

**BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL  
PRINCIPAL BENCH AT NEW DELHI**

**I.A. NO. 701 OF 2025**

**IN**

**ORIGINAL APPLICATION NO. 606 OF 2022**

**IN THE MATTER OF:**

Public Action Committee

... Applicants

-Versus-

State of Punjab & Ors

... Respondents

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NDoH: 24.11.2025

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Date: 07.11.2025

Place: New Delhi

**DRAWN & FILED BY:**



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**SETTLED BY:**

Mr. Sanjay Upadhyay  
*[Senior Advocate]*

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State of Punjab & Ors

... Respondents

**REPLY BY RESPONDENT NO.7 TO IA NO. 701 OF 2025 IN OA NO.  
606 OF 2022 FILED BY THE ORIGINAL APPLICANT.**

**MOST RESPECTFULLY SHEWETH:**

1. That this Hon'ble Tribunal is presently seized of the above-captioned Original Application that has been filed against the grain-based distillery of the Respondent No. 7, M/s Malbros International Private Limited (hereinafter, 'Answering Respondent') situated at Village Mansoorwal, Tehsil Zira, District Ferozepur, Punjab. Specifically, the subject unit of the answering Respondent has been lawfully engaged in the distillation of spirits since 2007 with a permitted capacity of 100 KLD, thereafter enhanced by another plant of 180 KLD capacity for manufacturing of Ethanol, with a valid EC. In this regard, it is also apposite to mention that while the Environmental Clearance ("EC") for expansion was obtained for a capacity of 600 KLD, but the ethanol plant operated at a capacity of only 180 KLD which is much lesser than the capacity for which a prior EC was granted. Notably, post expansion, the ethanol manufacturing began its commercial production from 03.02.2022 and supplied approximately 75 lacs Bulk Litres of Ethanol per month to Oil Marketing Companies, but these operations were halted less than six months thereafter i.e. on or about 24.07.2022 due to a serious law and order situation at the premises of the subject unit of the answering Respondent.

2. That while the present issue was being considered by this Hon'ble Tribunal on 09.09.2025, the Respondent No.7 had submitted that it may be permitted to continue with the production of ethanol in its plant and it further proposed that the unit shall stop production of grain based liquor (alcohol) altogether. Accordingly, the Counsels for the Original Applicant as well as the State of Punjab sought two weeks' time to obtain instructions in this regard.
3. That consequently, the Applicant filed an IA No. 701 of 2025 dated 25.10.2025 seeking a plethora of information on the plant situated at Village Zira, District Ferozepur, Punjab, in lieu of submitting its response to the proposal of the Answering Respondent made before this Hon'ble Tribunal on 09.09.2025.
4. That, however, on the last date of hearing on 03.11.2025, this Hon'ble Tribunal recorded that the Applicant would be confining its queries to those contained in paragraph 5 (a),(b) and (c), paragraph 6 (b) and (e), paragraph 8-(a), (b), (c), (d) and (e) and paragraph 9(a), (b), (c) and (d) of its I.A. No. 701 of 2025. In view thereof, this Hon'ble Tribunal granted liberty to the Answering Respondent for filing its Response to the said limited sections of the I.A. No. 701 of 2025.
5. That accordingly, in terms of the above said last Order dated 03.11.2025, the Answering Respondent seeks to place on record its objection to the information being sought as a substantial portion of the information is already on record and could have been accessed by the Applicant. Be that as it may, the point wise information is being provided in the table herein below:

S. No.	Clarification Sought	Response	Location in the Pleadings
<b>5. Clarification regarding ethanol production and operations</b>			
a.	When did the Malbros factory begin production of ethanol, if at all, and for what duration was such production carried out?	While the grain based distillery unit started its operations in September 2007 with a permitted capacity of 100 KLD, the grain based ethanol plant of 180 KLD (with a permitted capacity of 500 KLPD as per the EC dated 15.01.2018) began its commercial production on 03.02.2022 but the factory has been closed since 24.07.2022 owing to a severe law and order situation.	Refer pg. 548 in IA No. 737/2023.
b.	What types and grades of ethanol were produced (e.g., ENA, RS, Industrial, Anhydrous, or Fuel-grade) and in what quantities?	The plant has all requisite permissions/clearances for manufacturing grain based Anhydrous/ fuel grade Ethanol with a capacity of 180 KLD. In this regard, for the limited period of its operation, the said plant supplied 75 lacs BL ethanol per month to Oil Marketing Companies.	Annexure R/1 Colly @ pg 3289 of IA No. 189/2024.
c.	For what purpose was ethanol produced, potable, industrial, or blending with petrol?	The purpose for production of ethanol was for blending with petrol under the Ethanol Blending Programme of the Central Government. Accordingly, the unit was supplying Ethanol to Oil	Mentioned in Para 7/Pg. 217 and Para 12/Pg. 221 of Reply of Malbros

		Marketing Companies (OMCs). The unit has taken authorization for production from MOEF&CC, PPCB and for sale and dispatch from Punjab State Excise and Taxation department (E-2 Licence). The industry gets online orders of ethanol from OMCs and after receiving the orders, the online excise passes are issued which is duly signed by the concerned Excise Inspector posted in the factory and after that the ethanol tankers are dispatched from the excise enclosure, the keys are always with the excise officers. The Ethanol manufactured is of 99.76% purity. The OMCs to which ethanol is sold are Bharat Petroleum Corporation limited, Indian Oil Corporation Limited, Hindustan Petroleum Corporation Limited. Illustrative examples of their Purchase Orders and the sales data is enclosed in <b>Annexure-R/1</b> .	dated 20.02.2023.
<b>6. Clarifications Regarding Environmental Clearances, Consents and Statutory Approvals</b>			
b.	State the product description and capacity mentioned in each EC, Consent	The EC dated 15.01.2018 clearly mentions the products as "Grain based ethanol/ENA/RS/Industrial	Pg 3289 of IA No 189 of 2024 for

	<p>to Establish and Consent to Operate issued to the company, quoting the precise wording from each.</p>	<p>alcohol plant” for expansion of distillery from 100 KLPD to 600 KLPD.</p> <p>The CTO dated 12.11.2021 mentions the products as “Grain Based Anhydrous Denatured Ethanol/ENA/RS/Industrial Alcohol Plant @280 KLPD”. Copies of the last four inspections conducted by the PPCB dated 16.02.2021, 30.03.2021, 04.10.2021, before the plant was closed by force and 18.09.2022, after the plant was closed, as uploaded on its website have been attached as <b>Annexure- R/2 (Colly.)</b>.</p> <p>It is important to add that the said Inspections concluded that the unit was totally compliant.</p>	<p>EC dated 15.01.2018;</p> <p>Annexure R/2, Pg. 3295-3301 of IA No. 189/2024 dated 20.04.2024 for CTO dated 12.11.2021.</p>
e.	<p>When was PPCB consent provided and whether it was modified from "ethanol" to "anhydrous ethanol", provide the company's request for such modification and the authority's order approving it.</p>	<p>At the outset, it is clarified that there was no “modification” of the consents/clearances as claimed by the Applicants. In fact, fresh consents/clearances were obtained by the Answering Respondent for its additional unit. Specifically, the Answering Respondent has obtained CTE dated 24.04.2021 from the PPCB that includes production of industrial ethanol. After this,</p>	

		<p>the unit has also obtained CTO on 12.11.2021 for 280 KLPD production that includes production of Anhydrous denatured Ethanol. <b>Copy attached Annexure- R/3 (Colly.).</b></p> <p>Further, for inclusion of ethanol as product, the Answering Respondent applied to MOEF&amp;CC on 26.12.2016 for expansion of the existing unit from 100 KLPD to 600 KLPD. The EC was accordingly granted on 15.01.2018. The same has never been challenged by anyone including the Applicant herein.</p>	
<b>8. Clarification Regarding Public Disclosure &amp; Environmental Impact</b>			
a.	<p>Was any public hearing conducted in respect of ethanol production from the factory? If yes, provide full minutes and related documents.</p>	<p>Public hearing for the project was conducted by Punjab Pollution Control Board on 04.05.2016 after which the final, revised, EIA Report of the project incorporating the suggestions during public hearing was submitted on 19.12.2016 in which Ethanol as product is clearly mentioned. On 28.08.2017 &amp; 03.11.2017, the Respondent has also submitted additional information sought by EAC</p>	

		<p>(Expert Appraisal Committee) at MOEF&amp;CC. as stated above, the Answering Respondent has obtained CTE from PPCB on 24.04.2021 and CTO on 12.11.2021. In all these documents &amp; communications Ethanol as product is mentioned. Copy Attached as <b>Annexure- R/4 (Colly)</b>.</p> <p>However it is important to add that the Sarpanch of the Village Ratol Rohi as well as the Sarpanch of the Village Mansoorwal Kalan have given their consents on behalf of the villages on 21.04.2021 and 02.02.2021, respectively. Copies of the letters from both the Sarpanch have been appended as Annexure R/3 (Colly.) at Pg. 3310-3311 in the I.A. No. 189 of 2024 dated 20.04.2024 filed by the Answering Respondent herein. It is important to add here that the Applicant never participated in the Public Hearing, and neither have filed any objections during the Public Hearing.</p> <p>Further the copy of the EAC Minutes dated 12.10.2017 and 15.01.2018 and which are in</p>	
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		any case public documents is appended as <b>Annexure R/5 (Colly)</b> .	
b.	When the Environmental Clearance was amended to include ethanol, was any amendment or addendum issued by the Ministry?	<p>Yes, the EC dated 15.01.2018 clearly records ethanol as a product, which is an industrial, denatured alcohol not fit for human consumption.</p> <p>The Applicant has failed to understand the scientific distinction of alcohol which is used as potable liquor and ethanol which is used for industrial purpose and especially for blending with petrol.</p> <p>In simple language, Potable Alcohol which is ordinarily of about 96 to 96.5 % purity when distilled and when moisture content is reduced through an industrial process is converted to ethanol which is of 99.5 to 99.9 % purity and which is used as a fuel grade ethanol for blending with petrol.</p>	Pg 3289 of IA No 189 of 2024 for EC dated 15.01.2018.
c.	Did the company or its officials inform the local public of the change from beverage/industrial alcohol to fuel ethanol production and its possible	Prior to granting of EC, a statutorily mandated Public Hearing is a prerequisite. The details are publicly available in accordance with the EIA Notification 2006. The said public hearing was conducted by PPCB on 04 <sup>th</sup> May, 2016 regarding this project which is	

	<p>environmental effects?</p>	<p>covered in <b>Annexure- R/4 (Colly)</b>.</p> <p>As stated earlier, all such records including EIA Reports/EMP report, Public Hearing Minutes are publicly available documents and more importantly, the Sarpanch too has given his consent on behalf of the Village community as stated above.</p> <p>It is surprising that the Applicant who has chosen to remain silent all these years, never challenged the EC is now asking these basic information which was available as public documents. This clearly meets more than the eye.</p>	
<p>d.</p>	<p>While proposing to switch over from beverage ethanol to fuel ethanol, did the company submit any project-proposal report to the authorities? Provide copies of submissions and replies received.</p>	<p>The Answering Respondent submitted its proposal to MOEF&amp;CC on 26.12.2016 and on 19.12.2016 industry has submitted its EIA Report to the MoEF&amp;CC in which ethanol as a product is specified. Kindly refer Annexure- R/4.</p> <p>The unscientific terminology by the Applicant such as beverage ethanol is only to mislead this Hon'ble Tribunal.</p>	
<p>e.</p>	<p>What, according to the company, would be the environmental</p>	<p>The Respondent has invested in modern waste-treatment systems and generated employment for 1200 workers, most of whom are from the</p>	

	and social impacts of ethanol production?	<p>nearby rural areas. Further, the distillery creates a reliable, alternative market for green farmers including for surplus or damaged grains that might otherwise go to waste. Additionally, one of the by products from the production of ethanol is distillers dried grain with soluble (DDGS) which is a protein rich animal feed that is supplied to local animal husbandry industry and provides an additional revenue stream effectively utilising the entire grain and minimising waste. All these information is part of the EC process where all requisite information is provided along with EIA/EMP which are Public Documents and which form the basis of the grant of EC. The same were considered and additional information sought, discussions held by EAC and only then the EC was granted as early as January 15, 2018. The Applicant chose to remain silent till date and is now asking for such basic information. It is rather surprising to say the least.</p>	
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<b>9. Clarifications Regarding Environmental Compliance and Effluent Treatment</b>			
a.	Provide details of effluent streams and treatment systems associated with dehydration or anhydrous ethanol production	The details are as follows: Effluent Streams to ETP- Process Condensate, Spent Leese Treatment System- Zero Liquid Discharge System consists of Effluent Treatment Plant (Anaerobic system, aeration system) followed by Ultra Filtration, Reverse Osmosis ( RO) and Dust Mitigation (DM) plants.	Mentioned in Para 16-20/Pg. 224-228 of Reply of Malbros dated 20.02.2023 read with Para 22T(VI-VII)/Pg. 551-556 of I.A. No. 737 of 2023 for Process Flow Chart.
b.	If no separate treatment exists, clarify how such effluent is managed under the existing ZLD system.	New ETP followed by RO, DM section was constructed with the capacity of 1500 KLD for the new 180 KLD section.	
c.	Provide any environmental-impact or pollution-load study prepared for fuel-grade or anhydrous ethanol production and state whether it was ever submitted to	EIA study done for the area before setting up the plant which was submitted in MOEF&CC & Pollution Control Board. Covered in Excerpts of the EIA Report in <b>Annexure- R/4</b>  It is reiterated that all these documents are publicly available documents during the	

	MoEF&CC or PPCB.	process of grant of EC. The Applicant has chosen to remain silent in all these years which certainly smacks of other interests than environmental interest.	
d.	Clarify the status of Zero-Liquid-Discharge compliance and provide the latest monitoring data available with the unit.	The Answering Respondent's Unit is a fully compliant ZLD Unit. The MoEF&CC Report for the period April-September 2022 which includes compliance report, permissions, testing reports and other plant related data during that period is annexed as <b>Annexure- R/6 (Colly)</b> .	

5. That, further, on the last date of hearing, the Original Applicant had also attempted to mislead this Hon'ble Tribunal by alleging that the ethanol proposed to be produced by the Answering Respondent shall be diverted for manufacture of beverage-grade non-denatured alcohol. In this regard, it is the humble submission of the Answering Respondent herein that the said statement is wholly misconceived, factually incorrect and devoid of any merit. It is clarified that the manufacturing process adopted by the Answering Respondent for production of Denatured Anhydrous Ethanol necessarily involves the use of specific denaturants, including minor quantities of bitterants like crotonaldehyde and denatonium saccharide, which render the final product unfit for human consumption. Hence, by its very chemical composition and process parameters, the ethanol sought to be produced cannot be utilized for manufacture of "beverage-grade" alcohol which would be fit for human consumption.

6. That, specifically, a clear distinction exists between “Beverage” Alcohol and Denatured Anhydrous Ethanol, both in terms of purity levels and end use. The “Beverage” Alcohol achieves a final concentration of approximately 96.0% to 96.5% Alcohol by Volume (‘ABV’), corresponding to the azeotropic point with water, and is used in the manufacture of potable spirits. On the other hand, Anhydrous Ethanol, being fuel-grade ethanol, attains a purity level of approximately 99.5% to 99.9% ABV, that is in essence almost 100% pure, which is required for blending with petrol. This distinction unequivocally establishes that the ethanol produced by the Project Proponent is meant exclusively for biofuel blending and industrial solvent purposes and not for human consumption. For ease of reference a chart distinguishing “Beverage” Alcohol and ethanol production in distillery has been appended herewith as **Annexure- R/7**.

7. That it is reiterated that the Answering Respondent is an active and significant participant in the Ethanol Blended Petrol (‘EBP’) Programme, an initiative of the Government of India aimed at promoting environmentally sustainable fuels, reducing dependency on crude oil imports, and supporting the agricultural sector through ethanol blending. The Answering Respondent has already made substantial contributions to this programme from 03.02.2022 till 24.07.2022, which was prior to its forced closure owing to a severe law and order situation.

8. It is pertinent to note that the Ethanol Growth Story Policy Report issued by the Ministry of Petroleum and Natural Gas (Refer Annexure A-9/internal Pg. 109 of the IA No. 749 of 2023 dated 25.09.2023 filed by the Answering Respondent) identifies the issue of non-utilization of existing grain-based ethanol distillation capacity. The Project Proponent’s ongoing operations directly addresses the said policy imperatives, thereby contributing

substantially to the enhancement of ethanol blending levels under the EBP Programme, which have increased from 38 crore litres in Ethanol Supply Year (ESY) 2013-14 to 433.6 crore liters in ESY 2021-22 to over 707.4 crore liters in 2023-2024. Moreover, there are about sixteen distilleries operating in Punjab working on the basis of consents and excise licenses similar to that of the Answering Respondent.

9. That the Project Proponent, to obviate any misinformation or misgiving, undertakes that it shall use the Ethanol so produced only for EBP Programme.
10. That in view of the above clarifications, it is most humbly prayed by the Answering Respondent that this Hon'ble Tribunal may pass appropriate orders and dismiss the present Original Application.

Date: 07.11.2025  
Place: New Delhi

**DRAWN & FILED BY:**



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**SETTLED BY:**

Mr. Sanjay Upadhyay  
*[Senior Advocate]*

## BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL

## PRINCIPAL BENCH AT NEW DELHI

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AFFIDAVIT

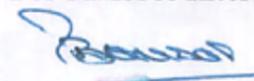
I, Pawan Kumar Bansal S/o Phool Chand Bansal aged about 66 , am the Authorised Signatory for M/s Malbros International Private Limited, situated at Village Mansoorwal Tehsil Zira do hereby solemnly affirms and declares as under:

1. That I am fully conversant of the fact sand circumstances of the matter and am competent to swear this Affidavit.
2. The contents of the accompanying *Response* are true and current to the best of my knowledge and have been drafted by the counsel on my instructions and nothing material has been concealed therefrom.
3. That the Annexure in the accompany in *Response* are true and correct to the best of my knowledge.

I identified the deponent who has signed in my presence

G. J. Singh  
DT 5/6/2019

For Malbros International Pvt Ltd


Pawan Bansal  
CAO

DEPONENT

07 NOV 2025

VERIFICATION:

Verified at New Delhi on this .....day of....., 2025 that the contents of the above affidavit are true and correct to my knowledge and belief and nothing material has been concealed the refrom.

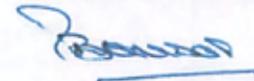


ATTESTED

NOTARY (Govt. of India)  
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Enrol. No.-D1281/2001  
Ch. No. 165A, Gate No. 11  
Patiala House Courts,  
New Delhi-110001  
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07 NOV 2025

For Malbros International Pvt Ltd


Pawan Bansal  
CAO

DEPONENT

## इंडियन ऑयल कॉर्पोरेशन लिमिटेड

राजस्थान राज्य कार्यालय : इंडियन ऑयल भवन  
अशोक चौक, आदर्श नगर, जयपुर-302004  
फोन : 2601318, 2611425 फैक्स : 0141-2579429

## Indian Oil Corporation Limited

Rajasthan State Office : Indian Oil Bhawan  
Ashok Chowk, Adarsh Nagar, Jaipur-302004  
Tel. : 2601318, 2611425 Fax : 0141-2579429



(विपणन प्रभाग)  
Marketing Division

**PURCHASE ORDER**

Ref: RSO/ETHANOL/1000377311 Cycle 1 (System ID 88833)/MIPL

Date: 01.12.2021

To,

M/s MALBROS INTERNATIONAL PVT. LTD.,  
VILLAGE-MANSOORWAL, TEHSIL-ZIRA,  
DISTRICT-FEROZEPUR, PUNJAB, PIN CODE-142026

**Sub: Purchase Order Against OMC Joint Tenders No. 1000377311 Cycle 1 (System ID 88833) for Supply of Denatured Anhydrous Ethanol for IOCL locations in the State of Rajasthan for the period Dec'21 to Nov'22.**

Sir,

This is in continuation of our LOA/LOI: Ethanol OMC Joint Tender/EOI No. 1000377311 Cycle 1 (System ID 88833) dated 28.11.2021 against OMC Joint Tenders No. 1000377311 Cycle 1 (System ID 88833) and the subsequent corrigendum / amendments brought thereafter, we are placing this Purchase Order (PO) on you for the supply of Indigenous Denatured Anhydrous Ethanol (meeting BIS Specifications IS 15464 and as amended from time to time) at various locations in the state of Rajasthan for the period i.e., Dec'21 to Nov'22.

**LOCATIONS & QUANTITIES:**

The location wise ethanol quantities to be supplied between 01-12-2020 TO 30-11-2021 to various IOCL locations in the state of Rajasthan are as mentioned below:

**ESY 21-22: Q1 (Dec'21 – Feb'22)**

State	Location	Feedstock for Ethanol	Qty. in KL	Basic rate Rs./KL	Tpt. Cost in Rs/ KL	GST Rs./KL 5%	Landed cost Rs./KL	Total Delivered cost in Rs.
Rajasthan	Jaipur Terminal	Damaged Food Grain Unfit for Human Consumption / Maize	552	52920	1328	2712.4	56960.4	31442141

**ESY 21-22 : Q2 (March'22 – May'22)**

State	Location	Feedstock for Ethanol	Qty. in KL	Basic rate Rs./KL	Tpt. Cost in Rs/ KL	GST Rs./KL 5%	Landed cost Rs./KL	Total Delivered cost in Rs.
Rajasthan	Jaipur Terminal	Damaged Food Grain Unfit for Human Consumption / Maize	1145	52920	1328	2712.4	56960.4	65219658

**ESY 21-22 : Q3 (June'22 – Aug'22)**

State	Location	Feedstock for Ethanol	Qty. in KL	Basic rate Rs./KL	Tpt. Cost in Rs/ KL	GST Rs./KL 5%	Landed cost Rs./KL	Total Delivered cost in Rs.
Rajasthan	Jaipur Terminal	Damaged Food Grain Unfit for Human Consumption / Maize	1186	52920	1328	2712.4	56960.4	67555034

**ESY 21-22: Q4 (Sep'22 – Nov'22)**

State	Location	Feedstock for Ethanol	Qty. in KL	Basic rate Rs./KL	Tpt. Cost in Rs/ KL	GST Rs./KL 5%	Landed cost Rs./KL	Total Delivered cost in Rs.
Rajasthan	Jaipur Terminal	Damaged Food Grain Unfit for Human Consumption / Maize	1315	52920	1328	2712.4	56960.4	74902926

**Total quantity: 4198 KL**

**Amount Grand Total: Rs. 23,91,19,759/-(around Rs. 23.91Cr.)**

**1. SALIENT TERMS AND CONDITIONS:**

The Terms & Conditions of procurement are as follows:

a) Ethanol Rates: The Basic Ethanol Prices will be as follows :

➤ Ethanol Rates: The Basic Ethanol Prices will be as follows :

- For Ethanol produced Sugar Cane Juice/Sugar Syrup/Sugar @ Rs.63.45/ litre.
- For Ethanol produced from B heavy molasses - @ Rs.59.08/ litre.
- For Ethanol produced from "C" Heavy Molasses - @ Rs.46.66/ litre.
- For Ethanol produced from Damaged Food grains / Maize - @ Rs. 52.92/ litre
- For Ethanol produced from Surplus Rice procured from FCI - @ Rs. 56.87/ litre

- Additionally, transportation charges as per One-way Distance Transportation Slab Rate mentioned in the Tender/EOI and GST @ 5% (or as may be applicable from time to time) on Basic Rate plus Transportation charges will be paid to you.
- The Import fees of State Excise or any other charges eg. Entry Tax, LBT etc. if incurred by OMC for receiving supply, will be on suppliers account and shall be deducted from suppliers' bills. The prices are on Delivered Cost basis at OMC Locations inclusive of all duties/levies/taxes/charges etc. payable by supplier.
- **On sole discretion of OMCs, vendors may be asked to shift 20% of the allocated quantity of the location to any other location on need basis during the latter part of the ESY by informing the bidder well in advance**
- OMCs may procure additional quantity up to 10% over and above the contracted quantity from the vendor on mutual consent basis.
- The quarters for Ethanol supply will be as follows (first day of first month to last day of second / third month as applicable):
 

Quarter I	: Dec' 21 to Feb' 22
Quarter II	: Mar' 22 to May' 22
Quarter III	: Jun' 22 to Aug' 22
Quarter IV	: Sep' 22 to Nov' 22
- b) As per Govt. of India advice, mechanism to differentiate among Ethanol produced from C heavy molasses, B heavy Molasses and Sugarcane juice / Sugar/ Sugar syrup route would be as provided by Dept. of Food & Public Distribution (DFPD), Ministry of Agriculture. OMCs will follow subject mechanism. In other words, Ethanol TTs sent by Suppliers for Ethanol produced from C heavy molasses, B Heavy Molasses and Sugarcane juice / Sugar/ Sugar syrup route must have all necessary documents; as would be prescribed by DFPD. In case of non-submission of such documents along with Ethanol TT, OMCs may release payment to Ethanol Suppliers as per Ethanol from "C"-Heavy Molasses i.e., @ Rs.46.66 per litre.

In case of Ethanol manufactured from Damaged food grain / maize, each TT delivering Ethanol produced from Damaged Food Grain must carry the Certificate/ Document issued by Excise Authority with unique serial number certifying the feed stock used for production of ethanol from Damaged food grain not fit for human consumption of such Ethanol and the invoice should have endorsement from Excise officials with the serial number of the certificate; as mentioned above, which will be attached along with the consignment.

In case of Ethanol manufactured from Surplus Rice procured from FCI, each TT delivering Ethanol produced from Surplus Rice must carry the Certificate/ Document issued by Excise Authority with unique serial number certifying the feed stock used for production from Surplus Rice supplied by FCI of such ethanol and the invoice should have endorsement from Excise officials with the serial number of the certificate; as mentioned above, which will be attached along with the consignment.

Refer clause in corrigendum 1 of Tender/EOI No 1000377311, system ID 88833, In order to meet the prorated annual off-take quantity as per Long term offtake agreement made with successful project proponents/suppliers in E-Tender/EOI no. 86996, if found necessary, the pre-allocated quantities awarded to existing supplier under this EOI may be reduced. The reduction in allocated quantity will be carried out in the reverse order of allocation criteria, as described below:

1. The allocation made to the farthest existing supplier from the OMC location from outside the state shall be reduced first.
2. If the quantity is not sufficient to accommodate the offtake quantity as per agreement, then allocation from the next farthest existing supplier shall be reduced and so on as per distance of the existing supplier(s) from OMC location.
3. If the quantity reduced from existing suppliers from outside state is not sufficient to accommodate the offtake quantity as per agreement, then the reduction in allocation from the existing suppliers from within the state shall be resorted to.
4. Within the state, the allocation made for ethanol from CHM, DFG & FCI rice from the farthest existing supplier shall be reduced first.
5. If the quantity is not sufficient, then allocation for ethanol from CHM, DFG & FCI rice from next farthest existing supplier shall be reduced and so on as per distance of the existing supplier from OMC location.
6. Next, allocation made for ethanol from BHM shall be reduced as explained in step 4 & 5 above.
7. Next allocation made from SCJ shall be reduced as explained in step 4&5 above.
8. For the above, the distance between OMC location and the existing supplier will be based on the one way distance slab applicable for transportation rates.

The reduced quantity, as above, may be re-allocated based on mutual consent. In case, reallocation not acceptable to the existing supplier, the allocation will stand reduced and the reduced quantity will be considered for PRC, BG, indents, etc.

The existing supplier will be informed at least one month in advance about the above reduction in the pre-allocated quantity.

## **2. DELIVERY PERIOD :**

- a) The delivery should commence within 30 days from the date of LOI or 10 days from the date of the PO, once placed, whichever is earlier.
- b) The supply period and allocation is categorized into four quarters as described earlier for the Ethanol Sugar Year (ESY) 2021-22 (from Dec' 21 to Nov' 22)
- c) Timely delivery by the vendor as per the delivery schedule is the essence of contract. Monthly procurement plan based on monthly pro-rata Purchase Order (PO) qty shall be applicable to vendor for supply unless same is revised by IOCL location with mutual consent.
- d) Applications for necessary NOCs /Permits / import /export permits etc will be made available by the OMCs. It will be the responsibility of the Suppliers to arrange for all the approvals / clearances / permits in connection with Excise or any statutory requirement for supply of ethanol to the OMC locations as per the tender clause of delivery period.
- e) Suppliers shall engage only such Tank Truck crew whose Antecedents have been verified and certificate issued by Police or proof of application made for the same. This will be verified by the locations for entry of TT crew into the OMC locations.
- f) Indents Alteration by IOCL :

IOCL reserves the right to alter the prorated monthly procurement indents for a PO for the location (by increasing or decreasing) with advance notice to the supplier, based on mutual consent.

In the interest of improving blending % under EBP programme, IOCL reserves the right for preponing the indents from different periods on mutual consent basis.

There may be situations at any IOCL location like closing or downsizing of Petrol operations or any other eventuality due to major projects / safety or non-availability/ exhaustion of Permits/ exhaustion of licensed quantity etc.

IOCL with advance notice may offer in writing to the Bidder, alternate location(s) where the remaining PO quantity (part or full) can be shifted. The transfer will be at new location rate and if there is a transportation rate already established for the Supplier at the alternate location, the transportation rate for the alternate location will be offered or else Transportation slab rate as per actual distance for new location will be offered. All other taxes/ charges will be as per the new location. The acceptance of new location for delivery of full or part balance PO quantity will be Supplier's discretion, which the Supplier should communicate in writing to the IOCL. In case of acceptance by the Supplier, the procurement period will start from 10 days of issuance of Change PO or receipt of first load at the new IOCL location, whichever is earlier. The prorated monthly pro-rata PO qty will be same as for original PO.

NOTE: For purpose of assessing the qty. received by a location in a month, the invoice date of the received qty. will be considered for calculation of PRC.

In case the TT does not report within normal average transit time from the date of invoice then actual reporting date will be considered. Actual reporting date at location shall be mentioned on the invoice and shall be jointly signed by both IOCL & Supplier's representatives.

In case of mutually agreed Indent Alteration, the revised indents would be considered for "Price Reduction" clause.

e) Monthly Indents Alteration sought by Supplier

Alteration of Indent sought by a Supplier

The Supplier can also request the IOCL location in writing with minimum 15 days' notice for rescheduling of his monthly indents (while maintaining the same quarterly prorated indent) due to unforeseen situations of temporary nature arising out of day-to-day operating activities or any other pressing issues faced by the Supplier; mentioning clearly the problem faced by him. The IOCL location at its discretion may accept in writing to the Supplier, rescheduling of indents proposed by the Supplier.

In case of any alteration of monthly indents by mutual consent on supplier's request, the monthly revised indent (higher or lower) would be considered for Price Reduction clause. This option can be exercised by the Supplier once during the quarter for a PO for a location i.e. the monthly indents for quarter only can be revised while maintaining the quarterly indent i.e. if quarterly prorated indent is 300 KL; the monthly alteration within a quarter must add to 300 KL.

f) Supplier willing to supply higher than monthly prorated indent for early completion of PO:

Supplier can request IOCL location with 15 days advance notice, for supply of higher than monthly prorated indent for next month for early completion of PO quantity; acceptance of the request will be at IOCL location's discretion.

In case of multiple Vendors seeking revision (increase) in indents at a location for the next month, the revision of indents by the location will normally be in proportion of PO quantity; subject to meeting the Location's Requirement/ capacity of unloading. The Supply or Pay Clause will be reckoned as per the revised indent. The prorata monthly indents as given along with PO will, however, be effective for

forthcoming months till contracted quantity is exhausted. This option can be exercised multiple times during the Procurement Period.

In such a case the quarterly revised indent (on supplier for a location & for a PO) may even become higher than prorated quarterly indent (this will enable the supplier early completion of PO quantity with location's consent).

Receipt of quantity higher than monthly indent (original or revised) dispatched by the Supplier, will be at IOCLs location's discretion.

### **3. PRICE REDUCTION CLAUSE**

The supplier will make the supplies either as per day wise indent provided by IOC location up to the limit of monthly quantity applicable as per PO or monthly pro-rata PO quantity. The supplier shall strictly adhere to the supply schedule and achieve supply performance of a minimum of 85% of the quantity per month and minimum of 95% of the quantity on quarterly basis for which Price Reduction Clause will not be applicable. However, if the vendor is not achieving 85% of the supplies for a particular month and/ or minimum of 95% of the quantity quarterly basis Price Reduction Clause will be applicable. Price Reduction Clause will be applicable, where shortfall in supply (undelivered quantity for the month/quarter as the case may be) is higher in the above two cases.

Moreover, supplier has to adhere to the day wise indent provided by IOC location basis the monthly pro-rata PO qty, else supplier's TT may not be decanted on the same day due to other supplier's indented supplies in line with day wise indent.

Beginning of the first quarter will be calculated as 30 days from date of issue of LOI/LOA or 10 days from the date of issue of PO or date of reporting of first load, whichever is earlier. If the beginning of the first quarter does not fall on the first day of the calendar month, prorated indent for the balance period of that month would be considered. The following 2 months will complete the quarter.

There may not be full quarter remaining in that case the part quarter can be 2 months or 1 month. For the part quarter of two months supplier has to achieve minimum of 85% of the prorated monthly indent and minimum of 100% of the prorated quantity for that part quarter will be considered for Price Reduction Clause. If the part quarter is a one month then supplier has to achieve 95% of the indented quantity.

If the supplier is able to supply 100% of quarterly quantity as per PO in a quarter, keeping the overall lapse due to TT capacity below 12 KL in the quarterly PO quantity/Prorate PO quantity and if IOC is able to receive the quantity at the same location or any other location, monthly Penalty shall not be applicable to the Supplier.

Additionally if the supplier is able to supply 100% of the quantity as per PO for the entire ESY including the quantity lapsed during the earlier quarters of the ESY by the end of the particular ESY keeping the overall lapse due to TT capacity below 12 KL and if the IOC is able to receive the quantity at the same location or any other location, then Penalty shall not be applicable to the Supplier. OMCs decision in the above cases shall be final.

An amount equivalent to 1% of the Basic Cost shall be payable by the supplier for the undelivered quantity 85% of Indented quantity less supplied quantity on month to month basis and / or 95% of Indented quantity less supplied quantity, whichever is higher) and these shall be deducted from the payment due to the vendors and/ or by encashing security deposit. In addition to above PRC amount, any statutory tax shall be payable as applicable.

