EXECUTIVE SUMMARY

1. Introduction :

M/s. Vitthal Corporation Ltd., will manufacture **Rectified Spirit and Extra Neutral Alcohol** as an agro based industrial manufacturing unit at Entry 5(g) with Category A of the Schedule in EIA Notification promulgated in 2006 which is in good demand for growing chemical industry in India and region. This will not disturb the present land use because our area occupied will be only small % of Influence zone 10 km and is already NA. No Prime Agriculture Land will be put to this industrial use. The surrounding land is already under Industrial use. Trees will be maintained and not razed down. No Rehabilitation is involved. There will be a problematic waste material but will be taken care of and dimension of the project itself is only moderate.

No.	Product	Existing	Additional	Total
1	Sugar Factory-TCD	2500	-	2500
2	Rectified Spirit and Extra Neutral Alcohol - KLPD	20	30	50

Table 1: List of Product

This project is very necessary in view of making useful material available to Indian Chemical Industry defense and as a foreign exchange saver product.

- The local people desire that industries should come here on existing plot.
- The candidate site is suitable from general MoEF expectations.
- Water, power, Raw material, and Market is assured and found available with ease.
- Full precautions will be taken for Pollution Control, Resource Conservation and Environmental Protection.
- This is cost effective and Sustainable Development.

Briefly this can be mentioned that this study has taken full Responsible Care to see that the proponent group does not wish to gain profit at the cost of comfort of the society. In fact it is the endeavor of the Proponents

- To keep transparent relations with the neighbors in the area
- To strengthen the Gram Panchayat democratic set up, by paying taxes.
- Not to disturb any prime agricultural land
- Not to encroach on others' existing water source
- Not to overload the existing power supply, causing load-shedding to the villagers
- To remove the barren-ness of the land and prevent wasting of rainwater.
- To Recharge the groundwater
- To strengthen the physical infrastructure
- To create greenery within our premises and even outside to some extent
- To reduce the wastewater pollution created by this new activity by utilizing it as fertilizer as to grow plantation and landscaping.
- To reduce the solid waste pollution created by this new activity by disposing it in eco-friendly manner.
- In the final analysis society to get pollution-free environment, Indian Citizen to get effective material timely and Proponent getting comfortable, peaceful and encouraging business climate.
- This could be a win-win situation with benefit to Proponents, benefit to the Public and no (or low) harm to the environment. More of this finds place in this pre-feasibility report now and in EIA later.
- All this is possible for which Environment Management Plan will be worked out and scrupulously obeyed.

2. Justification for the project

This project will procure molasses generated in the sugar units as by-product/ reject and convert into useful alcohol. The raw material is adequately available as per demand. The finished product is also in demand. Even some times it is imported. This activity will also generate some employment. The ethanol is Foreign Exchange Saver. It reduces Molasses Load of existing Sugar Factory. Useful fertilizer will be won from it as non-conventional, renewable source. The spent-wash will also give bio-gas and the same will be used as dust-free fuel. Need for this project is explained.

Justification: This is a belt of the State that produces sugar-cane and number of sugar factories here produce sugar, the prominent and nearer to us, Solapur district has following sugar mills producing molasses as raw material for the distillery and press-mud as filler material for spent wash composting. None of them have a distillery unit.

These aspects are required to be attended on priority in this industrial sector and is done so in this study. Various Govt. departments are also keeping a control on this activity and permissions are sought from all the departments. Unless these are in hand, the proponents will not commence the production.

Various permissions obtained and obtainable from:

- IEM, Govt. of India
- Central Excise, Govt. of India
- Water permission, Govt. of Maharashtra 22.06.2007
- Power connection, Electricity Board under Govt. of Maharashtra
- State Excise (Commissionore letter) Application made, EC awaited.
- VAT Registration
- Town Planning Department, Layout approval
- District Commissioner. NA order for Industrial purpose
- Incorporation of Company 1999

3. Location and Boundaries

The proposed industry will be established in the premise of the existing sugar industry located at Vitthalrao Shinde Nagar, Post-Mhaisgaon, Taluka-Madha, Dist.-Solapur, Maharashtra State. The total land area of the site is 150 acres. The land area is sufficient present and proposed activities.

The site is located at 23.60 km S-W to the Pune Solapur NH 9. District head quarter Solapur is at 23.60 km from the site. The nearest town Kurdwadi is located at 7.7 km in West direction from the site.

The area is in dry tropical climate with hot summer and cold winter with scanty rain fall. The surrounding area of the project site is rural agrarian. Annual rainfall is low with an average of about 730mm. River Sina, the perennial river is located at about 4 km E to the site. Rain water streams are present in the region and they carry water only during rainy days.

