

EXECUTIVE SUMMARY

OF

DRAFT ENVIRONMENTAL IMPACT ASSESSMENT REPORT

FOR

PUBLIC HEARING

OF

**PROPOSED 60 KLPD MOLASSES BASED DISTILLERY,
EXPANSION OF SUGAR MILL FROM 4800 TCD TO 7500 TCD &
CO-GENERATION POWER PLANT
FROM 14.5 MW TO 30 MW WITHIN EXISTING PREMISES**

AT

**Shri Datta Sakhar Kharkhana,
Village Asurle-Porle, Tehsil - Panhala,
District Kolhapur, Maharashtra**

APPLICANT

M/s. Shri Datta Sakhar Kharkhana

(A unit of Dalmia Bharat Sugar & Industries Limited)

Hansalaya Building, 11th & 12th Floor, 15, Barakhamba Road, New Delhi 110001

Phone No. 011 - 23465100; Fax No. 011 - 23313303

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EXECUTIVE SUMMARY

1.0 PROJECT DESCRIPTION

1.1 INTRODUCTION

M/s. Shri Datta Sakhar Kharkhana (A unit of Dalmia Bharat Sugar & Industries Limited) has an existing capacity of 4800 TCD sugar mill & 14.5 MW Co-generation Power plant in village Asurle-Porle, Tehsil Panhala District Kolhapur, Maharashtra where the company is now proposing 60 KLPD molasses based distillery, Expansion of sugar mill from 4800 to 7500 TCD & Co-generation power plant from 14.5 MW to 30 MW within existing premises.

As per EIA Notification dated 14th Sep, 2006 as amended on 1st December 2009, the project falls under Category “A”, Project or Activity 5 (j) & (g).

1.2 DETAILS OF THE PROJECT AREA

The details of environmental setting of Project Site are given below:

TABLE-1
Salient Features of the Project

S. No.	Particulars	Details
A.	Nature and Size of the Project	Proposed 60 KLPD Molasses based Distillery, Expansion of Sugar Mill from 4800 TCD to 7500 TCD & Co-Generation Power Plant from 14.5 MW to 30 MW within existing premises
B.	Location Details	
1.	Village	Asurle - Porle
2.	Tehsil	Panhala
3.	District	Kolhapur
4.	State	Maharashtra
5.	Latitude	16°46'00.56" N
6.	Longitude	74°08'08.17' E
C.	Area Details	
1.	Plant Area	<ul style="list-style-type: none">➤ Total plant area is 86Acres.➤ Proposed expansion will be done within the existing plant premises➤ 28.5 Acre (33% of the total area) already developed as green belt
D.	Environmental Setting Details (with approximate aerial distance and direction from the plant site)	
1.	Nearest Village	Asurle-Porle
2.	Nearest Town / City	Kolhapur (~ 13 km in SE direction)