If the Indents are revised in line with Supply Agreement, the Revised Indents will be considered for "Price Reduction Clause" in place of "Original Indents"

In case state government have not issued guidelines for supply of Ethanol produced from Sugarcane Juice/ Sugar/ Sugar Syrup and /or B Heavy Molasses then in such cases the PRC shall not be applicable for the period until such time certification is started by Excise or any other competent authority in State.

In case of any dispute related to PRC waiver, State Level OMC committee will study based on representation received from Suppliers, verify facts and submit detailed report to HQO/ HO OMC committee to resolve the matter.

#### **4. SECURITY DEPOSIT:**

This Purchase Order is being issued on receipt of Bank Guarantee (BG) or Demand Draft for an amount equivalent to 1% of the LOA/LOI value along with Agreement duly signed on non-judicial stamp paper of appropriate value, in the format provided with LOI/LOA.

The Bank Guarantee towards Security Deposit shall be valid (shall remain in force) for guarantee period (as mentioned in the guarantee clause), with an invocation period of six months thereafter. The BG may be returned after completion of supplies, even at an earlier date subject to submission of reconciled accounts along with NOC from the IOC locations to the respective office from where PO has been issued.

The BG pertaining to respective quarter i.e. Dec'21-Feb'22, Mar'22-May'22, June'22-Aug'22, Sept'22-Nov'22 shall be returned on successful completion of supply of quantity of such quarter, after reconciliation of accounts or completion of the claim period whichever is earlier after adjusting the dues, if any. (applicable for Suppliers giving quarterly BG).

The vendor may also opt for retention of an amount equivalent to 1% of basic value of contract from his initial invoices as security deposit in lieu of Bank Guarantee. This amount shall be released after completion of supplies as per terms and conditions of the contract and reconciliation of PO v/s supplies and deduction of PRC amount if any.

*In lieu of Bank Guarantee, Vendor M/s MALBROS INTERNATIONAL PVT. LTD. opt for retention of an amount equivalent to 1% of basic value of contract from his initial invoices as security deposit vide letter Ref: NIL dated 29.11.2021. This amount shall be released after completion of supplies as per terms and conditions of the contract and reconciliation of Purchase order v/s supplies and deduction of PRC amount if any.*

#### **5. PAYMENT TERMS:**

The Supplier/Vendor is required to give price breakup for the Delivered Cost to the OMCs in the Invoice. Payment shall be made within 21 days after receipt of material at sites and submission of Original Invoice in triplicate. All outstanding payments w.r.t. past tenders will be recovered from vendors running Bills/BG if not settled by the vendor; unless the matter is sub-judice.

Provisions of TCS will be as applicable from time to time.

**6. TRANSIT INSURANCE :**

Transit Insurance for Ethanol being delivered at IOC locations is to be arranged by the Supplier and it is in the scope of the supplier. The rates quoted are inclusive of insurance charges and applicable taxes/duties/service tax etc.

**7. CHANGE OF DISTILLERY**

The supplier who have multiple distilleries registered with BPC under the EOI, due to some issue in the original distillery, supplier shall be allowed to change to alternate distillery (ies) during the period of contract with following conditions:

1. The alternate distillery (ies) needs to be located within the state where the original distillery is located.
2. Certificate from state excise clearly mentioning the reason for non-supply of Ethanol from the original distillery.
3. Certificate from state excise clearly mentioning the alternate distillery of the supplier from which the pending quantity is proposed to be supplied. This pending quantity supplied by alternate distillery will be adjusted from allocation of Original distillery.
4. The transportation rate applicable shall be less than or equal to the rate as per original contract.
5. This is applicable only for Cooperative distilleries under the administrative control of State Government and distilleries belonging to one Company.

**8. COMPLIANCE OF STATUTORY REGULATIONS & REQUIRED LICENCES:**

Supplier guarantees that the Ethanol supplied under this Contract have been produced, sold, dispatched, delivered and furnished in strict compliance with all applicable laws, regulations, labour agreement, working condition and technical codes and statutory requirements as applicable from time to time. The Supplier shall ensure compliance with the above and shall indemnify Purchaser against any actions, damages, costs and expenses of any failure to comply as aforesaid.

It is clearly & categorically understood that it will be entirely Ethanol Suppliers' responsibility to possess all valid statutory licenses, as are/will be applicable for Ethanol production & supply; and also renew the same from appropriate authorities. The total responsibility for possessing & validating the requisite licenses lies with the Supplier. IOCL shall follow directions as may be issued by any statutory authorities or any Courts for non-possession/compliance of any Licenses by the Supplier.

Supplier hereby agrees to indemnify and keep IOCL, its directors, officers, representatives indemnified from any claims, damages, losses, penalties, etc., arising from non possession of any of the Licenses by the Supplier and supply of Ethanol to IOCL.

In view of the Hon'ble NGT Orders dated 28/09/18, 30/10/18 & 31/10/18 regarding compliance to the safety measures prescribed by Petroleum and Explosive Safety Organization (PESO) and/or any statutory Authorities, the Supplier shall be complying with the safety measures as approved by statutory authorities, including PESO, and all others rules/ regulations framed by statutory authorities, including PESO, in this regard and/or any directions issued by Hon'ble NGT or any other court, which will be binding on the Supplier.

Also, any other Court Orders and/ or Govt. advice will be binding on the supplier and to be followed in letter & spirit.

**9. PRODUCT SPECIFICATIONS:**

Indigenous Denatured Anhydrous Ethanol conforming to Industry specifications based on IS 15464:2004, and its periodic revisions by BIS, is to be supplied by you along with test certificate/quality certificate as mentioned in the tender document. However, during the contract period, if the specifications undergo a change, you shall be bound to supply ethanol as per changed Specifications.

**10. NAME AND ADDRESS OF INDEPENDENT EXTERNAL MONITORS (IEM):**

- (a) Shri Basant Seth, Former CMD, Syndicate Bank and Information Commissioner, CIC
- (b) Shri Vijai Prakash Phatak, IRSS (Retd.)
- (c) Shri. Madhusudan Prasad, IAS (Retd.)

**Procedure for lodging complaints:**

All complaints/communication to IEMs should be sent on the common postal address of the IP-Secretariat as furnished below:

IP Secretariat,  
Indian Oil Corporation Limited,  
Room No 542, 5th Floor,  
Core 6, Scope Complex, Lodhi Road,  
New Delhi – 110003.

The complaints will thereafter be forwarded by IP Secretariat to all the IEMs on the common e-mail address [iem-iocl@indianoil.in](mailto:iem-iocl@indianoil.in) created for the said purpose.

The Tender Documents, Corrigendum/Amendments, the Terms & Conditions of the Tender, Specifications, subsequent negotiations and all other correspondences connected with this tender/offer shall form part of this Contract Agreement and shall remain in force during the entire contract period.

Kindly sign the copy of this Purchase Order as the token of your acceptance of the above terms and conditions.

Thanking you and assuring you of our best cooperation at all times.

**Yours faithfully,  
f/Indian Oil Corporation Limited**

SHASHI

KANT ARYA

Digitally signed by SHASHI KANT ARYA  
DN: cn=IN, ou=Personal, postalCode=302004,  
st=Rajasthan  
2.5.4.20=852f97675b42b79298633b76014c  
84e897bda1763b0de55d759f584d05bb0df4  
c=SHASHI KANT ARYA  
Date: 2021.12.02 14:01:22 +05'30'

**Sr. Manager (Ops.)  
Rajasthan State Office**

**Encl : As stated**

## ETHANOL MONTHLY INDENT SCHEDULE

LOCATION:- JAIPUR TERMINAL

All figures in KL

MONTH	Ethanol from SCJ/Sugar/Syrup	Ethanol from B-Heavy Molasses	Ethanol from C-Heavy Molasses	Ethanol from Damaged Food Grains Unfit for human consumption / Maize	Ethanol from surplus Rice	TOTAL
Dec-21				184		
Jan-22				184		
Feb-22				184		
Mar-22				382		
Apr-22				382		
May-22				381		
Jun-22				396		
Jul-22				395		
Aug-22				395		
Sep-22				439		
Oct-22				438		
Nov-22				438		
<b>TOTAL</b>				<b>4198 KL</b>		

## The above indent is indicative. Locations can alter Indent quantities and may also give detailed Indents. Suppliers are required to contact Locations periodically on the same.

3457

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# हिन्दुस्तान पेट्रोलियम कॉर्पोरेशन लिमिटेड

(भारत सरकार उपक्रम) रजिस्टर्ड ऑफिस : 17, जमशेदजी टाटा रोड, मुंबई - 400 020

## HINDUSTAN PETROLEUM CORPORATION LIMITED

(A GOVERNMENT OF INDIA ENTERPRISE) REGISTERED OFFICE : 17, JAMSHEDJI TATA ROAD, MUMBAI - 400 020

जयपुर टर्मिनल, छीतरोली इन्डस्ट्रीयल एरिया, अजमेर रोड, बगरू, जयपुर-303007

Jaipur Terminal, Chitroli Industrial Area, Ajmer Road, Bagru, Jaipur- 303007

Corporate Identification Number (CIN) - L 23201 MH 1952 GOI 008858

दूरभाष / Telephone : 9672817861

### PURCHASE ORDER

ORIGINAL

**TO :** MALBROS INTERNATIONAL PVT. LTD.

VILLAGE MANSOORWAL,

TEHSIL ZIRA,

FEROZEPUR-142026

Punjab

India

Cell No. : 9811573422

E-Mail : krishanbhardwaj@oasisgrp.in

PAN : AADCM7203R

GSTIN : 03AADCM7203R1ZB

PO Number : 21000064-OP-11242/RS

PO Date : 2/12/2021

LOI Reference : LOI DT 23.11.2021

Tender Number : 21000034 HD 11242

Vendor's Offer Reference :

ERP Vendor Code : 28129892

PR Number : 21000121 HP 11370

Entity Code Type : -

GST Type : Registered GST

Title : Ethanol Vad Jpr DFG/SR Q1234

Please supply the following items / service, as per the terms and conditions mentioned below and in attachments :

Supply From :

GSTIN :

GSTIN STATE :

Deliver to : VADODARA TERMINAL, VILLAGE ASOJ (TALUKA VADODARA RURAL), VILLAGE PIL& (VILLAGE PILOL), NE,  
PILOL RAILWAY STATION,, VADODARA, 391745, Gujarat, India,

Phone: 02836-234162 Fax: 02836-234184

GSTIN : 24AAACH1118B1ZI

GSTIN STATE : GUJARAT

Order Line Number	Tender Line No.	Item Description Item Number HSN/SAC Code	Quantity Ordered	QTY UOM	Unit Rate INR	Unit Rate UOM
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Supply From :

GSTIN : 03AADCM7203R1ZB

GSTIN STATE : PUNJAB

Deliver to : Jaipur Terminal-MDPL, HINDUSTAN PETROLEUM CORPORATION LTD, MDPL - JAIPUR TML, P.O  
AWANIA, Behind Chitroli Industrial area, DIST: JAIPUR, Jaipur, 303007, Rajasthan, India,  
Phone: Fax:

Cont. on next page

Page No : 1 of 6

21000064-OP-11242/RS

GSTIN : 08AAACH1118B1ZC

GSTIN STATE : RAJASTHAN

Order Line Number	Tender Line No.	Item Description Item Number HSN/SAC Code	Quantity Ordered	QTY UOM	Unit Rate INR	Unit Rate UOM
5.000	5.000	Eth Jaipur DFG Q1 1426000 22072000	186.150	Kiloliter	54,248.0000	Kiloliter
6.000	6.000	Eth Jaipur DFG Q2 1426000 22072000	.670	Kiloliter	54,248.0000	Kiloliter
7.000	7.000	Eth Jaipur DFG Q3 1426000 22072000	.870	Kiloliter	54,248.0000	Kiloliter
8.000	8.000	Eth Jaipur DFG Q4 1426000 22072000	.170	Kiloliter	54,248.0000	Kiloliter
13.000		Eth Jaipur SR Q2 1426000 22072000	982.000	Kiloliter	58,198.0000	Kiloliter
14.000		Eth Jaipur SR Q3 1426000 22072000	384.000	Kiloliter	58,198.0000	Kiloliter
15.000		Eth Jaipur SR Q4 1426000 22072000	1128.000	Kiloliter	58,198.0000	Kiloliter
20.000		Eth Jaipur SR Q4 1426000 22072000	370.000	Kiloliter	58,264.0000	Kiloliter

Deliver to : VADODARA TERMINAL, VILLAGE ASOJ (TALUKA VADODARA RURAL), VILLAGE PIL& (VILLAGE PILOL), NE,  
PILOL RAILWAY STATION,, VADODARA, 391745, Gujarat, India,  
Phone:02836-234162 Fax:02836-234184

Cont. on next page

Page No : 2 of 6  
21000064-OP-11242/RS

**EXTRAS (TAXES, DUTIES & OTHERS) :**

The amounts mentioned below in the column titled "Extras (Taxes, duties & others)" to be referred as follows :

(a) If specified as %, the same to be considered as % of Unit Rates.

(b) If specified as absolute amount, the same to be considered as add-on amount for the unit of measure in which Unit Rate is mentioned on the order

Line No	Item Number	Item Description	Extras (Taxes, duties & others)
1.000	1426000	Eth Vadodara DFG Q1	IGST 5 %
2.000	1426000	Eth Vadodara DFG Q2	IGST 5 %
3.000	1426000	Eth Vadodara DFG Q3	IGST 5 %
4.000	1426000	Eth Vadodara DFG Q4	IGST 5 %
5.000	1426000	Eth Jaipur DFG Q1	IGST 5 %
<b>6.000</b>	1426000	Eth Jaipur DFG Q2	IGST 5 %
7.000	1426000	Eth Jaipur DFG Q3	IGST 5 %
<b>8.000</b>	1426000	Eth Jaipur DFG Q4	IGST 5 %
<b>10.000</b>	1426000	Eth Vadodara SR Q2	IGST 5 %
<b>11.000</b>	1426000	Eth Vadodara SR Q3	IGST 5 %
<b>12.000</b>	1426000	Eth Vadodara SR Q4	IGST 5 %
13.000	<b>1426000</b>	Eth Jaipur SR Q2	IGST 5 %
14.000	<b>1426000</b>	Eth Jaipur SR Q3	IGST 5 %
15.000	<b>1426000</b>	Eth Jaipur SR Q4	IGST 5 %
<b>17.000</b>	<b>1426000</b>	Eth Vadodara SR Q3	IGST 5 %
<b>20.000</b>	<b>1426000</b>	Eth Jaipur SR Q4	IGST 5 %

**NOTES/ TERMS/ CONDITIONS:**

Notes/Terms/Conditions  
Change PO as per request

Change in feedstock from DFG for Q1 to SR for Q3 for Vadodara terminal Location

Unit Rate - Rs. 60466 + 5% IGST for Vadodara Terminal.

SR Quantity For Vadodara Terminal is as below (DFG for Q1 quarter has **reduced to Zero**)

Q3 - 1121 KL

Vendor has requested for change in feedstock from existing Damaged Food Grains

to Surplus Rice vide mail dated 07.06.2022

This Purchase order is placed on you for supply of Indigenous Anhydrous Denatured Ethanol (Meeting BIS Specifications IS 15464 and as amended from time to time ) at our locations Jaipur Terminal and vadodara Terminal for the SY 2021-22 against your offer for the Tender/EOI No. 1000377311(Cycle 1) (System ID 888833) Dated 28.10.2021 & its Corrigendum (floated by BPCL on behalf of PSU OMCs)

Balance Terms & conditions will be as per OMC joint tender no. 1000377311(Cycle 1) (System ID 888833) Dated 28.10.2021 & its Corrigendum and as per attached LOI dated 23.11.2021 issued to you.

Total value of this PO shall be 45,43,32,769.8/- only.

The period for procurement is from December' 21 to November' 22. Details of Quarter wise locations quantities to be supplied shall be as mentioned in attached LOI.

Please acknowledge the receipt of this Purchase Order and ensure compliance..

**ENCLOSURES**

Detailed Item Description / Specifications (Yes/No)

Technical Terms and Conditions (Yes/No)

Commercial Terms and Conditions (Yes/No)

Special Terms and Conditions (Yes/No)

General Terms & Conditions (Yes/No)

Others \_\_\_\_\_ Nos. (Yes/No)

**Please acknowledge the receipt of this order**

**For Hindustan Petroleum Corporation Limited**

**Signature** :   
**Name** : C PARAMESWAR  
**Designation** : Deputy General Manager - Insta

Sign & Seal of the Vendor  
for Acknowledgement of the Order



# हिन्दुस्तान पेट्रोलियम कॉर्पोरेशन लिमिटेड

( भारत सरकार उपक्रम ) रजिस्टर्ड ऑफिस : 17, जमशेदजी टाटा रोड, मुम्बई - 400 020

## HINDUSTAN PETROLEUM CORPORATION LIMITED

( A GOVERNMENT OF INDIA ENTERPRISE ) REGISTERED OFFICE : 17, JAMSHEDJI TATA ROAD, MUMBAI - 400 020

**जोधपुर टर्मिनल**, गाँव व पोस्ट - सालावास, जिला - जोधपुर - 342013 (राजस्थान), फोन नं. : 7412946111 / 222 / 333 / 4444  
**JODHPUR TERMINAL**, Village & Post - Salawas, District - Jodhpur - 342013 (Raj.), Phone No. : 7412946111 / 222 / 333 / 4444  
**CIN : L23201MH1952GOI008858**

### Revision Purchase Order

ORIGINAL

**TO** : MALBROS INTERNATIONAL PVT. LTD.  
 VILLAGE MANSOORWAL,  
 TEHSIL ZIRA,  
 FEROPUR-142026  
 Punjab  
 India

**PO Number** : 21000027-OP-11278  
**PO DATE** : 17/12/2021  
**REVISION NUMBER** : 1  
**REVISION DATE** : 25/3/2022  
**ERP Vender Code** : 28129892  
**GST Type** : Registered GST

**Cell No.** : 9811573422  
**E-Mail** : krishanbhardwaj@oasisgrp.in  
**PAN** : AADCM7203R  
**GSTIN** : 03AADCM7203R1ZB

**Title** : Eth Jodhpu DFG SFG Q1 Q2 Q3 Q4

Please refer Purchase Order Number 21000027/OP/11278 dated 17/12/2021 and its subsequent revision(s) if any up to revision number 0 and note the following revisions:

**Supply From** : **GSTIN** : **GSTIN STATE**:

**Supply From** : **GSTIN** : 03AADCM7203R1ZB **GSTIN STATE**: PUNJAB

**Deliver to** : SALAWAS TOP, Salawas, Rajasthan, Salawas, 342802, Rajasthan, India,

**GSTIN** : 08AAACH1118B1ZC

**GSTIN STATE** : RAJASTHAN

Order Line Number	Item Number / HSN/SAC Code	Item Description	Revision	Quantity Ordered	QTY UOM	Unit Rate INR	Unit Rate UOM
2.000	1426000	Ethanol DFG Jodhpur Q2	From	849.410	Kiloliter	54,784.000	Kiloliter
	22072000		To	.410			

3.000	1426000	Ethanol DFG Jodhpur Q3	From	924.790	Kiloliter	54,784.000	Kiloliter
	22072000		To	.790			
4.000	1426000	Ethanol DFG Jodhpur Q4	From	111.260	Kiloliter	54,784.000	Kiloliter
	22072000		To	.260			
9.000	1426000	Eth from DFG to SR Jdhpr Q2	From				
	22072000		To	849.000	Kiloliter	58,734.000	Kiloliter
10.000	1426000	Eth from DFG to SR Jdhpr Q3	From				
	22072000		To	924.000	Kiloliter	58,734.000	Kiloliter
11.000	1426000	Eth from DFG to SR Jdhpr Q4	From				
	22072000		To	111.000	Kiloliter	58,734.000	Kiloliter

**Legend** UOM - Unit of Measure, QTY - Quantity, INR - Indian Rupees

**EXTRAS (TAXES, DUTIES & OTHERS) :**

The amounts mentioned below in the column titled "Extras (Taxes, duties & others)" to be referred as follows :

- (a) If specified as %, the same to be considered as % of Unit Rates.  
 (b) If specified as absolute amount, the same to be considered as add-on amount for the unit of measure in which Unit Rate is mentioned on the order

Line No	Item Number	Item Description	Extras (Taxes, duties & others)
9.000	1426000	Eth from DFG to SR Jdhpr Q2	IGST 5 %
10.000	1426000	Eth from DFG to SR Jdhpr Q3	IGST 5 %
11.000	1426000	Eth from DFG to SR Jdhpr Q4	IGST 5 %

**NOTES/ TERMS/ CONDITIONS:**

Change PO as per Change LPR received from Zone as per below details -

Vendor has requested for change in feedstock from existing Damaged Food Grains to Surplus Rice vide letter dated 23.03.2022

and changes to be made as per following details:

Location PO NumberQty shifted from DFG to SR (KL)QuarterChanges required in line of PR

Jodhpur 21000027-OP-11278 849 (DFG) to 849 (SR) Q2 Line Number 2

Jodhpur 21000027-OP-11278 924 (DFG) to 924 (SR) Q3 Line Number 3

Jodhpur 21000027-OP-11278 111 (DFG) to 111 (SR) Q4 Line Number 4

\*Note: Rest of the lines in Change PO 21000027-OP-11278 will remain same

OMC ED Committee vide letter dated 10/02/2022 has given approval for change in feed stock as per following SOP:

1. The Vendor will make a written request for change in feed stock
2. Feedstock change shall be permitted as required by OMC basis request of supplier for all the feed stocks
3. Changes in feedstock can be from SCJ to BHM / CHM-DFG-SR or vice versa. However, since allocation has been made prioritizing SCJ followed by BHM then CHM-DFG-SR. Feed stock change from SCJ to BHM / CHM-DFG-SR and BHM to CHM-DFG-SR will be permitted if the supplier is willing to supply to any location as per requirement of OMC
4. These changes are for total ESY 2021-22

Cont. on next page

Page No : 3 of 4  
21000027-OP-11278

**ENCLOSURES :**

Detailed Item Description / Specifications (Yes/No)

Technical Terms and Conditions (Yes/No)

Commerical Terms and Conditions (Yes/No)

Special Terms and Conditions (Yes/No)

General Terms &amp; Conditions (Yes/No)

Others \_\_\_\_\_ Nos.(Yes/No)

**Please acknowledge the receipt of this order****For Hindustan Petroleum Corporation Limited****Signature** :**Name** :

MANASVI KUMAR DIXIT

**Designation** :

Senior Depot Manager

Sign & Seal of the Vendor  
for Acknowledgement of the Order



इंडियन ऑयल कॉर्पोरेशन लिमिटेड

मध्य प्रदेश राज्य कार्यालय

इंडियनऑयल भवन, 16 अरेरा हिल्स, जेल रोड, भोपाल-462 011

इपीएबीएक्स नं. : 0755-2524800, फ़ैक्स : 0755-2554350

**Indian Oil Corporation Limited**

**Madhya Pradesh State Office**

IndianOil Bhawan, 16 Arera Hills, Jail Road, Bhopal-462 011

EPABX No. : 0755-2524800, Fax : 0755-2554350



विपणन विभाग  
Marketing Division

**REVISED PURCHASE ORDER**

Ref: MPSO/ETHANOL/1000377311 Cycle 1 (Revised)

Date: 05.04.2022

To  
M/s MALBROS INTERNATIONAL PVT LTD  
Vill-Mansoorwal, Firozpur-142026  
Punjab  
9899450255

**Sub: Revised Purchase Order Against OMC Joint Tenders No. 1000377311 Cycle 1 (System ID 88833) for Supply of Denatured Anhydrous Ethanol for IOCL locations in the State of MP & CG for the period Dec'21 to Nov'22 In Place of GSO(Jamnagar)**

Sir,

This is in continuation of our LOA/LOI: Ethanol OMC Joint Tender/EOI No. 1000377311 Cycle 1 (System ID 88833) against OMC Joint Tenders No. 1000377311 Cycle 1 (System ID 88833) and the subsequent corrigendum / amendments brought thereafter, we are placing this Revised Purchase Order (PO) on you for the supply of Indigenous Denatured Anhydrous Ethanol (meeting BIS Specifications IS 15464 and as amended from time to time) at various locations in the state of **MP & CG** for the period i.e., Dec'21 to Nov'22 In Place of GSO(Jamnagar).

**As per HO guideline to take care of variation in feedstock availability it is permitted for change feed stock from Damaged food grain to surplus rice.**

**LOCATIONS & QUANTITIES:**

**ESY 21-22 : Q2 (March'22 – May'22)**

State	Location	Feedstock for Ethanol	Qty. in KL	Basic rate Rs./KL	Tpt. Cost in Rs./KL	Imp ort Fee Rs./KL	GST Rs./KL 5%	Landed cost Rs./KL	Total Delivered cost in Rs.
		Sugar Cane Juice/Sugar/Sugar syrup		63450.00					
		B-Heavy Molasses		59080.00					
		C-Heavy Molasses		46660.00					
		Damaged Food Grain Unfit for Human Consumption / Maize		52920.00					
CG	KORBA	Surplus Rice procured from FCI	1000	56870.00	4243.54	NIL	3055.67	64169.21	64619210

पंजीकृत कार्यालय : जी-9, अली यावर जंग मार्ग, बान्द्रा (पूर्व), मुम्बई-400 051 (भारत)

Regd. Office : G-9, Ali Yavar Jung Marg, Bandra (East), Mumbai-400 051 (India)

**Amount Grand Total: Rs. 64619210**

**SALIENT TERMS AND CONDITIONS:**

The Terms & Conditions of procurement are as follows:

- a) Ethanol Rates: The Basic Ethanol Prices will be as follows :
- Ethanol Rates: The Basic Ethanol Prices will be as follows :
- For Ethanol produced Sugar Cane Juice/Sugar Syrup/Sugar @ Rs.63.45/ litre.
  - For Ethanol produced from B heavy molasses - @ Rs.59.08/ litre.
  - For Ethanol produced from "C" Heavy Molasses - @ Rs.46.66/ litre.
  - For Ethanol produced from Damaged Food grains / Maize - @ Rs. 52.92/ litre
  - For Ethanol produced from Surplus Rice procured from FCI - @ Rs. 56.87/ litre
- Additionally, transportation charges as per One-way Distance Transportation Slab Rate mentioned in the Tender/EOI and GST @ 5% (or as may be applicable from time to time) on Basic Rate plus Transportation charges will be paid to you.
- The Import fees of State Excise or any other charges eg. Entry Tax, LBT etc. if incurred by OMC for receiving supply, will be on suppliers account and shall be deducted from suppliers' bills. The prices are on Delivered Cost basis at OMC Locations inclusive of all duties/levies/taxes/charges etc. payable by supplier.
- **On sole discretion of OMCs, vendors may be asked to shift 20% of the allocated quantity of the location to any other location on need basis during the latter part of the ESY by informing the bidder well in advance**
- OMCs may procure additional quantity up to 10% over and above the contracted quantity from the vendor on mutual consent basis.
- The quarters for Ethanol supply will be as follows (first day of first month to last day of second / third month as applicable).
- Quarter I : Dec' 21 to Feb' 22  
 Quarter II : Mar' 22 to May' 22  
 Quarter III : Jun' 22 to Aug' 22  
 Quarter IV : Sep' 22 to Nov' 22
- b) As per Govt. of India advice, mechanism to differentiate among Ethanol produced from C heavy molasses, B heavy Molasses and Sugarcane juice / Sugar/ Sugar syrup route would be as provided by Dept. of Food & Public Distribution (DFPD), Ministry of Agriculture. OMCs will follow subject mechanism. In other words, Ethanol TTs sent by Suppliers for Ethanol produced from C heavy molasses, B Heavy Molasses and Sugarcane juice / Sugar/ Sugar syrup route must have all necessary documents; as would be prescribed by DFPD. In case of non-submission of such documents along with Ethanol TT, OMCs may release payment to Ethanol Suppliers as per Ethanol from "C"-Heavy Molasses i.e., @ Rs.46.66 per litre.

In case of Ethanol manufactured from Damaged food grain / maize, each TT delivering Ethanol produced from Damaged Food Grain must carry the Certificate/ Document issued by Excise Authority with unique serial number certifying the feed stock used for production of ethanol from Damaged food grain not fit for human consumption of such Ethanol and the invoice should have endorsement from Excise officials with the serial number of the certificate; as mentioned above, which will be attached along with the consignment.

In case of Ethanol manufactured from Surplus Rice procured from FCI, each TT delivering Ethanol produced from Surplus Rice must carry the Certificate/ Document issued by Excise Authority with unique serial number certifying the feed stock used for production from Surplus Rice supplied by FCI of such ethanol and the invoice should have endorsement from Excise officials with the serial number of the certificate; as mentioned above, which will be attached along with the consignment.

Refer clause in corrigendum 1 of Tender/EOI No 1000377311, system ID 88833, In order to meet the prorated annual off-take quantity as per Long term offtake agreement made with successful project proponents/suppliers in E-Tender/EOI no. 86996, if found necessary, the pre-allocated quantities awarded to existing supplier under this EOI may be reduced. The reduction in allocated quantity will be carried out in the reverse order of allocation criteria, as described below:

1. The allocation made to the farthest existing supplier from the OMC location from outside the state shall be reduced first.
2. If the quantity is not sufficient to accommodate the offtake quantity as per agreement, then allocation from the next farthest existing supplier shall be reduced and so on as per distance of the existing supplier(s) from OMC location.
3. If the quantity reduced from existing suppliers from outside state is not sufficient to accommodate the offtake quantity as per agreement, then the reduction in allocation from the existing suppliers from within the state shall be resorted to.
4. Within the state, the allocation made for ethanol from CHM, DFG & FCI rice from the farthest existing supplier shall be reduced first.
5. If the quantity is not sufficient, then allocation for ethanol from CHM, DFG & FCI rice from next farthest existing supplier shall be reduced and so on as per distance of the existing supplier from OMC location.
6. Next, allocation made for ethanol from BHM shall be reduced as explained in step 4 & 5 above.
7. Next allocation made from SCJ shall be reduced as explained in step 4&5 above.
8. For the above, the distance between OMC location and the existing supplier will be based on the one way distance slab applicable for transportation rates.

The reduced quantity, as above, may be re-allocated based on mutual consent. In case, reallocation not acceptable to the existing supplier, the allocation will stand reduced and the reduced quantity will be considered for PRC, BG, indents, etc.

The existing supplier will be informed at least one month in advance about the above reduction in the pre-allocated quantity.

## **2) DELIVERY PERIOD :**

- a) The delivery should commence within 30 days from the date of LOI or 10 days from the date of the PO, once placed, whichever is earlier.
- b) The supply period and allocation is categorized into four quarters as described earlier for the Ethanol Sugar Year (ESY) 2021-22 (from Dec'21 to Nov'22)
- c) Timely delivery by the vendor as per the delivery schedule is the essence of contract. Monthly procurement plan based on monthly pro-rata Purchase Order (PO) qty shall be applicable to vendor for supply unless same is revised by IOCL location with mutual consent.
- d) Applications for necessary NOCs /Permits / import /export permits etc will be made available by the OMCs. It will be the responsibility of the Suppliers to arrange for all the approvals / clearances / permits in connection with Excise or any statutory requirement for supply of ethanol to the OMC locations as per the tender clause of delivery period.
- e) Suppliers shall engage only such Tank Truck crew whose Antecedents have been verified and certificate issued by Police or proof of application made for the same. This will be verified by the locations for entry of TT crew into the OMC locations.
- f) Indents Alteration by IOCL :

IOCL reserves the right to alter the prorated monthly procurement indents for a PO for the location (by increasing or decreasing) with advance notice to the supplier, based on mutual consent.

In the interest of improving blending % under EBP programme, IOCL reserves the right for preponing the indents from different periods on mutual consent basis.

There may be situations at any IOCL location like closing or downsizing of Petrol operations or any other eventuality due to major projects / safety or non-availability/ exhaustion of Permits/ exhaustion of licensed quantity etc.

IOCL with advance notice may offer in writing to the Bidder, alternate location(s) where the remaining PO quantity (part or full) can be shifted. The transfer will be at new location rate and if there is a transportation rate already established for the Supplier at the alternate location, the transportation rate for the alternate location will be offered or else Transportation slab rate as per actual distance for new location will be offered. All other taxes/ charges will be as per the new location. The acceptance of new location for delivery of full or part balance PO quantity will be Supplier's discretion, which the Supplier should communicate in writing to the IOCL. In case of acceptance by the Supplier, the procurement period will start from 10 days of issuance of Change PO or receipt of first load at the new IOCL location, whichever is earlier. The prorated monthly pro-rata PO qty will be same as for original PO.

NOTE: For purpose of assessing the qty. received by a location in a month, the invoice date of the received qty. will be considered for calculation of PRC.

In case the TT does not report within normal average transit time from the date of invoice then actual reporting date will be considered. Actual reporting date at location shall be mentioned on the invoice and shall be jointly signed by both IOCL & Supplier's representatives.

In case of mutually agreed Indent Alteration, the revised indents would be considered for "Price Reduction" clause.

e) Monthly Indents Alteration sought by Supplier

Alteration of Indent sought by a Supplier

The Supplier can also request the IOCL location in writing with minimum 15 days' notice for rescheduling of his monthly indents (while maintaining the same quarterly prorated indent) due to unforeseen situations of temporary nature arising out of day-to-day operating activities or any other pressing issues faced by the Supplier; mentioning clearly the problem faced by him. The IOCL location at its discretion may accept in writing to the Supplier, rescheduling of indents proposed by the Supplier.

In case of any alteration of monthly indents by mutual consent on supplier's request, the monthly revised indent (higher or lower) would be considered for Price Reduction clause. This option can be exercised by the Supplier once during the quarter for a PO for a location i.e. the monthly indents for quarter only can be revised while maintaining the quarterly indent i.e. if quarterly prorated indent is 300 KL; the monthly alteration within a quarter must add to 300 KL.

f) Supplier willing to supply higher than monthly prorated indent for early completion of PO:

Supplier can request IOCL location with 15 days advance notice, for supply of higher than monthly prorated indent for next month for early completion of PO quantity; acceptance of the request will be at IOCL location's discretion.

In case of multiple Vendors seeking revision (increase) in indents at a location for the next month, the revision of indents by the location will normally be in proportion of PO quantity; subject to meeting the Location's Requirement/ capacity of unloading. The Supply or Pay Clause will be reckoned as per the revised indent. The prorata monthly indents as given along with PO will, however, be effective for forthcoming months till contracted quantity is exhausted. This option can be exercised multiple times during the Procurement Period.

In such a case the quarterly revised indent (on supplier for a location & for a PO) may even become higher than prorated quarterly indent (this will enable the supplier early completion of PO quantity with location's consent).