With all this consideration, this site was ranked first and adopted. The features

#	Feature	Particulars
1	Location	At Vitthalrao Shinde Nagar, Post-Mhaisgaon, Taluka-Madha, Dist.-Solapur, Maharashtra State.
2	Latitude/Longitude	Latitude: 18^0 6'49.21"N Longitude: 75^0 29'7.98"E
3	Average altitude above mean MSL	546 m above MSL

4	Temperature in °C	The highest temperature is usually observed during the months of April–May and lowest temperature during December/ January. Maximum – 43^0 C, Minimum – 23^0 C
5	Rain fall in mm	Total annual average rainfall : 730 mm
6	Wind velocity	This region is characterized by low to moderate wind velocities. The mean day velocities are in the range of 2.8 to 4.6 and especially high during pre monsoon period of April to May.
7	Nearest highway	Pune Solapur NH-9, 23.60 km SW to the site.
8	Rail line way line	Kurdwadi , 7.7 km from site
9	Nearest airport	Solapur airport – 72 km
10	Nearest Villages	Mhaisgaon :1.70 km NE
11	Nearest town	Kurdwadi :7.7 km W from the site
12	Nearest major city	Solapur : 23.60 km S-W from the site
13	Nearest water body	River Sina : 4 km E from the site
14	Sensitive locations such as protected forests, monuments, national park, zoos etc.	No such locations with in 25 km from the site except the river Sian at 4 km SW from the site (ToR 6)

Table 2: Environmental Setting of the Proposed Project

4 Resources:

The proposed additional product will be 20 KLPD Alcohol and Extra Neutral Alcohol.
Justification of Plant Capacity: We have proposed addtional plant capacity of 20 KLPD. This is an optimum size for us because it is manageable both from production, pollution control and quality assurance point of view. All necessary infra-structure for this capacity is already conveniently available with existing level of production such as transformer foundation, control panel room, laboratory, water complex etc. This adds to the flexibility and ease of spares storage. Molasses tank, water works, administration building, Laboratory, tank farm, O & M Tools kit, will all serve the purpose well. On all sides in the vicinity we have industry of our unit and sugarcane fields. We propose to erect and run this proposed 20 KLPD.

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Raw Material
The basic raw material for this key product is the molasses as –

#	Raw Material	Quantity Tonns/Annum	Source
1.	Molasses	21600	Nearby mills
2.	Sulfuric/ HCl acid	2.00	Mumbai
3.	Nutrients N, P	2.00	Mumbai
4	Turkey Red Oil (TRO)	4.5	Mumbai

Table 3: Raw Material for additional 20 KLPD

Along with Raw Materials utilities too will be required and are available.

Utilities:

Along with Raw Materials, utilities too will be required and are available.

- Power: Need 700 kVA. Available through Govt. Electricity Board and own generation. As emergency back-up we have DG sets.
- Man Power: Staff, skilled and unskilled, totally 40 persons will be required, and will be available.
- Water Need is about 600 cu.m/day and met from existing Sina river intake.

- Steam requirements for RS is at 3kg/sq cm pressure, for this size of unit can be met by using boiler of existing, or generally on the exhaust steam of power plant.
- Molasses Storage Tanks (two no.) of 4000 MT capacity totally, or about 3 weeks.
- Building materials: This is not a heavy construction, and majority is in fabrication from Mild steel structural. The orientation is so kept as to balance nearly the cutting and filling. The small requirement is available systematically. The construction –erection time will be small and will be done in daytime. Labor camp is not necessary.
- As the treatment scheme is of composting route, Filler material and composting with press mud is involved and quantitatively it is available.
- Total Cost for project will be Rs 9.5 crores for expansion.

Thus all the resources are available and will be used economically and judiciously

