

EXECUTIVE SUMMARY
DRAFT ENVIRONMENT IMPACT ASSESSMENT REPORT

PROPOSED EXPANSION OF DISTILLERY PROJECT FROM 45
KLPD TO 100 KLPD

AT

SONAI, TAL. – NEWASA, DISTRICT – AHMEDNAGAR,
MAHARASHTRA

BY

M/S MULA SAHAKARI SAKHAR KARKHANA LTD. (MSSKL)



PROJECT PROPONENT

M/S MULA SAHAKARI SAKHAR KARKHANA LTD.
(MSSKL),

SONAI, TAL. – NEWASA, DISTRICT – AHMEDNAGAR,
MAHARASHTRA .

1.0 Introduction

M/s Mula Co-op Sugar Factory Ltd. (Mula SSK Ltd.) is an agro based Company focused on the manufacture of sugar, power and allied products. Mula SSKL is registered under Companies Act 1956 in 1970. Project is located at gut no Gat no. 848 -865, 867-872, 885-890, 896 & 919 to 921 located at Post Sonai, Taluka Newasa, District Ahmednagar, Maharashtra state.

MSSKL is an existing Co op sugar factory with present cane crushing capacity of 7500 TCD along with 30 MW Co-gen project and 30 KLPD C molasses based distillery. Since beginning, MSSKL has made good progress by ensuring higher productivity and energy saving by adopting cost effective modern technology. The sugar mill management has done exceedingly uncommon and unique social and agricultural development work which has turned sugar plant area of operation into a green belt.

The environment Clearance has been received for 5500TCD, 30 MW cogeneration power plant and 45 KLPD molasses based distillery. MoEF&CC vide letter No. J-11011/131/2014-IA II (I) dated 22.01.2016) copy of environment clearance is attached as annexure I & Copy of Regional officer , MoEF & CC Visit report with action plan is attached as annexure II.

MSSKL has already received Environmental clearance for expansion of existing 30 KLPD distillery to 45 KLPD distillery thereby after expansion making use of C molasses as feed stocks for production of Fuel ethanol from its existing expanded distillery unit, thereby operating it to produce fuel ethanol. MSSKL has now further proposing to carry out further expansion of distillery from 45KLPD to 100 KLPD on C molasses with MEE, incineration boiler and CPU to achieve zero liquid discharge.

1.1 Projects Details

1.1.1 Project location

Project is located at gut no Gat no. 848 -865, 867-872, 885-890, 896 & 919 to 921 located at Post Sonai, Taluka Newasa, District Ahmednagar, Maharashtra state. The site is located at

rural surroundings and is about 17 km from Railway Station (Rahuri) and 40 km from Ahmednagar.

1.1.2 Project Description

Sr.No.	Particulars	Description
1	Name and address of project proponent	M/s Mula SSK Ltd. At Post Sonai, Tal. Newasa, Dist- Ahmednagar , Pin-414105(M.S.)
2	Latitude & Longitude	Latitude-19°22'45.39" N & Longitude – 74°50'22.42"E
3	Constitution of the Organization	Co-Operative Limited Company
4	Existing Project Capacity	Sugar Unit- 7500 TCD, Co-gen.- 30Mw, Distillery- 30 KLPD on C molasses with ETP as reboiler and bio-composting using press mud as filler material. Distillery received environmental clearance for expansion from 30KLPD to 45 KLPD with ETP as bio-methanation, MEE, CPU and bio-composting
5	New/Expansion/ Modernization	Expansion of distillery – additional 55 KLPD on C molasses with MEE, incineration boiler and CPU to achieve zero liquid discharge.
5	No. of working days in a year	Sugar plant season-180 days, Co-gen -210 days, Existing distillery after expansion -270 days, Proposed distillery-300 days
7	Requirement of land	No additional land required. Factory is having 280 Acres of land
8	Existing Env. Clearance	EC from MOEF &CC vide letter no. J/11011/131/2014-IA II (I) dated 22.01.2016 for 5500 TCD sugar, 30 MW cogeneration power plant and 45 KLPD molasses based distillery. EC for Expansion of sugar unit from 5500TCD to 7500 TCD