Receipt of quantity higher than monthly indent (original or revised) dispatched by the Supplier, will be at IOCLs location's discretion.

### 3) PRICE REDUCTION CLAUSE

The supplier will make the supplies either as per day wise indent provided by IOC location up to the limit of monthly quantity applicable as per PO or monthly pro-rata PO quantity. The supplier shall strictly adhere to the supply schedule and achieve supply performance of a minimum of 85% of the quantity per month and minimum of 95% of the quantity on quarterly basis for which Price Reduction Clause will not be applicable. However, if the vendor is not achieving 85% of the supplies for a particular month and/ or minimum of 95% of the quantity quarterly basis Price Reduction Clause will be applicable. Price Reduction Clause will be applicable, where shortfall in supply (undelivered quantity for the month/quarter as the case may be) is higher in the above two cases.

Moreover, supplier has to adhere to the day wise indent provided by IOC location basis the monthly pro-rata PO qty, else supplier's TT may not be decanted on the same day due to other supplier's indented supplies in line with day wise indent.

Beginning of the first quarter will be calculated as 30 days from date of issue of LOI/LOA or 10 days from the date of issue of PO or date of reporting of first load, whichever is earlier. If the beginning of the first quarter does not fall on the first day of the calendar month, prorated indent for the balance period of that month would be considered. The following 2 months will complete the quarter.

There may not be full quarter remaining in that case the part quarter can be 2 months or 1 month. For the part quarter of two months supplier has to achieve minimum of 85% of the prorated monthly indent and minimum of 100% of the prorated quantity for that part quarter will be considered for Price Reduction Clause. If the part quarter is a one month then supplier has to achieve 95% of the indented quantity.

If the supplier is able to supply 100% of quarterly quantity as per PO in a quarter, keeping the overall lapse due to TT capacity below 12 KL in the quarterly PO quantity/Prorate PO quantity and if IOC is able to receive the quantity at the same location or any other location, monthly Penalty shall not be applicable to the Supplier.

Additionally if the supplier is able to supply 100% of the quantity as per PO for the entire ESY including the quantity lapsed during the earlier quarters of the ESY by the end of the particular ESY keeping the overall lapse due to TT capacity below 12 KL and if the IOC is able to receive the quantity at the same location or any other location, then Penalty shall not be applicable to the Supplier. OMCs decision in the above cases shall be final.

An amount equivalent to 1% of the Basic Cost shall be payable by the supplier for the undelivered quantity 85% of Indented quantity less supplied quantity on month to month basis and / or 95% of Indented quantity less supplied quantity, whichever is higher) and these shall

be deducted from the payment due to the vendors and/ or by encashing security deposit. In addition to above PRC amount, any statutory tax shall be payable as applicable.

If the Indents are revised in line with Supply Agreement, the Revised Indents will be considered for "Price Reduction Clause" in place of "Original Indents"

In case state government have not issued guidelines for supply of Ethanol produced from Sugarcane Juice/ Sugar/ Sugar Syrup and /or B Heavy Molasses then in such cases the PRC shall not be applicable for the period until such time certification is started by Excise or any other competent authority in State.

In case of any dispute related to PRC waiver, State Level OMC committee will study based on representation received from Suppliers, verify facts and submit detailed report to HQO/ HO OMC committee to resolve the matter.

#### **4) SECURITY DEPOSIT:**

This Purchase Order is being issued on receipt of Bank Guarantee (BG) or Demand Draft for an amount equivalent to 1% of the LOA/LOI value along with Agreement duly signed on non-judicial stamp paper of appropriate value, in the format provided with LOI/LOA.

The Bank Guarantee towards Security Deposit shall be valid (shall remain in force) for guarantee period (as mentioned in the guarantee clause), with an invocation period of six months thereafter. The BG may be returned after completion of supplies, even at an earlier date subject to submission of reconciled accounts along with NOC from the IOC locations to the respective office from where PO has been issued.

The BG pertaining to respective quarter i.e. Dec'21-Feb'22, Mar'22-May'22, June'22-Aug'22, Sept'22-Nov'22 shall be returned on successful completion of supply of quantity of such quarter, after reconciliation of accounts or completion of the claim period whichever is earlier after adjusting the dues, if any. (applicable for Suppliers giving quarterly BG).

The vendor may also opt for retention of an amount equivalent to 1% of basic value of contract from his initial invoices as security deposit in lieu of Bank Guarantee. This amount shall be released after completion of supplies as per terms and conditions of the contract and reconciliation of PO v/s supplies and deduction of PRC amount if any

#### **5) PAYMENT TERMS:**

The Supplier/Vendor is required to give price breakup for the Delivered Cost to the OMCs in the Invoice. Payment shall be made within 21 days after receipt of material at sites and submission of Original Invoice in triplicate. All outstanding payments w.r.t. past tenders will be recovered from vendors running Bills/BG if not settled by the vendor; unless the matter is sub-judice. Provisions of TCS will be as applicable from time to time.

#### **6) TRANSIT INSURANCE :**

Transit Insurance for Ethanol being delivered at IOC locations is to be arranged by the Supplier and it is in the scope of the supplier. The rates quoted are inclusive of insurance charges and applicable taxes/duties/service tax etc.

#### **7) Change of Distillery**

The supplier who have multiple distilleries registered with BPC under the EOI, due to some issue in the original distillery, supplier shall be allowed to change to alternate distillery (ies) during the period of contract with following conditions:

1. The alternate distillery (ies) needs to be located within the state where the original distillery is located.
2. Certificate from state excise clearly mentioning the reason for non-supply of Ethanol from the original distillery.
3. Certificate from state excise clearly mentioning the alternate distillery of the supplier from which the pending quantity is proposed to be supplied. This pending quantity supplied by alternate distillery will be adjusted from allocation of Original distillery.
4. The transportation rate applicable shall be less than or equal to the rate as per original contract.
5. This is applicable only for Cooperative distilleries under the administrative control of State Government and distilleries belonging to one Company.

**8) COMPLIANCE OF STATUTORY REGULATIONS & REQUIRED LICENCES:**

Supplier guarantees that the Ethanol supplied under this Contract have been produced, sold, dispatched, delivered and furnished in strict compliance with all applicable laws, regulations, labour agreement, working condition and technical codes and statutory requirements as applicable from time to time. The Supplier shall ensure compliance with the above and shall indemnify Purchaser against any actions, damages, costs and expenses of any failure to comply as aforesaid.

It is clearly & categorically understood that it will be entirely Ethanol Suppliers' responsibility to possess all valid statutory licenses, as are/will be applicable for Ethanol production & supply; and also renew the same from appropriate authorities. The total responsibility for possessing & validating the requisite licenses lies with the Supplier. IOCL shall follow directions as may be issued by any statutory authorities or any Courts for non-possession/compliance of any Licenses by the Supplier.

Supplier hereby agrees to indemnify and keep IOCL, its directors, officers, representatives indemnified from any claims, damages, losses, penalties, etc., arising from non possession of any of the Licenses by the Supplier and supply of Ethanol to IOCL.

In view of the Hon'ble NGT Orders dated 28/09/18, 30/10/18 & 31/10/18 regarding compliance to the safety measures prescribed by Petroleum and Explosive Safety Organization (PESO) and/or any statutory Authorities, the Supplier shall be complying with the safety measures as approved by statutory authorities, including PESO, and all others rules/ regulations framed by statutory authorities, including PESO, in this regard and/or any directions issued by Hon'ble NGT or any other court, which will be binding on the Supplier.

Also, any other Court Orders and/ or Govt. advice will be binding on the supplier and to be followed in letter & spirit.

**9) PRODUCT SPECIFICATIONS:**

Indigenous Denatured Anhydrous Ethanol conforming to Industry specifications based on IS 15464:2004, and its periodic revisions by BIS, is to be supplied by you along with test certificate/quality certificate as mentioned in the tender document. However, during the contract period, if the specifications undergo a change, you shall be bound to supply ethanol as per changed Specifications.

**10) NAME AND ADDRESS OF INDEPENDENT EXTERNAL MONITORS (IEM):**

- (a) Shri Basant Seth, Former CMD, Syndicate Bank and Information Commissioner, CIC
- (b) Shri Vijai Prakash Phatak , IRSS (Retd.)
- (c) Shri. Madhusudan Prasad, IAS (Retd.)

Procedure for lodging complaints:

All complaints/communication to IEMs should be sent on the common postal address of the IP-Secretariat as furnished below:

IP Secretariat,  
Indian Oil Corporation Limited,  
Room No 542, 5th Floor,  
Core 6, Scope Complex, Lodhi Road,  
New Delhi – 110003.

The complaints will thereafter be forwarded by IP Secretariat to all the IEMs on the common e-mail address [iem-iocl@indianoil.in](mailto:iem-iocl@indianoil.in) created for the said purpose.

The Tender Documents, Corrigendum/Amendments, the Terms & Conditions of the Tender, Specifications, subsequent negotiations and all other correspondences connected with this tender/offer shall form part of this Contract Agreement and shall remain in force during the entire contract period.

Kindly sign the copy of this Purchase Order as the token of your acceptance of the above terms and conditions.

Thanking you and assuring you of our best cooperation at all times.

Yours faithfully,

  
for Indian Oil Corporation Ltd.

**(Satish S. Rajgire)**  
Chief. Manager (Operations)  
for General Manager I/c (Operations)

Encl : As stated

Inv. Date	Payer Desc	Billing quantity in Liters
01-03-2022	HINDUSTAN PETROLEUM CORP LTD- JODHP	40,000
01-03-2022	INDIAN OIL CORP. LTD JODHPUR	40,000
01-03-2022	INDIAN OIL CORPORATION LTD, BATHIND	25,000
01-03-2022	INDIAN OIL CORPORATION LTD. JAIPUR	35,000
02-03-2022	HINDUSTAN PETROLEUM CORP LTD- JODHP	40,000
02-03-2022	INDIAN OIL CORP. LTD - JALANDHAR	40,000
02-03-2022	INDIAN OIL CORP. LTD JODHPUR	40,000
03-03-2022	BHARAT PETROLEUM CORP LTD - JAIPUR	40,000
03-03-2022	BHARAT PETROLEUM CORP LTD - JAIPUR	35,000
03-03-2022	BHARAT PETROLEUM CORP LTD - JAIPUR	40,000
03-03-2022	INDIAN OIL CORP. LTD JODHPUR	40,000
04-03-2022	BHARAT PETROLEUM CORP LTD - JAIPUR	40,000
04-03-2022	BHARAT PETROLEUM CORP LTD - JAIPUR	40,000
04-03-2022	BHARAT PETROLEUM CORP. LTD. - KOTA	40,000
05-03-2022	BHARAT PETROLEUM CORP LTD. JODHPUR	40,000
05-03-2022	BHARAT PETROLEUM CORP LTD. JODHPUR	40,000
05-03-2022	HINDUSTAN PETROLEUM CORP LTD- JODHP	40,000
05-03-2022	HINDUSTAN PETROLEUM CORP LTD- JODHP	-40,000
07-03-2022	BHARAT PETROLEUM CORP LTD. JODHPUR	40,000
07-03-2022	BHARAT PETROLEUM CORPORATION LIMITE	40,000
07-03-2022	HINDUSTAN PETROLEUM CORP LTD- JODHP	40,000
07-03-2022	HINDUSTAN PETROLEUM CORP. LTD-BATHI	39,000
07-03-2022	HINDUSTAN PETROLEUM CORP. LTD-BATHI	32,000
07-03-2022	INDIAN OIL CORP. LTD JODHPUR	40,000
07-03-2022	INDIAN OIL CORP. LTD JODHPUR	40,000
07-03-2022	INDIAN OIL CORP. LTD JODHPUR	40,000
07-03-2022	INDIAN OIL CORPORATION LTD. JAIPUR	40,000
08-03-2022	BHARAT PETROLEUM CORP LTD - JAIPUR	40,000
08-03-2022	HINDUSTAN PETROLEUM CORP LTD- JODHP	40,000
08-03-2022	HINDUSTAN PETROLEUM CORP. LTD-BATHI	32,000
08-03-2022	INDIAN OIL CORPORATION LTD, BATHIND	40,000
08-03-2022	INDIAN OIL CORPORATION LTD, BATHIND	34,000
09-03-2022	BHARAT PETROLEUM CORP LTD - JAIPUR	35,000
09-03-2022	BHARAT PETROLEUM CORPORAION LIMITED	39,000
09-03-2022	HINDUSTAN PETROLEUM CORP LTD- JODHP	40,000
09-03-2022	INDIAN OIL CORPORATION LTD, BATHIND	35,000
09-03-2022	INDIAN OIL CORPORATION LTD. JAIPUR	29,000
11-03-2022	BHARAT PETROLEUM CORP. LTD. - KOTA	40,000
11-03-2022	BHARAT PETROLEUM CORPORAION LIMITED	40,000
11-03-2022	HINDUSTAN PETROLEUM CORP LTD- JODHP	40,000
11-03-2022	HINDUSTAN PETROLEUM CORP. LTD-BATHI	25,000
11-03-2022	INDIAN OIL CORPORATION LTD, BATHIND	25,000
11-03-2022	INDIAN OIL CORPORATION LTD. JAIPUR	40,000
12-03-2022	BHARAT PETROLEUM CORP LTD - JAIPUR	35,000
12-03-2022	BHARAT PETROLEUM CORP LTD. JODHPUR	40,000
12-03-2022	BHARAT PETROLEUM CORP LTD. JODHPUR	34,000
12-03-2022	BHARAT PETROLEUM CORP. LTD. - KOTA	40,000
12-03-2022	BHARAT PETROLEUM CORPORAION LIMITED	25,000
12-03-2022	BHARAT PETROLEUM CORPORATION LIMITE	25,000
12-03-2022	HINDUSTAN PETROLEUM CORP. LTD-BATHI	35,000
12-03-2022	INDIAN OIL CORPORATION LTD, BATHIND	40,000
14-03-2022	BHARAT PETROLEUM CORP LTD. JODHPUR	40,000

14-03-2022	BHARAT PETROLEUM CORP LTD. JODHPUR	40,000
14-03-2022	BHARAT PETROLEUM CORP. LTD. - KOTA	40,000
14-03-2022	BHARAT PETROLEUM CORP. LTD. - KOTA	40,000
14-03-2022	INDIAN OIL CORPORATION LTD. JAIPUR	40,000
15-03-2022	BHARAT PETROLEUM CORP LTD - JAIPUR	38,000
15-03-2022	BHARAT PETROLEUM CORP LTD. JODHPUR	40,000
15-03-2022	BHARAT PETROLEUM CORP LTD. JODHPUR	34,000
15-03-2022	BHARAT PETROLEUM CORP. LTD. - KOTA	40,000
15-03-2022	BHARAT PETROLEUM CORPORAION LIMITED	25,000
15-03-2022	HINDUSTAN PETROLEUM CORP LTD-JALAND	39,000
15-03-2022	INDIAN OIL CORPORATION LTD. JAIPUR	32,000
15-03-2022	INDIAN OIL CORPORATION LTD. JAIPUR	35,000
16-03-2022	BHARAT PETROLEUM CORP LTD - JAIPUR	35,000
16-03-2022	HINDUSTAN PETROLEUM CORP LTD-JALAND	25,000
16-03-2022	INDIAN OIL CORP. LTD - JALANDHAR	25,000
21-03-2022	BHARAT PETROLEUM CORP LTD - JAIPUR	40,000
21-03-2022	BPCL (Koyali)20-21	40,000
21-03-2022	HINDUSTAN PETROLEUM CORP. LTD-BATHI	25,000
21-03-2022	HINDUSTAN PETROLEUM CORP. LTD-BATHI	40,000
21-03-2022	HINDUSTAN PETROLEUM CORP. LTD-BATHI	25,000
21-03-2022	INDIAN OIL CORP. LTD - JALANDHAR	25,000
22-03-2022	BHARAT PETROLEUM CORP. LTD. - KOTA	40,000
22-03-2022	BHARAT PETROLEUM CORP. LTD. - KOYAL	34,000
22-03-2022	BHARAT PETROLEUM CORPORATION LIMITE	40,000
22-03-2022	HINDUSTAN PETROLEUM CORP. LTD-BATHI	25,000
23-03-2022	BHARAT PETROLEUM CORP LTD - JAIPUR	40,000
23-03-2022	BHARAT PETROLEUM CORP LTD - JAIPUR	40,000
23-03-2022	BHARAT PETROLEUM CORP. LTD. - KOTA	40,000
23-03-2022	BHARAT PETROLEUM CORP. LTD. - KOTA	40,000
23-03-2022	BHARAT PETROLEUM CORP. LTD. - KOTA	40,000
23-03-2022	BHARAT PETROLEUM CORP. LTD. - KOTA	40,000
23-03-2022	BPCL (Koyali)20-21	35,000
23-03-2022	HINDUSTAN PETROLEUM CORP. LTD-BATHI	35,000
23-03-2022	HINDUSTAN PETROLEUM CORP. LTD-BATHI	-35,000
23-03-2022	INDIAN OIL CORP. LTD - JALANDHAR	35,000
23-03-2022	INDIAN OIL CORPORATION LTD, BATHIND	40,000
23-03-2022	INDIAN OIL CORPORATION LTD. JAIPUR	40,000
24-03-2022	BHARAT PETROLEUM CORP. LTD. - KOTA	40,000
24-03-2022	BHARAT PETROLEUM CORP. LTD. - KOTA	40,000
24-03-2022	BHARAT PETROLEUM CORPORATION LTD	40,000
24-03-2022	BHARAT PETROLEUM CORPORATION LTD	40,000
24-03-2022	HINDUSTAN PETROLEUM CORP. LTD-BATHI	25,000
24-03-2022	INDIAN OIL CORPORATION LTD. JAIPUR	40,000
24-03-2022	INDIAN OIL CORPORATION LTD. JAIPUR	40,000
25-03-2022	BHARAT PETROLEUM CORP LTD - JAIPUR	40,000
25-03-2022	BHARAT PETROLEUM CORP LTD - JAIPUR	40,000
25-03-2022	BHARAT PETROLEUM CORP. LTD. - KOTA	40,000
25-03-2022	BHARAT PETROLEUM CORP. LTD. - KOTA	40,000
25-03-2022	BHARAT PETROLEUM CORPORATION LTD	35,000
25-03-2022	HINDUSTAN PETROLEUM CORP. LTD-BATHI	25,000
26-03-2022	BHARAT PETROLEUM CORP. LTD. - KOTA	40,000
26-03-2022	BPCL (Koyali)20-21	35,000
26-03-2022	HINDUSTAN PETROLEUM CORP. LTD-BATHI	29,000
26-03-2022	INDIAN OIL CORP. LTD - JALANDHAR	40,000
26-03-2022	INDIAN OIL CORPORATION LTD, BATHIND	35,000

28-03-2022	BHARAT PETROLEUM CORPORAION LIMITED	40,000
28-03-2022	BPCL (Koyali)20-21	40,000
28-03-2022	INDIAN OIL CORPORATION LTD, BATHIND	40,000
29-03-2022	BHARAT PETROLEUM CORP. LTD. - KOTA	40,000
29-03-2022	BHARAT PETROLEUM CORP. LTD. - KOTA	40,000
29-03-2022	BHARAT PETROLEUM CORP. LTD. - KOTA	40,000
29-03-2022	HINDUSTAN PETROLEUM CORP LTD JAIPUR	40,000
29-03-2022	INDIAN OIL CORP. LTD - JALANDHAR	32,000
29-03-2022	INDIAN OIL CORPORATION LTD, BATHIND	40,000
30-03-2022	BHARAT PETROLEUM CORP. LTD. - KOTA	40,000
30-03-2022	BHARAT PETROLEUM CORP. LTD. - KOTA	40,000
30-03-2022	BHARAT PETROLEUM CORP. LTD. - KOTA	40,000
30-03-2022	BHARAT PETROLEUM CORPORATION LIMITE	29,000
30-03-2022	HINDUSTAN PETROLEUM CORP LTD JAIPUR	40,000
31-03-2022	BHARAT PETROLEUM CORP. LTD. - KOTA	40,000
31-03-2022	HINDUSTAN PETROLEUM CORP LTD JAIPUR	40,000
31-03-2022	INDIAN OIL CORP. LTD - JALANDHAR	35,000
31-03-2022	INDIAN OIL CORPORATION LTD, BATHIND	25,000
31-03-2022	INDIAN OIL CORPORATION LTD, BATHIND	29,000
31-03-2022	INDIAN OIL CORPORATION LTD, BATHIND	29,000
01-04-2022	BHARAT PETROLEUM CORP. LTD. - KOTA	40,000
01-04-2022	HINDUSTAN PETROLEUM CORP LTD- JODHP	40,000
01-04-2022	HINDUSTAN PETROLEUM CORP LTD- JODHP	40,000
01-04-2022	HINDUSTAN PETROLEUM CORP LTD- JODHP	40,000
02-04-2022	BHARAT PETROLEUM CORP. LTD. - KOTA	40,000
02-04-2022	HINDUSTAN PETROLEUM CORP LTD- JODHP	40,000
02-04-2022	HINDUSTAN PETROLEUM CORP LTD- JODHP	40,000
02-04-2022	HINDUSTAN PETROLEUM CORP LTD-JALAND	29,000
02-04-2022	HINDUSTAN PETROLEUM CORPN LTD -GJ	35,000
04-04-2022	BHARAT PETROLEUM CORP. LTD. - KOTA	40,000
04-04-2022	BHARAT PETROLEUM CORP. LTD. - KOTA	40,000
04-04-2022	HINDUSTAN PETROLEUM CORPN LTD -GJ	40,000
04-04-2022	INDIAN OIL CORP LTD - DASKROI	40,000
04-04-2022	INDIAN OIL CORP LTD - DASKROI	40,000
04-04-2022	INDIAN OIL CORP. LTD JODHPUR	40,000
04-04-2022	INDIAN OIL CORP. LTD JODHPUR	40,000
04-04-2022	INDIAN OIL CORPORATION LTD, BATHIND	40,000
05-04-2022	BHARAT PETROLEUM CORPORATION LTD	40,000
05-04-2022	HINDUSTAN PETROLEUM CORP. LTD-BATHI	40,000
05-04-2022	HINDUSTAN PETROLEUM CORPN LTD -GJ	34,000
05-04-2022	INDIAN OIL CORP. LTD - JALANDHAR	40,000
05-04-2022	INDIAN OIL CORP. LTD JODHPUR	38,000
05-04-2022	INDIAN OIL CORPORATION LTD, BATHIND	25,000
06-04-2022	BHARAT PETROLEUM CORP. LTD. - KOTA	40,000
06-04-2022	BHARAT PETROLEUM CORP.LTD-KOYALI	40,000
06-04-2022	BHARAT PETROLEUM CORPORATION LTD	40,000
06-04-2022	HINDUSTAN PETROLEUM CORP LTD-JALAND	40,000
06-04-2022	INDIAN OIL CORP. LTD JODHPUR	40,000
07-04-2022	BHARAT PETROLEUM CORP. LTD. - KOTA	40,000
07-04-2022	BHARAT PETROLEUM CORP. LTD. - KOTA	40,000
07-04-2022	BHARAT PETROLEUM CORP.LTD-KOYALI	39,000
07-04-2022	HINDUSTAN PETROLEUM CORPN LTD -GJ	35,000

07-04-2022	INDIAN OIL CORP. LTD JODHPUR	29,000
08-04-2022	BHARAT PETROLEUM CORP. LTD. - KOTA	40,000
08-04-2022	BHARAT PETROLEUM CORP. LTD. - KOTA	40,000
08-04-2022	BHARAT PETROLEUM CORPORATION LIMITE	25,000
08-04-2022	HINDUSTAN PETROLEUM CORPN LTD -GJ	40,000
08-04-2022	INDIAN OIL CORP. LTD JODHPUR	40,000
09-04-2022	BHARAT PETROLEUM CORP LTD - JAIPUR	40,000
09-04-2022	BHARAT PETROLEUM CORP. LTD. - KOTA	40,000
09-04-2022	HINDUSTAN PETROLEUM CORP LTD JAIPUR	40,000
11-04-2022	BHARAT PETROLEUM CORP. LTD. - KOTA	40,000
11-04-2022	BHARAT PETROLEUM CORP. LTD. - KOTA	40,000
11-04-2022	BHARAT PETROLEUM CORPORAION LIMITED	39,000
11-04-2022	BHARAT PETROLEUM CORPORAION LIMITED	35,000
11-04-2022	HINDUSTAN PETROLEUM CORP LTD JAIPUR	40,000
11-04-2022	HINDUSTAN PETROLEUM CORP LTD JAIPUR	40,000
11-04-2022	HINDUSTAN PETROLEUM CORPN LTD -GJ	40,000
11-04-2022	INDIAN OIL CORP LTD - DASKROI	40,000
11-04-2022	INDIAN OIL CORPORATION LTD. JAIPUR	40,000
11-04-2022	INDIAN OIL CORPORATION LTD. JAIPUR	40,000
12-04-2022	BHARAT PETROLEUM CORP. LTD. - KOTA	40,000
12-04-2022	INDIAN OIL CORPORATION LTD. JAIPUR	40,000
15-04-2022	BHARAT PETROLEUM CORP. LTD. - KOTA	40,000
15-04-2022	HINDUSTAN PETROLEUM CORP. LTD-BATHI	29,000
16-04-2022	BHARAT PETROLEUM CORP. LTD. - KOTA	40,000
16-04-2022	BHARAT PETROLEUM CORP. LTD. - KOTA	40,000
16-04-2022	BHARAT PETROLEUM CORPORAION LIMITED	25,000
16-04-2022	HINDUSTAN PETROLEUM CORP. LTD-BATHI	25,000
18-04-2022	BHARAT PETROLEUM CORP. LTD. - KOTA	40,000
18-04-2022	BHARAT PETROLEUM CORP. LTD. - KOTA	40,000
18-04-2022	BHARAT PETROLEUM CORP. LTD. - KOTA	40,000
18-04-2022	HINDUSTAN PETROLEUM CORP. LTD-BATHI	34,000
18-04-2022	INDIAN OIL CORPORATION LTD KORBA	39,000
18-04-2022	INDIAN OIL CORPORATION LTD KORBA	40,000
18-04-2022	INDIAN OIL CORPORATION LTD. JAIPUR	40,000
19-04-2022	BHARAT PETROLEUM CORP. LTD. - KOTA	34,000
19-04-2022	BHARAT PETROLEUM CORP. LTD. - KOTA	40,000
19-04-2022	INDIAN OIL CORPORATION LTD KORBA	29,000
19-04-2022	INDIAN OIL CORPORATION LTD KORBA	40,000
20-04-2022	BHARAT PETROLEUM CORP. LTD. - KOTA	40,000
20-04-2022	HINDUSTAN PETROLEUM CORP. LTD-BATHI	40,000
20-04-2022	HINDUSTAN PETROLEUM CORP. LTD-BATHI	34,000
20-04-2022	INDIAN OIL CORPORATION LTD KORBA	34,000
21-04-2022	BHARAT PETROLEUM CORP. LTD. - KOTA	40,000
21-04-2022	BHARAT PETROLEUM CORP. LTD. - KOTA	40,000
21-04-2022	HINDUSTAN PETROLEUM CORP LTD JAIPUR	40,000
21-04-2022	HINDUSTAN PETROLEUM CORPN LTD -GJ	39,000
21-04-2022	INDIAN OIL CORPORATION LTD. JAIPUR	40,000
22-04-2022	HINDUSTAN PETROLEUM CORP LTD JAIPUR	40,000
22-04-2022	HINDUSTAN PETROLEUM CORPN LTD -GJ	29,000
23-04-2022	BHARAT PETROLEUM CORP. LTD. - KOTA	40,000
23-04-2022	BHARAT PETROLEUM CORP. LTD. - KOTA	40,000
23-04-2022	HINDUSTAN PETROLEUM CORP LTD JAIPUR	40,000
23-04-2022	HINDUSTAN PETROLEUM CORP. LTD-BATHI	28,000
23-04-2022	INDIAN OIL CORPORATION LTD. JAIPUR	40,000
24-04-2022	BHARAT PETROLEUM CORP. LTD. - KOTA	34,000

24-04-2022	HINDUSTAN PETROLEUM CORP LTD JAIPUR	40,000
24-04-2022	HINDUSTAN PETROLEUM CORP. LTD-BATHI	29,000
24-04-2022	INDIAN OIL CORP LTD - DASKROI	29,000
24-04-2022	INDIAN OIL CORPORATION LTD. JAIPUR	40,000
25-04-2022	BHARAT PETROLEUM CORP. LTD. - KOTA	40,000
25-04-2022	HINDUSTAN PETROLEUM CORP LTD JAIPUR	40,000
25-04-2022	INDIAN OIL CORP LTD - DASKROI	29,000
25-04-2022	INDIAN OIL CORP. LTD - JALANDHAR	28,000
25-04-2022	INDIAN OIL CORPORATION LTD. JAIPUR	40,000
26-04-2022	HINDUSTAN PETROLEUM CORP LTD JAIPUR	40,000
26-04-2022	INDIAN OIL CORP LTD - DASKROI	35,000
26-04-2022	INDIAN OIL CORP. LTD - JALANDHAR	25,000
26-04-2022	INDIAN OIL CORPORATION LTD KORBA	35,000
26-04-2022	INDIAN OIL CORPORATION LTD. JAIPUR	40,000
27-04-2022	BHARAT PETROLEUM CORP LTD - JAIPUR	34,000
27-04-2022	BHARAT PETROLEUM CORPORATION LIMITE	29,000
27-04-2022	HINDUSTAN PETROLEUM CORP LTD JAIPUR	40,000
27-04-2022	HINDUSTAN PETROLEUM CORP. LTD-BATHI	28,000
27-04-2022	INDIAN OIL CORPORATION LTD KORBA	40,000
28-04-2022	BHARAT PETROLEUM CORP. LTD. - KOTA	32,000
28-04-2022	BHARAT PETROLEUM CORPORAION LIMITED	25,000
28-04-2022	HINDUSTAN PETROLEUM CORP LTD JAIPUR	38,000
28-04-2022	INDIAN OIL CORPORATION LTD KORBA	40,000
28-04-2022	INDIAN OIL CORPORATION LTD KORBA	40,000
29-04-2022	BHARAT PETROLEUM CORP. LTD. - KOTA	40,000
29-04-2022	BHARAT PETROLEUM CORP. LTD. - KOTA	40,000
29-04-2022	HINDUSTAN PETROLEUM CORP. LTD-BATHI	38,000
29-04-2022	INDIAN OIL CORP. LTD - JALANDHAR	35,000
29-04-2022	INDIAN OIL CORPORATION LTD KORBA	40,000
02-05-2022	BHARAT PETROLEUM CORP. LTD. - KOTA	40,000
02-05-2022	HINDUSTAN PETROLEUM CORP LTD JAIPUR	40,000
02-05-2022	HINDUSTAN PETROLEUM CORP. LTD-BATHI	40,000
02-05-2022	INDIAN OIL CORP LTD - DASKROI	35,000
02-05-2022	INDIAN OIL CORP LTD - DASKROI	40,000
02-05-2022	INDIAN OIL CORP LTD - DASKROI	40,000
02-05-2022	INDIAN OIL CORP. LTD JODHPUR	40,000
03-05-2022	BHARAT PETROLEUM CORP LTD - JAIPUR	29,000
03-05-2022	BHARAT PETROLEUM CORP. LTD. - KOTA	40,000
03-05-2022	HINDUSTAN PETROLEUM CORP LTD JAIPUR	40,000
03-05-2022	HINDUSTAN PETROLEUM CORP. LTD-BATHI	29,000
03-05-2022	HINDUSTAN PETROLEUM CORPN LTD -GJ	40,000
03-05-2022	HINDUSTAN PETROLEUM CORPN LTD -GJ	34,000
03-05-2022	INDIAN OIL CORP. LTD JODHPUR	40,000
03-05-2022	INDIAN OIL CORPORATION LTD KORBA	40,000
03-05-2022	INDIAN OIL CORPORATION LTD KORBA	40,000
04-05-2022	BHARAT PETROLEUM CORP. LTD. - KOTA	40,000
04-05-2022	HINDUSTAN PETROLEUM CORP LTD JAIPUR	40,000
04-05-2022	HINDUSTAN PETROLEUM CORPN LTD -GJ	40,000
04-05-2022	INDIAN OIL CORPORATION LTD KORBA	40,000
05-05-2022	BHARAT PETROLEUM CORP. LTD. - KOTA	40,000
05-05-2022	BHARAT PETROLEUM CORPORATION LTD	40,000
05-05-2022	HINDUSTAN PETROLEUM CORP. LTD-BATHI	40,000
05-05-2022	INDIAN OIL CORP LTD - DASKROI	40,000
05-05-2022	INDIAN OIL CORP. LTD JODHPUR	40,000
05-05-2022	INDIAN OIL CORPORATION LTD KORBA	29,000