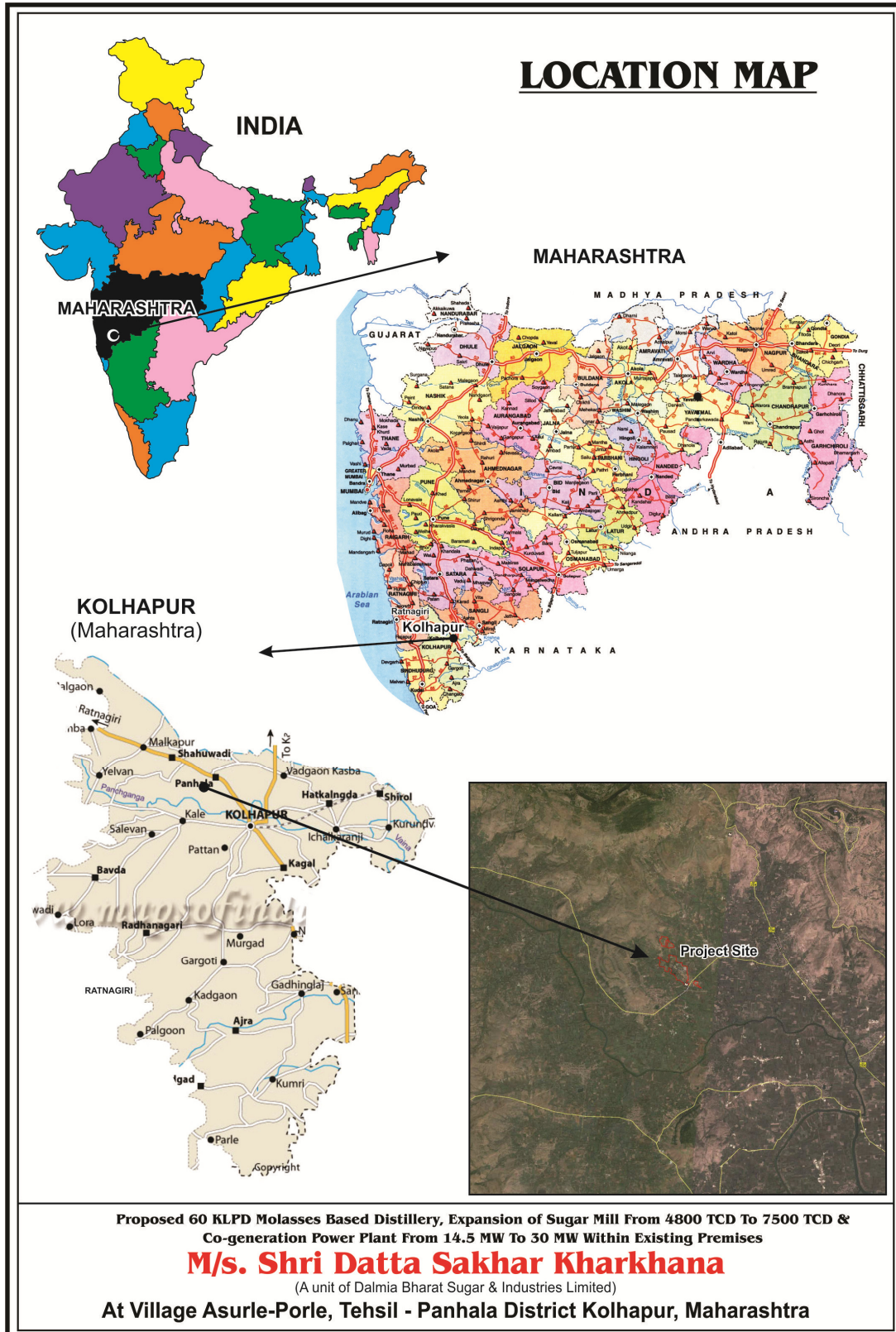
Proposed 60 KLPD Molasses based Distillery, Expansion of Sugar Mill from 4800 TCD to 7500 TCD & Co-Generation Power Plant from 14.5 MW to 30 MW within Existing Premises

At Shri Datta Sakhar Kharkhana, Village Asurle-Porle, Tehsil – Panhala District Kolhapur, Maharashtra