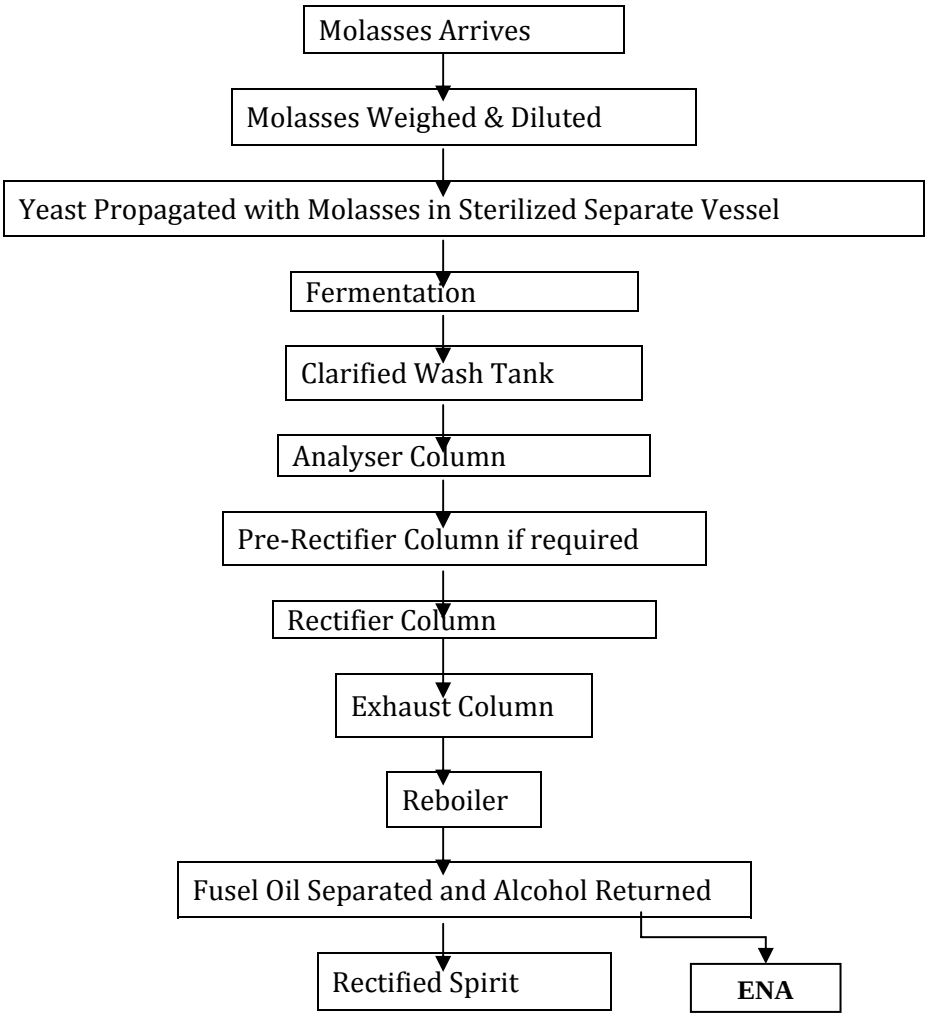
5. Process :

Manufacturing Process:

M/s. VITTHAL CORPORATION LIMITED already are engaged in this agro-industrial activity at this site and are now desirous to add 20 KLPD capacity to its molasses based Distillery. The peculiarities of manufacturing process, as now envisaged, are as follows

Distillery Unit

This is a simple three step process namely molasses preparation, fermentation and distillation. The standard flow sheet as will be adopted can be given as;



The chemistry behind this with controlling equations can be presented as

Controlling Equations:

1. $C_{12}H_{22}O_{11} + H_2O \longrightarrow 2C_6H_{12}O_6$

Sucrose + Water ⟶ Reducing Sugar

342 +18 ⟶ 360

1 + 0.05263 ⟶ 1.05263

2. $C_6H_{22}O_6 \longrightarrow 2C_2H_5OH + 2CO_2$

Reducing Sugar ⟶ Ethyl Alcohol + Carbon Dioxide

180 ⟶ 92 + 88

1 ⟶ 0.5111 + 0.4889

1.05263 ⟶ 0.53978 + 0.51462

Thus,

	In	**Output Alcohol**
	1 kg Reducing Sugar	0.511 kg by Equation
	463.68 kg Reducing Sugar (Say 1 Tonn Molasses)	236.98 kg by Equation
	463.68 kg Reducing Sugar	298.23 Lit. by Equation
	463.68 kg Reducing Sugar	259.46 Lit. Actually (87% η)

For the sake of eco-friendly considerations continuous fermentation and multi-pressure distillation will be practiced. The CO_2 will be scrubbed in water and the water that entraps escaping alcohol fumes will be recycled for molasses preparation.