06-05-2022	BHARAT PETROLEUM CORP. LTD. - KOTA	34,000
06-05-2022	BHARAT PETROLEUM CORPORATION LTD	40,000
06-05-2022	INDIAN OIL CORP LTD - DASKROI	40,000
07-05-2022	BHARAT PETROLEUM CORP. LTD. - KOTA	34,000
07-05-2022	BHARAT PETROLEUM CORPORATION LIMITE	39,000
07-05-2022	BHARAT PETROLEUM CORPORATION LTD	40,000
07-05-2022	INDIAN OIL CORP LTD - DASKROI	40,000
07-05-2022	INDIAN OIL CORPORATION LTD KORBA	40,000
07-05-2022	INDIAN OIL CORPORATION LTD KORBA	40,000
08-05-2022	BHARAT PETROLEUM CORPORATION LTD	40,000
08-05-2022	HINDUSTAN PETROLEUM CORP. LTD-BATHI	25,000
08-05-2022	HINDUSTAN PETROLEUM CORP. LTD-BATHI	29,000
08-05-2022	HINDUSTAN PETROLEUM CORP. LTD-BATHI	29,000
08-05-2022	INDIAN OIL CORP. LTD JODHPUR	40,000
09-05-2022	HINDUSTAN PETROLEUM CORP. LTD-BATHI	40,000
09-05-2022	INDIAN OIL CORPORATION LTD KORBA	40,000
09-05-2022	INDIAN OIL CORPORATION LTD KORBA	35,000
09-05-2022	INDIAN OIL CORPORATION LTD KORBA	35,000
10-05-2022	BHARAT PETROLEUM CORP LTD. JODHPUR	29,000
10-05-2022	HINDUSTAN PETROLEUM CORPN LTD -GJ	40,000
10-05-2022	INDIAN OIL CORP. LTD - JALANDHAR	39,000
10-05-2022	INDIAN OIL CORPORATION LTD KORBA	40,000
11-05-2022	HINDUSTAN PETROLEUM CORP LTD JAIPUR	40,000
11-05-2022	HINDUSTAN PETROLEUM CORP LTD JAIPUR	40,000
12-05-2022	BHARAT PETROLEUM CORPORATION LIMITE	40,000
12-05-2022	HINDUSTAN PETROLEUM CORP LTD JAIPUR	40,000
12-05-2022	HINDUSTAN PETROLEUM CORP. LTD-BATHI	25,000
12-05-2022	INDIAN OIL CORP. LTD JODHPUR	40,000
12-05-2022	INDIAN OIL CORP. LTD JODHPUR	40,000
13-05-2022	BHARAT PETROLEUM CORP LTD. JODHPUR	29,000
13-05-2022	HINDUSTAN PETROLEUM CORPN LTD -GJ	39,000
13-05-2022	INDIAN OIL CORP. LTD - JALANDHAR	25,000
13-05-2022	INDIAN OIL CORPORATION LTD KORBA	40,000
13-05-2022	INDIAN OIL CORPORATION LTD, BATHIND	25,000
14-05-2022	HINDUSTAN PETROLEUM CORP LTD JAIPUR	34,000
14-05-2022	HINDUSTAN PETROLEUM CORPN LTD -GJ	40,000
14-05-2022	INDIAN OIL CORP. LTD - JALANDHAR	40,000
14-05-2022	INDIAN OIL CORP. LTD JODHPUR	35,000
14-05-2022	INDIAN OIL CORPORATION LTD KORBA	40,000
15-05-2022	BHARAT PETROLEUM CORP. LTD. - KOTA	40,000
15-05-2022	HINDUSTAN PETROLEUM CORP LTD- JODHP	40,000
15-05-2022	HINDUSTAN PETROLEUM CORP LTD- JODHP	40,000
15-05-2022	INDIAN OIL CORP. LTD JODHPUR	40,000
15-05-2022	INDIAN OIL CORP. LTD JODHPUR	35,000
16-05-2022	BHARAT PETROLEUM CORP LTD. JODHPUR	29,000
16-05-2022	BHARAT PETROLEUM CORP. LTD. - KOTA	40,000
16-05-2022	HINDUSTAN PETROLEUM CORP LTD- JODHP	40,000
16-05-2022	HINDUSTAN PETROLEUM CORPN LTD -GJ	40,000
18-05-2022	BHARAT PETROLEUM CORP LTD. JODHPUR	30,000
18-05-2022	BHARAT PETROLEUM CORP. LTD. - KOTA	40,000
18-05-2022	HINDUSTAN PETROLEUM CORP LTD- JODHP	40,000
18-05-2022	HINDUSTAN PETROLEUM CORP LTD- JODHP	40,000
18-05-2022	HINDUSTAN PETROLEUM CORP LTD-JALAND	25,000
18-05-2022	HINDUSTAN PETROLEUM CORP. LTD-BATHI	40,000
18-05-2022	HINDUSTAN PETROLEUM CORP. LTD-BATHI	40,000

18-05-2022	INDIAN OIL CORP. LTD - JALANDHAR	40,000
19-05-2022	BHARAT PETROLEUM CORP. LTD. - KOTA	40,000
19-05-2022	HINDUSTAN PETROLEUM CORP LTD- JODHP	40,000
19-05-2022	HINDUSTAN PETROLEUM CORPN LTD -GJ	40,000
19-05-2022	INDIAN OIL CORPORATION LTD KORBA	40,000
19-05-2022	INDIAN OIL CORPORATION LTD, BATHIND	29,000
20-05-2022	BHARAT PETROLEUM CORP. LTD. - KOYAL	40,000
20-05-2022	BHARAT PETROLEUM CORPORATION LIMITE	40,000
20-05-2022	INDIAN OIL CORP LTD - DASKROI	40,000
20-05-2022	INDIAN OIL CORPORATION LTD. JAIPUR	40,000
21-05-2022	BHARAT PETROLEUM CORPORAION LIMITED	40,000
21-05-2022	HINDUSTAN PETROLEUM CORP. LTD-BATHI	25,000
21-05-2022	INDIAN OIL CORP. LTD - JALANDHAR	29,000
23-05-2022	BHARAT PETROLEUM CORPORAION LIMITED	40,000
23-05-2022	BHARAT PETROLEUM CORPORATION LTD	40,000
23-05-2022	HINDUSTAN PETROLEUM CORP. LTD-BATHI	40,000
23-05-2022	HINDUSTAN PETROLEUM CORPN LTD -GJ	40,000
23-05-2022	HINDUSTAN PETROLEUM CORPN LTD -GJ	40,000
23-05-2022	INDIAN OIL CORP LTD - DASKROI	40,000
23-05-2022	INDIAN OIL CORPORATION LTD, BATHIND	40,000
24-05-2022	BHARAT PETROLEUM CORPORAION LIMITED	29,000
24-05-2022	BHARAT PETROLEUM CORPORATION LIMITE	40,000
24-05-2022	HINDUSTAN PETROLEUM CORP LTD- JODHP	40,000
24-05-2022	HINDUSTAN PETROLEUM CORPN LTD -GJ	-40,000
24-05-2022	HINDUSTAN PETROLEUM CORPN LTD -GJ	40,000
24-05-2022	HINDUSTAN PETROLEUM CORPN LTD -GJ	40,000
24-05-2022	INDIAN OIL CORP LTD - DASKROI	40,000
24-05-2022	INDIAN OIL CORP LTD - DASKROI	40,000
24-05-2022	INDIAN OIL CORPORATION LTD. JAIPUR	35,000
25-05-2022	BHARAT PETROLEUM CORPORAION LIMITED	40,000
25-05-2022	INDIAN OIL CORP LTD - DASKROI	40,000
25-05-2022	INDIAN OIL CORP LTD - DASKROI	40,000
25-05-2022	INDIAN OIL CORP. LTD - JALANDHAR	40,000
25-05-2022	INDIAN OIL CORPORATION LTD. JAIPUR	35,000
26-05-2022	BHARAT PETROLEUM CORP LTD - JAIPUR	35,000
26-05-2022	BHARAT PETROLEUM CORP LTD - JAIPUR	40,000
26-05-2022	BHARAT PETROLEUM CORP LTD - JAIPUR	40,000
26-05-2022	HINDUSTAN PETROLEUM CORP. LTD-BATHI	40,000
26-05-2022	INDIAN OIL CORP LTD - DASKROI	40,000
27-05-2022	BHARAT PETROLEUM CORP LTD - JAIPUR	40,000
27-05-2022	BHARAT PETROLEUM CORPORAION LIMITED	40,000
27-05-2022	HINDUSTAN PETROLEUM CORP LTD- JODHP	40,000
27-05-2022	INDIAN OIL CORP LTD - DASKROI	40,000
27-05-2022	INDIAN OIL CORP LTD - DASKROI	39,000
28-05-2022	BHARAT PETROLEUM CORP LTD - JAIPUR	40,000
28-05-2022	HINDUSTAN PETROLEUM CORP LTD- JODHP	40,000
28-05-2022	INDIAN OIL CORP LTD - DASKROI	40,000
28-05-2022	INDIAN OIL CORPORATION LTD KORBA	40,000
28-05-2022	INDIAN OIL CORPORATION LTD, BATHIND	25,000
29-05-2022	BHARAT PETROLEUM CORPORAION LIMITED	40,000
29-05-2022	BHARAT PETROLEUM CORPORAION LIMITED	29,000
29-05-2022	BHARAT PETROLEUM CORPORAION LIMITED	25,000
29-05-2022	HINDUSTAN PETROLEUM CORP LTD- JODHP	40,000
29-05-2022	INDIAN OIL CORPORATION LTD, BATHIND	25,000
30-05-2022	BHARAT PETROLEUM CORP LTD - JAIPUR	32,000

30-05-2022	BHARAT PETROLEUM CORP LTD - JAIPUR	40,000
30-05-2022	INDIAN OIL CORP. LTD JODHPUR	40,000
30-05-2022	INDIAN OIL CORP. LTD JODHPUR	35,000
30-05-2022	INDIAN OIL CORPORATION LTD, BATHIND	40,000
31-05-2022	BHARAT PETROLEUM CORPORAION LIMITED	29,000
31-05-2022	HINDUSTAN PETROLEUM CORP. LTD-BATHI	29,000
31-05-2022	HINDUSTAN PETROLEUM CORP. LTD-BATHI	34,000
31-05-2022	INDIAN OIL CORP. LTD JODHPUR	35,000
31-05-2022	INDIAN OIL CORP. LTD JODHPUR	40,000
31-05-2022	INDIAN OIL CORPORATION LTD, BATHIND	25,000
01-06-2022	HINDUSTAN PETROLEUM CORPN LTD -GJ	40,000
01-06-2022	HINDUSTAN PETROLEUM CORPN LTD -GJ	39,000
01-06-2022	INDIAN OIL CORP LTD - DASKROI	40,000
01-06-2022	INDIAN OIL CORP LTD - DASKROI	40,000
01-06-2022	INDIAN OIL CORP. LTD - JALANDHAR	25,000
02-06-2022	BHARAT PETROLEUM CORP LTD - JAIPUR	35,000
02-06-2022	BHARAT PETROLEUM CORP. LTD. - KOTA	40,000
02-06-2022	HINDUSTAN PETROLEUM CORPN LTD -GJ	40,000
02-06-2022	INDIAN OIL CORP LTD - DASKROI	40,000
02-06-2022	INDIAN OIL CORPORATION LTD, BATHIND	25,000
03-06-2022	BHARAT PETROLEUM CORP. LTD. - KOTA	40,000
03-06-2022	BHARAT PETROLEUM CORP. LTD. - KOTA	40,000
03-06-2022	HINDUSTAN PETROLEUM CORP. LTD-BATHI	40,000
06-06-2022	BHARAT PETROLEUM CORP. LTD. - KOTA	40,000
06-06-2022	BHARAT PETROLEUM CORP. LTD. - KOTA	40,000
06-06-2022	BHARAT PETROLEUM CORP. LTD. - KOYAL	40,000
06-06-2022	BHARAT PETROLEUM CORP. LTD. - KOYAL	40,000
06-06-2022	BHARAT PETROLEUM CORPORATION LIMITE	40,000
06-06-2022	INDIAN OIL CORP LTD - DASKROI	40,000
06-06-2022	INDIAN OIL CORP LTD - DASKROI	40,000
06-06-2022	INDIAN OIL CORPORATION LTD, BATHIND	25,000
07-06-2022	BHARAT PETROLEUM CORP. LTD. - KOTA	40,000
07-06-2022	BHARAT PETROLEUM CORPORAION LIMITED	25,000
07-06-2022	BHARAT PETROLEUM CORPORATION LIMITE	24,000
07-06-2022	HINDUSTAN PETROLEUM CORP. LTD-BATHI	40,000
07-06-2022	HINDUSTAN PETROLEUM CORPN LTD -GJ	40,000
07-06-2022	INDIAN OIL CORPORATION LTD, BATHIND	25,000
08-06-2022	BHARAT PETROLEUM CORP. LTD. - KOTA	38,000
08-06-2022	BHARAT PETROLEUM CORPORAION LIMITED	40,000
08-06-2022	HINDUSTAN PETROLEUM CORP. LTD-BATHI	35,000
08-06-2022	HINDUSTAN PETROLEUM CORPN LTD -GJ	40,000
08-06-2022	INDIAN OIL CORPORATION LTD. JAIPUR	35,000
09-06-2022	BHARAT PETROLEUM CORP LTD. JODHPUR	40,000
09-06-2022	BHARAT PETROLEUM CORP LTD. JODHPUR	29,000
09-06-2022	BHARAT PETROLEUM CORP. LTD. - KOTA	40,000
09-06-2022	BHARAT PETROLEUM CORPORAION LIMITED	25,000
09-06-2022	HINDUSTAN PETROLEUM CORPN LTD -GJ	29,000
09-06-2022	HINDUSTAN PETROLEUM CORPN LTD -GJ	40,000
09-06-2022	INDIAN OIL CORPORATION LTD, BATHIND	24,000
10-06-2022	BHARAT PETROLEUM CORP LTD. JODHPUR	40,000
10-06-2022	BHARAT PETROLEUM CORP. LTD. - KOTA	40,000
10-06-2022	HINDUSTAN PETROLEUM CORPN LTD -GJ	40,000
10-06-2022	INDIAN OIL CORP LTD - DASKROI	40,000
10-06-2022	INDIAN OIL CORP. LTD - JALANDHAR	40,000
11-06-2022	BHARAT PETROLEUM CORP LTD. JODHPUR	40,000

11-06-2022	HINDUSTAN PETROLEUM CORP LTD- JODHP	34,000
11-06-2022	HINDUSTAN PETROLEUM CORP LTD- JODHP	40,000
11-06-2022	HINDUSTAN PETROLEUM CORP. LTD-BATHI	24,000
11-06-2022	INDIAN OIL CORP LTD - DASKROI	40,000
12-06-2022	BHARAT PETROLEUM CORP LTD. JODHPUR	40,000
12-06-2022	BHARAT PETROLEUM CORP. LTD. - KOTA	40,000
12-06-2022	BHARAT PETROLEUM CORP. LTD. - KOTA	40,000
12-06-2022	INDIAN OIL CORP LTD - DASKROI	25,000
12-06-2022	INDIAN OIL CORPORATION LTD. JAIPUR	35,000
13-06-2022	HINDUSTAN PETROLEUM CORP LTD- JODHP	40,000
13-06-2022	HINDUSTAN PETROLEUM CORP. LTD-BATHI	40,000
13-06-2022	HINDUSTAN PETROLEUM CORPN LTD -GJ	40,000
13-06-2022	INDIAN OIL CORP LTD - DASKROI	29,000
13-06-2022	INDIAN OIL CORP LTD - DASKROI	39,000
13-06-2022	INDIAN OIL CORP. LTD - JALANDHAR	25,000
14-06-2022	BHARAT PETROLEUM CORP. LTD. - KOTA	40,000
14-06-2022	HINDUSTAN PETROLEUM CORP LTD- JODHP	40,000
14-06-2022	HINDUSTAN PETROLEUM CORP LTD-JALAND	40,000
14-06-2022	INDIAN OIL CORP LTD - DASKROI	40,000
14-06-2022	INDIAN OIL CORP LTD - DASKROI	29,000
15-06-2022	BHARAT PETROLEUM CORP. LTD. - KOTA	40,000
15-06-2022	HINDUSTAN PETROLEUM CORP LTD JAIPUR	40,000
15-06-2022	HINDUSTAN PETROLEUM CORP. LTD-BATHI	40,000
15-06-2022	HINDUSTAN PETROLEUM CORPN LTD -GJ	40,000
15-06-2022	INDIAN OIL CORP LTD - DASKROI	35,000
16-06-2022	BHARAT PETROLEUM CORP. LTD. - KOTA	40,000
16-06-2022	HINDUSTAN PETROLEUM CORP LTD JAIPUR	40,000
16-06-2022	INDIAN OIL CORP LTD - DASKROI	40,000
16-06-2022	INDIAN OIL CORP. LTD - JALANDHAR	40,000
17-06-2022	BHARAT PETROLEUM CORP. LTD. - KOTA	40,000
17-06-2022	BHARAT PETROLEUM CORP. LTD. - KOYAL	40,000
17-06-2022	HINDUSTAN PETROLEUM CORP LTD JAIPUR	40,000
17-06-2022	HINDUSTAN PETROLEUM CORP. LTD-BATHI	29,000
17-06-2022	HINDUSTAN PETROLEUM CORPN LTD -GJ	34,000
18-06-2022	BHARAT PETROLEUM CORP. LTD. - KOTA	40,000
18-06-2022	HINDUSTAN PETROLEUM CORP LTD JAIPUR	40,000
18-06-2022	HINDUSTAN PETROLEUM CORP LTD-JALAND	24,000
18-06-2022	INDIAN OIL CORP LTD - DASKROI	40,000
18-06-2022	INDIAN OIL CORPORATION LTD, BATHIND	25,000
18-06-2022	INDIAN OIL CORPORATION LTD. JAIPUR	35,000
20-06-2022	BHARAT PETROLEUM CORPORAION LIMITED	40,000
20-06-2022	HINDUSTAN PETROLEUM CORP LTD JAIPUR	40,000
20-06-2022	HINDUSTAN PETROLEUM CORP LTD JAIPUR	40,000
20-06-2022	HINDUSTAN PETROLEUM CORP LTD- JODHP	40,000
20-06-2022	HINDUSTAN PETROLEUM CORP LTD- JODHP	40,000
20-06-2022	INDIAN OIL CORP LTD - DASKROI	39,000
20-06-2022	INDIAN OIL CORP. LTD - JALANDHAR	40,000
20-06-2022	INDIAN OIL CORP. LTD JODHPUR	40,000
20-06-2022	INDIAN OIL CORP. LTD JODHPUR	40,000
21-06-2022	BHARAT PETROLEUM CORP. LTD. - KOYAL	40,000
21-06-2022	HINDUSTAN PETROLEUM CORP LTD JAIPUR	40,000
21-06-2022	HINDUSTAN PETROLEUM CORP LTD- JODHP	40,000
21-06-2022	INDIAN OIL CORP. LTD JODHPUR	40,000
22-06-2022	BHARAT PETROLEUM CORP LTD. JODHPUR	35,000
22-06-2022	INDIAN OIL CORP. LTD - JALANDHAR	24,000

22-06-2022	INDIAN OIL CORP. LTD JODHPUR	40,000
22-06-2022	INDIAN OIL CORP. LTD JODHPUR	40,000
22-06-2022	INDIAN OIL CORP. LTD JODHPUR	40,000
22-06-2022	INDIAN OIL CORPORATION LTD, BATHIND	40,000
23-06-2022	BHARAT PETROLEUM CORPORATION LTD	40,000
23-06-2022	BHARAT PETROLEUM CORPORATION LTD	39,000
23-06-2022	HINDUSTAN PETROLEUM CORP. LTD-BATHI	40,000
23-06-2022	INDIAN OIL CORP. LTD JODHPUR	40,000
23-06-2022	INDIAN OIL CORP. LTD JODHPUR	40,000
24-06-2022	INDIAN OIL CORP. LTD JODHPUR	40,000
24-06-2022	INDIAN OIL CORP. LTD JODHPUR	40,000
24-06-2022	INDIAN OIL CORPORATION LTD. JAIPUR	35,000
24-06-2022	INDIAN OIL CORPORATION LTD. JAIPUR	40,000
24-06-2022	INDIAN OIL CORPORATION LTD. JAIPUR	40,000
25-06-2022	HINDUSTAN PETROLEUM CORP LTD JAIPUR	35,000
25-06-2022	INDIAN OIL CORP. LTD JODHPUR	40,000
25-06-2022	INDIAN OIL CORP. LTD JODHPUR	40,000
25-06-2022	INDIAN OIL CORPORATION LTD, BATHIND	40,000
25-06-2022	INDIAN OIL CORPORATION LTD. JAIPUR	40,000
27-06-2022	BHARAT PETROLEUM CORPORATION LTD	40,000
27-06-2022	BHARAT PETROLEUM CORPORATION LTD	40,000
27-06-2022	BHARAT PETROLEUM CORPORATION LTD	40,000
27-06-2022	INDIAN OIL CORP LTD - DASKROI	29,000
27-06-2022	INDIAN OIL CORP LTD - DASKROI	35,000
27-06-2022	INDIAN OIL CORP. LTD JODHPUR	40,000
27-06-2022	INDIAN OIL CORP. LTD JODHPUR	40,000
27-06-2022	INDIAN OIL CORP. LTD JODHPUR	40,000
27-06-2022	INDIAN OIL CORPORATION LTD, BATHIND	35,000
27-06-2022	INDIAN OIL CORPORATION LTD. JAIPUR	40,000
27-06-2022	INDIAN OIL CORPORATION LTD. JAIPUR	35,000
28-06-2022	BHARAT PETROLEUM CORPORAION LIMITED	40,000
28-06-2022	BHARAT PETROLEUM CORPORATION LTD	40,000
28-06-2022	INDIAN OIL CORP LTD - DASKROI	40,000
28-06-2022	INDIAN OIL CORP LTD - DASKROI	40,000
28-06-2022	INDIAN OIL CORPORATION LTD. JAIPUR	35,000
29-06-2022	BHARAT PETROLEUM CORPORAION LIMITED	29,000
29-06-2022	BHARAT PETROLEUM CORPORAION LIMITED	24,000
29-06-2022	BHARAT PETROLEUM CORPORAION LIMITED	25,000
29-06-2022	INDIAN OIL CORP LTD - DASKROI	40,000
29-06-2022	INDIAN OIL CORP LTD - DASKROI	40,000
29-06-2022	INDIAN OIL CORP. LTD - JALANDHAR	35,000
30-06-2022	BHARAT PETROLEUM CORP. LTD. - KOTA	40,000
30-06-2022	BHARAT PETROLEUM CORP. LTD. - KOTA	35,000
30-06-2022	BHARAT PETROLEUM CORPORATION LTD	29,000
30-06-2022	HINDUSTAN PETROLEUM CORP LTD- JODHP	35,000
30-06-2022	HINDUSTAN PETROLEUM CORP LTD- JODHP	35,000
30-06-2022	INDIAN OIL CORPORATION LTD. JAIPUR	35,000
01-07-2022	BHARAT PETROLEUM CORP. LTD. - KOTA	40,000
01-07-2022	BHARAT PETROLEUM CORP. LTD. - KOTA	40,000
01-07-2022	BHARAT PETROLEUM CORPORAION LIMITED	29,000
01-07-2022	BHARAT PETROLEUM CORPORATION LTD	40,000
01-07-2022	HINDUSTAN PETROLEUM CORP LTD- JODHP	35,000
02-07-2022	BHARAT PETROLEUM CORP. LTD. - KOTA	40,000
02-07-2022	BHARAT PETROLEUM CORP. LTD. - KOTA	-40,000
02-07-2022	BHARAT PETROLEUM CORP. LTD. - KOTA	40,000

02-07-2022	HINDUSTAN PETROLEUM CORPN LTD -GJ	40,000
02-07-2022	INDIAN OIL CORP LTD - DASKROI	34,000
02-07-2022	INDIAN OIL CORPORATION LTD, BATHIND	29,000
02-07-2022	INDIAN OIL CORPORATION LTD, BATHIND	40,000
04-07-2022	BHARAT PETROLEUM CORP LTD - JAIPUR	40,000
04-07-2022	BHARAT PETROLEUM CORP LTD - JAIPUR	40,000
04-07-2022	BHARAT PETROLEUM CORP. LTD. - KOTA	40,000
04-07-2022	BHARAT PETROLEUM CORP. LTD. - KOTA	40,000
04-07-2022	HINDUSTAN PETROLEUM CORPN LTD -GJ	40,000
04-07-2022	INDIAN OIL CORP LTD - DASKROI	40,000
04-07-2022	INDIAN OIL CORP LTD - DASKROI	40,000
04-07-2022	INDIAN OIL CORP LTD - DASKROI	40,000
04-07-2022	INDIAN OIL CORPORATION LTD, BATHIND	34,000
05-07-2022	BHARAT PETROLEUM CORP. LTD. - KOTA	40,000
05-07-2022	BHARAT PETROLEUM CORP. LTD. - KOTA	40,000
05-07-2022	BHARAT PETROLEUM CORPORATION LTD	40,000
05-07-2022	HINDUSTAN PETROLEUM CORPN LTD -GJ	35,000
07-07-2022	BHARAT PETROLEUM CORP. LTD. - KOTA	40,000
07-07-2022	HINDUSTAN PETROLEUM CORPN LTD -GJ	40,000
07-07-2022	INDIAN OIL CORP. LTD - JALANDHAR	29,000
07-07-2022	INDIAN OIL CORP. LTD JODHPUR	40,000
07-07-2022	INDIAN OIL CORP. LTD JODHPUR	40,000
08-07-2022	BHARAT PETROLEUM CORP. LTD. - KOTA	40,000
08-07-2022	HINDUSTAN PETROLEUM CORP. LTD-BATHI	24,000
08-07-2022	HINDUSTAN PETROLEUM CORP. LTD-BATHI	29,000
08-07-2022	INDIAN OIL CORP LTD - DASKROI	29,000
08-07-2022	INDIAN OIL CORP. LTD JODHPUR	40,000
08-07-2022	INDIAN OIL CORP. LTD JODHPUR	40,000
09-07-2022	BHARAT PETROLEUM CORP LTD. JODHPUR	35,000
09-07-2022	HINDUSTAN PETROLEUM CORP. LTD-BATHI	29,000
09-07-2022	INDIAN OIL CORP. LTD JODHPUR	40,000
09-07-2022	INDIAN OIL CORP. LTD JODHPUR	40,000
11-07-2022	BHARAT PETROLEUM CORP LTD - JAIPUR	40,000
11-07-2022	BHARAT PETROLEUM CORP. LTD. - KOYAL	40,000
11-07-2022	BHARAT PETROLEUM CORPORAION LIMITED	40,000
11-07-2022	INDIAN OIL CORP LTD - DASKROI	40,000
11-07-2022	INDIAN OIL CORP LTD - DASKROI	40,000
11-07-2022	INDIAN OIL CORP. LTD JODHPUR	35,000
11-07-2022	INDIAN OIL CORP. LTD JODHPUR	40,000
11-07-2022	INDIAN OIL CORP. LTD JODHPUR	35,000
12-07-2022	HINDUSTAN PETROLEUM CORP. LTD-BATHI	40,000
12-07-2022	INDIAN OIL CORPORATION LTD, BATHIND	29,000
12-07-2022	INDIAN OIL CORPORATION LTD, BATHIND	25,000
13-07-2022	BHARAT PETROLEUM CORP LTD - JAIPUR	35,000
13-07-2022	BHARAT PETROLEUM CORP LTD. JODHPUR	40,000
13-07-2022	BHARAT PETROLEUM CORP LTD. JODHPUR	40,000
13-07-2022	BHARAT PETROLEUM CORPORAION LIMITED	25,000
13-07-2022	HINDUSTAN PETROLEUM CORP. LTD-BATHI	25,000
14-07-2022	BHARAT PETROLEUM CORP LTD. JODHPUR	40,000
14-07-2022	BHARAT PETROLEUM CORP. LTD. - KOYAL	24,000
14-07-2022	INDIAN OIL CORP LTD - DASKROI	29,000
14-07-2022	INDIAN OIL CORPORATION LTD. JAIPUR	40,000
14-07-2022	INDIAN OIL CORPORATION LTD. JAIPUR	40,000
15-07-2022	HINDUSTAN PETROLEUM CORP. LTD-BATHI	40,000
15-07-2022	INDIAN OIL CORPORATION LTD. JAIPUR	40,000

16-07-2022	INDIAN OIL CORP LTD - DASKROI	29,000
16-07-2022	INDIAN OIL CORP LTD - DASKROI	29,000
16-07-2022	INDIAN OIL CORP. LTD - JALANDHAR	40,000
16-07-2022	INDIAN OIL CORPORATION LTD, BATHIND	25,000
16-07-2022	INDIAN OIL CORPORATION LTD. JAIPUR	40,000
17-07-2022	INDIAN OIL CORP LTD - DASKROI	34,000
17-07-2022	INDIAN OIL CORPORATION LTD. JAIPUR	40,000
18-07-2022	BHARAT PETROLEUM CORP LTD. JODHPUR	35,000
18-07-2022	BHARAT PETROLEUM CORP. LTD. - KOTA	40,000
18-07-2022	HINDUSTAN PETROLEUM CORP. LTD-BATHI	40,000
18-07-2022	INDIAN OIL CORP LTD - DASKROI	29,000
18-07-2022	INDIAN OIL CORP. LTD - JALANDHAR	29,000
18-07-2022	INDIAN OIL CORP. LTD - JALANDHAR	25,000
19-07-2022	BHARAT PETROLEUM CORP. LTD. - KOTA	40,000
19-07-2022	BHARAT PETROLEUM CORPORAION LIMITED	40,000
19-07-2022	BHARAT PETROLEUM CORPORATION LTD	40,000
19-07-2022	HINDUSTAN PETROLEUM CORPN LTD -GJ	34,000
19-07-2022	INDIAN OIL CORPORATION LTD, BATHIND	40,000
20-07-2022	BHARAT PETROLEUM CORP. LTD. - KOTA	40,000
20-07-2022	BHARAT PETROLEUM CORPORATION LTD	40,000
20-07-2022	INDIAN OIL CORP LTD - DASKROI	29,000
20-07-2022	INDIAN OIL CORPORATION LTD. JAIPUR	40,000
21-07-2022	INDIAN OIL CORP. LTD JODHPUR	40,000
21-07-2022	INDIAN OIL CORP. LTD JODHPUR	40,000
21-07-2022	INDIAN OIL CORP. LTD JODHPUR	40,000
21-07-2022	INDIAN OIL CORP. LTD JODHPUR	40,000
21-07-2022	INDIAN OIL CORPORATION LTD. JAIPUR	40,000
22-07-2022	BHARAT PETROLEUM CORP. LTD. - KOTA	40,000
22-07-2022	BHARAT PETROLEUM CORP. LTD. - KOTA	35,000
22-07-2022	INDIAN OIL CORP LTD - DASKROI	40,000
22-07-2022	INDIAN OIL CORPORATION LTD. JAIPUR	40,000
16-03-2023	INDIAN OIL CORPORATION LTD. PANIPAT	25,000
16-03-2023	INDIAN OIL CORPORATION LTD. PANIPAT	25,000
17-03-2023	INDIAN OIL CORPORATION LTD. PANIPAT	29,000
17-03-2023	INDIAN OIL CORPORATION LTD. PANIPAT	40,000
17-03-2023	INDIAN OIL CORPORATION LTD. PANIPAT	29,000
17-03-2023	INDIAN OIL CORPORATION LTD. PANIPAT	32,000
17-03-2023	INDIAN OIL CORPORATION LTD. PANIPAT	40,000
17-03-2023	INDIAN OIL CORPORATION LTD. PANIPAT	40,000
18-03-2023	INDIAN OIL CORPORATION LTD. PANIPAT	40,000
18-03-2023	INDIAN OIL CORPORATION LTD. PANIPAT	40,000
18-03-2023	INDIAN OIL CORPORATION LTD. PANIPAT	40,000
18-03-2023	INDIAN OIL CORPORATION LTD. PANIPAT	29,000
18-03-2023	INDIAN OIL CORPORATION LTD. PANIPAT	34,000
19-03-2023	INDIAN OIL CORPORATION LTD. PANIPAT	40,000
19-03-2023	INDIAN OIL CORPORATION LTD. PANIPAT	34,000
19-03-2023	INDIAN OIL CORPORATION LTD. PANIPAT	25,000
19-03-2023	INDIAN OIL CORPORATION LTD. PANIPAT	25,000
20-03-2023	INDIAN OIL CORPORATION LTD. PANIPAT	29,000
20-03-2023	INDIAN OIL CORPORATION LTD. PANIPAT	24,000

Inv. Date	Payer Desc	Description	Billing quantity in Kg
04-03-2022	SENTINI COMTRADE INDIA PRIVATE LIM	Animal Feed Supplement	25,030
04-03-2022	SENTINI COMTRADE INDIA PRIVATE LIM	Animal Feed Supplement	40,970
05-03-2022	SENTINI COMTRADE INDIA PRIVATE LIM	Animal Feed Supplement	30,920
07-03-2022	Omega Agro	Animal Feed Supplement	35,300
08-03-2022	EVEREST TRADE LINK	Animal Feed Supplement	24,960
09-03-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	28,440
11-03-2022	EVEREST TRADE LINK	Animal Feed Supplement	26,640
12-03-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	29,810
12-03-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	31,250
14-03-2022	EVEREST TRADE LINK	Animal Feed Supplement	26,190
14-03-2022	F A NUTRIENTS	Animal Feed Supplement	29,600
14-03-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	34,220
15-03-2022	EVEREST TRADE LINK	Animal Feed Supplement	25,060
15-03-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	28,560
21-03-2022	EVEREST TRADE LINK	Animal Feed Supplement	25,460
22-03-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	32,960
26-03-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	25,300
28-03-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	38,260
28-03-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	29,750
29-03-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	41,560
30-03-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	43,330
30-03-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	33,220
31-03-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	32,830
31-03-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	35,520
31-03-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	36,990
31-03-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	36,510
01-04-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	35,280
01-04-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	33,030
02-04-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	34,920
04-04-2022	Prorich Agro Private Limited - PB	Animal Feed Supplement	24,950
04-04-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	33,940
04-04-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	33,070
04-04-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	33,410
05-04-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	41,070
06-04-2022	NIHAL CHAND SHAM LAL	Animal Feed Supplement	36,370
06-04-2022	Prorich Agro Private Limited - PB	Animal Feed Supplement	30,110
07-04-2022	Prorich Agro Private Limited - PB	Animal Feed Supplement	29,460
07-04-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	33,550
07-04-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	33,620
08-04-2022	Prorich Agro Private Limited - PB	Animal Feed Supplement	29,660
08-04-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	33,780
09-04-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	33,910
09-04-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	33,940
09-04-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	29,020
09-04-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	34,050
09-04-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	30,000
10-04-2022	Prorich Agro Private Limited - PB	Animal Feed Supplement	25,060
11-04-2022	GOOD GRAIN FOODS	Animal Feed Supplement	30,340
11-04-2022	Prorich Agro Private Limited - PB	Animal Feed Supplement	29,960
11-04-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	25,430
11-04-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	30,240
12-04-2022	GOOD GRAIN FOODS	Animal Feed Supplement	30,840
12-04-2022	NIHAL CHAND SHAM LAL	Animal Feed Supplement	36,450