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S. No.	Particulars	Details																																								
3.	Nearest National Highway	NH-204 (~ 2.5 km in NE direction)																																								
4.	Nearest Railway station	Kolhapur (~ 13 km in SE direction)																																								
5.	Nearest Airport	Kolhapur (~ 22 km in SE direction)																																								
6.	National Parks, Wild Life Sanctuaries, Biosphere Reserves, Tiger / Elephant Reserves, Wildlife Corridors, Reserved Forests (RF) / Protected Forests (PF) etc. within 10 km radius	<p>No National Park, Wildlife Sanctuary, Biosphere Reserve, Tiger Reserve, Elephant Reserve etc. exists within 10 km radius</p> <table border="1"> <thead> <tr> <th>S. No.</th> <th>Name</th> <th>Distance</th> <th>Direction</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>Porle RF</td> <td>Nearby</td> <td>West</td> </tr> <tr> <td>2.</td> <td>Rakshi PF</td> <td>3.0 km</td> <td>NNW</td> </tr> <tr> <td>3.</td> <td>Waghave PF</td> <td>6.0 km</td> <td>NW</td> </tr> <tr> <td>4.</td> <td>Pohale PF</td> <td>6.5 km</td> <td>ENE</td> </tr> <tr> <td>5.</td> <td>Giroli PF</td> <td>7.0 km</td> <td>NE</td> </tr> <tr> <td>6.</td> <td>Sadake PF</td> <td>8.5 km</td> <td>ENE</td> </tr> <tr> <td>7.</td> <td>Jakhale PF</td> <td>9.0 km</td> <td>NE</td> </tr> <tr> <td>8.</td> <td>Kotoli PF</td> <td>9.5 km</td> <td>WNW</td> </tr> <tr> <td>9.</td> <td>Manpadali PF</td> <td>9.5 km</td> <td>ENE</td> </tr> </tbody> </table>	S. No.	Name	Distance	Direction	1.	Porle RF	Nearby	West	2.	Rakshi PF	3.0 km	NNW	3.	Waghave PF	6.0 km	NW	4.	Pohale PF	6.5 km	ENE	5.	Giroli PF	7.0 km	NE	6.	Sadake PF	8.5 km	ENE	7.	Jakhale PF	9.0 km	NE	8.	Kotoli PF	9.5 km	WNW	9.	Manpadali PF	9.5 km	ENE
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8.	Seismic Zone	Zone-III [as per IS 1893 (Part-I): 2002]																																								
E.	Cost details																																									
1.	Total Cost for the Expansion Project	Total : 190 Crores																																								
2.	Cost for Environmental Protection Measures	Total : 28 Crores																																								
F.	Basic Requirements of the Project																																									
1.	Water (KLD)	1250 KLPD in season and 1024 KLPD in off Season.																																								
2.	Power (MW)	11.80 MW																																								
3.	Manpower	Total: 763																																								
4.	Steam Requirement	182 TPH																																								
5.	Working Day	Sugar Mill – 160 days Distillery – 270 days Power Plant- 330 days																																								

1.3 LOCATION MAP



1.4 REQUIREMENTS FOR THE PROJECT

TABLE -2
Raw Material Requirement for the Project

Raw Material		Quantity	Source	Distance	Mode of transportation
Sugar Mill	Sugar Cane	7500 TPD	Cane Fields	< 100 km	Trucks
Distillery Unit	Molasses	284 TPD	Own and nearest Sugar mills	< 100 km	Tankers
Co-Generation Power Plant	<ul style="list-style-type: none"> ❖ In season: Biogas and Bagasse from Sugar Mill ❖ Off season: Biogas, Biomass fuels, imported coal, bagasse saved during seasonal operation , Rice husk etc 				

TABLE 3
Water Requirement for the Project after expansion

Plant Facility	Season Fresh Water Requirement (KL/day)	Off Season Fresh Water Requirement (KL/day)	Remark
Domestic	100	100	
Sugar Unit	600	---	Working days 160 days
Distillery	150 * (Total requirement 595 KLPD but 445 KLPD come from Sugar Mill)	595 *	Condensate from Sugar mill – 445 KLPD Net Fresh water requirement – 150 KLPD Working Days – 270 Days
Co-generation Power Plant	400	329	Working Days : 330 days
Total Fresh Water Requirement	1250	1024	

**TABLE 4
Power Balance**

	Unit	For 160 Days Sugar, Cogeneration and Distillery plants are in operation	For 300 Days Cogeneration and Distillery plants are in operation	For 330 Days only Cogeneration plant in operation	Balance 35 days when no operation
Power generation	MW	30	30	30	Power to be drawn from Grid
Consumption	MW	11.8	4.3	2.7	
Export to Grid	MW	18.2	25.7	27.3	

**TABLE 5
Fuel Balance**

Description	Unit	Fuel Requirement for 200 TPH boilers
Bagasse per day	T /Day	1560
Coal Per day	T /Day	720
Bagasse Available per annum	MTPA	0.36
Coal @ 15 % per annum	MTPA	0.053