6. POLLUTION CONTROL

6.1 Water Environment

AIR POLLUTION:

M/s. **Vitthal Corporation Ltd.** already are engaged in this agro-industrial activity at this site and are now desirous to install a thermal volume reduction treatment for a total of molasses based 30 + 20 = 50 KLPD Distillery. The details regarding pollution control of water, waste water, air and solid wastes are as follows

a) Water & Wastewater

Water will be used for domestic and industrial purposes. The water budget can be presented in a table as follows:

<u>Water Budget</u>:-

The water input and wastewater output for collective alcohol production can be described stepwise as follows:

For 30 + 20= 50 KLPD

#	Utilization	*Water input cum/d*	Water out cum/d
1	Boiler	Fresh water from DM plant - 42 Condensate recycle - 129	**Blow Down - 6** Steam sent to Distillation - 162
2	Cooling Tower	Fresh water in - 250	Loss as wind age - 220 Purging water - 30
3	Floor & vessel Washing	Fresh water in - 13	Loss in wetting - 06 Effluent - 07
4	Fermentation	Fresh water - 263 From feed - 25 CO2 Scrubbing - 20 Spent lees - 60 **Total = 368**	Wash sent to Distillation – 362 Loss in Yeast sludge - 06
5	Distillation	From Boiler steam - 162 Fermented wash in - 362 **Total = 524**	Product in liquid form - 50 Spent less Recycle - 60 Spent less to ETP-54 Spent Wash-360
6	CO_2 Scrubbing	Fresh Water – 20	Scrubbed water to Fermentation - 20

Water Budget

Input side (Industrial):

a.	Water for Industry	- 585 cum/d
b.	Condensate	- 129 cum/d
c.	Water from feed	- 25 cum/d
	Total Input	**- 739 cum/d**

Output side :

a.	Loss from Industrial Use	-	232 cum/d
b.	Effluent sober nature sent for garden	-	36 cum/d
c.	Effluent Moderately polluted	-	61 cum/d
d.	Effluent Highly polluted spent wash	-	360 cum/d
e.	product in Liquid Form	-	50cum/d
Total Output			**739 cum/d**

EFFLUENT TREATMENT & AIR POLLUTION CONTROL

This is an existing Agro based industrial complex planning enhancing the capacity to 20 KLPD.

The highly professional management and their vendors endeavor to have perfection in the technology for environmental management and have formulated a comprehensive plan using Best Available Technology. This philosophy is for both i.e. production and pollution control. The salient technical details of the plan are as under:-

In view of the latest technology development the management has decided to go in for continuous fermentation process, and pressure vacuum distillation which yields better recovery than that of the conventional process.

I) EFFLUENT TREATMENT :-

It is decided to bring the segregation principle in practice. Now, these streams are segregated in four branches as follows. It shall help in many ways for ease of treatment. (All figures in cum/day)

#	Particulars	50 KLPD
A	Domestic Effluent	8
B	Industrial sober wastewater	36
C	Industrial moderately polluted	61
D	Industrial highly polluted	360

Segregation of Streams

Stream (A): Domestic Effluent –
The domestic effluent is fully biodegradable. Hence it is treated in well-designed septic tanks followed by anaerobic filter, of adequate capacity.

Stream (B): Industrial Sober Wastewater -
This is sober water except temperature, comes from cooling purging, Boiler Blow down. A detention tank with 2 hours holding capacity (depth only 450 mm, to keep surface more) is proposed. If, necessary dose of bleaching powder may be given. After some detention, the water will be suitable to be used for cooling/ floor-vessel washing. However it will be added to stream C for further treatment.

Stream (C): Industrial moderately polluted waste water -
The Moderately polluted wastewater comes from floor and vessel washings, demineralised regeneration and spent lees. The characteristics of this stream are expected to be:

Sr. No.	Parameter	Values mg/l
1	pH	5 to 7
2	SS	300-450
3	BOD	400-650
4	COD	1000-1250
5	TDS	2800-3000
6	Flow cum/d	128
7	Odour	Not pronounced
8	O & G	30-50
9	Color	Faint yellow
10	Temperature	45-50

Expected characteristics of Moderately Polluted waste water

This needs a treatment by Biological Oxidation. It is proposed to use the existing unit of Sugar ETP to the maximum extent possible as infrastructure optimization for such small effluent of lesser strength. ETP units that already are Preliminary Units, Equalization Tank, Aeration Tank, Secondary Settling and Sludge Drying Bed.

This final effluent will be of such standard that it is suitable for disposal on land for irrigation. As on alternative, during a season when a sugar mill is not working the small effluent quantity will be joint storm D for care.

Stream (D) Industrial highly polluted wastewater

i) Zero Pollution by Distillery Effluent: - Technical Approach

Effluent Spent wash from distillery has always been a cause of concern as it is a fact that no fool-proof method has been found to completely treat the distillery effluent. A judicial combination of treatment disposal techniques in the form of Anaerobic Digester and MEE and Composting is proposed. This is so because it is unwise to waste the energy source and nutrient source available and which can satisfy same required distillery and farmer's requirement.