12-04-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	33,010
13-04-2022	Prorich Agro Private Limited - PB	Animal Feed Supplement	24,700
17-04-2022	Prorich Agro Private Limited - PB	Animal Feed Supplement	30,190
18-04-2022	GOOD GRAIN FOODS	Animal Feed Supplement	30,920
18-04-2022	GOOD GRAIN FOODS	Animal Feed Supplement	29,480
19-04-2022	JV Health Care	Animal Feed Supplement	30,940
19-04-2022	NIHAL CHAND SHAM LAL	Animal Feed Supplement	38,120
20-04-2022	GOOD GRAIN FOODS	Animal Feed Supplement	30,430
20-04-2022	JV Health Care	Animal Feed Supplement	30,430
21-04-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	32,900
21-04-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	31,280
23-04-2022	NIHAL CHAND SHAM LAL	Animal Feed Supplement	30,470
23-04-2022	Omega Agro	Animal Feed Supplement	27,350
23-04-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	29,260
24-04-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	30,000
25-04-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	31,240
25-04-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	30,060
26-04-2022	Prorich Agro Private Limited - PB	Animal Feed Supplement	20,570
26-04-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	30,150
27-04-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	32,870
27-04-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	31,670
28-04-2022	LAKHSHAY AGRO FOODS	Animal Feed Supplement	30,820
28-04-2022	SENTINI COMTRADE INDIA PRIVATE LIM	Animal Feed Supplement	41,190
29-04-2022	GOOD GRAIN FOODS	Animal Feed Supplement	31,600
29-04-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	33,160
29-04-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	34,120
30-04-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	31,410
30-04-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	28,380
02-05-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	29,910
02-05-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	29,220
02-05-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	9,110
02-05-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	27,810
03-05-2022	GOOD GRAIN FOODS	Animal Feed Supplement	12,630
03-05-2022	GOOD GRAIN FOODS	Animal Feed Supplement	17,380
03-05-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	25,130
04-05-2022	LAKHSHAY AGRO FOODS	Animal Feed Supplement	25,080
04-05-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	26,070
05-05-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	28,910
05-05-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	35,570
06-05-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	29,650
06-05-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	34,870
07-05-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	27,260
07-05-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	27,010
07-05-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	30,040
08-05-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	30,030
08-05-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	30,220
09-05-2022	GOOD GRAIN FOODS	Animal Feed Supplement	17,260
09-05-2022	GOOD GRAIN FOODS	Animal Feed Supplement	15,000
09-05-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	37,400
09-05-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	29,180
10-05-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	35,100
10-05-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	35,230
11-05-2022	SENTINI COMTRADE INDIA PRIVATE LIM	Animal Feed Supplement	41,130
11-05-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	24,010
12-05-2022	JV Health Care	Animal Feed Supplement	25,030
12-05-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	29,910
12-05-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	28,180

13-05-2022	Garg Enterprises	Animal Feed Supplement	24,650
13-05-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	29,980
14-05-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	30,500
14-05-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	25,410
15-05-2022	Garg Enterprises	Animal Feed Supplement	33,260
15-05-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	30,170
16-05-2022	JV Health Care	Animal Feed Supplement	28,900
16-05-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	37,070
16-05-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	25,050
17-05-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	36,770
18-05-2022	JV Health Care	Animal Feed Supplement	29,240
18-05-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	24,610
18-05-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	26,040
19-05-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	29,070
19-05-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	27,250
20-05-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	24,650
20-05-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	13,000
20-05-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	12,000
21-05-2022	JV Health Care	Animal Feed Supplement	25,240
21-05-2022	Nutrikraft India Private LTD INDORE	Animal Feed Supplement	25,000
21-05-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	25,220
23-05-2022	AMAN FEED INDUSTRIES	Animal Feed Supplement	31,590
23-05-2022	JV Health Care	Animal Feed Supplement	30,500
23-05-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	24,080
23-05-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	28,190
23-05-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	25,860
24-05-2022	AMAN FEED INDUSTRIES	Animal Feed Supplement	25,680
25-05-2022	Neogenetics Foods Private LTD HARDO	Animal Feed Supplement	30,000
25-05-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	31,580
26-05-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	28,050
26-05-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	29,530
27-05-2022	Omega Agro	Animal Feed Supplement	39,580
27-05-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	32,180
27-05-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	34,820
28-05-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	24,900
28-05-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	27,990
29-05-2022	Nutrikraft India Private Ltd - Jind	Animal Feed Supplement	24,980
30-05-2022	Neogenetics Foods Private LTD HARDO	Animal Feed Supplement	24,990
30-05-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	27,440
30-05-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	30,230
31-05-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	32,300
01-06-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	32,200
01-06-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	28,690
02-06-2022	Omega Agro	Animal Feed Supplement	3,350
02-06-2022	Omega Agro	Animal Feed Supplement	35,000
02-06-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	30,990
02-06-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	27,320
03-06-2022	Omega Agro	Animal Feed Supplement	32,680
03-06-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	30,660
04-06-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	32,690
06-06-2022	KRISHNA AGARO INDUSTRIES (Block)	Animal Feed Supplement	29,680
06-06-2022	Omega Agro	Animal Feed Supplement	25,020
06-06-2022	Omega Agro	Animal Feed Supplement	34,450
06-06-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	30,070
07-06-2022	Prodigy Foods (Derabassi)	Animal Feed Supplement	30,050
07-06-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	30,240
08-06-2022	Omega Agro	Animal Feed Supplement	35,240

08-06-2022	Omega Agro	Animal Feed Supplement	28,430
09-06-2022	Nutrikraft India Private LTD BIRKON	Animal Feed Supplement	25,000
09-06-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	34,580
10-06-2022	Omega Agro	Animal Feed Supplement	34,260
10-06-2022	Prodigy Foods (Derabassi)	Animal Feed Supplement	33,760
10-06-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	33,050
11-06-2022	JV Health Care	Animal Feed Supplement	30,820
11-06-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	26,510
11-06-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	23,930
12-06-2022	Omega Agro	Animal Feed Supplement	29,990
13-06-2022	JV Health Care	Animal Feed Supplement	35,710
13-06-2022	KRISHNA AGARO INDUSTRIES (Block)	Animal Feed Supplement	29,870
13-06-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	33,670
13-06-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	26,390
14-06-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	24,990
14-06-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	35,800
15-06-2022	NIHAL CHAND SHAM LAL	Animal Feed Supplement	28,450
15-06-2022	Nutrikraft India Private Ltd - Jind	Animal Feed Supplement	25,000
16-06-2022	KRISHNA AGARO INDUSTRIES (Block)	Animal Feed Supplement	30,030
16-06-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	9,960
16-06-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	13,000
16-06-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	28,020
17-06-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	24,210
18-06-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	28,390
18-06-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	29,950
19-06-2022	Nutrikraft India Private LTD INDORE	Animal Feed Supplement	24,790
19-06-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	25,040
20-06-2022	Nutrikraft India Private LTD BIRKON	Animal Feed Supplement	24,980
20-06-2022	Nutrikraft India Private LTD INDORE	Animal Feed Supplement	24,970
20-06-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	28,460
21-06-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	32,190
21-06-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	29,950
22-06-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	31,860
22-06-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	32,320
22-06-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	36,780
23-06-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	25,590
24-06-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	2,31,360
24-06-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	-2,31,360
24-06-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	32,490
24-06-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	27,030
24-06-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	27,030
24-06-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	-27,030
25-06-2022	GODREJ AGROVET LIMITED - KHANNA	Animal Feed Supplement	25,000
25-06-2022	GODREJ AGROVET LIMITED - KHANNA	Animal Feed Supplement	24,810
25-06-2022	GODREJ AGROVET LIMITED - KHANNA	Animal Feed Supplement	20,370
25-06-2022	KRISHNA AGARO INDUSTRIES (Block)	Animal Feed Supplement	24,410
25-06-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	29,680
26-06-2022	GODREJ AGROVET LIMITED - KHANNA	Animal Feed Supplement	29,810
26-06-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	32,780
27-06-2022	Jain Agro Chem (Ghaziabad)	Animal Feed Supplement	35,040
27-06-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	32,050
28-06-2022	Jain Agro Chem (Ghaziabad)	Animal Feed Supplement	29,980
28-06-2022	Neogenetics Foods Private LTD HARDO	Animal Feed Supplement	25,000
28-06-2022	Omega Agro	Animal Feed Supplement	33,630
28-06-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	24,930
29-06-2022	Jain Agro Chem (Ghaziabad)	Animal Feed Supplement	34,560
30-06-2022	Jain Agro Chem (Ghaziabad)	Animal Feed Supplement	40,000

30-06-2022	Shyamaji Agrocom	Animal Feed Supplement	19,000
30-06-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	33,310
01-07-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	34,460
02-07-2022	Jain Agro Chem (Ghaziabad)	Animal Feed Supplement	27,490
02-07-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	29,910
03-07-2022	Nutrikraft India Private Ltd - Jind	Animal Feed Supplement	30,000
03-07-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	28,050
04-07-2022	GODREJ AGROVET LIMITED - KHANNA	Animal Feed Supplement	25,030
04-07-2022	GODREJ AGROVET LIMITED - KHANNA	Animal Feed Supplement	24,990
04-07-2022	Jain Agro Chem (Ghaziabad)	Animal Feed Supplement	28,910
04-07-2022	KRISHNA AGARO INDUSTRIES (Block)	Animal Feed Supplement	24,550
05-07-2022	GODREJ AGROVET LIMITED - KHANNA	Animal Feed Supplement	24,440
05-07-2022	GODREJ AGROVET LIMITED - KHANNA	Animal Feed Supplement	25,540
06-07-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	34,110
07-07-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	32,810
07-07-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	33,860
08-07-2022	Jain Agro Chem (Ghaziabad)	Animal Feed Supplement	25,590
08-07-2022	Neogenetics Foods Private LTD HARDO	Animal Feed Supplement	29,990
08-07-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	31,650
09-07-2022	Jain Agro Chem (Ghaziabad)	Animal Feed Supplement	35,650
11-07-2022	Jain Agro Chem (Ghaziabad)	Animal Feed Supplement	28,350
11-07-2022	Nutrikraft India Private LTD BIRKON	Animal Feed Supplement	30,000
11-07-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	34,070
11-07-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	32,450
11-07-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	33,220
13-07-2022	Jain Agro Chem (Ghaziabad)	Animal Feed Supplement	41,880
13-07-2022	Universe Agro Foods	Animal Feed Supplement	30,000
14-07-2022	Jain Agro Chem (Ghaziabad)	Animal Feed Supplement	25,190
14-07-2022	SENTINI COMTRADE INDIA PRIVATE LIM	Animal Feed Supplement	28,300
14-07-2022	SENTINI COMTRADE INDIA PRIVATE LIM	Animal Feed Supplement	12,680
15-07-2022	Jain Agro Chem (Ghaziabad)	Animal Feed Supplement	37,020
15-07-2022	Jain Agro Chem (Ghaziabad)	Animal Feed Supplement	32,860
16-07-2022	Nutrikraft India Private LTD ERODE	Animal Feed Supplement	31,000
16-07-2022	Nutrikraft India Private LTD ERODE	Animal Feed Supplement	30,800
18-07-2022	Jain Agro Chem (Ghaziabad)	Animal Feed Supplement	36,460
19-07-2022	GODREJ AGROVET LIMITED - KHANNA	Animal Feed Supplement	24,990
19-07-2022	Nutrikraft India Private Ltd - Jind	Animal Feed Supplement	30,000
20-07-2022	GODREJ AGROVET LIMITED - KHANNA	Animal Feed Supplement	24,950
20-07-2022	GODREJ AGROVET LIMITED - KHANNA	Animal Feed Supplement	24,970
20-07-2022	Jain Agro Chem (Ghaziabad)	Animal Feed Supplement	30,230
21-07-2022	GODREJ AGROVET LIMITED - KHANNA	Animal Feed Supplement	25,090
21-07-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	33,390
22-07-2022	KRISHNA AGARO INDUSTRIES (Block)	Animal Feed Supplement	41,030
22-07-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	31,450
23-07-2022	Jain Agro Chem (Ghaziabad)	Animal Feed Supplement	9,890
23-07-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	39,160
23-07-2022	YASHIKA PROTEINS PRIVATE LIMITED	Animal Feed Supplement	34,280

**PUNJAB POLLUTION CONTROL BOARD****Inspection Report**

Inspection ID: 15196183

1. General Details			
a.	Industry ID R20FZR888417		
b.	Name of the Industry MALBROS INTERNATIONAL PVT LIMITED (Unit II)		
c.	Address of the Industry VILL. MANSOORWAL, TEHSIL ZIRA, DISTT FEROZEPUR PUNJAB		
d.	District FEROZEPUR		
e.	Category RED		
f.	Scale of the Industry Large		
g.	Type of the Industry 1060-Distillery ( molasses / grain / yeast based)		
h.	Operational Status of the Industry In operation		
i.	Type of visit Application Processing		
j.	Date of Visit 16-02-2021		
k.	Person Contacted Pawan Bansal		
l.	Designation of the Personcontacted CAO		
m.	Mobile Number of the personcontacted 9914800006		
n.	Email ID of the personcontacted pkbansal59@gmail.com		
o.	ID, Name & Designation of visiting officers Rohit Singla (PPCB096),		
2. Compliance of various Pollution Acts/Rules			
	Acts / Rules	Status	Observations (if Non Complying)
i.	Water (Prevention & Control of Pollution) Act, 1974	Complying	
ii.	Air (Prevention & Control of Pollution) Act, 1981	Complying	
iii.	Hazardous & Other Wastes(Management & Transboundary Movement) Rules, 2016	-Select-	
iv.	Bio-Medical Waste Management Rules, 2016	-Select-	
3. Any other observations			

**Rohit Singla**  
**(AEE)**

# PUNJAB POLLUTION CONTROL BOARD



## Inspection Report

**Inspection ID: 15196183**

1.	General Details		
a.	Industry ID	R20FZR888417	
b.	Name of the Industry	MALBROS INTERNATIONAL PVT LIMITED (Unit II)	
c.	Address of the Industry	VILL. MANSOORWAL, TEHSIL ZIRA, DISTT FEROZEPUR PUNJAB	
d.	District	FEROZEPUR	
e.	Category	RED	
f.	Scale of the Industry	Large	
g.	Type of the Industry	1060-Distillery ( molasses / grain / yeast based)	
h.	Operational Status of the Industry	In operation	
i.	Type of visit	Application Processing	
j.	Date of Visit	30-03-2021	
k.	Person Contacted	Pawan Bansal	
l.	Designation of the Personcontacted	CAO	
m.	Mobile Number of the personcontacted	9914800006	
n.	Email ID of the personcontacted	pkbansal59@gmail.com	
o.	ID, Name & Designation of visiting officers	Rohit Singla (PPCB096),	
2.	Compliance of various Pollution Acts/Rules		
	Acts / Rules	Status	Observations (if Non Complying)
i.	Water (Prevention & Control of Pollution) Act, 1974	Complying	
ii.	Air (Prevention & Control of Pollution) Act, 1981	Complying	
iii.	Hazardous & Other Wastes(Management & Transboundary Movement) Rules, 2016	-Select-	
iv.	Bio-Medical Waste Management Rules, 2016	-Select-	
3.	Any other observations		

**Rohit Singla**  
**(EE)**

# PUNJAB POLLUTION CONTROL BOARD



## Inspection Report

**Inspection ID: 17127833**

1.	General Details		
a.	Industry ID	R20FZR888417	
b.	Name of the Industry	MALBROS INTERNATIONAL PVT LIMITED	
c.	Address of the Industry	VILL. MANSOORWAL, TEHSIL ZIRA, DISTT FEROZEPUR PUNJAB	
d.	District	FEROZEPUR	
e.	Category	RED	
f.	Scale of the Industry	Large	
g.	Type of the Industry	Sodium Silicate manufacturing units.	
h.	Operational Status of the Industry	In operation	
i.	Type of visit	Application Processing	
j.	Date of Visit	04-10-2021	
k.	Person Contacted	Sh. Pawan Bansal	
l.	Designation of the Personcontacted	CAO	
m.	Mobile Number of the personcontacted	9914800006	
n.	Email ID of the personcontacted	malbros@oasisgrp.in	
o.	ID, Name & Designation of visiting officers	Aushpreet Singh (PPCB139),	
2.	Compliance of various Pollution Acts/Rules		
	Acts / Rules	Status	Observations (if Non Complying)
i.	Water (Prevention & Control of Pollution) Act, 1974	Complying	
ii.	Air (Prevention & Control of Pollution) Act, 1981	Complying	
iii.	Hazardous & Other Wastes(Management & Transboundary Movement) Rules, 2016	-Select-	
iv.	Bio-Medical Waste Management Rules, 2016	-Select-	
3.	Any other observations		

**Aushpreet Singh**  
**(AEE)**

# PUNJAB POLLUTION CONTROL BOARD



## Inspection Report

**Inspection ID: 15623514**

1. General Details			
a.	Industry ID	R20FZR888417	
b.	Name of the Industry	MALBROS INTERNATIONAL PVT LIMITED	
c.	Address of the Industry	VILL. MANSOORWAL, TEHSIL ZIRA, DISTT FEROZEPUR PUNJAB	
d.	District	FEROZEPUR	
e.	Category	RED	
f.	Scale of the Industry	Small	
g.	Type of the Industry	1060-Distillery ( molasses / grain / yeast based)	
h.	Operational Status of the Industry	Not in operation	
i.	Type of visit	Application Processing	
j.	Date of Visit	18-09-2022	
k.	Person Contacted	Sh. Pawan Bansal	
l.	Designation of the Personcontacted	CAO	
m.	Mobile Number of the personcontacted	9914800006	
n.	Email ID of the personcontacted	malbros@oasisgrp.in	
o.	ID, Name & Designation of visiting officers	Aushpreet Singh (PPCB139),	
2. Compliance of various Pollution Acts/Rules			
	Acts / Rules	Status	Observations (if Non Complying)
i.	Water (Prevention & Control of Pollution) Act, 1974	Complying	
ii.	Air (Prevention & Control of Pollution) Act, 1981	Complying	
iii.	Hazardous & Other Wastes(Management & Transboundary Movement) Rules, 2016	-Select-	
iv.	Bio-Medical Waste Management Rules, 2016	-Select-	
3. Any other observations			

**Aushpreet Singh**  
**(AEE)**



## PUNJAB POLLUTION CONTROL BOARD

[Colly]

Invest Punjab, PBIP, Udyog Bhawan, Sector 17, Chandigarh

Website:- www.ppcb.gov.in

Office Dispatch No :	Registered/Speed Post	Date:
Industry Registration ID: R20FZR888417		Application No : 15384779

To,

**Pawan Bansal**  
**Village Mansoorwal**  
**Zira, Ferozepur-142047**

**Subject: Grant of "Consent to Establish"(NOC) for Expansion of an existing industrial unit u/s 25 of Water (Prevention & Control of Pollution) Act, 1974 and u/s 21 of Air (Prevention & Control of Pollution) Act, 1981.**

With reference to your application for obtaining 'Consent to Establish'(NOC) for Expansion of an existing industrial plant u/s 25 of Water (Prevention & Control of Pollution) Act, 1974 and u/s 21 of Air (Prevention & Control of Pollution) Act, 1981, you are, hereby, permitted to expand the existing industrial unit to discharge the effluent(s) & emission(s) arising out of your premises subject to the Terms and Conditions as specified in this Certificate.

### 1. Particulars of Consent to Establish (NOC) for Expansion granted to the Industry

Certificate No.	CTE/Exp/FZR/2021/15384779
Date of issue :	27/04/2021
Date of expiry :	31/03/2023
Certificate Type :	Expansion
Previous CTE/CTO No. & Validity :	PBIP/PPCB/2018/165 From:11/10/2018 To:14/03/2021

### 2. Particulars of the Industry

Name & Designation of the Applicant	Pawan Bansal, (Cao)
Address of Industrial premises	Malbros International Pvt Limited, Vill. Mansoorwal, tehsil Zira, Distt Ferozepur Punjab , Ferozepur, Ferozepur-142047
Existing Capital investment of the industry	56900.0 lakhs
Capital investment for Expansion Project	56900.00 lakhs
Category of Industry	Red
Type of Industry	1060-Distillery ( molasses / grain / yeast based)
Scale of the Industry	Large
Office District	Ferozepur
Consent Fee Details	Rs. 5.64 lakhs vide UTR/R no. 76575168 dated 13.03.2021 and Rs. 5.64 lakhs vide UTR/R no. 750861355 dated 29.01.2021.

"This is computer generated document from OCMMS by PPCB"

Malbros International Pvt Limited, Vill. Mansoorwal, tehsil Zira, Distt Ferozepur Punjab , Ferozepur, Ferozepur, 142047

<b>Raw Materials (Name with quantity per day)</b>	<i>Nakku(Grain unfit for human consumption)/Bajra/Maize/Sorghum (After Expansion)) @1350Metric Tonnes/Day</i>
<b>Products (Name with quantity per day)</b>	<i>Animal feed Supplement/Cattle Feed/Poultry Feed @300Metric Tonnes/Day Cogeneration plant @40Megawatt Grain Based Ethanol/ENA/RS/Industrial Alcohol Plant (after expansion) @600Kilo Liters/Day</i>
<b>By-Products, if any,(Name with quantity per day)</b>	<i>Co2 @275Metric Tonnes/Day</i>
<b>Details of the machinery and processes</b>	<i>As per the application form and project report.</i>
<b>Details of the Effluent Treatment Plant</b>	<i>Trade Effluent @4200.0 KLD shall be treated in Effluent Treatment Plant (ETP) based on Zero Liquid Discharge (ZLD) Technology.  Domestic Effluent @ 15.0 KLD in existing Sewage Treatment Plant (STP)</i>
<b>Mode of Disposal of Effluent</b>	<i>Entire quantity of treated trade effluent shall be reused back into the process &amp; cooling towers by Zero Liquid Discharge (ZLD) technology.  Treated domestic effluent @ 15 KLD is to be discharged onto land for plantation within the premises of the industry.</i>
<b>Standards to be achieved under Water (Prevention &amp; Control of Pollution) Act, 1974</b>	<i>As prescribed by the CPCB/Board/MoEF&amp;CC</i>
<b>Sources of emissions and type of pollutants</b>	<i>Boiler 1 of capacity 100 TPH (expansion)- SPM Boiler 2 of capacity 100 TPH (expansion) - SPM Boiler capacity 14 TPH (existing) - SPM Boiler capacity 10 TPH (existing)- SPM  03 no. DG sets of capacities 1000 KVA each (proposed)- SPM&lt; SOX, NOx 03 no. DG sets of capacities 500 KVA each (existing)- SPM&lt; SOX, NOx</i>
<b>Mode of disposal of emissions with stack height</b>	<i>Boiler 1 of capacity 100 TPH - Stack of Height 63 m AGL after APCD.  Boiler 2 of capacity 100 TPH - Stack of Height 63 m AGL after APCD.  Boiler capacity 14 TPH - Stack of Height 35 m AGL after APCD.  Boiler capacity 10 TPH - Stack of Height 30 m AGL after APCD.  All DG sets shall have Stack of height as per following formula: <math>H = h+0.2 (KVA)^{0.5}</math> where h = height of the building in meters where the generator set is installed.</i>

Quantity of fuel required in TPD	<p>Boiler 1 of capacity 100 TPH - BIOMASS/RICE HUSK@25TPH</p> <p>Boiler 2 of capacity 100 TPH - BIOMASS/RICE HUSK@25TPH</p> <p>Boiler capacity 14 TPH - BIOMASS/RICE HUSK@ 55 TPD</p> <p>Boiler capacity 10 TPH - BIOMASS/RICE HUSK@ 40 TPD</p> <p>03 no. DG sets of capacities 1000 KVA each - HSD @ 1600 lt/day each.</p> <p>03 no. DG sets of capacities 500 KVA each - HSD @ 800 lt/day each.</p>
Type of Air Pollution Control Devices to be installed	<p>Boiler 1 of capacity 100 TPH - Electrostatic Precipitator as APCD.</p> <p>Boiler 2 of capacity 100 TPH - Electrostatic Precipitator as APCD.</p> <p>Boiler capacity 14 TPH - Trima Cyclone as APCD</p> <p>Boiler capacity 10 TPH - Trima Cyclone as APCD</p>
Standars to be achieved under Air (Prevention & Control of Pollution) Act, 1981	As prescribed by the CPCB/Board/ MoEF&CC



27/04/2021

**(Guneet Sethi)**  
**Environmental Engineer**

For &amp; on behalf

of

**(Punjab Pollution Control Board)****Endst. No.:****Dated:**

A copy of the above is forwarded to the following for information and necessary action please:  
 Environmental Engineer, Regional Office, Faridkot.



27/04/2021

**(Guneet Sethi)**  
**Environmental Engineer**

*For & on behalf**of***(Punjab Pollution Control Board)**

**A. GENERAL CONDITIONS**

1. The industry shall apply for consent of the Board as required under the provision of Water (Prevention & Control of Pollution) Act, 1974, Air (Prevention & Control of Pollution) Act, 1981 & Authorization under Hazardous and other Wastes (Management and Transboundary Movement) Rules, 2016, two months before the commissioning of the industry.
2. The industry shall provide adequate arrangements for fighting the accidental leakages/ discharge of any air pollutant/gas/liquids from the vessels, mechanical equipments etc. which are likely to cause environmental pollution.
3. The Industry shall apply for further extension in the validity of the CTE atleast two months before the expiry of this CTE, if applicable.
4. The industry shall comply with any other conditions laid down or directions issued by the Board under the provisions of the Water (Prevention & Control of Pollution) Act, 1974 and the Air (Prevention & Control of Pollution) Act,1981 from time to time.
5. The project has been approved by the Board from pollution angle and the industry shall obtain the approval of site from other concerned departments, if need be.
6. The industry shall get its building plans approved under the provisions of section 3-A of Punjab Factory Rules, 1952.
7. The industry shall put up display board indicating the Environment data in the prescribed format at the main entrance gate.
8. The industry shall provide port-holes, platforms and/or other necessary facilities as may be required for collecting samples of emissions from any chimney, flue or duct or any other outlets.

**Specifications of the port-holes shall be as under:-**

- i) The sampling ports shall be provided atleast 8 times chimney diameter downstream and 2 times upstream from the flow disturbance. For a rectangular cross section the equivalent diameter ( $D_e$ ) shall be calculated from the following equation to determine upstream, downstream distance:-  

$$D_e = 2 LW / (L+W)$$
 Where L= length in mts. W= Width in mts.
  - ii) The sampling port shall be 7 to 10 cm in diameter
9. The industry shall discharge all gases through a stack of minimum height as specified in the following standards laid down by the Board.

**(i) Stack height for boiler plants**

S.NO.	Boiler with Steam Generating Capacity	Stack heights
1.	Less than 2 ton/hr.	9 meters or 2.5 times the height of neighboring building which ever is more
2.	More than 2 ton/hr. to 5 ton/hr.	12 meters
3.	More than 5 ton/hr. to 10 ton/hr	15 meters
4.	More than 10 ton/hr. to 15 ton/hr	18 meters
5.	More than 15 ton/hr. to 20 ton/hr	21 meters
6.	More than 20 ton/hr. to 25 ton/hr.	24 meters
7.	More than 25 ton/hr. to 30 ton/hr.	27 meters
8.	More than 30 ton/hr.	30 meters or using the formula $H = 14 Q_g^{0.3}$ or $H = 74 (Q_p)^{0.24}$ Where $Q_g$ = Quantity of SO <sub>2</sub> in Kg/hr. $Q_p$ = Quantity of particulate matter in Ton/day.

**Note : Minimum Stack height in all cases shall be 9.0 mtr. or as calculated from relevant formula whichever is more.**

**(ii) For industrial furnaces and kilns, the criteria for selection of stack height would be based on fuel used for the corresponding steam generation.**

**(iii) Stack height for diesel generating sets:**

Capacity of diesel generating set	Height of the Stack	
0-50 KVA	Height of the building	+ 1.5 mt
50-100 KVA	-do-	+ 2.0 mt.
100-150 KVA	-do-	+ 2.5 mt.
150-200 KVA	-do-	+ 3.0 mt.
200-250 KVA	-do-	+ 3.5 mt.
250-300 KVA	-do-	+ 3.5 mt.

**For higher KVA rating stack height H (in meter) shall be worked out according to the formula:**

$$H = h + 0.2 (KVA)^{0.5}$$

where h = height of the building in meters where the generator set is installed.

10. The industry shall put up canopy on its DG sets and also provide stack of adequate height as per norms prescribed by the Board and shall ensure the compliance of instructions issued by the Board vide office order no. Admin./SA-2/F.No.783/2011/448 dated 8/6/2010.
11. The industry shall put up canopy on its DG sets and also provide stack of adequate height as per norms prescribed by the Board and shall ensure the compliance of instructions issued by the Board vide office order no. Admin./SA-2/F.No.783/2011/448 dated 8/6/2010.
  - (i) Once in Year for Small Scale Industries.
  - (ii) Four in a Year for Large/Medium Scale Industries.
  - (iii) The industry will submit monthly reading/ data of the separate energy meter installed for running of effluent treatment plant/re-circulation system to the concerned Regional Office of the Board by the 5th of the following month.
12. The industry shall provide flow meters at the source of water supply, at the outlet of effluent treatment plant and shall maintain the record of the daily reading and submit the same to the concerned Regional Office by the 5th day of the following month.
13. The industry shall make necessary arrangements for the monitoring of stack emissions and shall get its emissions analyzed from lab approved / authorized by the Board:-
  - (i) Once in Year for Small Scale Industries.
  - (ii) Twice/thrice/four time in a Year for Large/Medium Scale Industries.
14. The pollution control devices shall be interlocked with the manufacturing process of the industry.
15. The Board reserves the right to revoke this "consent to establish" (NOC) at any time, in case the industry is found violating any of the conditions of this "consent to establish" and/or the provisions of Water (Prevention & Control of Pollution) Act, 1974 and Air (Prevention & Control of Pollution) Act, 1981 as amended from time to time.
16. The industry shall plant minimum of three suitable varieties of trees at the density of not less than 1000 trees per acre along the boundary of the industrial premises.
17. The issuance of this consent does not convey any property right in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of Central, State or Local Laws or Regulations.
18. The consent does not authorize or approve the construction of any physical structures or facilities for undertaking of any work in any natural watercourse.
19. Nothing in this NOC shall be deemed to neither preclude the institution of any legal action nor relieve the applicant from any responsibilities, liabilities or penalties to which the applicant is or may be subjected under this or any other Act.
20. The diversion or bye pass of any discharge from facilities utilized by the applicant to maintain compliance with the terms and conditions of this consent is prohibited except.
  - (i) Where unavoidable to prevent loss of life or some property damage or
  - (ii) Where excessive storm drainage or run off would damage facilities necessary for compliance with terms and conditions of this consent. The applicant shall immediately notify the consent issuing authority in writing of each such diversion or bye-pass.
21. The industry shall ensure that no water pollution problem is created in the area due to discharge of effluents from its industrial premises.

22. The industry shall comply with the conditions imposed if any by the SEIAA/MOEF in the Environmental Clearance granted to it as required under EIA notification dated 14/9/06, if applicable.
23. The industry shall earmark a land within their premises for disposal of boiler ash in an environmentally sound manner, and / or the industry shall make necessary arrangements for proper disposal of fuel ash in a scientific manner and shall maintain proper record for the same, if applicable.
24. The industry shall obtain and submit Insurance cover as required under the Public Liability Insurance Act, 1991.
25. The industry shall submit a site emergency plan approved by the Chief Inspector of Factories, Punjab as applicable.
26. The industry shall provide proper and adequate air pollution control arrangements for control emission from its coal/fuel handling area, if applicable.
27. The Industry shall comply with the code of practice as notified by the Government / Board for the type of Industries where the siting guidelines / code of practice have been notified
28. Solids, sludge, filter backwash or other pollutant removed from or resulting from treatment or control of waste waters shall be disposed off in such a manner so as to prevent any pollutants from such materials from entering into natural water.
29. The industry shall submit a detailed plan showing therein, the distribution system for conveying waste-waters for application on land for irrigation along with the crop pattern to be adopted throughout the year.
30. The industry shall not irrigate the vegetable crops with the treated effluents which are used/ consumed as raw.
31. The industry shall ensure that its production capacity & quantity of trade effluent do not exceed the quantity mentioned in the NOC and shall not carry out any expansion without the prior permission/NOC of the Board.
32. All amendments/revisions made by the Board in the emission/stack height standards shall be applicable to the industry from the date of such amendments/revisions.
33. The industry shall not cause any nuisance/traffic hazard in vicinity of the area.
34. The industry shall maintain the following record to the satisfaction of the Board :-
  - (i) Log books for running of air pollution control devices or pumps/motors used for it.
  - (ii) Register showing the result of various tests conducted by the industry for monitoring of stack emissions and ambient air.
  - (iii) Register showing the stock of absorbents and other chemicals to be used for scrubbers.
35. The industry shall ensure that there will not be significant visible dust emissions beyond the property line.
36. The industry shall establish sufficient number of piezometer wells in consultation with the concerned Regional Office, of the Board to monitor the impact on the Ground Water Quantity due to the industrial operations, if applicable.
37. The industry shall provide adequate and appropriate air pollution control devices to contain emissions from handling, transportation and processing of raw material & product of the industry



27/04/2021

**(Guneet Sethi)**  
**Environmental Engineer**

*For & on behalf*  
*of*



B. SPECIAL CONDITIONS



1. The industry will get its environmental clearance amended, with respect to addition in site area of 56 kanals 13 marlas land bearing khasra nos. 38//7 (1-5), 13 (0-14), 6 (5-18), 14 (7-5), 15 (8-0), 16/1 (0-18), 16/2 (7-2), 17 (8-0), 18 min (2-10), 23 (2-16), 24/1 (5-9), 25/1 (2-13), 39//20/2 (3-16) and 21/1 (0-7) of revenue estate of village Mansoorwal kalan, Tehsil Zira, Distt. Ferozepur, immediately.
2. The industry will not carry out any construction activity at its site, till its obtains amended Environmental Clearance for whole area(40.66 acres) to be covered by of the industry.
3. The industry shall strictly comply with all the conditions mentioned in the Environmental Clearance granted to it under the EIA notification dated 14.09.2006, by MoEF&CC.
4. The industry shall obtain permission from PWRDA for abstraction of groundwater and comply with the guidelines issued by it from time to time.
5. The industry shall adopt Zero Liquid Discharge technology and shall reuse the entire quantity of treated trade effluent back into the process.
6. The efficiency and efficacy of the ETP and STP shall be the entire responsibility of the industry.
7. The industry shall provide electromagnetic flow meters on the pipelines through which the treated trade effluent shall be reused back in various process(es) and shall also maintain proper record in this regard, at all the times.
8. The industry shall not use any unauthorised mode for disposal of effluent, in any case.
9. The promoter shall not discharge its effluent into any drain/nallah/choe/water stream etc., under any circumstances.
10. The industry shall ensure that no treated/ untreated effluent is discharged anywhere outside its premises, in any case.
11. The efficiency and efficacy of the APCDs to be installed at the site, shall be the entire responsibility of the industry.
12. No emissions from the proposed project shall be discharged in to atmosphere without its proper treatment.
13. The industry shall install/ provide ETP, MEE as well as APCDs at the site, in commensuration with the construction work of the main project at the site.
14. The industry shall dispose of its boilers' ash in an environmentally sound manner and shall also maintain proper the record in this regard.
15. The industry shall install Online Continuous Emission Monitoring System (OCEMS) in its premises, as per the guidelines laid down by CPCB, from time to time.
16. The industry shall comply with the provisions of the Manufacturing, Storage and Import of Hazardous Chemical Rules, 1989.
17. The industry shall comply with the provision of the Hazardous Waste Management Rules 2016.
18. The industry shall provide thick green belt along its boundary wall, so as to attenuate the odour problem (if any), which may arise due to operation of the unit.
19. The industry shall ensure that no nuisance is created in the area due to its operations and no public compliant(s) is(are) received.
20. The industry shall submit a copy of the approved building plans from Director of Factory of Punjab, before obtaining Consent to Operate of the Board.
21. The Consent is being issued to the industry based upon the undertakings/documents/ information submitted by it alongwith the online application form. The Board would be at liberty to take penal action against the industry/project proponent and its responsible/ concerned person(s) in case information/document is detected as incorrect/false/misleading at any point of time.
22. In case the industry fails to comply with the provisions of the Water (Prevention & Control of Pollution) Act, 1974, Air (Prevention & Control of Pollution) Act, 1981, Environment (Protection) Act, 1986 and/or any other environmental law applicable to the project and Rules, Circulars & Directions issued by the Board from time to time, action as deemed fit shall be taken against the industry.