		from SEIAA, Mumbai dated 24 June 2020.
9	Manpower	For Sugar Unit-792 For Existing Distillery Unit -27 & Proposed 55 KLPD distillery-47
10	Boiler Capacity & Fuel	Existing for sugar: 80 TPH & 85 TPH - 2 Nos. with stack height 70 & 75 M respectively For proposed distillery of 55 KLPD- 22 TPH Incineration boiler, Fuel- bagasse & coal
11	Water Supply	From Mula Right bank canal, permission available.
12	Water requirement	Existing sugar Unit- 760 KLD, Co-gen- 150 KLD & Distillery- 309 KLD , For proposed 55 KLPD C Molasses based distillery project 835 KLD
13	Effluent Treatment	For sugar Unit ETP- 670 Cu M/day, Co-gen- 130CuM/day, Total- 800 CuM/day Spent wash generation : 360 m ³ /day & for existing expanded distillery- Bio-methanation, MEE, CPU & bio composting For proposed distillery- 475 m ³ /day & MEE,Incineration boiler & CPU
14	Green Belt area	Out of 280 Acres, 96 acra as green belt area. The number of standing trees are 64,668,
15	Project cost	Proposed 55 KLPD Distillery project cost with MEE,CPU, incineration boiler & 2Mw TG set – Rs 8254.60 lakh

1.1.3 Basic Raw Material

Land requirement

Total Plot area is 280 acres. No additional land will be required for expansion. The number of standing trees is 68668 nos. The existing distillery unit is on 13.0 Acre land and for expansion 4.69 acre land will be required for the proposed expansion of distillery project.

Raw material:

Molasses is one of the waste products produced from sugar factory. Molasses (C- heavy and B- heavy), Syrup and Juice can be used as raw material for distillery. The resultant alcohol has various uses in chemical industry, pharmaceutical industry and as Ethanol. Distillery unit needs the raw material as molasses & this can be fulfilled by sugar factory of our own. Total requirement of Molasses will be 70200 MT for 55 KLPD and 24000 B heavy Molasses for 45 KLPD distillery.

Water Requirement

The fresh water 1144 m³/day (Existing 309 m³/day and 835 M³/day) will be required for the project and permission is obtained from Mula Right Bank Canal, which is very close to the factory. The water is lifted through pumps from the canal. Factory has obtained permission from Irrigation Department; Govt. of Maharashtra for lifting the water,

Power requirement:

The steam and power generation from Boiler & TG set are 22TPH and 2 MW respectively. The steam requirement for the proposed distillery process is 13.6 TPH, 5.2TPH steam either condensed in dump condenser or used in existing distillery. The remaining steam 3.2 TPH is used for deaerator for boiler.

The total power consumption for proposed distillery with incineration boiler is estimated as 1455Kw/hr

Fuel requirement:

Conc. Spent wash, Bagasse and coal will be used as a fuel for the 22 TPH incineration Boiler.

Details of Fuel Requirement

Sr. No.	Fuel	Fuel Consumption
1	Bagasse	44.4 TPD
2	Coal	42 TPD
3	Conc. Spent wash	170 TPD

Manpower requirement:

Sugar ad Cogeneration: About Nos. of people working in Sugar and Cogen unit.

Distillery; Construction Phase: 50 people will be required for the construction phase

Operation Phase; Existing Distillery Unit -27 Persons working & for Proposed expansion of 55 KLPD distillery, additional 45 persons will be required

Cost and implementation schedule:

The Capital cost of the proposed expansion 55 KLPD distillery project with incineration boiler and TG set is estimated as Rs.8254.68 lakh & complete proposed expansion within 12 months from receipt of NOC from statutory Authorities .

