The water samples shows that they are suitable for potable purpose.

4.3 NOISE LEVELS

Noise levels were measured at 5 stations during day time & night time. The noise levels at the monitoring stations are ranging from 41.35 dBA to 49.57dBA.

4.4 LAND USE PATTERN

There are no National Parks, Sanctuaries within 10 km. radius of the plant site.

5.0 ENVIRONMENTAL MANAGEMENT PLAN

5.1 AIR ENVIRONMENT

The steam requirement for the proposed distillery plant will be met from the 20 TPH boiler (biogas/coal) . A stack height of 42 m will be provided for effective dispersion of emissions into the atmosphere. Bagfilters will be provided to bring down the particulate matter in the exhaust gas to less than 150 mg/nm³.

5.2 WATER ENVIRONMENT

The spent wash generated from the distillery will be primarily treated in anaerobic digester and will be treated in R.O. plant. Permeate will be recycled and the rejects will be taken for bio-composting to achieve zero discharge as per CREP recommendations. The storage capacity of the lagoon will be less than 30 days. Service water will be treated in an Oil & Grease trap. Boiler blowdown, and DM plant & Softener regeneration water will be neutralized in a neutralization tank and will be mixed with Cooling tower blowdown & treated service water in a Central Monitoring Basin and will be utilized for greenbelt development within the plant premises after ensuring the compliance with KSPCB norms.

5.3 NOISE ENVIRONMENT

The major noise sources in the proposed plant are compressor, Boiler .The employees working near the noise generating sources will be provided with earplugs. The extensive greenbelt proposed to be

developed around the plant will also help in attenuating the noise levels further. Noise barriers in the form of trees will be grown around the administrative block, ETP and other utility buildings. Training will be imparted to plant personnel to generate awareness about the effects of noise.

5.4 LAND ENVIRONMENT

The effluent generated from the project will be treated to comply with the KSPCB standards. The yeast sludge generated will be utilized in Bio-composting process. The ash generated will be given to brick manufacturers. Hence there will not be any adverse impact on land environment due to the proposed project.

5.5 GREENBELT DEVELOPMENT

Green belt development will further enhance the environment quality through limitation of air emissions, attenuation of noise levels, balancing Eco environment, prevention of soil erosion and creation of aesthetic environment. A greenbelt of 80 acres (inclusive of greenbelt proposed in sugar and co-generation plant premises) will be developed in the plant premises as per CPCB.

5.6 POST PROJECT ENVIRONMENTAL MONITORING

Ambient air quality, stack monitoring, effluent analysis, ground water analysis will be carried out and the reports will be submitted to Ministry of Environment & Forests, New Delhi/KSPCB.

5.7 RAIN WATER HARVESTING

Rainwater harvesting pits will be constructed to harvest the run-off water from roof top by laying a separate storm water drainage system for recharging of ground water in consultation with the state Ground Water Board.