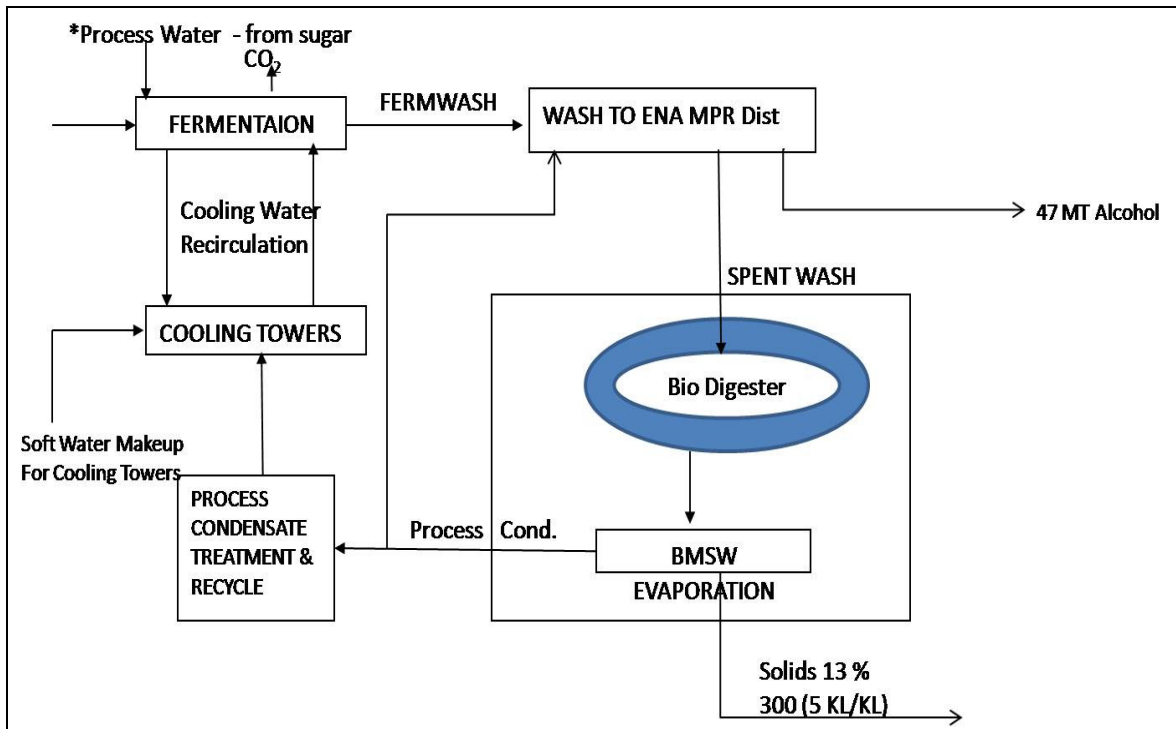
1.5 PROCESS DESCRIPTION

Manufacturing Process of Sugar

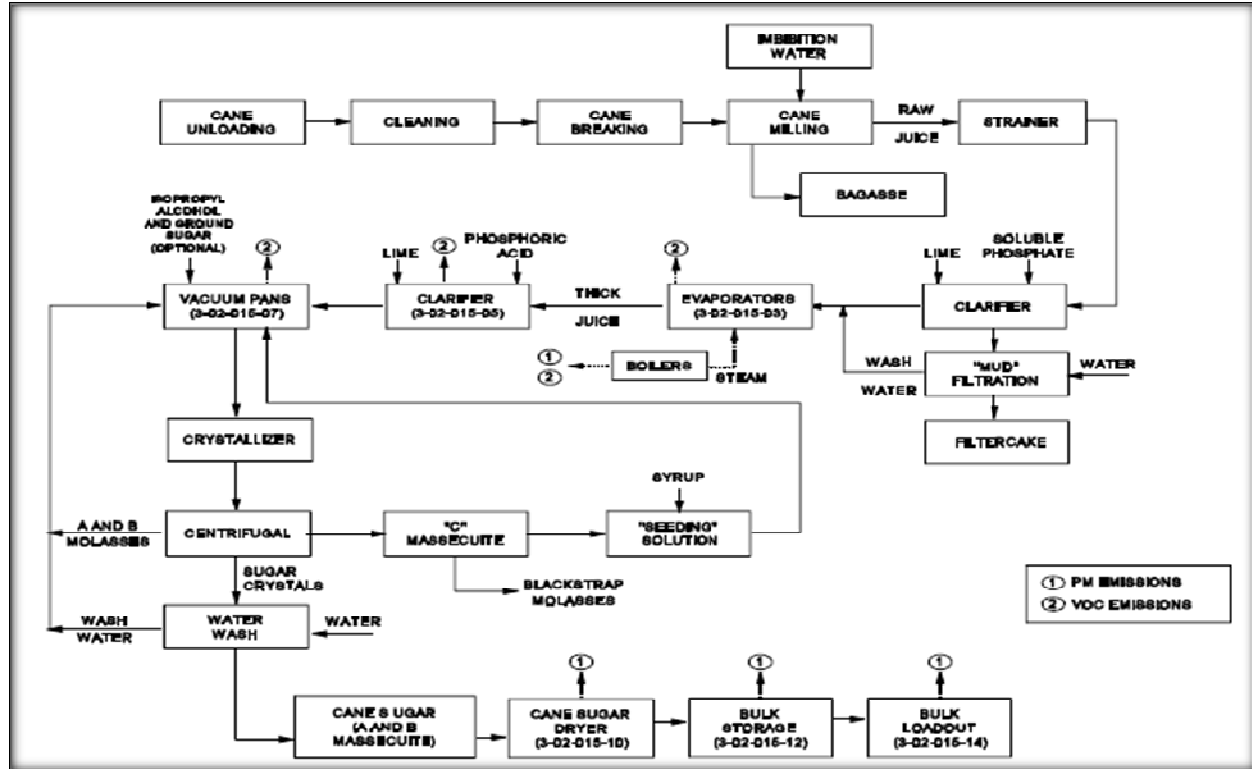
- Sugarcane Handling & Milling
- Juice Clarification & Filtration
- Crystallization
- Centrifugation
- Drying, Grading & Bagging