1.2 Description of Environment

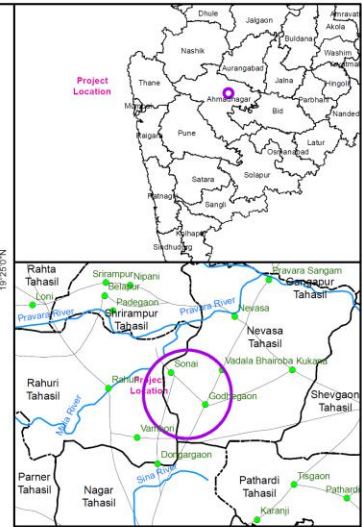
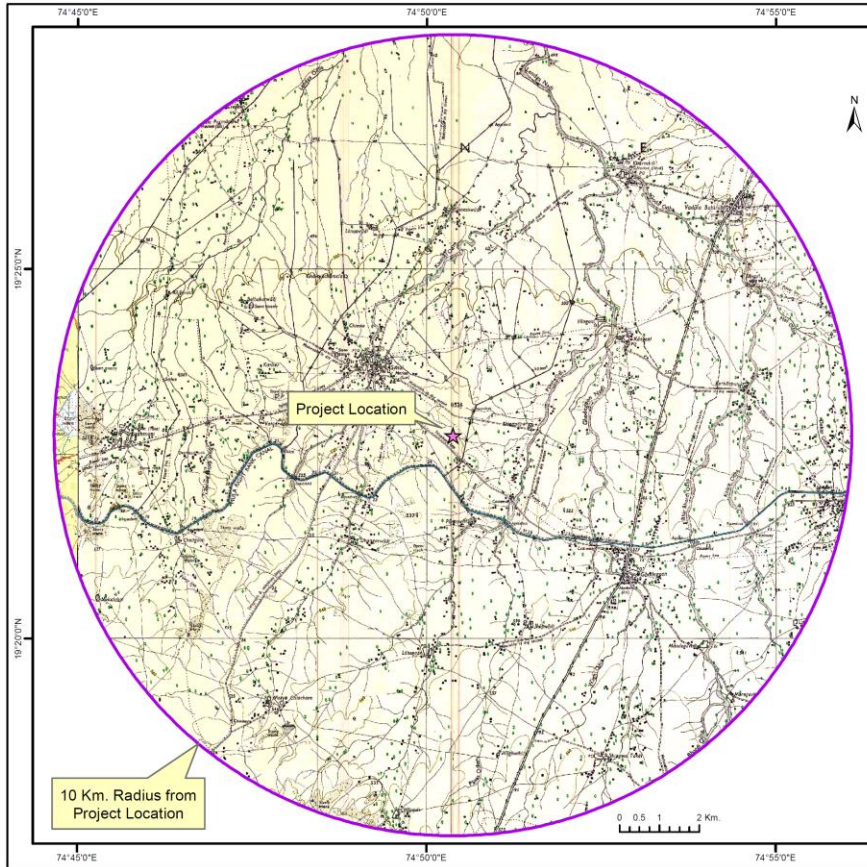
The area around the proposed expansion Distillery Plant is being surveyed for physical features and existing environmental scenario. The field survey and baseline monitoring has been has been done from the period of October 2020 to December 2020.

Environmental Setting of the Study Area: The site is located in the rural area. No other industries are found in the region. Location features of the Study area are given in Table below.

Environmental Setting (10 km radius)

Sr. No.	Particulars	Details
1	Latitude	19°22'46.14" N
2	Longitude	74°50'19.87"E

Sr. No.	Particulars	Details
3	Elevation above MSL	532.62 M (1747 ft) above mean sea level (MSL).
4	Climatic Conditions	Mean as Maximum Temperature : 38.9°C Mean as Minimum Temperature : 11.7°C Average Annual Rainfall : 600 mm
5	Present land use at the proposed site	Existing Sugar, Co Gen and distillery unit
6	Transport Connectivity	Road
7	Nearest Highway	Ahmednagar-Aurangabad State Highway SH 60 – 5 Km
8	Nearest Railway Station	Rahuri Railway Station – 17 Km
9	Nearest air port	Shirdi International Airport – 70 Km Chikalthana, Aurangabad Airport-89.2 Km
10	Nearest Town	Rahuri - 17 Km
11	Nearest city	Ahmednagar- 40 Km
12	District head quarter	Ahmednagar- 40 Km
13	Village Panchayat	Sonai
14	Nearest Water Body	Mula right Canal at 500 Meter of karkhana site passing through study area from west to east
15	Hills/Valleys	There are no hills/valleys within 15 km radius distance of the project site
16	Ecologically sensitive zones within 15 km distance	There is no ecologically sensitive zone within 15 km radius distance of the project site
17	Historical/ Archaeological places	There are no Historical/ Archaeological places within 15 km radius distance of the project site
18	Nearest Defense and other Establishments	There are no nearest defense and other establishments from the project site
17	Reserved forest/protected forest	Patches of reserved forest observed within 10 km radius distance of the project site