23. The project proponent shall obtain permission(s) from all the concerned department(s), as required.



27/04/2021

**(Guneet Sethi)**  
**Environmental Engineer**

*For & on behalf*

*of*

**(Punjab Pollution Control Board)**





**PUNJAB POLLUTION CONTROL BOARD**  
Invest Punjab, PBIP, Udyog Bhawan, Sector 17, Chandigarh  
Website:- www.ppcb.gov.in

<b>Office Dispatch No :</b>	<b>Registered/Speed Post</b>	<b>Date:</b>
<b>Industry Registration ID:</b> R20FZR888417		<b>Application No :</b> 16885572

**To,**  
Pawan Bansal  
Village Mansoorwal  
Zira, Ferozepur-142047

**Subject:** Grant Varied 'Consent to Operate' an outlet u/s 25/26 of Water (Prevention & Control of Pollution) Act, 1974 for discharge of effluent.

With reference to your application for obtaining Varied Consent to Operate an outlet for discharge of the effluent u/s 25/26 of Water (Prevention & Control of Pollution) Act, 1974, you are, hereby, authorized to operate an industrial unit for discharge of the effluent(s) arising out of your premises subject to the Terms and Conditions as mentioned in this Certificate

**1. Particulars of Consent to Operate under Water Act, 1974 granted to the industry**

<b>Consent to Operate Certificate No.</b>	CTOW/Varied/FZR/2021/16885572
<b>Date of issue :</b>	12/11/2021
<b>Date of expiry :</b>	31/12/2022
<b>Certificate Type :</b>	Varied
<b>Previous CTO No. &amp; Validity :</b>	CTOW/Varied/FZR/2019/9512969 From:18/04/2019 To:31/03/2023

**2. Particulars of the Industry**

<b>Name &amp; Designation of the Applicant</b>	Pawan Bansal, (Cao)
<b>Address of Industrial premises</b>	Malbros International Pvt Limited, Vill. Mansoorwal, tehsil Zira, Distt Ferozepur Punjab , Ferozepur, Ferozepur-142047
<b>Capital Investment of the Industry</b>	22500.0 lakhs
<b>Category of Industry</b>	Red
<b>Type of Industry</b>	1060-Distillery ( molasses / grain / yeast based)
<b>Scale of the Industry</b>	Large
<b>Office District</b>	Ferozepur
<b>Consent Fee Details</b>	Rs. 5.64 lakhs vide UTR/R no. 76575168 dated 13.03.2021 and Rs. 6.27 lakhs vide UTR/R no. 231199082 dated 17.09.2021 under the Water Act, 1974
<b>Raw Materials(Name with quantity per day)</b>	Nakku(Grain unfit for human consumption)/Bajra/Maize/Sorghum @650Metric Tonnes/Day

<b>Products (Name with quantity per day)</b>	<i>Animal feed Supplement/Cattle Feed/Poultry Feed @ 140Metric Tonnes/Day Cogeneration plant @ 12Megawatt Grain Based Anhydrous Denatured Ethanol/ENA/RS/Industrial Alcohol Plant @ 280Kilo Liters/Day</i>
<b>By-Products, if any,(Name with quantity per day)</b>	<i>Co2 @ 125Metric Tonnes/Day</i>
<b>Details of the machinery and processes</b>	<i>As per the application form.</i>
<b>Details of the Effluent Treatment Plant</b>	<i>Trade Effluent @ 1960.0 KLD -  a. For treatment of trade effluent @ 697 KLD - ETP consisting of MEE--&gt;Feed tank--&gt;Digester--&gt; Lamella Clarifier--&gt; Storage tank--&gt; Anaerobic filter--&gt; Preaeration tank--&gt;Retention tank- -&gt; Clarifier-1--&gt; Aeration tank--&gt; Clarifier-2--&gt; RO Feed Tank-- &gt; 3 Stage--&gt; RO System  b. For treatment of trade effluent @ 1263 KLD, ETP consisting of Lamella Clarifier--&gt; Aeration tank 1--&gt; Primary Clarifier--&gt; Aeration tank 2--&gt; Secondary Clarifier--&gt; MGF --&gt; ACF --&gt; Bag Filter --&gt; UF Treatment --&gt; RO System --&gt; D.M. Plant.  Domestic Effluent @ 10.0 KLD - Sewage Treatment Plant (STP)</i>
<b>Mode of Disposal</b>	<i>Treated Trade Effluent @ 1790 KLD - entire quantity to be reused back into the process and also as feed to DM Plant of capacity 700 KLD thus ensuring Zero Liquid Discharge (ZLD). Treated Domestic Effluent @ 8 KLD - onto land for plantation after treatment in STP.</i>
<b>Standards to be achieved under Water(Prevention &amp; Control of Pollution) Act, 1974</b>	<i>As prescribed by the CPCB/Board/ MoEF&amp;CC</i>



15/11/2021

**(Guneet Sethi)**  
**Environmental Engineer**

For &amp; on behalf

of

**(Punjab Pollution Control Board)****Endst. No.:****Dated:**

A copy of the above is forwarded to the following for information and necessary action please:

*"This is computer generated document from OCMMS by PPCB"**Malbros International Pvt Limited, Vill. Mansoorwal, tehsil Zira, Distt Ferozepur Punjab ,Ferozepur, Ferozepur, 142047*

1. Senior Environmental Engineer, Zonal Office, Bathinda

2. Environmental Engineer, Regional Office, Faridkot, with the request to visit the site of the industry after 02 months and check the compliance of the conditions of the CTO, carry out effluent sampling and send detailed report in this regard to concerned Zonal Office through e-noting



15/11/2021

**(Guneet Sethi)**  
**Environmental Engineer**

*For & on behalf*

*of*

**(Punjab Pollution Control Board)**



**TERMS AND CONDITIONS****A. GENERAL CONDITIONS**

1. This consent is not valid for getting power load from the Punjab State Power Corporation Limited or for getting loan from the financial institutions.
2. The industry shall apply for renewal/further extension in validity of consent atleast two months before expiry of the consent.
3. The industry shall ensure that the effluent discharging through the authorized outlet shall confirm to the prescribed standards as applicable from time to time.
4. The industry shall plant minimum of three suitable varieties of trees at the density of not less than 1000 trees per hectare all along the boundary of the industrial premises.
5. The achievement of the adequacy and efficiency of the effluent treatment plant/pollution control devices/recirculation system installed shall be the entire responsibility of the industry.
6. The industry shall ensure that the Hazardous Wastes generated from the premises are handled as per the provisions of the Hazardous Wastes(Management, Handling and Trans boundary Movement) Rules, 2008 as amended time to time , without any adverse effect on the environment, in any manner
7. The responsibility to monitor the effluent discharged from the authorized outlet and to maintain a record of the same rests with the industry. The Board shall only test check the accuracy of these reports for which the industry shall deposit the samples collection and testing fee with the Board as and when required.
8. The industry shall submit balance sheet of every financial year to the concerned Regional Office by 30th June of every year.
9. The industry shall submit a yearly certificate to the effect that no addition/up-gradation/ modification/modernization has been carried out during the previous year otherwise the industry shall apply for the varied consent.
10. During the period beginning from the date of issuance and the date of expiration of this consent, the applicant shall not discharge floating solids or visible foam.
11. Any amendments/revisions made by the Board in the tolerance limits for discharges shall be applicable to the industry from the date of such amendments/revisions.
12. The industry shall not change or alter the manufacturing process(es) so as to change the quality and/or quantity of the effluents generated without the written permission of the Board.
13. Any upset conditions in the plant/plants of the factory, which is likely to result in increased effluent and/or result in violation of the standards lay down by the Board shall be reported to the Environmental Engineer, Punjab Pollution Control Board of concerned Regional Office immediately failing which any stoppage and upset conditions that come to the notice of the Board/its officers, will be deemed to be intentional violation of the conditions of consent.
14. The industry shall provide terminal manhole(s) at the end of each collection system and a manhole upstream of final outlet (s) out of the premises of the industry for measurement of flow and for taking samples.
15. The industry shall for the purpose of measuring and recording the quantity of water consumed and effluent discharged, affix meters of such standards and at such places as approved by the Environmental Engineer, Punjab Pollution Control Board of the concerned Regional Office.
16. The industry shall maintain record regarding the operation of effluent treatment plant i.e. record of quantity of chemicals and energy utilized for treatment and sludge generated from treatment so as to satisfy the Board regarding regular and proper operation of pollution control equipment.
17. The industry shall provide online monitoring equipment<sup>1/2</sup>s for the parameters as decided by concerned Regional Office with the effluent treatment plant/air pollution control devices installed, if applicable.
18. The pollution control devices shall be interlocked with the manufacturing process of the industry.
19. The authorized outlet and mode of disposal shall not be changed without the prior written permission of the Board.
20. The industry shall comply with the conditions imposed by the SEIAA / MOEF in the environmental clearance granted to it as required under EIA notification dated 14/9/06, if applicable.
21. The industry shall obtain and submit Insurance cover as required under the Public Liability Insurance Act, 1991.
22. The industry shall not use any unauthorized out-let(s) for discharging effluents from its premises. All unauthorized outlets, if any, shall be connected to the authorized outlet within one month from the date of issue of this consent.

23. The industry shall make necessary arrangements for the monitoring of effluent being discharged by the industry and shall monitor its effluents:-
  - (i) Once in Year for Small Scale Industries.
  - (ii) Four in a Year for Large/Medium Scale Industries.
  - (iii) The industry will submit monthly reading/ data of the separate energy meter installed for running of effluent treatment plant/re-circulation system to the concerned Regional Office of the Board by the 5th of the following month.
24. The industry shall provide electromagnetic flow meters at the source of water supply, at inlet/outlet of effluent treatment plant within one month and shall maintain the record of the daily reading and submit the same to the concerned Regional Office by the 5th of the following month.
25. The Board reserves the right to revoke this consent at any time in case the industry is found violating any of the conditions of this consent and/or the provisions of Water (Prevention & Control of Pollution) Act, 1974 as amended from time to time.
26. The issuance of this consent does not convey any property right in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of Central, State or Local Laws or Regulations.
27. The consent does not authorize or approve the construction of any physical structures or facilities for undertaking of any work in any natural watercourse.
28. Nothing in this consent shall be deemed to neither preclude the institution of any legal action nor relieve the applicant from any responsibilities, liabilities or penalties to which the applicant is or may be subjected under this or any other Act.
29. The industry shall make necessary and adequate arrangements to hold back the effluent in case of failure of septic tank.
30. The diversion or bye pass of any discharge from facilities utilized by the applicant to maintain compliance with the terms and conditions of this consent is prohibited except.
  - (i) Where unavoidable to prevent loss of life or some property damage or
  - (ii) Where excessive storm drainage or run off would damage facilities necessary for compliance with terms and conditions of this consent. The applicant shall immediately notify the consent issuing authority in writing of each such diversion or bye-pass.
31. The industry shall ensure that no water pollution problem is created in the area due to discharge of effluents from its industrial premises.
32. The industry shall comply with the code of practice as notified by the Government/ Board for the type of industries where the siting guidelines/ code of practice have been notified.
33. Solids, sludge, filter backwash or other pollutant removed from or resulting from treatment or control of waste waters shall be disposed off in such a manner to prevent any pollutants from such materials from entering into natural water.
34. The industry shall re-circulate the entire cooling water and shall also re-circulate/reuse to the maximum extent the treated effluent in processes
35. The industry shall make necessary and adequate arrangements to hold back the effluent in case of failure of re-circulation system/ effluent treatment plant.
36. The industry shall make proper disposal of the effluent so as to ensure that no stagnation occurs inside and outside the industrial premises during rainy season and no demand period.
37. Where excessive storm water drainage or run off, would damage facilities necessary for compliance with terms and conditions of this consent, the applicant shall immediately notify the consent issuing authority in writing of each such diversion or bye-pass.
38. The industry shall submit a detailed plan showing therein the distribution system for conveying waste-water for application on land for irrigation along with the crop pattern for the year.
39. The industry shall ensure that the effluent discharged by it is toxicity free.
40. The industry shall not irrigate the vegetable crops with the treated effluents which are used/ consumed as raw.
41. Drains causing oil & grease contamination shall will be segregated. Oil & grease trap shall be provided to recover oil & grease from the effluent.

42. The industry shall establish sufficient number of piezometer wells in consultation with the concerned Regional Office, of the Board to monitor the impact on the Ground Water Quantity due to the industrial operations, and the monitoring shall be submitted to the Environmental Engineer of the concerned Regional Office by the 5th of every month.
43. The industry shall ensure that its production capacity & quantity of trade effluent do not exceed the quantity mentioned in the consent and shall not carry out any expansion without the prior permission/NOC of the Board.

**B. SPECIAL CONDITIONS**



1. The industry shall install CCTV camera at the new ETP and shall connect the same with the server of the Board. within 01 month and shall intimate the Regional Office of the Board, within 07 days, thereafter.
2. The industry shall carry out construction/development activity strictly only in 36.5 acres of land area for which it has obtained Environmental Clearance.
3. The industry shall not carry out construction/development activity on the additional land area beyond 36.5 acres, without obtaining prior Environmental Clearance from MoEF&CC.
4. The industry shall strictly comply with all the conditions mentioned in the Environmental Clearance granted to it under the EIA notification dated 14.09.2006, by MoEF&CC.
5. This consent is being issued to the industry in supersession to the earlier Consent to Operate granted to it under the Water Act, 1974 vide no. CTOW/Varied/FZR/2019/9512969 dated 18/04/2019, which is valid upto 31/03/2023.
6. The industry shall comply with the guidelines issued by PWRDA from time to time.
7. The industry shall adopt only Zero Liquid Discharge technology and shall reuse the entire quantity of treated trade effluent back into the process.
8. The efficiency and efficacy of the ETP and STP shall be the entire responsibility of the industry.
9. The industry shall provide electromagnetic flow meters on the pipelines through which the treated trade effluent shall be reused back in various process(es) and shall also maintain proper record in this regard, at all the times.
10. The industry shall not use any unauthorised mode for disposal of effluent, in any case.
11. The promoter shall not discharge its effluent into any drain/nallah/choe/water stream etc., under any circumstances.
12. The industry shall ensure that no treated/ untreated effluent is discharged anywhere outside its premises, in any case.
13. The industry shall comply with the provisions of the Manufacturing, Storage and Import of Hazardous Chemical Rules, 1989.
14. The industry shall comply with the provision of the Hazardous Waste Management Rules 2016.
15. The industry shall ensure that no nuisance is created in the area due to its operations and no public compliant(s) is(are) received.
16. The industry shall submit a copy of the approved building plans from Director of Factory of Punjab, before obtaining Consent to Operate of the Board.
17. The Consent is being issued to the industry based upon the undertakings/documents/ information submitted by it alongwith the online application form. The Board would be at liberty to take penal action against the industry/project proponent and its responsible/ concerned person(s) in case information/document is detected as incorrect/false/misleading at any point of time.
18. In case the industry fails to comply with the provisions of the Water (Prevention & Control of Pollution) Act, 1974, Air (Prevention & Control of Pollution) Act, 1981, Environment (Protection) Act, 1986 and/or any other environmental law applicable to the project and Rules, Circulars & Directions issued by the Board from time to time, action as deemed fit shall be taken against the industry.
19. The project proponent shall obtain permission(s) from all the concerned department(s), as required.



15/11/2021

**(Guneet Sethi)**  
**Environmental Engineer**

*For & on behalf*

*of*

**(Punjab Pollution Control Board)**



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*Malbros International Pvt Limited, Vill. Mansoorwal, tehsil Zira, Distt Ferozepur Punjab ,Ferozepur, Ferozepur, 142047*

*Page8*



**PUNJAB POLLUTION CONTROL BOARD**  
Invest Punjab, PBIP, Udyog Bhawan, Sector 17, Chandigarh  
Website:- www.ppcb.gov.in

Office Dispatch No : \_\_\_\_\_ Registered/Speed Post \_\_\_\_\_ Date: \_\_\_\_\_  
Industry Registration ID: R20FZR888417 \_\_\_\_\_ Application No : 16885533

To,  
**Pawan Bansal**  
Village Mansoorwal  
Zira, Ferozepur-142047

Subject: Grant Varied 'Consent to Operate' u/s 21 of Air (Prevention & Control of Pollution) Act, 1981 for discharge of emissions arising out of premises.

With reference to your application for obtaining Varied 'Consent to Operate' u/s 21 of Air (Prevention & Control of Pollution) Act, 1981, you are hereby, authorized to operate an industrial unit for discharge of the emission(s) arising out of your premises subject to the Terms and Conditions as mentioned in this Certificate.

**1. Particulars of Consent to Operate under Air Act, 1981 granted to the industry**

Consent to Operate Certificate No.	CTOA/Varied/FZR/2021/16885533
Date of issue :	12/11/2021
Date of expiry :	31/12/2022
Certificate Type :	Varied
Previous CTO No. & Validity :	CTE/Exp/FZR/2021/15384779 From:27/04/2021 To:31/03/2023

**2. Particulars of the Industry**

Name & Designation of the Applicant	Pawan Bansal, (Cao)
Address of Industrial premises	Malbros International Pvt Limited, Vill. Mansoorwal, tehsil Zira, Distt Ferozepur Punjab , Ferozepur, Ferozepur-142047
Capital Investment of the Industry	22500.0 lakhs
Category of Industry	Red
Type of Industry	1060-Distillery ( molasses / grain / yeast based)
Scale of the Industry	Large
Office District	Ferozepur
Consent Fee Details	Rs. 5.64 lakhs vide UTR/R no. 750861355 dated 29.01.2021 and Rs. 6.05 lakhs vide UTR/R no. 354647781 dated 17.09.2021 under the Air Act, 1981
Raw Materials (Name with Quantity per day)	Nakku(Grain unfit for human consumption)/Bajra/Maize/Sorghum @650Metric Tonnes/Day

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Malbros International Pvt Limited, Vill. Mansoorwal, tehsil Zira, Distt Ferozepur Punjab , Ferozepur, Ferozepur, 142047

<b>Products (Name with Quantity per day)</b>	<i>Animal feed Supplement/Cattle Feed/Poultry Feed @140Metric Tonnes/Day Cogeneration plant @12Megawatt Grain Based Anhydrous Denatured Ethanol/ENA/RS/Industrial Alcohol Plant @280Kilo Liters/Day</i>
<b>By-products, if any, (Name with Quantity per day)</b>	<i>As per the application form.</i>
<b>Details of the machinery and process</b>	<i>As per the application form.</i>
<b>Quantity of fuel required (in TPD) and capacity of boilers/ Furnace/Thermo heater etc.</b>	<i>Boiler of capacity 65 TPH - BIOMASS/RICE HUSK @450Metric Tonnes/Day Boiler of capacity 14 TPH - BIOMASS/RICE HUSK @55Metric Tonnes/Day Boiler of capacity 10 TPH - BIOMASS/RICE HUSK/P STRAW @36Metric Tonnes/Day 03 no. DG sets of capacity 1000 KVA each &amp; 03 no. DG sets of capacity 500 KVA each - HSD</i>
<b>Type of Air Pollution Control Devices to be installed</b>	<i>Boiler of capacity 65 TPH - Electrostatic Precipitator Boiler of capacity 14 TPH - Bag Filter House Boiler of capacity 10 TPH - Bag Filter House</i>
<b>Stack height provided with each boiler/thermo heater/Furnace etc.</b>	<i>Boiler of capacity 10 TPH -135(Ground Level)/17(Roof Level) Boiler of capacity 14 TPH -230(Ground Level)/12(Roof Level) Boiler of capacity 65 TPH -365(Ground Level)/35(Roof Level) 03 no. DG sets of capacity 1000 KVA each &amp; 03 no. DG sets of capacity 500 KVA each - Stack of height as per following formula: <math>H = h + 0.2 (KVA)0.5</math> where h = height of the building in meters where the generator set is installed.</i>
<b>Sources of emissions and type of pollutants</b>	<i>Boiler of capacity 10 TPH -SPM Boiler of capacity 14 TPH -SPM Boiler of capacity 65 TPH -SPM</i>
<b>Standards to be achieved under Air(Prevention &amp; Control of Pollution) Act, 1981</b>	<i>As prescribed by the CPCB/Board/ MoEF&amp;CC</i>



15/11/2021

**(Guneet Sethi)**  
**Environmental Engineer**

For & on behalf  
of

**(Punjab Pollution Control Board)**

**Endst. No.:****Dated:**

A copy of the above is forwarded to the following for information and necessary action please:

1. Senior Environmental Engineer, Zonal Office, Bathinda
2. Environmental Engineer, Regional Office, Faridkot, with the request to visit the site of the industry after 02 months and check the compliance of the conditions of the CTO, carry out emission samplings and send detailed report in this regard to concerned Zonal Office through e-noting

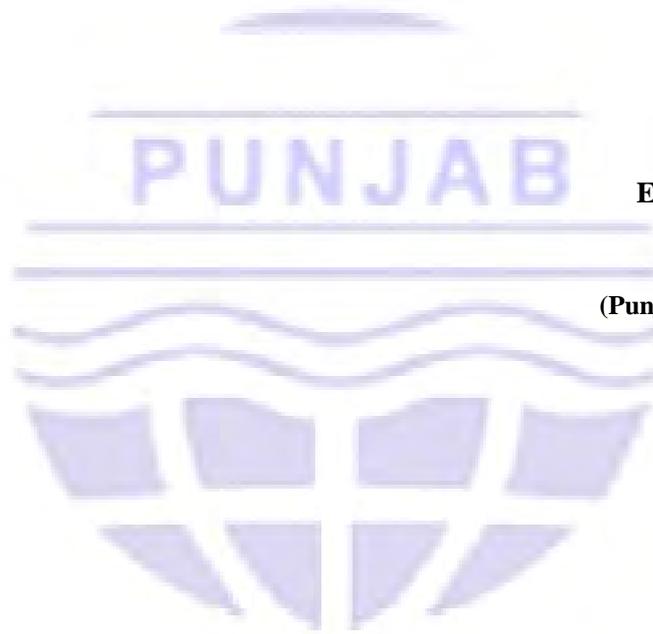


15/11/2021

**(Guneet Sethi)**  
**Environmental Engineer**

*For & on behalf*  
*of*

**(Punjab Pollution Control Board)**



## TERMS AND CONDITIONS

### A. GENERAL CONDITIONS

1. This consent is not valid for getting power load from the Punjab State Power Corporation Ltd. or for getting loan from the financial institutions.
2. The industry shall apply for renewal /extension of consent at least two months before expiry of the consent.
3. The industry shall not violate any of the norms prescribed under the Air (Prevention & Control of Pollution) Act, 1981, failing which, the consent shall be cancelled / revoked.
4. The achievement of adequacy and efficiency of the air pollution control devices installed shall be the entire responsibility of the industry
5. The authorized fuel being used shall not be changed without the prior written permission of the Board.
6. The industry shall not discharge any fugitive emissions. All gases shall be emitted through a stack of suitable height, as per the norms fixed by the Board from time to time.
7. The industry shall provide port-holes, platforms and/or other necessary facilities as may be required for collecting samples of emissions from any chimney, flue or duct or any other outlets.

#### Specifications of the port-holes shall be as under:-

- i) The sampling ports shall be provided atleast 8 times chimney diameter downstream and 2 times upstream from the flow disturbance. For a rectangular cross section the equivalent diameter ( $D_e$ ) shall be calculated from the following equation to determine upstream, downstream distance:-  

$$D_e = 2 LW / (L+W)$$
 Where L= length in mts. W= Width in mts.
- ii) The sampling port shall be 7 to 10 cm in diameter
8. The industry shall put display Board indicating environmental data in the prescribed format at the main entrance gate.
9. The industry shall discharge all gases through a stack of minimum height as specified in the following standards laid down by the Board.

#### (i) Stack height for boiler plants

S.NO.	Boiler with Steam Generating Capacity	Stack heights
1.	Less than 2 ton/hr.	9 meters or 2.5 times the height of neighboring building which ever is more
2.	More than 2 ton/hr. to 5 ton/hr.	12 meters
3.	More than 5 ton/hr. to 10 ton/hr	15 meters
4.	More than 10 ton/hr. to 15 ton/hr	18 meters
5.	More than 15 ton/hr. to 20 ton/hr	21 meters
6.	More than 20 ton/hr. to 25 ton/hr.	24 meters
7.	More than 25 ton/hr. to 30 ton/hr.	27 meters
8.	More than 30 ton/hr.	30 meters or using the formula $H = 14 Q_g^{0.3}$ or $H = 74 (Q_p)^{0.24}$ Where $Q_g$ = Quantity of SO <sub>2</sub> in Kg/hr. $Q_p$ = Quantity of particulate matter in Ton/day.

**Note : Minimum Stack height in all cases shall be 9.0 mtr. or as calculated from relevant formula whichever is more.**

**(ii) For industrial furnaces and kilns, the criteria for selection of stack height would be based on fuel used for the corresponding steam generation.**

**(iii) Stack height for diesel generating sets:**

Capacity of diesel generating set	Height of the Stack	
0-50 KVA	Height of the building	+ 1.5 mt
50-100 KVA	-do-	+ 2.0 mt.
100-150 KVA	-do-	+ 2.5 mt.
150-200 KVA	-do-	+ 3.0 mt.
200-250 KVA	-do-	+ 3.5 mt.
250-300 KVA	-do-	+ 3.5 mt.

**For higher KVA rating stack height H (in meter) shall be worked out according to the formula:**

$$H = h + 0.2 (KVA)^{0.5}$$

where h = height of the building in meters where the generator set is installed.

10. The pollution control devices shall be interlocked with the manufacturing process of the industry to ensure its regular operation.
11. The existing pollution control equipment shall be altered or replaced in accordance with the directions of the Board, and no pollution control equipment or chimney shall be altered or as the case may be erected or re-erected except with the prior approval of the Board.
12. The industry will provide canopy and adequate stack with the D.G sets so as to comply with the provision of notification No GSR-371 E dated 17-5-2002(amended from time to time) issued by MOEF under Environment (Protection) Act, 1986.
13. The Govt. of Punjab, Department of Science, Technology & Environment vide its notification no.4/46/92-3ST/2839 dt. 29/12/1993 has put prohibition on the use of rice husk as fuel after 1.4.1995 except the following:-  
**In the form of briquettes and use of rice husk in fluidized bed combustion. So the industry shall make the necessary arrangement to comply with the above notification.**
14. The industry shall submit balance sheet of every financial year to the concerned Regional Office by 30th June of every year
15. That the industry shall submit a yearly certificate to the effect that no addition / up-gradation/ modification/ modernization has been carried out during the previous year otherwise the industry shall apply for the varied consent.
16.
  - a) The industry shall ensure that at any time the emission do not exceed the prescribed emissions standards laid down by the Board from time to time for such type of industry /emissions.
  - b) The industry shall ensure that the emissions from each stack shall conform to the following emission standards laid down by the Board in respect of the Industrial Boilers.

Steam Generating capacity A.	Required particulate matter B.	
<i>Area upto 5 Km from Other than 'A' class Other than the periphery of I and Class-II town</i>		
<i>Less than 2 ton/hr.</i>	800 mg/NM3	1200 mg/NM3
<i>2 ton to 10 ton/hr.</i>	500 mg/NM3	1000 mg/NM3
<i>Above 10 ton to 15 ton/hr</i>	350 mg/NM3	500 mg/NM3
<i>Above 15 ton/hr</i>	150 mg/NM3	150 mg/NM3

All emissions normalized to 12% carbon dioxide.

17. The industry shall ensure that the Hazardous Wastes generated from the premises are handled as per the provisions of the Hazardous Waste (Management, Handling and Transboundary Movement) Rules, 2008, without any adverse effect on the environment, in any manner.
18. The air pollution control equipments shall be kept at all time in good running condition and;

- (i) All failures of control equipments.
  - (ii) The emissions of any air pollutant into the atmosphere in excess of the standards lay down by the Board occurring or being apprehended to occur due to accident or other unforeseen act or event. 'Shall be intimated through fax to the concerned Regional Office as well as to the Director of Factories, Punjab, Chandigarh as required under rule 10 of the Punjab State Board for the Prevention and Control of Air Pollution Rules, 1983'.
19. The industry shall plant minimum of three suitable varieties of trees at the density of not less than 1000 trees per hectare all along the boundary of the industrial premises.
  20. The industry shall submit a site emergency plan approved by the Chief Inspector of Factories, Punjab as applicable.
  21. The industry shall comply with the conditions imposed by the SEIAA/MOEF in the Environmental Clearance granted to it as required under EIA notification dated 14/9/06, if applicable.
  22. The industry shall make necessary arrangements for the monitoring of stack emissions and shall get its emissions analyzed from lab approved / authorized by the Board:-
    - (i) Once in Year for Small Scale Industries.
    - (ii) Twice/thrice/four time in a Year for Large/Medium Scale Industries.
  23. The industry shall maintain the following record to the satisfaction of the Board :-
    - (i) Log books for running of air pollution control devices or pumps/motors used for it.
    - (ii) Register showing the result of various tests conducted by the industry for monitoring of stack emissions and ambient air.
    - (iii) Register showing the stock of absorbents and other chemicals to be used for scrubbers.
  24. The industry will install the separate energy meter for running pollution control devices and shall maintain record with respect to operation of air pollution control device so as to satisfy the Board regarding the regular operation of air pollution control device and monthly reading / record may be sent to the Board by the fifth of the following month.
  25. The industry shall provide online monitoring system as applicable, for in stack emission and shall maintain the record of the same for inspection of the Board Officers.
  26. The Board reserves the right to revoke the consent granted to the industry at any time, in case the industry is found violating the provisions of Air (Prevention & Control of Pollution) Act, 1981 as amended from time to time.
  27. The industry shall comply with any other conditions laid down or directions issued in due course by the Board under the provisions of the Air (Prevention & Control of Pollution) Act, 1981.
  28. Nothing in this consent shall be deemed to neither preclude the institution of any legal action nor relieve the applicant from any responsibilities, liabilities or penalties to which the applicant is or may be subjected to under this or any other Act.
  29. Any amendments/revisions made by the Board/CPCB/MOEF in the emission/stack height standards shall be applicable to the industry from the date of such amendments/revisions.
  30. The industry shall dispose off its solid waste generated by the burning of fuel in an Environmentally Sound Manner within the premises/outside as approved by the Board, to avoid public nuisance and air pollution problem in the area.
  31. The industry shall ensure that no air pollution problem or public nuisance is created in the area due to the discharge of emissions from the industry.
  32. The industry shall provide adequate arrangement for fighting the accidental leakage/discharge of any air pollutant/gas/ liquids from the vessels, mechanical equipment's etc, which are likely to cause environmental pollution.
  33. The industry shall not change or alter the manufacturing process(es) and fuel so as to change the quality/quantity of emissions generated without the prior permission of the Board.
  34. The industry shall earmark a land within their premises for disposal of boiler ash in an environmentally sound manner, and / or the industry shall make necessary arrangements for proper disposal of fuel ash in a scientific manner and shall maintain proper record for the same, if applicable.
  35. The industry shall obtain and submit Insurance cover under the Public Liability Insurance Act, 1991.
  36. The industry shall provide proper and adequate air pollution control arrangements for control emission from its fuel handling area, if applicable.

37. The industry shall comply with the code of practice as notified by the Government/Board for the type of industries where the siting guidelines / Code of Practice have been notified.
38. The industry shall not cause any nuisance/traffic hazard in vicinity of the area
39. The industry shall ensure that the noise & air emission from D.G. sets do not exceed the standards prescribed for D.G. sets by the Ministry of Environment & Forests, New Delhi.
40. The industry shall ensure that there will not be significant visible dust emissions beyond the property line
41. The industry shall provide adequate and appropriate air pollution control devices to contain emissions from handling, transportation and processing of raw material & product of the industry.
42. The Industry shall ensure that its production capacity does not exceed the capacity mentioned in the consent and shall not carry out any expansion without the prior permission / NOC of the Board.

#### **B. SPECIAL CONDITIONS**

1. The industry shall install SPM analyzer & and shall connect the OCEMS with the server of the Board. Within 01 month and shall intimate the Regional Office of the Board, within 07 days, thereafter.
2. The industry shall carry out construction/development activity strictly only in 36.5 acres of land area for which it has obtained Environmental Clearance.
3. The industry shall not carry out construction/development activity on the additional land area beyond 36.5 acres, without obtaining prior Environmental Clearance from MoEF&CC.
4. The industry shall strictly comply with all the conditions mentioned in the Environmental Clearance granted to it under the EIA notification dated 14.09.2006, by MoEF&CC.
5. This consent is being issued to the industry in supersession to the earlier Consent to Operate granted to it under the Air Act, 1981 vide no. CTOA/Renewal/FZR/2019/9507470 dated 18/04/2019, which is valid upto 31/03/2023.
6. The efficiency and efficacy of the APCDs shall be the entire responsibility of the industry.
6. No emissions from the proposed project shall be discharged in to atmosphere without its proper treatment.
7. The industry shall dispose of its boilers' ash in an environmentally sound manner and shall also maintain proper the record in this regard.
8. The industry shall comply with the provisions of the Manufacturing, Storage and Import of Hazardous Chemical Rules, 1989.
9. The industry shall comply with the provision of the Hazardous Waste Management Rules 2016.
10. The industry shall ensure that no nuisance is created in the area due to its operations and no public compliant(s) is(are) received.
11. The industry shall submit a copy of the approved building plans from Director of Factory of Punjab, before obtaining Consent to Operate of the Board.
12. The Consent is being issued to the industry based upon the undertakings/documents/ information submitted by it alongwith the online application form. The Board would be at liberty to take penal action against the industry/project proponent and its responsible/ concerned person(s) in case information/document is detected as incorrect/false/misleading at any point of time.
13. In case the industry fails to comply with the provisions of the Water (Prevention & Control of Pollution) Act, 1974, Air (Prevention & Control of Pollution) Act, 1981, Environment (Protection) Act, 1986 and/or any other environmental law applicable to the project and Rules, Circulars & Directions issued by the Board from time to time, action as deemed fit shall be taken against the industry.
14. The project proponent shall obtain permission(s) from all the concerned department(s), as required.