Manufacturing Process of ENA/RS/Fuel Grade Alcohol

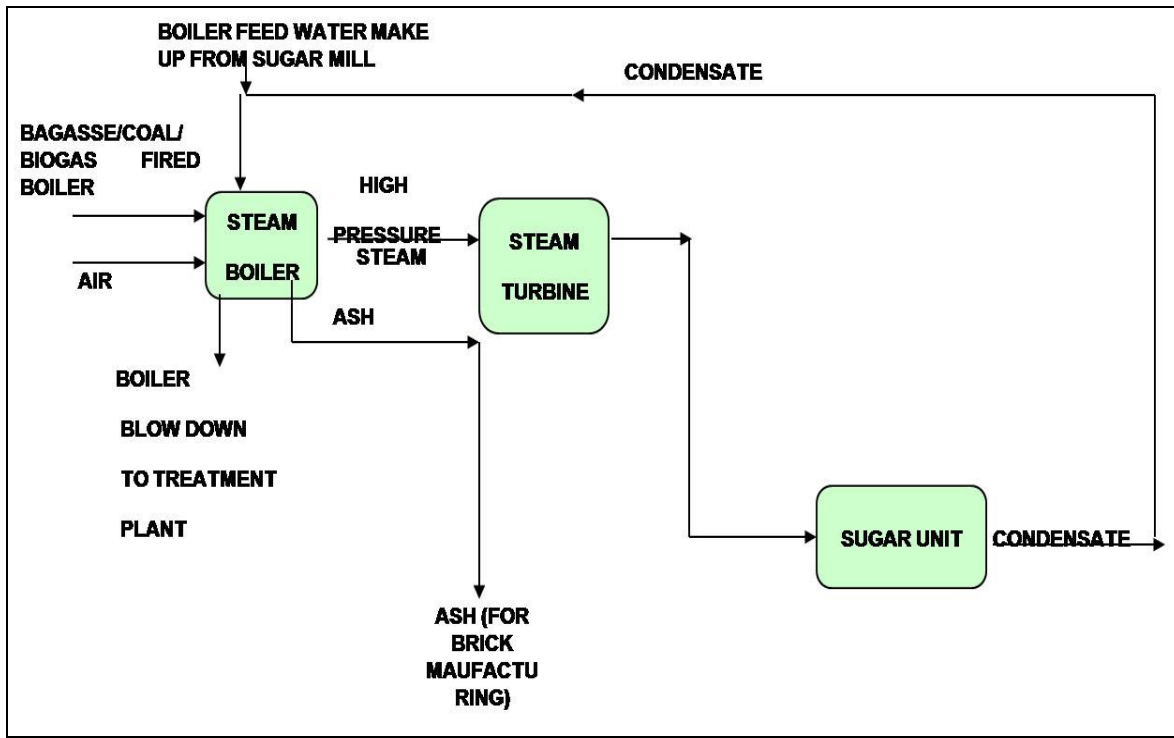
- Yeast Propagation
- Fermentation
- Distillation
- Fuel Grade Alcohol Production