Toposheet No:
 1. 47 I / 11
 2. 47 I / 15

PROJECT	
CLIENT	Mula SSK Ltd., Sonai
TITLE	Toposheet Map
ULTRA-TECH Environmental Consultancy & Laboratory  Jai Commercial Complex, Eastern Express Highway, Khopat, Thane (W), Thane West, Thane, Maharashtra 400601, India	



Baseline Environment

Project site is located at coordinates Latitude 19°22'45.39" N and Longitude 74°50'22.42"E. in Ahmednagar district of Maharashtra state. The study area is considered to be within 10 km radius of the project site for baseline environment monitoring. The studies were conducted for the period of October 2020 to December 2020.

Ambient Air Quality Status:

- **Particulate Matter(PM₁₀)**

The maximum 68 µg/m³ concentration of PM₁₀ was observed at project site and minimum 40 µg/m³ concentration was observed at Dhangarwadi Village. Higher values observed at project site due to vehicular movement.

- **Particulate Matter(PM_{2.5})**

The maximum 28 µg/m³ concentration of PM_{2.5} was observed at project site while minimum 16 µg/m³ concentration was observed at Dhangarwadi Village

- **Sulphur Dioxide(SO₂)**

The maximum 23 µg/m³ concentration of SO₂ was observed at GHODEGAON while minimum 10 µg/m³ concentration was recorded at LOHGAON & Dhangarwadi village.

- **Oxide of Nitrogen (NO_x)**

The maximum 28 µg/m³ concentration of NO_x was observed at SHANISHINGNAPUR while minimum 12 µg/m³ concentration was recorded at Lohgaon Village.

- **Carbon Mono-oxide (CO):**

The average maximum 8 hourly concentration for CO was found to be 1.7 mg/m³ at Sonai while minimum concentration was recorded 0.5 mg/m³ at Dhangarwadi Village.

Inference: All the parameters were found well within the prescribed limits of NAAQ Standard, CPCB.

Noise Level

Noise monitoring was carried out as per MoEF and CPCB guidelines. To understand the Noise Quality with respect to zone category, nine representative locations were selected. Noise monitoring was carried out from time 06:00 Hrs to 22:00 Hrs and Night Time – 22:00 Hrs to 06:00 Hrs. Obtained results are compared with Noise pollution rules 2000. Higher noise level recorded at project site due to the project activities and vehicular movement.

All values during day and night period are under the permissible standards.

Surface water Environment

- **pH:** pH of the all surface water sample ranges from 7.8 to 8.2
- **Total Dissolved Solids:** The dissolved solids consist mainly of bicarbonates, carbonates, sulphates, chlorides, nitrates and possibly phosphates of calcium, magnesium, sodium and potassium. The amount of dissolved solids present in water is a consideration for its suitability for domestic use. Results show the ranges of TDS 172 mg/l to 660 mg/l .
- **Biological Oxygen Demand (BOD):** out of 6 samples, **4 samples** show values below detection level and two samples shows BOD less than 3 mg/l.
- **Chemical Oxygen Demand:** The recorded results of COD range from 12 to 32 mg/l.
- **Total Hardness:** The desirable limit for total hardness, as per the Indian standards is 200 mg/lit and the values observed in samples are below the desirable limit except samaples collected at Canal near proect site.
- **Chloride:** : The concentrations of the chlorides of all samples were between 19 and 81 mg/lit.
- **Sulphate:** The concentration values ranged from 18 to 120 mg/lit,
- Surface water samples satisfy water quality criteria 'B' (Total coliform 500 or below, pH 6.6 – 8.5, DO 6mg/L or above, BOD 3 mg/L or less), as per CPCB classification.