By adopting the above technology, it is possible to achieve not only zero pollution but also will utilize fully the merit of spent wash for the resource generation.

ii) Typical Characteristics of Distillery Effluent

Distillery effluent, commonly known as Spent wash, is highly colored with low pH and high BOD and COD, total solids volatile solids etc.

Table shows the typical characteristics of distillery spent wash for continuous fermentation process adopted almost everywhere now, with particular characteristics of vacuum distillation process

Sr.No.	Particulars	Parameters
1.	Temperature of Spent wash	Avg. 50 Deg.C.
2.	Colour	Dark Brown
3.	PH	3.5 - 4.5
4.	BOD mg/ltr.	60,000 – 70,000
5.	COD mg/ltr.	1,00,000–1,40,000
6.	Total Solids mg/ltr.	80,000 – 1,00,000
7.	Potassium (K) mg/ltr.	8,000 – 10,000
8.	Chloride mg/ltr.	1,500 – 2,000
9.	Sulphates mg/ltr.	2,000 – 4,000
10.	Phosphates as PO mg.ltr.	600 – 800
11.	Calcium (Ca) mg/ltr.	500 – 600
12.	Ammonical Nitrogen mg/ltr.	2,000 – 2500

Typical Characteristics of Distillery Effluent

iii) Anaerobic Digestion Process.

In recent years, due to escalation of energy costs and environmental concerns have increased the interest in direct anaerobic treatment of distillery-spent wash. The anaerobic method of waste treatment offers a number of significant advantages.

iv) Anaerobic Digestion Process for Distillery Effluent Treatment:

Anaerobic Digestion Process has established as most successful primary treatment for distillery effluent because of peculiar nature of the effluent viz. high organic matter concentration and low pH and advantages of anaerobic digestion process viz. reduction of organic matter concentration with lower energy input, low sludge development, higher flexibility of operation and above all, generation of non conventional energy in the form of biogas which can substitute a substantial portion of fuel requirement of the parent industry.

v) Treatment Process Proposed:

The spent wash is an excellent source for the generation of biogas. The BOD is converted to methane & CO_2.

Congenial environment is provided to bacteria. Initial bacterial culture is inoculated & this bio-digester plant is sent in working. The pH, temperature, alkalinity etc. are mentioned at optimum level & absence of light & oxygen is ensured. An opportunity of contact between the biomass & their substrates is also provided.

Existing System: Industry shall have CSTR biogas process capacity 360 cum/day of effluent. Biogas generated is used in boiler as a fuel & to avoid SPM arising from solid fuel such as bagasse, the industry have adopted high efficiency multi cone cyclone separator.

The Treatment units shall have in Bio-digester collectively for 360 cum/day spent-wash effluent.

#	Unit	Specification	MOC
1	Pre Settling	Simple unaided settling. Removes settlable BOD sludge taken for composting supernatant taken to digester.	Lagoon
2	Pre Treatment	Temperature above 38 to 40 ^{0}C and pH brought to 6.5 to 7.0	
3	Biogas Digester	Type- Cylindrical, Vertical shell 24 day HRT	MS
4	Degassing Pond	Type- Cylindrical, vertical shell Bottom- Conical, sand blasting, epoxy painted,	MS
5	Lamella Clarifier	Type- Vertical shell, pack of plates in Bottom-Conical	MS / Plate SS
6	Gas Holder Floating Drum	Type- Cylindrical, vertical shell MS, With pressure, vacuum relief valves.	MS
7	DAP Dosing tank	Type- Cylindrical, vertical shell Bottom- Conical Diameter- 1.2 m Height- 1.5 m	MS
8	Central Agitator	Top entry, variable speed of 40-125 rpm	SS
9	Lateral Agitator	Side entry, speed 350 rpm ,	SS
10	Inter-Piping		MS/ SS

Table 4 : Bio-Digester Units

After the first stage treatment, the post bio-digester has the Characteristics of this effluent stream as expected:

Sr. No.	Parameter	Values mg/l
1	Ph	7.5 to 7.65
2	Temperature	Room
3	Color	Blackish brown
4	Total Suspended Solids	6630
5	BOD	5200
6	COD	29600
7	Flow (m^3/Day)	330

Characteristics of Post-digester Spent Wash

After the first step the effluent still has organic contents. To harvest this value for our use, bio-composting was earlier adopted. However it is now proposed to take this via thermal process for volume reduction. Thus –

Digester	Volume reduction by MEE	Aerobic Compost	Zero D

This volume of spent wash is now subjected to aerobic bio composting. The CREP norms will be obeyed for lagooning. Compost yard, leachate collection etc.