15/11/2021

**(Guneet Sethi)**  
**Environmental Engineer**

*For & on behalf**of***(Punjab Pollution Control Board)**

**F.No. J-11011/228/2015-IA II (I)**  
 Government of India  
 Ministry of Environment, Forest and Climate Change  
 (IA-II Division)

Indira Paryavaran Bhawan  
 Jorbagh Road, New Delhi - 3  
 Dated: 15<sup>th</sup> January, 2018

To,  
 M/s Malbros International Pvt Ltd  
 40 North Avenue Road,  
 West Punjabi Bagh,  
 New Delhi - 26

**Sub: Expansion of Grain based Distillery from 100 KLPD to 600 KLPD & Co-Generation Power Plant of 40 MW by M/s Malbros International Pvt Ltd at Village Mansoorwal, Tehsil Zira, District Ferozepur (Punjab) - Environmental Clearance - reg.**

**Ref.: Online proposal No. IA/PB/IND2/30448/2006 dated 26<sup>th</sup> December, 2016**

Sir,

This has reference to your online proposal No. IA/PB/IND2/30448/2006 dated 26<sup>th</sup> December, 2016 for environmental clearance to the above project, along with the documents including Form-1, Terms of Reference (ToR), EIA/ EMP report containing the Public hearing proceedings/details.

2. The Ministry of Environment, Forest and Climate Change has examined the proposal for environmental clearance to the project 'Expansion of Grain based Distillery from 100 KLPD to 600 KLPD (by adding 2 units of 250 KLPD each in two phases as Unit-II) and the expansion of Co-Generation Power Plant by adding 40 MW (2x20 MW)' by M/s Malbros International Pvt Ltd in a total area of 14.8 ha at Village Mansoorwal, Tehsil Zira, Faridkot Road, District Ferozepur (Punjab) with following units: -

Unit	Capacity
Grain based Ethanol/ENA/RS/Industrial alcohol Plant	500 KLPD (2 X 250 KLPD)
Co-generation Power plant	40 MW (2 X 20MW)
CO <sub>2</sub> Plant	225 TPD (2X 112.5 TPD)
DDGS/Cattle Feed/Poultry Feed	300 TPD (2X150 TPD)

3. Total project area is 14.8 ha (36.5 acre) and no additional land shall be required for the proposed installation of Unit II. Almost 33% i.e. 4.9 ha (12.10 acre) of the total area has already been developed as greenbelt/plantation. As per Form-1, there are no National Parks, Wildlife Sanctuaries, Reserve Forest/Protected Forests, Biosphere Reserves, Tiger/Elephant Reserves, Wildlife Corridors etc. within 10 km of the project site.

4. Total cost of the expansion project is Rs.583 crores. Capital cost for pollution control measures shall be Rs.58 crores and recurring cost shall be Rs.10 crores/annum. The raw materials for the production shall be grains (damaged grain feed stock, nakku, Kinki, sorghum, maize, bajra, barley, 1200-1300 TPD), which shall be obtained from nearby areas. The number of working days shall be 350 days/annum.



5. The present fresh water requirement of 900 KLPD is being met through ground water. The required clearance in this regard has been obtained from CGWA vide their letter dated 14<sup>th</sup> March, 2016 (for 2013 KLPD). Total water requirement due to the proposed expansion (additional capacity of 500 KLPD) is estimated to be 10958 cum/day. The treated effluent of 6848 cum/day is proposed to be recycled/reused for different industrial operations, leaving the fresh water requirement for the proposed expansion limited to 4110 cum/day which is proposed to be met through Sirhind Canal Water. Necessary permission to draw 2.5 cusecs (6000 cum/day) of water has been obtained from the concerned regulatory authority i.e. Sirhind Canal Circle, Ludhiana.
6. Spent wash shall be taken through centrifuge decanters and thin slops from the decanter centrifuge will be partly recycled back to process (30-35 %) and partly taken to the Thin Slops Evaporation plant for concentration of remaining solids to form a syrup. This syrup shall also be mixed into the wet cake coming out of centrifuge and forms part of cattle feed. Wet cake/DDGS from decanter shall be passed through steam tube bundle drier for drying into cake with 10-12% moisture (max) to give higher shelf life. DDGS shall be ideally used as cattle feed/ poultry feed/ etc. No effluent shall be generated from the plant, thus ensuring Zero Liquid Discharge.
7. The total power requirement for proposed project shall be 9.0 MW proposed to be sourced from 40 MW (2 x 20 MW) Co-Generation Power Plant & 3 x 1000 kVA of DG set (for back up). The remaining power shall be exported to the State power grid.
8. Two biomass/ rice husk/ bagasse/ paddy & wheat straw fired boilers of 100 TPH capacity each shall be installed. A stack of 63 m height equipped with Electrostatic Precipitator (ESP) shall be installed to encounter the emission from boiler stack. CO<sub>2</sub> generated during the fermentation process shall be scrubbed, purified & collected for sale as by-product. DG sets shall have adequate height of stack as per CPCB Guidelines. Ash from the boiler shall be sold to the brick manufacturers.
9. The project/activities are covered under Category A of item 5(g) 'Distillery' of the Schedule to the Environment Impact Assessment (EIA) Notification and requires appraisal at central level by the Sectoral Expert Appraisal Committee (EAC) in the Ministry.
10. The ToR for the project was granted by Ministry on 28<sup>th</sup> December, 2015 and the public hearing was conducted by the SPCB on 4<sup>th</sup> May, 2016.
11. The proposal was considered by the Expert Appraisal Committee (Industry-2) in its 31<sup>st</sup> meeting held during 23-24 November, 2017. The project proponent and their accredited consultant M/s J.M. EnviroNet Pvt Ltd, presented the EIA / EMP report as per the ToR. The Committee found the EIA / EMP report as satisfactory and complying with the ToR. The Committee has recommended the proposal for grant of environmental clearance.
12. Based on the proposal submitted by the project proponent and recommendations of the EAC (Industry-2), the Ministry of Environment, Forest and Climate change hereby accords environmental clearance to the project **'Expansion of Grain based Distillery from 100 KLPD to 600 KLPD (by adding 2 units of 250 KLPD each in two phases as Unit-II) and the expansion of Co-Generation Power Plant by adding 40 MW (2x20 MW)'** by M/s Malbros International Pvt Ltd at Village Mansoorwal, Tehsil Zira, Faridkot Road, District Ferozepur (Punjab), under the provisions of the EIA Notification, 2006, subject to the compliance of terms and conditions as below:-
  - (a) The project proponent shall take corrective measures vis-a-vis the observations of the Regional Office in their monitoring report forwarded to the Ministry vide letter dated 15<sup>th</sup> February, 2016. The action taken report shall be submitted to the Regional Office within six months for



evaluation of the efficacy/adequacy of the measures undertaken by the project proponent, for onward submission of the same to the Ministry.

- (b) Grain unfit for human consumption (also not attacked by pests and/or pesticides), shall only be used as raw material for the distillery.
- (c) Consent to Establish/Operate for the project shall be obtained from the State Pollution Control Board as required under the Air (Prevention and Control of Pollution) Act, 1981 and the Water (Prevention and Control of Pollution) Act, 1974.
- (d) As already committed by the project proponent, Zero Liquid Discharge shall be ensured and no waste/treated water shall be discharged outside the premises.
- (e) Necessary authorization required under the Hazardous and Other Wastes (Management and Trans-Boundary Movement) Rules, 2016, Solid Waste Management Rules, 2016 shall be obtained and the provisions contained in the Rules shall be strictly adhered to.
- (f) To control source and the fugitive emissions, suitable pollution control devices shall be installed to meet the prescribed norms and/or the NAAQS. The gaseous emissions shall be dispersed through stack of adequate height as per CPCB/SPCB guidelines.
- (g) Total fresh water requirement shall not exceed 4800 KL/day (8 KL/KL of Alcohol) for the distillery, to be met from Canal and the ground water. Prior permission in this regard shall be obtained from the concerned regulatory authority.
- (h) Industrial/trade effluent shall be segregated into High COD/TDS and Low COD/TDS effluent streams, as applicable. High TDS/COD shall be passed through stripper followed by MEE and ATFD (agitated thin film drier). Low TDS effluent stream shall be treated in ETP and then passed through RO system.
- (i) Process effluent/any wastewater shall not be allowed to mix with storm water. Storm water drain shall be passed through guard pond.
- (j) Hazardous chemicals shall be stored in tanks, tank farms, drums, carboys etc. Flame arresters shall be provided on tank farm and the solvent transfer through pumps.
- (k) Process organic residue and spent carbon, if any, shall be sent to cement industries. ETP sludge, process inorganic & evaporation salt shall be disposed off to the TSDF.
- (l) The Company shall strictly comply with the rules and guidelines under Manufacture, Storage and Import of Hazardous Chemicals (MSIHC) Rules, 1989 as amended time to time. All transportation of Hazardous Chemicals shall be as per the Motor Vehicle Act (MVA), 1989.
- (m) The company shall undertake waste minimization measures as below:-
  - (i) Metering and control of quantities of active ingredients to minimize waste.
  - (ii) Reuse of by-products from the process as raw materials or as raw material substitutes in other processes.
  - (iii) Use of automated filling to minimize spillage.
  - (iv) Use of Close Feed system into batch reactors.

*SH*

- (v) Venting equipment through vapour recovery system.
- (vi) Use of high pressure hoses for equipment clearing to reduce wastewater generation.
- (n) The green belt of 5-10 m width shall be developed in more than 33% of the total project area, mainly along the plant periphery, in downward wind direction, and along road sides etc. Selection of plant species shall be as per the CPCB guidelines in consultation with the State Forest Department.
- (o) All the commitments made regarding issues raised during the public hearing/consultation meeting held 4<sup>th</sup> May, 2016 shall be satisfactorily implemented.
- (p) At least 2.5% of the total project cost shall be allocated for Enterprise Social Commitment based on public hearing issues and item-wise details along with time bound action plan shall be prepared and submitted to the Ministry's Regional Office.
- (q) The company shall make all arrangements for control of noise from the drilling activity. Acoustic enclosure shall be provided for the DG sets along with the adequate stack height as per CPCB guidelines.
- (r) The unit shall make the arrangement for protection of possible fire hazards during manufacturing process in material handling. Fire fighting system shall be as per the norms.
- (s) Occupational health surveillance of the workers shall be done on a regular basis and records maintained as per the Factories Act.
- (t) Continuous online (24X7) monitoring system for stack emissions shall be installed for measurement of flue gas discharge and the pollutants concentration, and the data to be transmitted to the CPCB and SPCB server. For online continuous monitoring of effluent, the unit shall install web camera with night vision capability and flow meters in the channel/drain carrying effluent within the premises.
- (u) There shall be adequate space inside the plant premises earmarked for parking of vehicles for raw materials and finished products, and no parking to be allowed outside on public places.
- (v) Storage of raw materials, coal etc shall be either stored in silos or in covered areas to prevent dust pollution and other fugitive emissions.
- (w) The energy sources for lighting purposes shall preferably be LED based. A minimum of 10-20% of the total power requirement for the industrial operations shall be met from non-conventional energy resources/solar supply.
- (x) The project proponent shall use either agricultural waste or bio fuel as energy source for boilers.

**12.1** The grant of Environmental Clearance is further subject to compliance of other generic conditions as under:-

- (i) The project authorities must strictly adhere to the stipulations made by the state Pollution Control Board (SPCB), State Government and/ or any other statutory authority.
- (ii) No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment, Forest and Climate Change. In case of deviations or alterations in the project proposal from those submitted to this Ministry for clearance, a fresh reference shall be made to the Ministry to assess the adequacy of conditions imposed and to add additional environmental protection measures required, if any.



- (iii) The locations of ambient air quality monitoring stations shall be decided in consultation with the State Pollution Control Board (SPCB) and it shall be ensured that at least one stations each is installed in the upwind and downwind direction as well as where maximum ground level concentrations are anticipated.
- (iv) The National Ambient Air Quality Emission Standards issued by the Ministry vide G.S.R. No. 826(E) dated 16<sup>th</sup> November, 2009 shall be complied with.
- (v) The overall noise levels in and around the plant area shall be kept well within the standards by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation. The ambient noise levels shall conform to the standards prescribed under Environment (Protection) Act, 1986 Rules, 1989 viz. 75 dBA (day time) and 70 dBA (night time).
- (vi) The Company shall harvest rainwater from the roof tops of the buildings and storm water drains to recharge the ground water and utilize the same for different industrial operations within the plant.
- (vii) Training shall be imparted to all employees on safety and health aspects of chemicals handling. Pre-employment and routine periodical medical examinations for all employees shall be undertaken on regular basis. Training to all employees on handling of chemicals shall be imparted.
- (viii) The company shall comply with all the environmental protection measures and safeguards proposed in the documents submitted to the Ministry. All the recommendations made in the EIA/EMP in respect of environmental management, risk mitigation measures and public hearing shall be implemented.
- (ix) The company shall undertake all measures for improving socio-economic conditions of the surrounding area. CSR activities shall be undertaken by involving local villagers, administration and other stake holders. Also eco-developmental measures shall be undertaken for overall improvement of the environment.
- (x) A separate Environmental Management Cell equipped with full-fledged laboratory facilities shall be set up to carry out the Environmental Management and Monitoring functions.
- (xi) The company shall earmark sufficient funds towards capital cost and recurring cost per annum to implement the conditions stipulated by the Ministry of Environment, Forest and Climate Change as well as the State Government along with the implementation schedule for all the conditions stipulated herein. The funds so earmarked for environment management/ pollution control measures shall not be diverted for any other purpose.
- (xii) A copy of the clearance letter shall be sent by the project proponent to concerned Panchayat, Zila Parisad/ Municipal Corporation, Urban local Body and the local NGO, if any, from whom suggestions/ representations, if any, were received while processing the proposal.
- (xiii) The project proponent shall also submit six monthly reports on the status of compliance of the stipulated Environmental Clearance conditions including results of monitored data (both in hard copies as well as by e-mail) to the respective Regional Office of MoEF&CC, the respective Zonal office of CPCB and SPCB. A copy of Environmental Clearance and six monthly compliance status report shall be posted on the website of the company.



- (xiv) The environmental statement for each financial year ending 31<sup>st</sup> March in Form-V as is mandated shall be submitted to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliance of environmental clearance conditions and shall also be sent to the respective Regional offices of MoEF&CC by e-mail.
- (xv) The project proponent shall inform the public that the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with the SPCB/Committee and may also be seen at Website of the Ministry at <http://moef.nic.in>. This shall be advertised within seven days from the date of issue of the clearance letter, at least in two local newspapers that are widely circulated in the region of which one shall be in the vernacular language of the locality concerned and a copy of the same shall be forwarded to the concerned Regional office of the Ministry.

13. The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.

14. The Ministry reserves the right to stipulate additional conditions, if found necessary. The company in a time bound manner will implement these conditions.

15. The above conditions will be enforced, inter-alia under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, the Hazardous Waste (Management, Handling and Trans-boundary Movement) Rules, 2016 and the Public Liability Insurance Act, 1991 along with their amendments and rules.

*S.K.*  
15/11/2018  
(S. K. Srivastava)  
Scientist E

**Copy to: -**

1. The Principal Chief Conservator of Forests, Government of Punjab, Forest Complex Sector 68, Mohali, **S.A.S Nagar-160062** (Punjab)
2. The Additional Principal Chief Conservator of Forests (C), Ministry of Environment, Forest and Climate Change, Regional Office (NZ), Bays No. 24-25, Sector 31 A, Dakshin Marg, **Chandigarh-160030**
3. The Member Secretary, Central Pollution Control Board, Parivesh Bhavan, East Arjun Nagar, **Delhi - 32**
4. The Member Secretary, Punjab Pollution Control Board, Vatavaran Bhawan, Nabha Road, **Patiala** (Punjab)
5. Monitoring Cell, Ministry of Environment, Forest and Climate Change, **New Delhi**
6. Guard File/Monitoring File/Record File.

*S.K.*  
15/11/2018  
(S. K. Srivastava)  
Scientist E



# Malbros

International Pvt. Ltd.

Village Mansoorwal, Tehsil Zira,  
District Ferozepur, Punjab  
Phone : 01682 - 262007, 262107  
Email : malbros@ymail.com

**MIL 150/16-17**  
**Date: 19.12.2016**

To  
**The Director (Industry-2) IA Division**  
Ministry of Environment, Forest & Climate Change  
Indira Paryawaran Bhawan  
Jor Bagh Road  
New Delhi-110003

**Subject:** Proposed installation of Unit II – Grain Based Ethanol / ENA / RS / Industrial Alcohol Plant (500 KLPD (2 x 250 KLPD)) & Co-generation Power Plant (40 MW (2 x 20 MW)) in Existing Distillery Plant at Village – Mansoorwal, Tehsil – Zira, District – Ferozepur (Punjab) by M/s. **Malbros International Private Limited**

**Ref:** MoEF&CC File no, J-11011/228/2015-IA II (I)

Dear Sir,

With reference to the aforesaid subject, we hereby request you that the First Technical Presentation (for ToR approval) in MoEF&CC, New Delhi for our project was held on dated 30<sup>th</sup> November, 2015 and MoEF&CC issued the prescribed ToR vide Letter no J-11011/228/2015-IA II (I) dated 28<sup>th</sup> December, 2015. The Public Hearing for our project was conducted by Punjab Pollution Control Board on 04<sup>th</sup> May, 2016. The Final EIA/EMP Report has been prepared incorporating all the prescribed ToR points & concerns raised during Public Hearing.

As per New EIA, Notification dated 14<sup>th</sup> Sep., 2006, as amended from time to time; we are herewith submitting the Final EIA/EMP report along with public hearing details for obtaining Environment Clearance from the Ministry of Environment, Forest & Climate Change, New Delhi.

Kindly consider our case & grant us the Environment Clearance at the earliest.

Thanking you and With Regards,

**For Malbros International Private Limited**

**Pawan Bansal**  
CAO

**Encl: As above**

**FINAL ENVIRONMENTAL IMPACT  
ASSESSMENT REPORT  
&  
ENVIRONMENTAL MANAGEMENT PLAN**

**FOR**

**Proposed installation of Unit II -  
Grain Based Ethanol/ENA/RS/ Industrial Alcohol Plant  
{500 KLPD (2X250 KLPD)}  
& Co-generation Power Plant {40 MW (2X 20 MW)}  
in Existing Distillery Plant**



**Study Period: Post Monsoon Season (Oct. to Dec. 2015)**

**At**

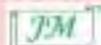
**At Village Mansoorwal, Tehsil Zira,  
District Ferozepur, Punjab**



**APPLICANT**

**Malbros International Private Limited**

40- North Avenue Road,  
West Punjabi Bagh, New Delhi. 110026  
Phone No.: 011-47012635  
E-mail: malbros@ymail.com



**EIA CONSULTANT**

**J.M. EnviroNet Pvt. Ltd.**

(Registered EIA Consultant Organization from NABET-Q.C.I., MoEF  
and NABL Approved Environmental Laboratory)  
S.C.O. 16, SECTOR 10-A, GURGAON-122 001 (HARYANA)  
Phone No.: 0124-3206559, 4873400, Fax No.: 0124-4141029  
E-mail: jmenviron@hotmail.com



**Malbros**

**International Pvt. Ltd.**

Village Mansoorwal, Tehsil Zira,

District Ferozepur, Punjab

Phone : 01682 - 262007, 262107

Email : malbros@ymail.com

**UNDERTAKING**

I, Pawan Bansal (CAO) of Malbros International Private Limited give this undertaking to the effect that conditions laid down in ToR prescribed by MoEF&CC, New Delhi vide letter no J-11011/228/2015-IA II (I) dated 28<sup>th</sup> December, 2015 for preparation of EIA for Proposed installation of Unit II – Grain Based Ethanol / ENA / RS / Industrial Alcohol Plant (500 KLPD (2 x 250 KLPD)) & Co-generation Power Plant (40 MW (2 x 20 MW)) in Existing Distillery Plant at Village - Mansoorwal, Tehsil - Zira, District - Ferozepur (Punjab) have been complied with and the data submitted and information presented in this report are factually correct.

Date: 19.12.2016

Place: Ferozepur

**For & behalf of**

**For Malbros International Private Limited**

**Pawan Bansal**

**CAO**

Corp. Office: 40, North Avenue Road, West Punjabi Bagh, New Delhi 110026, Telefax: 011-25229720

Correspondence Address : VIA Speedpost at Village Mansoorwal - 142050, Tehsil Zira, District Ferozepur (Punjab) Mobile No : 99148-00006

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**ABBREVIATIONS**

$\mu\text{g}/\text{m}^3$	:	Micro gram per meter cube
$\mu\text{m}$	:	Micro Meter
AAQM	:	Ambient Air Quality Monitoring
AAQMS	:	Ambient Air Quality Monitoring Station
APCM/E	:	Air Pollution Control Measures/Equipment
CGWA	:	Central Ground Water Authority
CO	:	Carbon monoxide
CO <sub>2</sub>	:	Carbon dioxide
CGWB	:	Central Ground Water Board
CMS	:	Continuous Monitoring System
CPCB	:	Central Pollution Control Board
CREP	:	Corporate Responsibility for Environment Protection
Db	:	Decibel
DWGS	:	Distillers Wet Grains Soluble
EAC	:	Expert Appraisal Committee
EIA	:	Environmental Impact Assessment
EMC	:	Environment Management Cell
EMP	:	Environmental Management Plan
ENA	:	Extra Neutral Alcohol
ENE	:	East North East
EPA	:	Environmental Protection Agency
ERDAS	:	Earth Resources Data Analysis System
ESP	:	Electrostatic Precipitator
ETP	:	Effluent Treatment Plant
GCP	:	Ground Control Points
GLC	:	Ground Level Concentration
Govt.	:	Government
Ha	:	Hectare
HDPE	:	High Density Polyethylene
HSE	:	Health, Safety & Environment
ID	:	Induced Draft
IMD	:	India Meteorological Department
IRS	:	Indian Remote Sensing Satellite
IS	:	Indian Standards
Kg	:	Kilogram
KLPD	:	Kilo Liter Per Day
Km	:	Kilometer
KVA	:	Kilo Volt Ampere
KW	:	Kilo Watt
LU/LC	:	Land Use / Land Cover
M	:	Meter
MIPL	:	Malbros International Private Limited
mg/l	:	Milligram per Litre
$\text{mg}/\text{m}^3$	:	Milligram per meter cube
mm	:	Millimeter
MoEF	:	Ministry of Environment & Forests
MOWR	:	Ministry of Water Resources
mRL	:	Mean Reduced Level
MSL	:	Mean Sea Level
MT	:	Metric Tonnes
MW	:	Mega Watt

NH	:	National Highway
NNE	:	North North East
NOC	:	No objection Certificate
NO <sub>2</sub>	:	Nitrogen dioxide
NRSA	:	National Remote Sensing Agency
NTF	:	National Task Force
NW	:	North West
O <sub>3</sub>	:	Ozone
PF	:	Protected Forest
pH	:	Potential of Hydrogen
PM	:	Particulate Matter
PPE	:	Personal Protective Equipment
PPV	:	Peak Particle Velocity
PSPCB	:	Punjab State Pollution Control Board
PWD	:	Public Works Department
RDS	:	Respirable Dust Sampler
RF	:	Reserve Forest
Rp	:	Recharge from Plant
RS	:	Rectified Spirits
RSPM	:	Respirable Suspended Particulate Matter
SE	:	South East
SEAC	:	State Level Expert Appraisal Committee
SEIAA	:	State Environmental Impact Assessment Authority
SH	:	State Highway
SOI	:	Survey of India
SO <sub>2</sub>	:	Sulphur dioxide
SPCB	:	State Pollution Control Board
SPM	:	Suspended Particulate Matter
Sq.	:	Square
SSE	:	South South East
SSW	:	South South West
T	:	Tonnes
TDS	:	Total Dissolved Solids
ToR	:	Terms of Reference
TPD	:	Tonnes Per Day
TPH	:	Tonnes Per Hour
TPP	:	Thermal Power Plant
TR	:	Total Recharge
USDA	:	United States Department of Agriculture
V	:	Volt



**J-11011/228/2015-IA II (I)**  
**Government of India**  
**Ministry of Environment, Forest and Climate Change**  
**(I.A. Division)**

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**Dated: 28<sup>th</sup> December, 2015**

To,  
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 M/s Malbros International Pvt. Ltd.  
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 West Punjabi Bagh, Delhi

**Email.: [malbros@ymail.com](mailto:malbros@ymail.com) ; Fax.: 99148-00006**

**Subject: Installation of Unit II - Grain Based Ethanol/RS Industrial/ENA Plant (500 KLPD (2X250 KLPD)) & Co-generation Power Plant (40 MW (2X 20 MW)) in the Existing Distillery Plant at Village Mansoorwala, Tehsil Zira, District Ferozepur, Punjab by M/s Malbros International Private Limited- reg. TOR**

**Ref. No.: Your Proposal no. IA/PB/IND2/30450/2015 ; dated 28<sup>th</sup> August, 2015**

Sir,

Kindly refer your proposal no. IA/PB/IND2/30450/2015 dated 28<sup>th</sup> August, 2015 along with project documents including Form-I, Pre-feasibility Report and draft 'Terms of Reference' as per the EIA Notification, 2006. It is noted that the proposal is for expansion grain based Ethanol/RS Industrial/ENA Plant (500 KLPD (2X250 KLPD)) & Co-generation Power Plant (40 MW (2X 20 MW)) in the Existing Distillery Plant at Village Mansoorwala, Tehsil Zira, District Ferozepur, Punjab by M/s Malbros International Pvt. Ltd. Following are proposed project configurations:-

S.N.	Unit	Total Capacity
1	Grain based Ethanol /ENA/RS/ Industrial Alcohol Plant	500 KLPD (2 x 250 KLPD)
2	Co-generation Power Plant	40 MW (2 x 20 MW)
3	CO2 Plant	225 TPD (2 x 112.5 TPD)
4	DDG/ Cattle Feed/ Poultry Feed	300 TPD (2 x 150 TPD)

2.0 Draft Terms of Reference (TOR) have been discussed and finalized during 1<sup>st</sup> Expert Appraisal Committee (Industry-2) meeting held during 30<sup>th</sup> November- 1<sup>st</sup> December 2015 for preparation of EIA/EMP report. The Committee prescribed the following Specific and Additional TOR in addition to Generic TOR provided at Annexure-I (refer to Ministry's website) for preparation of EIA-EMP report

#### A. Specific TOR

- 1 List of existing distillery units in the study area along with their capacity and sourcing of raw material.
- 2 Number of working days of the distillery unit.
- 3 Details of raw materials such as grains, their source with availability.
- 4 Details of the use of steam from the boiler.
- 5 Plan to reduce spent wash generation within 6-8 KL/KL of alcohol produced.

*lk*

- 6 Proposed effluent treatment system for grain based distillery (spent wash, spent lees, condensate and utilities) as well as domestic sewage and scheme for achieving zero effluent discharge (ZLD).
- 7 Proposed action to restrict fresh water consumption within 10 KL/KL of alcohol production.
- 8 Details about capacity of spent wash holding tank, material used, design consideration. No. of peizometers to be proposed around spent wash holding tank.
- 9 Action plan to control ground water pollution.
- 10 Details of solid waste management including management of boiler ash, yeast, etc.
- 11 Commitment to install dryer.
- 12 Action plan to control odour pollution.
- 13 Arrangements for installation of continuous online monitoring system (24x7 monitoring device)

#### B. Additional TOR

- i Public hearing to be conducted and issues raised and commitments made by the project proponent on the same should be included in EIA/EMP Report in the form of tabular chart with financial budget for complying with the commitments made.
- ii Availability of gain from the market to be assessed adequately
- iii A separate chapter on status of compliance of Environmental Conditions granted by State/Centre to be provided. As per circular dated 30th May, 2012 issued by MoEF, a certified report by RO, MoEF on status of compliance of conditions on existing unit to be provided in EIA-EMP report.

3.0 These 'TORs' should be considered for the preparation of EIA / EMP for expansion grain based Ethanol/RS Industrial/ENA Plant (500 KLPD (2X250 KLPD)) & Co-generation Power Plant (40 MW (2X 20 MW)) in the Existing Distillery Plant at Village Mansoorwala, Tehsil Zira, District Ferozepur, Punjab by M/s Malbros International Pvt. Ltd. in addition to all the relevant information as per the 'General Structure of EIA' given in Appendix III and IIIA in the EIA Notification, 2006. The EIA/EMP as per TORs should be submitted to the Chairman, Punjab Pollution Control Board, for public consultation. The SPCB shall conduct the public hearing/public consultation as per the provisions of EIA notification, 2006.

4.0 You are requested to kindly submit the final EIA/EMP prepared as per TORs and incorporating all the issues raised during Public Hearing / Public Consultation to the Ministry for considering the proposal for environmental clearance **within 3 years as per the MoEF O.M. No. J-11013/41/2006-IA.II (I) dated 8<sup>th</sup> October, 2014.**

5.0 The consultants involved in the preparation of EIA/EMP report after accreditation with Quality Council of India/ National Accreditation Board of Education and Training (QCI/NABET) would need to include a certificate in this regard in the EIA/EMP reports prepared by them and data provided by other Organization(s)/Laboratories including their status of approvals etc.

  
(Lalit Bokolia)  
Additional Director

Copy to:

- 1 The Chairman, Punjab State Pollution Control Board, Nabha Road, Patiala – 147 001, Punjab.
- 2 Additional Principal Conservator of Forests (C), Ministry of Environment, Forest and Climate Change, Regional Office (NZ), Bays No. 24-25, Sector 31 A, Dakshin Marg, Chandigarh – 160030 4

  
(Lalit Bokolia)  
Additional Director

Annexure-I**GENERIC TERMS OF REFERENCE (TOR) IN RESPECT OF INDUSTRY SECTOR**

1. **Executive Summary**
2. **Introduction**
  - i. Details of the EIA Consultant including NABET accreditation
  - ii. Information about the project proponent
  - iii. Importance and benefits of the project
3. **Project Description**
  - i. Cost of project and time of completion.
  - ii. Products with capacities for the proposed project.
  - iii. If expansion project, details of existing products with capacities and whether adequate land is available for expansion, reference of earlier EC if any.
  - iv. List of raw materials required and their source along with mode of transportation.
  - v. Other chemicals and materials required with quantities and storage capacities
  - vi. Details of Emission, effluents, hazardous waste generation and their management.
  - vii. Requirement of water, power, with source of supply, status of approval, water balance diagram, man-power requirement (regular and contract)
  - viii. Process description along with major equipments and machineries, process flow sheet (quantities) from raw material to products to be provided
  - ix. Hazard identification and details of proposed safety systems.
  - x. Expansion/modernization proposals:
    - a. Copy of all the Environmental Clearance(s) including Amendments thereto obtained for the project from MOEF/SEIAA shall be attached as an Annexure. A certified copy of the latest Monitoring Report of the Regional Office of the Ministry of Environment and Forests as per circular dated 30<sup>th</sup> May, 2012 on the status of compliance of conditions stipulated in all the existing environmental clearances including Amendments shall be provided. In addition, status of compliance of Consent to Operate for the ongoing /existing operation of the project from SPCB shall be attached with the EIA-EMP report.
    - b. In case the existing project has not obtained environmental clearance, reasons for not taking EC under the provisions of the EIA Notification 1994 and/or EIA Notification 2006 shall be provided. Copies of Consent to Establish/No Objection Certificate and Consent to Operate (in case of units operating prior to EIA Notification 2006, CTE and CTO of FY 2005-2006) obtained from the SPCB shall be submitted. Further, compliance report to the conditions of consents from the SPCB shall be submitted.
4. **Site Details**
  - i. Location of the project site covering village, Taluka/Tehsil, District and State, Justification for selecting the site, whether other sites were considered.

- ii. A toposheet of the study area of radius of 10km and site location on 1:50,000/1:25,000 scale on an A3/A2 sheet. (including all eco-sensitive areas and environmentally sensitive places)
- iii. Details w.r.t. option analysis for selection of site
- iv. Co-ordinates (lat-long) of all four corners of the site.
- v. Google map-Earth downloaded of the project site.
- vi. Layout maps indicating existing unit as well as proposed unit indicating storage area, plant area, greenbelt area, utilities etc. If located within an Industrial area/Estate/Complex, layout of Industrial Area indicating location of unit within the Industrial area/Estate.
- vii. Photographs of the proposed and existing (if applicable) plant site. If existing, show photographs of plantation/greenbelt, in particular.
- viii. Landuse break-up of total land of the project site (identified and acquired), government/private - agricultural, forest, wasteland, water bodies, settlements, etc shall be included. (not required for industrial area)
- ix. A list of major industries with name and type within study area (10km radius) shall be incorporated. Land use details of the study area
- x. Geological features and Geo-hydrological status of the study area shall be included.
- xi. Details of Drainage of the project upto 5km radius of study area. If the site is within 1 km radius of any major river, peak and lean season river discharge as well as flood occurrence frequency based on peak rainfall data of the past 30 years. Details of Flood Level of the project site and maximum Flood Level of the river shall also be provided. (mega green field projects)
- xii. Status of acquisition of land. If acquisition is not complete, stage of the acquisition process and expected time of complete possession of the land.
- xiii. R&R details in respect of land in line with state Government policy

5. **Forest and wildlife related issues (if applicable):**

- i. Permission and approval for the use of forest land (forestry clearance), if any, and recommendations of the State Forest Department. (if applicable)
- ii. Landuse map based on High resolution satellite imagery (GPS) of the proposed site delineating the forestland (*in case of projects involving forest land more than 40 ha*)
- iii. Status of Application submitted for obtaining the stage I forestry clearance along with latest status shall be submitted.
- iv. The projects to be located within 10 km of the National Parks, Sanctuaries, Biosphere Reserves, Migratory Corridors of Wild Animals, the project proponent shall submit the map duly authenticated by Chief Wildlife Warden showing these features vis-à-vis the project location and the recommendations or comments of the Chief Wildlife Warden-thereon
- v. Wildlife Conservation Plan duly authenticated by the Chief Wildlife Warden of the State Government for conservation of Schedule I fauna, if any exists in the study area
- vi. Copy of application submitted for clearance under the Wildlife (Protection) Act, 1972, to the Standing Committee of the National Board for Wildlife

6. **Environmental Status**

- i. Determination of atmospheric inversion level at the project site and site-specific micro-meteorological data using temperature, relative humidity, hourly wind speed and direction and rainfall.
- ii. AAQ data (except monsoon) at 8 locations for PM10, PM2.5, SO2, NOX, CO and other parameters relevant to the project shall be collected. The monitoring stations

- shall be based CPCB guidelines and take into account the pre-dominant wind direction, population zone and sensitive receptors including reserved forests.
- iii. Raw data of all AAQ measurement for 12 weeks of all stations as per frequency given in the NAQPM Notification of Nov. 2009 along with – min., max., average and 98% values for each of the AAQ parameters from data of all AAQ stations should be provided as an annexure to the EIA Report.
  - iv. Surface water quality of nearby River (100m upstream and downstream of discharge point) and other surface drains at eight locations as per CPCB/MoEF&CC guidelines.
  - v. Whether the site falls near to polluted stretch of river identified by the CPCB/MoEF&CC, if yes give details.
  - vi. Ground water monitoring at minimum at 8 locations shall be included.
  - vii. Noise levels monitoring at 8 locations within the study area.
  - viii. Soil Characteristic as per CPCB guidelines.
  - ix. Traffic study of the area, type of vehicles, frequency of vehicles for transportation of materials, additional traffic due to proposed project, parking arrangement etc.
  - x. Detailed description of flora and fauna (terrestrial and aquatic) existing in the study area shall be given with special reference to rare, endemic and endangered species. If Schedule-I fauna are found within the study area, a Wildlife Conservation Plan shall be prepared and furnished.
  - xi. Socio-economic status of the study area.