Groundwater Environment

- **pH:** The pH is a measure of the activity of the (solvated) hydrogen ion. The range of pH is netural to slightly alkaline (7.6 to 8.12)
- **Total Dissolved Solids:** The dissolved solids consist mainly of bicarbonates, carbonates, sulphates, chlorides, nitrates and possibly phosphates of calcium,

magnesium, sodium and potassium. The amount of dissolved solids present in water in the range of 388 to 680 mg/l .

- **Total Hardness:** The values of the samples analyzed are in the of 216 to 492 mg/l
- **Chloride:** The chloride values are in the range on 68 to 113 mg/l
- **Sulphate:** The concentrations of sulphates in the in the range on 46 to 124 mg/l.

Soil Environment

The soil being of friable consistency, the bulk density & water holding capacity of the soil is in the of the soil is in the range of 1113 to 1172 kg/m³ & 54.4 -58.5 respectively.

The pH of the soil in the study area is slightly alkaline to moderately alkaline in reaction having pH is in the range of 7.4 -8.0. The (Electrical Conductivity) of the soil extract in the study area is in the range of 0.496 -0.782 mS/cm. which is less than 2 mS/cm indicating no salinity problem to be expected in the soil. CEC is in between 26.2 and 28.0 meq/100g, moreover it can be interpreted that soil has Moderate productivity & high absorption capacity.

Analysis shows that the concentration of organic matter is in the range of 0.6 to 1.2 % and total organic carbon is in the range of 0.3 to 0.7 %. it was observed that Soil samples are Poor to Medium fertile in nature based on organic carbon contents. Available phosphorous potassium and nitrogen, of the soil samples are found to be in the range of 56-83, 236 -382 & 123-150 kg/ha respectively,

Ecology

The proposed expansion site is located in existing premises of Mula SSKL. As per guidelines of MoEF for Environmental Impact Assessment, the study area was restricted upto 10 km periphery of the project site. Detail assessment was carried out for the determination of Floral, Fauna, Avifauna and Aquatic Ecology species.

Based on field survey Primary data were generated by preparing a general checklist of the plants encountered in this area. The study shows overall 79 plant species comprising of 40 trees, 18 shrubs, 11 herbs , 3 climbers and 5 grasses in study area. The floristic survey reveals that the study area shows dominance of trees, viz. Azadirachta indica, Acacia

nilotica, Aegle marmelos, Cassia fistula etc.; shrubs viz., Lantana camara, Calatropis sp. , Hibiscus rosa-sinensis etc.; herbs like Alternanthera sessilis, Argemone mexicana, Celosia argentea etc.

The survey revealed that there were 8 species of mammals in the study area. During the survey, 20 species of birds were noticed. The dominant birds were Indian myna, house crow, blue rock pigeon etc.

Altogether Six species of reptiles were found, of which *Calotes versicolor* were encountered at various places in study area.

Study area comprised of 13 species of butterflies, dominated by *Eurema hecabe*, *Euploea core*, *Papilio demoleus* and *Danaus chrysippus*.

Socio Economic survey:

While dealing study area (10 Km radius from project site) as per secondary data (Population Census 2011) the total population is 95343. There are 18625 households in the study area and the average size of household is 5 members per household in the study area. The dependent population below 6 years is 12552 (13.2% of the total population) in the study area. The sex ratio of the study area is 922 females per 1000 males. The sex ratio of the study area is lesser to the sex ratio of the Ahmednagar district i.e. 934 females per 1000 males, but better than sex ratio of Maharashtra state i.e. 910 females per 1000 males. The study area is rural in nature as the total population of the study area is rural. Population Density in study area is: 304 per Sq. Km. (Population Density = Number of People/Land Area). While dealing study area 10 km radius from project site as per Census of India 2011 within study area total working population is 48.7% and non-working population is 51.3 %

Questions were asked to respondents to seek their opinions, perceptions and aspirations regarding the project. Opinions are important vehicle through which one could understand the existing mental attitude of people in general and groups, and community in particular.