To comply with CREP norms, following civil works will be provided.

#	Unit	Capacity	LxBxH in Meter			Quantity
1	SW Storage tank I for settling	1115 cum	23	20	2.5	2
2	SW Storage tank II for settling	1800 cum	30	24	2.5	2
3	SW Digested Storage Tank	11115 cum	65	57	3.0	1
4	Compost yard. Brick-on-edge	7.5 acres	160	150		1
5	Leachate collection tank	200 cum	10	10	2.0	1

The compost yard is designed as per CPCB Norms as follows.

1	Spent wash generation per day cum	360
2	Spent wash generation post-MEE per day cum	201
3	Distillery working days	270
4	Spent wash generation post-MEE Annually cum 201x270	54270
5	Ratio of Spent Wash to Press Mud Filler	2.5 to 1
6	Press mud required per annum 54270/2.5	21708
7	Number of days per cycle	60
8	Number of cycles	4
9	Press mud required per cycle 21708/4	5427
10	Press Mud per acre	850
11	Acerage required 5427/850	6.38
12	Area for Lagoons, Roads, laboratory	Existing
13	Acerage provided.	7.5

III) DISPOSAL :-

Disposal is of predominant importance in total environmental management.

Stream (A):

The treated domestic sewage coming out of septic tank and anaerobic filter shall be disposed on land for gardening.

Stream (B):

The stream of utility waters (cooling purging, and Boiler Blow down) coming after nominal treatment from Semi-floatation detention tank plant and chlorination, is fit for adding to stream C for further treatment by Bio-oxidation.

Stream (C):

The stream of industrial effluent of only moderately polluted type coming after treatment from Biological Oxidation treatment plant is then fit for recycle for cooling, floor-washing or for greening etc as disposal by reuse. When once fully recycled/ reused, nothing is left for further disposal or in non season with stream D.

Stream (D):

The stream of industrial effluent of highly polluted type coming after distillation is then converted in compost & nothing is left for further disposal.

II) AIR POLLUTION:

The air pollution sources are known and accordingly measures of prevention, abatement, control and mitigation will be taken. This can be summarized as –

Sr. No.	Source	Pollutant	In-plant Measures	Control Equipment
1	Proposed	SPM, CO	Feed rice-husk more	Gravity settling

	Boiler		dry. Suitable stack height for effective dispersion.	chamber, Fly-ash arrestor of wet scrubber type. Suitable stack height for effective dispersion.
2	D. G. Set	SO_2, soot	High efficiency fuel burning equipment, fuel additives added.	Soot Arrestor, Suitable stack height for effective dispersion.
3	Anaerobic Digester	H_2S	Closed Roof. No foul smell.	
4	Bio-oxidation small ETP	HC	--	Fully Aerobic
5	Bio - Composting	HC	Kept Aerobic	Trees at boundary line

In plant Measures
With these precautions air and odour pollution will be under check. Already we have standing.

Solid waste:
This is not a big problem. The solid in process generate only as yeast spent residue. This is highly biodegradable and can be taken to compost yard without difficulty. Other will be empty drums which can be used for refill or may be disposed to original vendors. The colony is very small the organic portion will be composted and inert sent for low

Solid Waste

Based on above working, the summary is per day
Non Hazardous waste

Waste	Qty	Treatment	Disposal
Canteen	10 kg/day	Vermi composting	Own Garden
ETP Sludge	12 kg/day	Composting	Sales
Sweepings	20 kg/day	Segregation	Sales
Garden trash	20 kg/day	Collection	Mulching
Ash	10 T /day	Collection	Compost/ Brick kiln

Table 5: Solid Waste per Day

Hazardous waste

Waste	Qty	Treatment	Disposal
Lubricating oil Drums	3/month	Collection	Authorized Recycler
Spent Oil	10 kg/day	Collection	Authorized Recycler

7. Background Study:

This is important part of study.

(A) **Natural Environment :** We have undertaken to do the sampling as –

#	**Media**	Stations	**Parameters**	**Frequency**
1	Surface Water	3	6	Half Yearly
2	Ground Water	3	6	Half Yearly
3	Ambient Air	3	3	Half Yearly
4	Ambient Noise	3	2	Half Yearly

Table 6 : Summary of Sampling

The stations are selected in all the directions from the factory and in 10 km radius. The Environmental quality is generally found satisfactory.