Process flow chart of Molasses Based Distillery



Process flow chart of Sugar Mill



Process flow chart for Cogeneration Power Plant

2.0 DESCRIPTION OF ENVIRONMENT

The concentration for all the 8 AAQM stations for PM₁₀ ranges between 58.2 µg/m³ to 95.1 µg/m³ PM_{2.5} ranges between 25.1 µg/m³ to 46.2 µg/m³, SO₂ ranges between 6.1 µg/m³ to 11.2 µg/m³ and NO_x ranges between 13.0 µg/m³ to 22.1 µg/m³.

Noise levels varies from 50.10 to 54.8 Leq. dB (A) in day time and in night time 41.5 to 48.1 Leq. dB (A).

The ground water analysis for all the 8 sampling stations shows that pH varies from 7.01 to 7.58, total hardness varies from 134.64 mg/l to 567.12 mg/l & total dissolved solids varies from 285 mg/l to 690 mg/l.

The analysis results for soil shows that soil is slightly alkaline to moderately alkaline in nature as pH value ranges from 7.02 to 7.20 & is Silty loam in texture. The concentration of Nitrogen has been found to be in better amount whereas potassium and phosphorous varied between very less to medium amount in the soil.

3.0 ENVIRONMENTAL MONITORING PROGRAMME

Environmental Monitoring

S. No.	DESCRIPTION	FREQUENCY OF MONITORING
1.	Meteorological Data	Daily
2.	Ambient Air Quality in Core Zone	Half Yearly
3.	Water Quality	Half Yearly
4.	Noise Level Monitoring	Half Yearly
5.	Soil Quality	Yearly
6.	Monitoring of Agricultural crops	Yearly
7.	Socio – economic status of nearby area	Yearly

4.0 PROJECT BENEFITS

- The company's management recruited the skilled, semi skilled & unskilled workers from the nearby villages, hence rapidly increasing the social status of the villagers. The same will be replicated for expansion phase.
- Excise and sales tax revenue – the project will provide excise and tax revenue for the state and hence developmental works in the districts will be enhanced.
- Overall development of rural areas, new shops, upliftment of locals through small business opportunities.
- Indirect employment creation for several persons involved with raw materials, products from such projects.

5.0 ENVIRONMENTAL IMPACTS AND MANAGEMENT PLAN

5.1 AIR ENVIRONMENT

- All major sources of air pollution are being provided with ESP to maintain PM emissions below permissible limits (i.e. <150 mg/Nm³) as provided in existing consent to operate but will adhere to permissible limit below 100 mg/Nm³ after the expansion with necessary modification or with new equipments.
- Boiler is equipped with RCC stack of height 76m, which is suitable for discharge of pollutants as per CPCB standards.
- Fly ash is being stored in silos & Ash storing Yard and the open areas are/will sprinkled with water to reduce dust/fugitive emissions
- Proper maintenance of vehicles is being done regularly.

- CREP & CPCB guidelines are being / will be followed.
- Fugitive dust emission control guidelines are being / will be followed.
- Green belt is being developed along the plant premises as dust preventive barrier.
- Regular air quality monitoring is being carried out as per CPCB / SPCB norms.

5.2 WATER ENVIRONMENT

Dalmia Bharat Sugar & Industries Ltd. is presently taking all measures to effectively manage effluents. Same will be followed for proposed expansion.

SCHEME FOR ZERO DISCHARGE FROM DISTILLERY

- The proposed Molasses based distillery would be based on “ZERO DISCHARGE”.
- A duly lined storage lagoon of 30 days capacity shall be provided.
- Spent Lees from Distillation column are recycled back.
- Spent Wash is sent for anaerobic treatment & thus production of useful Biogas (used as fuel in boiler), which will be followed by concentration in multi-effect evaporator.
- Concentrated Spent Wash will be mixed with Press Mud generated from Sugar Unit for manufacturing Organic Manure
- Waste water from Sugar Unit & Distillery will be treated in ETP. Treated Water will be used for Distillery, greenbelt development and irrigation.