All the respondents were aware of the project, which reflects that the project proponent has carried out regular consultation with the local peoples. All the respondents are in support of the project fully, but they need regular flow of information from the point

person provided by the community as well as the project person regarding the progress of the project. Their only demand is to give the preference to local people for employment, transporters and raw material suppliers etc.

1.3 Environment Impact and its Mitigation Measures

Air Environment

- ❖ The height of the stack is provided 75 m for 85 TPH boiler and 70 m for 80 TPH boiler.
- ❖ For the 22 TPH Incineration boiler , 75 M stack height and ESP
- ❖ Stack emissions will be regularly monitored by Mula SSKL/external agencies on periodic basis to check the efficiency of air polluting control devices and necessary action.
- ❖ Online Monitoring system is installed and connected to CPCB and MPCB server.
- ❖ To control of the airborne fugitive emissions from the ash handling area will be achieved through regular water sprinkling in this area.

The green belt development at ash handling areas will be undertaken

Noise Environment

- ❖ All rotating items will be well lubricated and provided with enclosures as far as possible to reduce noise transmission. Vibration isolators will be provided to reduce vibration and noise wherever possible
- ❖ Manufacturers and suppliers of machine/equipment like cane handling equipment's i.e. Belt Conveyor, Compressors, STG, Turbine and generators will be manufactured as per OSHA/ MoEF guidelines.
- ❖ The personnel safety such as ear muffs, ear plugs and industrial helmets will also act as a noise reducers will be provided workers.
- ❖ Acoustic laggings and silencers will be provided in equipment wherever necessary. The compressed air station will be provided with suction side silencers. Ventilation fans will be installed in enclosed premises

- ❖ The silencers and mufflers of the individual machines will be regularly checked

Water Environment

Waste Water Treatment: Fresh Water requirement for proposed expansion will be 835 M3/day.

- Spent wash generated 360 M3/day from 45 KLPD distillery will be treated through Biomethanation, evaporation and Bio Composting
- Spent wash generated 475 from 55 KLPD will be treated through MEE followed by Incineration boiler.
- Condensate from MEE will be treated in condensate polishing unit

Solid waste management

Bagasse, coal and Conc. Spent wash will be used for 22 TPH Boiler. Molasses will be used as raw material for distillery unit. Press mud will be used for composting and sale to farmer as soil conditioner. Ash will be sale to brick manufacturer.

1.4 Environment Monitoring

Environment monitoring is prescribed during pre-construction, construction and operation phase. During operation phase of project it is important to understand the baseline environment status which is caused due to proposed project activity. Environmental monitoring will comply Air, Water, Soil, Ecology, and Noise parameters as per monitoring compliance norms and schedule. All parameters will be tested as per standard tools and methods and obtained results should be compared with CPCB norms.

1.5 Corporate Environment Responsibility (CER)

As per New Office Memorandum Published by MOEF &CC, New Delhi on 1st May 2018 regarding applicability of CER and Budget to the decided towards CER activities.

The total project cost is Rs. 8224 lakhs. 1.0% of the total cost it becomes Rs.82.4 lakhs approx. Hence we have dedicated Rs 82.24 lakh for Corporate Environment Responsibility (CER) activities to be carried out in surrounding villages based on need assessment.

1.6 Cost for Environment Management Plan

Cost of Environmental Protection Measures

S. No.	Environmental Aspect	Capital Expenditure Rs in lakh	Recurring Expenditure Rs in lakh.(per annum)
1	Air Emission control		
	Stack	70.0	5.0
	ESP	120	10.0
	CO2 Plant	300	5.0
2	Water & Wastewater management		
	MEE	400	10.0
	Condensate Polishing Unit (CPU)	150	10.0
3	Solid Waste Management	15	5.0
4	Green Belt Development	-	5.0
5	Environment Monitoring (stack, Ambient Air, Water and Soil and Noise) and meteorology	-	3.60
7	Rain Water Harvesting	25	2.0
9	Health & Safety	5	1.0
10	Online Monitoring System	15	2.0
	Total	1100.00	56.6