(B) Manmade environment

This includes existing land-use, demography, employment, socio-economic aspects and community development needed and proposed. This is for entire area both rural and urban in this study zone.

- Socio-Economic Status in Influence Zone will include the study of Non-Workers percentage whether high, from the percentage employed population on Agricultural, how far is the scope for other avenues of livelihood like Live Stock, Forestry, Fishing, Hunting, Orchards, Mining, Trade Commerce.
- Further out of Total Land what percentage is already under Cultivation and Out of Total Land what percentage is already under Irrigation.
- If the land is not likely to support more people, then whether Industrialization is necessary to improve the situation. All this is studied as cost benefit ratio.

It was found that industrialization is the only solution.

8. Safety

Safety and Occupational Health will be dealt carefully. A disciplined approach is natural to this industry. Safety policy will be in place. The unit will be registered under Factory Act and are bound by State Factory Rules. Thus, First aid trained and Fire-fighting trained person will be available in every shift. Safety Officer will be appointed, as also the competent person retained. Where necessary, provisions of other Acts, where required like Petroleum act, Explosive Act, etc. will be obeyed. Fire fighting system is kept as per norms of Insurance Company and CIF.

DMP (Disaster Management Plan) and off-site emergency plan will be in place. Accordingly, Personal protection equipment will be given and use will be insisted. Consulting Physician is retained to attain the factory. We inbuilt that since inception this unit had no accident.

9. Benefits

This industry will provide Alcohol as useful material for India, which will not only save but also earn foreign exchange. We shall also generate some power for the State. This will not disturb the present land use because our area occupied is already sanctioned by Government for industrial purpose, with only small % of Influence zone 10 km and already is in possession. Compatible Architecture will be adopted and No Prime Agriculture Land will be put to this industrial use. Trees will be maintained and not razed down. No Rehabilitation is involved because the land is already in possession of the Industry. The problematic waste materials like solid waste will be reused or taken care of, Wastewater will be reused to grow greenery, and air pollutants will be arrested. Water harvesting will be done and greenery will be increased. People will get some jobs here. Some incidental small employment like eatery, canteen, tyre repairs, garage too will become available to genuine people.

In the final analysis, it is the endeavor of the Proponents to give benefits --

- To keep transparent relations with the neighbors in the area

- To strengthen the Gram panchayat democratic set up by assistance to community.
- Not to disturb any prime agricultural land
- Not to encroach on others' existing water source
- Not to overload the existing power supply, causing load-shedding to the villagers
- To remove the barren-ness of the land and prevent wasting of rainwater.
- To Recharge the groundwater
- To strengthen the physical infrastructure
- To create greenery within our premises and even outside to some extent
- To reduce the wastewater pollution created by this new activity by utilizing it in our own fields as water to grow plantation and landscaping.
- To reduce the solid waste pollution created by this new activity by utilizing it in the fields of our own community land development..
- This could be a win-win situation with benefit to Proponents, benefit to the Public and no (or low) harm to the environment.
- All this is possible for which Environment Management Plan as worked out in next Chapter is scrupulously obeyed.

10. EIA Study Report

This is finally prepared and submitted as per guidelines given by MoEF as --

Chapter	Contents	
I	Proponents, ToR, Purpose	
II	Project explained. Why this, Why needed, Why here, What priorities, What options	
III	Environment Setting	Natural & Man-made
	Material, Method, Approach	Delphi technique
IV	High Significant Impact → Low Insignificant Impact & Shield	
	Proper Site → Prevention → Abatement → Treatment → Mitigation → Smooth Disposal	
V	Alternate Analysis	
	Selection of Raw Materials, Site, Process, Machinery- Hardware, Collaborators, Staff & Team	
VI	Monitoring = Stations, Parameters, Frequency, Statistics, Rectify	
VII	Risk = To Environment, To Health, To Bankers Public Consultation Reporting Community = Oustees Rehabilitation. Others- Assistance	
VIII	Benefits = Physical, Social, Employment, Other Tangible. Sustainable??	
IX	Cost-Benefit. If Project Done? If No-Project??	
X	EMP = Plan, Cell, Schedule, Watch-dog, Monitoring, Documentation, Reporting	
XI	Summary, Conclusion, Justification, Mitigation.	
XII	EIA Team = Proponent, Consultant, Associates, Future	

Table 8: EIA Study Report

The preparatory drill for above was on the background of our thinking –

Project Schedule & Cost Estimate

Proposed schedule for approval and implementation

The Project proponents are law abiding people and will commence the implementation only after approval of all permits, consents from various departments, under laws of the land. They have already commenced the work in this direction of getting permissions and Project Proponent have already obtained various permits/NOCs such as

- Industrial Entrepreneurial Memorandum from Govt. of India, Ministry of Industry, New Delhi. Letter of Intent
- Deed of Land.
- Building Plan (Planning phase)
- Certificate of Incorporation of Company
- Memorandum and Bye Laws approval.
- NOC from local body
- Power sanction from MSEB

It is anticipated that all the permissions will be in hand within three months and thereafter the implementation and construction will commenced. This unit does not involve very heavy and time consuming construction and manufacturing process is also less complicated. Thus quick implementation is possible, with already having some infrastructure in this particular case.