WASTE WATER MANAGEMENT IN SUGAR UNIT

- Most of the water is recycled / reused in sugar unit.
- Centralized lubrication system is used in Milling Tandem in place of equipment specific lubrication. This resulted in reduction in quantity of cleaning water and oil and grease.
- Waste water generated in operations like Floor washing, Boiler blow down , after treatment will be used in green belt.
- Water conservation recirculation system shall be installed for recovery of cooling water.
- Presently waste water generated from Sugar Mill (4800 TCD) is used in farm irrigation and recycled after treatment in ETP due to its high nutrients value. The same will be followed after expansion
- The capacity of present ETP Plant is 650 KLPD and will be expanded to 800 KLPD

WASTE WATER MANAGEMENT IN COGEN UNIT

- Uses of water in power plant is reduced drastically by installing Air Cooled Condenser (Although with a higher capital expenditure) instead of water intensive cooling tower operation hence reduction in demand of fresh water.
- Company has chosen state of art best available boiler configuration of high pressure i.e. 125 Kg/Cm². This resulted in reduction of water top up for the same amount of energy generation as compared to low pressure boiler.
- Complete waste water generated from water treatment plant is being used in ash quenching instead of sending it to ETP hence reduced load on ETP.

5.3 NOISE/ODOUR ENVIRONMENT

- Proper maintenance, oiling and greasing of machines at regular intervals is being / will be done to reduce generation of noise.
- Personal Protective Equipments like earplugs and earmuffs is being / will be provided to the workers exposed to high noise level.
- Green Belt of 10 meter width inside the plant premises and at the plant boundary is under development and same will be maintained in future.
- Regular monitoring of noise level is being / will be carried out.

5.4 SOLID /HAZARDOUS WASTE ENVIRONMENT

- Press Mud generated in Sugar Unit will be mixed with Spent wash generated from distillery to produce Organic Manure.
- Bagasse generated is used as fuel for Power generation in Co-gen Power Plant.
- Molasses is dark colour viscous matter generated from Sugar industry. This is used as raw material in Distillery for fuel grade Alcohol production.
- ETP Sludge generated after treating waste water generated in Sugar Unit will be used as manure.
- Ash is being given to brick manufactures as per present consent to operate and will be dispose for cement manufacturing as per MoEF Notification.

5.5 OCCUPATIONAL HEALTH & SAFETY MEASURES

- In order to ensure good health of workers, regular health check-up of the plant workers is already in practices.

- Occupational health surveillance programme is/will be taken as a regular exercise for all the employees and their records maintained.
- Proper storage and handling precautions is taken. The storage area is cool, dry and well ventilated and away from source of heat, flame or oxidizers.
- Use of Personal Protective Equipment (PPEs) is encouraged. Proper training programme on use of PPEs, characteristics of the material handled and safety precautions are regularly arranged.
- Fire safety measures is incorporated within the factory premises. Complete facility is covered under fire hydrant system which is operational. All the fire extinguishing media such as water, dry chemicals, CO₂, sand, dolomite, foam etc. will be kept in vital locations.
- Mock drills are arranged for the worker to test the effectiveness of the training program time to time and the way to react in case of emergency.
- Safety precautions are displayed in the premises on the banners, boards etc.

5.6 GREEN BELT DEVELOPMENT

- Out of the total plant area (i.e. 86 Acre), 28.5 ha (i.e. ~33%) has already been developed under green belt / plantation.
- The same will be maintained & further enhanced.
- Further as per TOR, 10 meter green belt all along factory side is under development.
- Green belt has been developed as per Central Pollution Control Board (CPCB) guidelines.
- Parks and Garden in the plant and colony premises have been developed.
- 80% survival rate has been/ will be maintained with all possible efforts.
- Green belt is developed along with the road & plant boundary will attenuate noise level, arrest dust and improve the environment in surrounding.

6.0 CONCLUSION

As discussed, it is safe to say that the project is not impacting on the ecology of the area, as adequate preventive measures are adopted to contain the various pollutants within permissible limits. Green belt development around the area is being taken up as an effective pollution mitigative technique. Community impacts will be beneficial, as the project will

generate significant economic benefits for the region. With the effective implementation of the Environment Management Plan (EMP) during the Plant activities, the proposed project can proceed without any significant negative impact on environment.