The implementation schedule can be given as –

For Environment Protection, there will be a cell tailored according to need, and there will be provision of Investment on Matters Environmental

For the purpose of Pollution Control, Resource Conservation and Environmental Protection, the Project Proponents PP has decided to set aside suitable amount as capital expenditure, with a due provision for likely recurring expenditure per year.

#	Environmental Aspect	Capital Expenditure Rs in Crore	Recurring Expenditure Rs in Lakh
1	Emission control Engineering	0.3	2.0
2	Water & Wastewater management	1.5	35.0
3	Solid Waste	0.18	1.0
4	Greening Drive	0.34	1.3
5	Monitoring	-	3.0
6	Environmental Cell & PR	0.03	2.0
7	Other aspects like Rain Water Harvesting, Safety, Security etc	0.15	0.3
8	Contingency	0.25	0.4
	Total	**2.75**	**45.0**

Table 9: Funds for Environmental Care

11. Social Responsibility

As CSR (Corporate Social Responsibility) we shall assist the Village Panchaayt for their social and community work fulfillment. By our presence, safety, security, transportation facility, employment and purchasing power will certainly increase in the community. There will as well be other tangible benefits

Both tangible and non-tangible benefits will result from this activity and many of those are described above. Apart from direct employment, many other benefits will accrue like

- Erosion control by nalla training, terracing and bunding within premises, where needed

- Flood control by rain-water arresting, and harvesting
- Groundwater level enhancing by recharging
- Time saving by quicker transport
- Aesthetics improvement by general greening with emphasis on biodiversity
- Availability of nursery facilitates plantation
- Developed economy strengthens democratic set-up.
- Strengthened democratic set-up will bring weightage to secure better school-subsidy and health-institutes
- Developed economy brings with it literacy and healthful living.
- Improved safety-security in surrounding with better Law and Order.
- Symbiosis and sustainable development will be the ultimate objective.

We shall keep Transparent Public Relations. In this particular case, the PP is signing as an Occupier on the Application for Consent to establish and hence is answerable to the SPCB, Government and all concerned for a very long tenure, almost perpetually. We, therefore, will have to have sustainable relations with all levels of Government Departments on one hand and the local sons of the soil and the work-force, on other. We have given a thought to this balancing act and hence have established a Public Relations Office (PR) already. Matters are proposed to be handled smoothly.

Industry shall have four major wings viz. Administration, Technical, Legal and Public Relations. A person of high caliber shall be supervising these four cells, and work with imagination.

- The conditions laid in all the permits, licenses, consents, N.O.C.s shall be minutely studied and compliance shall be commenced.
- Periodically Reports shall be submitted
- The inspectors of various Departments shall be periodically invited to examine the status of our compliance and guidance shall be obtained.
- Corridors of dialogue and communication shall be kept open with the people, peoples' representatives, NGOs, Public Interest Groups, so that any social suffering grievance shall not become a complaint, a conflict and end up in litigation.
- Reports will be kept with various departments.

This will help the community too.

12. Conclusion:

This industry will manufacture Alcohol, which are in good demand for growing infra-structural facilities in India and abroad. This will not disturb the present land use because our area occupied will be only small % of Influence zone 10 km and is already permitted for industrial use. No Prime Agriculture Land will be put to this industrial use. Trees will be maintained and not razed down. No Rehabilitation is involved. There will be no problematic waste materials as all will be utilized.

- This project is very necessary in view of making useful material available to Indian developmental activity for community, defense and as a foreign exchange saver/ earner product.
- The local people desire that industries should come here on existing plot.
- The candidate site is suitable from general MoEF expectations.
- Water, power, Raw material, and Market is assured and found available with ease.
- Full precautions will be taken for Pollution Control, Resource Conservation and Environmental Protection.
- This is cost effective and Sustainable Development.

The Report gives the details and finds that the impact overall is favorable to the country, to the people and to the environment as a sustainable development.

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