## 7. Impact and Environment Management Plan

- i. Assessment of ground level concentration of pollutants from the stack emission based on site-specific meteorological features. In case the project is located on a hilly terrain, the AQIP Modelling shall be done using inputs of the specific terrain characteristics for determining the potential impacts of the project on the AAQ. Cumulative impact of all sources of emissions (including transportation) on the AAQ of the area shall be assessed. Details of the model used and the input data used for modelling shall also be provided. The air quality contours shall be plotted on a location map showing the location of project site, habitation nearby, sensitive receptors, if any.
- ii. Water Quality modelling – in case of discharge in water body
- iii. Impact of the transport of the raw materials and end products on the surrounding environment shall be assessed and provided. In this regard, options for transport of raw materials and finished products and wastes (large quantities) by rail or rail-cum road transport or conveyor-cum-rail transport shall be examined.
- iv. A note on treatment of wastewater from different plant operations, extent recycled and reused for different purposes shall be included. Complete scheme of effluent treatment. Characteristics of untreated and treated effluent to meet the prescribed standards of discharge under E(P) Rules.
- v. Details of stack emission and action plan for control of emissions to meet standards.
- vi. Measures for fugitive emission control
- vii. Details of hazardous waste generation and their storage, utilization and management. Copies of MOU regarding utilization of solid and hazardous waste in cement plant shall also be included. EMP shall include the concept of waste-minimization, recycle/reuse/recover techniques, Energy conservation, and natural resource conservation.
- viii. Proper utilization of fly ash shall be ensured as per Fly Ash Notification, 2009. A detailed plan of action shall be provided.
- ix. Action plan for the green belt development plan in 33 % area i.e. land with not less than 1,500 trees per ha. Giving details of species, width of plantation, planning schedule etc. shall be included. The green belt shall be around the project

boundary and a scheme for greening of the roads used for the project shall also be incorporated.

- x. Action plan for rainwater harvesting measures at plant site shall be submitted to harvest rainwater from the roof tops and storm water drains to recharge the ground water and also to use for the various activities at the project site to conserve fresh water and reduce the water requirement from other sources.
- xi. Total capital cost and recurring cost/annum for environmental pollution control measures shall be included.
- xii. Action plan for post-project environmental monitoring shall be submitted.
- xiii. Onsite and Offsite Disaster (natural and Man-made) Preparedness and Emergency Management Plan including Risk Assessment and damage control. Disaster management plan should be linked with District Disaster Management Plan.

## 8. Occupational health

- i. Plan and fund allocation to ensure the occupational health & safety of all contract and casual workers
- ii. Details of exposure specific health status evaluation of worker. If the workers' health is being evaluated by pre designed format, chest x rays, Audiometry, Spirometry, Vision testing (Far & Near vision, colour vision and any other ocular defect) ECG, during pre placement and periodical examinations give the details of the same. Details regarding last month analyzed data of above mentioned parameters as per age, sex, duration of exposure and department wise.
- iii. Details of existing Occupational & Safety Hazards. What are the exposure levels of hazards and whether they are within Permissible Exposure level (PEL). If these are not within PEL, what measures the company has adopted to keep them within PEL so that health of the workers can be preserved,
- iv. Annual report of health status of workers with special reference to Occupational Health and Safety.

## 9. Corporate Environment Policy

- i. Does the company have a well laid down Environment Policy approved by its Board of Directors? If so, it may be detailed in the EIA report.
- ii. Does the Environment Policy prescribe for standard operating process / procedures to bring into focus any infringement / deviation / violation of the environmental or forest norms / conditions? If so, it may be detailed in the EIA.
- iii. What is the hierarchical system or Administrative order of the company to deal with the environmental issues and for ensuring compliance with the environmental clearance conditions? Details of this system may be given.
- iv. Does the company have system of reporting of non compliances / violations of environmental norms to the Board of Directors of the company and / or shareholders or stakeholders at large? This reporting mechanism shall be detailed in the EIA report

10. Details regarding infrastructure facilities such as sanitation, fuel, restroom etc. to be provided to the labour force during construction as well as to the casual workers including truck drivers during operation phase.
11. Enterprise Social Commitment (ESC)
  - i. Adequate funds (at least 2.5 % of the project cost) shall be earmarked towards the Enterprise Social Commitment based on Public Hearing issues and item-wise details along with time bound action plan shall be included. Socio-economic development activities need to be elaborated upon.
12. Any litigation pending against the project and/or any direction/order passed by any Court of Law against the project, if so, details thereof shall also be included. Has the unit received any notice under the Section 5 of Environment (Protection) Act, 1986 or relevant Sections of Air and Water Acts? If so, details thereof and compliance/ATR to the notice(s) and present status of the case.
13. 'A tabular chart with index for point wise compliance of above TORs.
14. The TORs prescribed shall be valid for a period of three years for submission of the EIA-EMP reports.

**The following general points shall be noted:**

- i. All documents shall be properly indexed, page numbered.
- ii. Period/date of data collection shall be clearly indicated.
- iii. Authenticated English translation of all material in Regional languages shall be provided.
- iv. The letter/application for environmental clearance shall quote the MOEF file No. and also attach a copy of the letter.
- v. The copy of the letter received from the Ministry shall be also attached as an annexure to the final EIA-EMP Report.
- vi. The index of the final EIA-EMP report must indicate the specific chapter and page no. of the EIA-EMP Report
- vii. While preparing the EIA report, the instructions for the proponents and instructions for the consultants issued by MOEF vide O.M. No. J-11013/41/2006-IA.II (I) dated 4<sup>th</sup> August, 2009, which are available on the website of this Ministry shall also be followed.
- viii. The consultants involved in the preparation of EIA-EMP report after accreditation with Quality Council of India (QCI) /National Accreditation Board of Education and Training (NABET) would need to include a certificate in this regard in the EIA-EMP reports prepared by them and data provided by other organization/Laboratories including their status of approvals etc. Name of the Consultant and the Accreditation details shall be posted on the EIA-EMP Report as well as on the cover of the Hard Copy of the Presentation material for EC presentation.

TORs' prescribed by the Expert Appraisal Committee (Industry) shall be considered for preparation of EIA-EMP report for the project in addition to all the relevant information as per the 'Generic Structure of EIA' given in Appendix III and IIIA in the EIA Notification, 2006. Where the documents provided are in a language other than English, an English translation shall be provided. The draft EIA-EMP report shall be submitted to the State Pollution Control Board of the concerned State for conduct of Public Hearing. The SPCB shall conduct the Public Hearing/public consultation, district-wise, as per the provisions of EIA notification, 2006. The Public Hearing shall be chaired by an Officer not below the rank of Additional District Magistrate. The issues raised in the Public Hearing and during the consultation process and the commitments made by the project

proponent on the same shall be included separately in EIA-EMP Report in a separate chapter and summarised in a tabular chart with financial budget (capital and revenue) along with time-schedule of implementation for complying with the commitments made. The final EIA report shall be submitted to the Ministry for obtaining environmental clearance.

<b>Proposed Installation of Unit II - Grain Based Ethanol / ENA / RS / Industrial Alcohol Plant {500 KLPD (2x250 KLPD)} &amp; Co-generation Power Plant {40MW (2x20 MW)} in Existing Distillery Plant</b> At Village-Mansoorwal, Tehsil-Zira, District-Ferozepur (Punjab)
<i>Chapter-I of Final EIA/EMP Report</i>

### ToR Compliance

Point-wise compliance to the ToR points issued by MoEF&CC, New Delhi vide letter no. J-11011/228/2015-IA II (I) dated 28<sup>th</sup> December, 2015 for Proposed installation of Unit II – Grain Based Ethanol / ENA / RS / Industrial Alcohol Plant {500 KLPD (2 x 250 KLPD)} & Co-generation Power Plant {40 MW (2 x 20 MW)} in Existing Distillery Plant at Village - Mansoorwal, Tehsil - Zira, District - Ferozepur (Punjab) by M/s. Malbros International Private Limited.

ToR Point No.	ToR Point	Compliance	Reference in EIA / EMP Report
<b>Generic ToRs</b>			
1.	<b>Executive Summary</b>	Executive Summary of the project has been incorporated in this EIA/EMP Report.	Chapter-XI, Page no. 174-183
2.	<b>Introduction</b>		
i.	Details of the EIA Consultant including NABET accreditation.	Details of the EIA Consultant including NABET accreditation has been incorporated in this EIA/EMP Report.	Chapter -XII, Page no. 184
ii.	Information about the project proponent.	Information about the project proponent has been incorporated in this EIA/EMP Report.	Chapter-I, Section 1.2.2, Page no. 28
iii.	Importance and benefits of the project.	Importance and benefits of this project has been incorporated in this EIA/EMP Report	Chapter-II, Section 2.2, Page no. 36
3.	<b>Project Description</b>		
i.	Cost of project and time of completion.	<ul style="list-style-type: none"> <li>• Total Cost of the Project is Rs. 583 Crores.</li> <li>• Phase I (250 KLPD Distillery &amp; 20 MW Cogeneration Power Plant) will be completed within 3 year after getting all the regulatory approvals. After installation phase I minimum time period of next 3 to 5 year will be required for setting up of Phase II (250 KLPD Distillery &amp; 20 MW Cogeneration Power Plant).</li> </ul>	-
ii.	Products with capacities for the proposed project.	Details of products with capacities for the proposed expansion project have been incorporated in this EIA/EMP Report.	Chapter - I, Table 1.2, Page no. 27
iii.	If expansion project, details of existing products with capacities and	<ul style="list-style-type: none"> <li>• The company is already running an existing Unit – I 100 KLPD Grain</li> </ul>	

Proposed Installation of Unit II - Grain Based Ethanol / ENA / RS / Industrial Alcohol Plant {500 KLPD (2x250 KLPD)} & Co-generation Power Plant {40MW (2x20 MW)} in Existing Distillery Plant  
At Village-Mansoorwal, Tehsil-Zira, District-Ferozepur (Punjab)

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ToR Point No.	ToR Point	Compliance	Reference in EIA / EMP Report
	whether adequate land is available for expansion, reference of earlier EC if any.	<p>Based Distillery along with 1.8 MW Co-generation Power Plant at Village Mansoorwal, Tehsil Zira, District Ferozepur (Punjab). The proposed project is of installation of Unit II in the existing distillery plant.</p> <ul style="list-style-type: none"> <li>• Environmental Clearance for existing Unit I has been obtained from MoEFCC, New Delhi vide Letter no. J-11011/187/2006- IA II (I) dated 25<sup>th</sup> September, 2006. Copy of the same has been enclosed in Annexure – 1A along with this EIA / EMP Report.</li> <li>• Total existing plant area is 14.8 ha (36.5 acres) &amp; the same is adequate for proposed installation project. No additional land is required for the same.</li> </ul>	<b>Annexure - 1 A</b>
iv.	List of raw materials required and their source along with mode of transportation.	List of raw materials required, their source and mode of transportation has been incorporated in this EIA/EMP Report.	Chapter-II, Section 2.4.1, Page no. 37
v.	Other chemicals and materials required with quantities and storage capacities.	Details of chemicals required along with quantities and storage capacities have been incorporated in this EIA/EMP Report.	Chapter-II, Section 2.4.1, Page no. 37
vi.	Details of Emission, effluents, hazardous waste generation and their management.	<ul style="list-style-type: none"> <li>• Emission details have been incorporated in this EIA / EMP Report.</li> <li>• No effluent will be generated from the plant as the distillery is based on “Zero Effluent Discharge”. Details of the same have been incorporated in this EIA/EMP Report.</li> <li>• Used oil &amp; grease generated from plant machinery / Gear boxes and D.G. Set as hazardous waste will be sold out to the CPCB authorized recycler.</li> </ul>	Chapter - IV, Table 4.1, Page no. 113

Proposed Installation of Unit II - Grain Based Ethanol / ENA / RS / Industrial Alcohol Plant {500 KLPD (2x250 KLPD)} & Co-generation Power Plant {40MW (2x20 MW)} in Existing Distillery Plant  
At Village-Mansoorwal, Tehsil-Zira, District-Ferozepur (Punjab)

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ToR Point No.	ToR Point	Compliance	Reference in EIA / EMP Report
vii.	Requirement of water, power, with source of supply, status of approval, water balance diagram, man-power requirement (regular and contract)	<ul style="list-style-type: none"> <li>• Water Total fresh water requirement for Unit II will be 4110 KLD. Source : Canal Water Water balance has been incorporated in this EIA/EMP Report. Status of Approval: Canal Permission from Superintending Engineer, Sirhind Canal Circle, Ludhiana vides letter no. 5924/50-R/Sidhwa dated 22.07.2015 has been attached as Annexure- 2.</li> <li>• Power The total power requirement for Unit II will be 9 MW. Source: Proposed 40 MW (2x20 MW) Co-generation Power Plant &amp; D.G. Sets- 3x1000 KVA (for Back-up purpose only)</li> <li>• Man-Power The total manpower requirement for Unit II will be 800 persons. Source: Unskilled / Semi-Skilled – Local Area; Skilled - Outside</li> </ul>	Chapter-II, Section 2.4.4, Page no. 38  <b>Annexure-2</b>
viii.	Process description along with major equipments and machineries, process flow sheet (quantitative) from raw material to products to be provided.	<ul style="list-style-type: none"> <li>• Process description along with flow sheets has been incorporated in this EIA/EMP Report.</li> <li>• Details of major equipment and machineries have been incorporated as Annexure 3 EIA/EMP Report.</li> <li>• Process flow sheet (quantitative) from raw material to products / mass balance has also been incorporated in this EIA / EMP Report.</li> </ul>	Chapter-II, Section 2.6, Page no. 43  <b>Annexure 3</b>  Chapter - II, Figure 2.1, Page no. 40
ix.	Hazard identification and details of proposed safety systems.	Hazard identification and details of proposed safety systems has been incorporated in this EIA / EMP Report.	Chapter-VII, Section 7.3, Page no. 139

<p><b>Proposed Installation of Unit II - Grain Based Ethanol / ENA / RS / Industrial Alcohol Plant {500 KLPD (2x250 KLPD)} &amp; Co-generation Power Plant {40MW (2x20 MW)} in Existing Distillery Plant</b>          At Village-Mansoorwal, Tehsil-Zira, District-Ferozepur (Punjab)</p>
<i>Chapter-I of Final EIA/EMP Report</i>

ToR Point No.	ToR Point	Compliance	Reference in EIA / EMP Report
x.	Expansion/modernization proposals:		
a)	<p>Copy of all the Environmental Clearance(s) including Amendments thereto obtained for the project from MOEF/SEIAA shall be attached as an Annexure.</p> <p>A certified copy of the latest Monitoring Report of the regional office of the Ministry of Environment and Forests as per circular dated 30th May, 2012 on the status of compliance of conditions stipulated in all the existing environmental clearances including Amendments shall be provided.</p> <p>In addition, status of compliance of Consent to Operate for the ongoing/ existing operation of the project from SPCB shall be attached with the EIA-EMP report.</p>	<ul style="list-style-type: none"> <li>EC for Existing Unit - I Grain Based Distillery [100 KLPD] has been obtained from MoEF&amp;CC, New Delhi vide Letter No. J-11011/187/2006- IA II (I) dated 25<sup>th</sup> September, 2006.</li> <li>Copy of the same has been enclosed as Annexure - 1A along with this EIA/EMP Report.</li> <li>EC certified compliance report, duly certified by Regional Office, MoEF&amp;CC, Chandigarh for Unit I has been enclosed as Annexure - 1B along with this EIA/EMP Report.</li> <li>Status of compliance of Consent to Operate for the ongoing/ existing operation of the project has been enclosed as <b>Annexure - 1 (c)</b> along with this EIA/EMP Report.</li> </ul>	<p><b>Annexure-1A</b></p> <p><b>Annexure-1B</b></p> <p><b>Annexure-1c</b></p>
b)	<p>In case the existing project has not obtained environmental clearance, reasons for not taking EC under the provisions of the EIA Notification 1994 and /or EIA Notification 2006 shall be provided. Copies of Consent to Establish/No Objection Certificate and Consent to Operate (in case of Units operating prior to EIA Notification 2006, CTE and CTO of FY 2005 - 2006) obtained from the SPCB shall be submitted. Further, Compliance report to the conditions of consents from the SPCB shall be submitted.</p>	<p>Since the existing project i.e. Unit-I has already obtained environmental clearance. Thus, this point is not applicable.</p>	
<b>4.</b>	<b>Site Details</b>		
i.	<p>Location of the project site covering village, Taluka/Tehsil, District and State, Justification for selecting the site, whether other sites were considered.</p>	<ul style="list-style-type: none"> <li>Location map showing plant site along with Village, Tehsil, District and State has been incorporated in this EIA/EMP Report.</li> <li>No alternative site has been</li> </ul>	<p>Chapter-I, Fig. 1.1, page no. 31</p>

<b>Proposed Installation of Unit II - Grain Based Ethanol / ENA / RS / Industrial Alcohol Plant {500 KLPD (2x250 KLPD)} &amp; Co-generation Power Plant {40MW (2x20 MW)} in Existing Distillery Plant</b> At Village-Mansoorwal, Tehsil-Zira, District-Ferozepur (Punjab)
<i>Chapter-I of Final EIA/EMP Report</i>

ToR Point No.	ToR Point	Compliance	Reference in EIA / EMP Report
		considered for the proposed Unit II as the same will be done within the existing plant premises.	
ii.	A toposheet of the study area of radius of 10 km and site location on 1:50,000/ 1:25,000 scale on an A3/A2 sheet (including all eco-sensitive areas and environmentally sensitive places).	Map showing plant site & 10 km radius study area on Google Earth has been incorporated in this EIA/EMP Report.	Chapter-I, Figure 1.3, Page no. 33
iii.	Details w.r.t. option analysis for selection of site.	The proposed installation will be done within the existing plant premises, therefore, no additional land will be required and hence option analysis for the selection of site is not applicable.	-
iv.	Co-ordinates (lat-long) of all four corners of the site.	Corner Co-ordinates of the plant site are given in this EIA/EMP Report.	Chapter-I, Section 1.3.1, Page no. 29
v.	Google map-Earth downloaded of the project site.	Google Earth downloaded map of the plant site is given in this EIA/EMP Report.	Chapter-I, Figure- 1.2, Page no. 32
vi.	Layout maps indicating existing Unit as well as proposed Unit indicating storage area, plant area, green belt area, utilities etc. If located within an industrial area/Estate/Complex, layout of Industrial Area indicating location of Unit within the Industrial area/Estate.	Plant Layout showing existing Unit I and proposed Unit II, storage area, greenbelt area, other utilities etc has been incorporated in this EIA/EMP Report. Existing plant is not located in Industrial area/Estate/ Complex.	Chapter-II, Figure- 2.2, Page no. 42.
vii.	Photographs of the proposed and existing (if applicable) plant site. If existing, show photographs of plantation/ greenbelt, in particular.	<ul style="list-style-type: none"> <li>Photographs of both the Units have been incorporated in this EIA / EMP Report.</li> <li>Photographs showing existing greenbelt/ plantation have also been incorporated in this EIA / EMP Report.</li> </ul>	Chapter- I, Figure 1.4, Page no. 34. Chapter - X, Fig. 10.2, Page no. 165
viii.	Land use break-up of total land of the project site (identified and acquired), government / private - agriculture, forest, wasteland, water bodies,	Total existing plant area is 14.8 ha and the same is under the possession of MIPL. No additional land will be required for	

<p><b>Proposed Installation of Unit II - Grain Based Ethanol / ENA / RS / Industrial Alcohol Plant {500 KLPD (2x250 KLPD)} &amp; Co-generation Power Plant {40MW (2x20 MW)} in Existing Distillery Plant</b>          At Village-Mansoorwal, Tehsil-Zira, District-Ferozepur (Punjab)</p>
<i>Chapter-I of Final EIA/EMP Report</i>

ToR Point No.	ToR Point	Compliance	Reference in EIA / EMP Report
	settlements, etc. shall be included (not required for industrial area).	the proposed installation of Unit II project; as the same will be done within the existing plant premises. Land break-up of total land of the existing plant site has been incorporated in this EIA / EMP Report.	Chapter - II, Table 2.5, Page no. 41
ix.	A list of major industries with name and type within study area (10 km radius) shall be incorporated. Land use details of the study area.	<ul style="list-style-type: none"> <li>List of major industries with name and type within study area (10 km radius) have been incorporated in this EIA/EMP Report.</li> <li>Land use details of the study area have also been incorporated in this EIA / EMP Report</li> </ul>	Chapter - III, Section -3.15, Page no. 105.  Chapter - III, Section-3.4, Page no. 53.
x.	Geological features and Geo-hydrological status of the study area shall be included.	Geological features and Geo-hydrological status of the study area has been incorporated in this EIA/EMP Report.	Chapter-III, Section 3.6, Page No. 65
xi.	Details of Drainage of the project up to 5 km radius of study area. If the site is within 1 km radius of any major river, peak and lean season river discharge as well as flood occurrence frequency based on peak rainfall data of the past 30 years. Details of Flood Level of the project site and maximum Flood Level of the river shall also be provided (mega green field projects).	Drainage details of the project and the study area have been shown on a map incorporated in this EIA/EMP Report. Plant Site does not fall within 1 km radius of any major River.	Chapter III, Fig. 3.6, Page no. 64
xii.	Status of acquisition of land. If acquisition is not complete, stage of the acquisition process and expected time of complete possession of the land.	Total plant area is 14.8 ha and the same is under the possession of MIPL. Since the proposed installation will be done within the existing plant premises thus, no additional land is required.	-
xiii.	R & R details in respect of land in line with state Government policy.	R & R is not applicable; as the proposed installation will be done within the existing plant premises and no additional land will be required for the same.	-
5.	<b>Forest and Wildlife related issues (if applicable)</b>		

<p><b>Proposed Installation of Unit II - Grain Based Ethanol / ENA / RS / Industrial Alcohol Plant {500 KLPD (2x250 KLPD)} &amp; Co-generation Power Plant {40MW (2x20 MW)} in Existing Distillery Plant</b>          At Village-Mansoorwal, Tehsil-Zira, District-Ferozepur (Punjab)</p>
<i>Chapter-I of Final EIA/EMP Report</i>

ToR Point No.	ToR Point	Compliance	Reference in EIA / EMP Report
i.	Permission and approval; for the use of forest land (forestry clearance), if any, and recommendations of the State Forest Department (if applicable)	No forest land is involved in the proposed expansion project; thus, no such permission / approval are required.	-
ii.	Land use map based on High resolution satellite imagery (GPS) of the proposed site delineating the forestland (in case of projects involving forest land more than 40 ha)	No forest land is involved in the proposed installation project.	
iii.	Status of Application submitted for obtaining the stage I forestry clearance along with latest status shall be submitted.	Not applicable	-
iv.	The projects to be located within 10 km of the National Parks, Sanctuaries, Biosphere Reserves, Migratory Corridors of Wild Animal; the project proponent shall submit the map duly authenticated by Chief Wildlife Warden showing these features vis-a- vis the project location and the recommendations or comments of the Chief Wildlife Warden - thereon.	No National Park, Sanctuary, Biosphere Reserve, Migratory Corridor of wild animals exists within 10 km radius study area. Map showing 10 km radius study area has been incorporated in this EIA/EMP Report.	Chapter - I, Figure - 1.3, Page no. 33
v.	Wildlife Conservation Plan duly authenticated by the Chief Wildlife Warden of the state government for conservation of schedule I fauna, if any exists in the study area.	No Schedule - I fauna was found within 10 km radius of the study area during biological study. List of fauna found within 10 km radius study area have been incorporated in this EIA/EMP Report.	Chapter - III, Table 3.18, Page no. 89
vi.	Copy of application submitted for clearance under the Wildlife (Protection) Act, 1972, to the Standing Committee of the National Board for Wildlife.	Not applicable.	-
<b>6.</b>	<b>Environmental Status</b>		
i.	Determination of atmospheric inversion level at the project site and site-specific micro-meteorological	Details of atmospheric inversion level have been incorporated in this EIA /	Chapter-IV, Table 4.2, Page

<p><b>Proposed Installation of Unit II - Grain Based Ethanol / ENA / RS / Industrial Alcohol Plant {500 KLPD (2x250 KLPD)} &amp; Co-generation Power Plant {40MW (2x20 MW)} in Existing Distillery Plant</b>          At Village-Mansoorwal, Tehsil-Zira, District-Ferozepur (Punjab)</p>
<i>Chapter-I of Final EIA/EMP Report</i>

ToR Point No.	ToR Point	Compliance	Reference in EIA / EMP Report
	data using temperature, relative humidity, hourly wind speed and direction and rainfall.	<p>EMP Report.</p> <p>Site-specific micro-meteorological data (temperature, relative humidity, wind speed and direction) were collected during Post Monsoon Season (Oct. to Dec., 2015). Details of the same have been incorporated in this EIA / EMP Report.</p> <p>Hourly meteorological data has been enclosed as Annexure - 4 along with this EIA / EMP Report.</p> <p>Rainfall data has also been incorporated in this EIA / EMP Report.</p>	<p>no. 115.</p> <p>Chapter-III Section- 3.8, Page no. 66 to 68.</p> <p><b>Annexure - 4</b> Chapter- III Section-3.7, Page no. 65.</p>
ii.	AAQ data (except monsoon) at 8 locations for PM10, PM2.5, SO2, NOx, CO and other parameters relevant to the project shall be collected. The monitoring stations shall be based CPCB guidelines and take into account the pre-dominant wind direction, population zone and sensitive receptors including reserved forests.	<p>AAQ monitoring for PM10, PM2.5, SO2, NOx and CO was carried out at 8 locations during Post Monsoon Season (Oct. to Dec., 2015).</p> <p>The monitoring stations were selected taking into account the dominant wind direction, population zone and sensitive receptors etc.</p> <p>Detail of the same has been incorporated in this EIA / EMP Report.</p>	<p>Chapter-III Section-3.9, Page no. 69 to 76.</p>
iii.	Raw data of all AAQ measurement for 12 weeks of all stations as per frequency given in the NAQQM Notification of Nov. 2009 along with min., max., average and 98% values for each of the AAQ parameters from data of all AAQ stations should be provided as an annexure to the EIA Report.	Raw data of all AAQ measurement / detailed AAQM Tables of all AAQ stations along with min., max., average and 98% values for each of the AAQ parameters have been enclosed as Annexure - 5 along with this EIA / EMP Report.	<b>Annexure - 5</b>
iv.	Surface water quality of nearby River (100m upstream and downstream of discharge point) and other surface drains at eight locations as per CPCB/MoEFCC guidelines.	No river lies within 10 km radius of the study area.	-
v.	Whether the site falls near to polluted stretch of river identified by the CPCB / MoEF&CC. If yes, give	The plant site does not fall near to the polluted stretch of rivers identified by the CPCB/ MoEF&CC.	-

<p><b>Proposed Installation of Unit II - Grain Based Ethanol / ENA / RS / Industrial Alcohol Plant {500 KLPD (2x250 KLPD)} &amp; Co-generation Power Plant {40MW (2x20 MW)} in Existing Distillery Plant</b>          At Village-Mansoorwal, Tehsil-Zira, District-Ferozepur (Punjab)</p>
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ToR Point No.	ToR Point	Compliance	Reference in EIA / EMP Report
	details.		
vi.	Ground water monitoring minimum at 8 locations shall be included.	Ground water monitoring was carried out at 8 locations in Post Monsoon Season (Oct. to Dec., 2015) and details of the same have been incorporated in this EIA/EMP Report.	Chapter-III, Section 3.11, Page no. 78 to 83.
vii.	Noise levels monitoring at 8 locations within the study area.	Noise levels monitoring was carried out at 8 locations within the study area in Post Monsoon Season (Oct. to Dec., 2015) and details of the same have been incorporated in this EIA/EMP Report.	Chapter-III, Section 3.10, Page no. 76 to 78.
viii.	Soil Characteristics as per CPCB guidelines.	Soil quality sampling at was carried out at 8 locations within the study area in Post Monsoon Season (Oct. to Dec., 2015) and details of the same have been incorporated in this EIA/EMP Report.	Chapter-III, Section 3.12, Page no. 83 to 85.
ix.	Traffic study of the area, type of vehicles, frequency of vehicles for transportation of materials, additional traffic due to proposed project, parking arrangement etc.	Traffic study of the area in respect of existing traffic, type of vehicles, frequency of vehicles for transportation of materials, additional traffic due to proposed installation, parking arrangement etc. was conducted and details for the same have been incorporated in this EIA / EMP Report.	Chapter - III, Section 3.16, Page no. 106 & 107.
x.	Detailed description on flora and fauna (terrestrial and aquatic) existing in the study area shall be given with special reference to rare, endemic and endangered species. If Schedule-I fauna are found within the study area, a Wildlife Conservation Plan shall be prepared and furnished.	Details of flora and fauna found within the study area have been incorporated in this EIA/EMP Report. No Schedule-I fauna was found within 10 km radius of the study area.	Chapter-III, Section 3.13, Page no. 86 to 93.
xi.	Socio-economic status of the study area.	Details regarding the socio-economic status of the study area have been incorporated in this EIA/EMP Report.	Chapter-III, Section 3.14, Page no. 93 to 104.
<b>7.</b>	<b>Impact Assessment and Environment Management Plan</b>		

Proposed Installation of Unit II - Grain Based Ethanol / ENA / RS / Industrial Alcohol Plant {500 KLPD (2x250 KLPD)} & Co-generation Power Plant {40MW (2x20 MW)} in Existing Distillery Plant  
At Village-Mansoorwal, Tehsil-Zira, District-Ferozepur (Punjab)

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ToR Point No.	ToR Point	Compliance	Reference in EIA / EMP Report
i.	<p>Assessment of ground level concentration of pollutants from the stack emission based on site-specific meteorological features. In case the project is located on a hilly terrain, the AQIP Modeling shall be done using inputs of the specific terrain characteristics for determining the potential impacts of the project on the AAQ.</p> <p>Cumulative impact of all sources of emissions (including transportation) on the AAQ of the area shall be assessed. Details of the model used and the input data used for modeling shall also be provided. The air quality contours shall be plotted on a location map showing the location of project site, habitation nearby, sensitive receptors, if any.</p>	<p>The incremental concentration of pollutants from the stack emission based on site-specific meteorological features has been predicted via computation done through mathematical modeling and incorporated in this EIA/EMP Report.</p> <p>The project site is not located on a hilly terrain.</p> <p>Impact of sources of emissions on the AAQ has been assessed. Details regarding the same along with the detail of model used for modeling have been incorporated in this EIA/EMP Report.</p> <p>Isopleths showing air quality contours plotted on location map have also been incorporated in this EIA/EMP Report.</p>	<p>Chapter- IV, Section 4.5.2, Page no. 112.</p> <p>Chapter- IV, Figure 4.1 to 4-3, Page no. 117 to 119.</p>
ii.	Water Quality modeling – in case of discharge in water body	The distillery is based on Zero Effluent Discharge. No wastewater is being / will be discharged from the plant. Therefore, water quality modeling study is not required.	-
iii.	Impact of the transport of the raw materials and end products on the surrounding environment shall be assessed and provided. In this regard, options for transport of raw materials and finished products and wastes (large quantities) by rail or rail-cum road transport or conveyor-cum-rail transport shall be examined.	<p>There will be no major impact of the transport of the raw materials and end products on the surrounding environment due to proposed installation of Unit II as proper mitigation measures will be adopted.</p> <p>Details reg. impact of the transport of the raw materials and end products on the surrounding environment has been incorporated in this EIA / EMP Report.</p> <p>National highway (NH-15) is in close proximity to the plant site thus the raw material will be easily transported through road transport.</p> <p>The option for transport of raw</p>	Chapter-IV, Section-4.5.2.2, Page no. 120.

<p><b>Proposed Installation of Unit II - Grain Based Ethanol / ENA / RS / Industrial Alcohol Plant {500 KLPD (2x250 KLPD)} &amp; Co-generation Power Plant {40MW (2x20 MW)} in Existing Distillery Plant</b>          At Village-Mansoorwal, Tehsil-Zira, District-Ferozepur (Punjab)</p>
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ToR Point No.	ToR Point	Compliance	Reference in EIA / EMP Report
		materials and finished products and wastes (large quantities) by rail or rail-cum road transport or conveyor-cum-rail transport is not required.	
iv.	A note on treatment of wastewater from different plant operations, extent recycled and reused for different purposes shall be included. Complete scheme of effluent treatment. Characteristics of untreated and treated effluent to meet the prescribed standards of discharge under E (P) Rules.	<p>Details regarding treatment of wastewater from different plant operations have been incorporated in this EIA/EMP Report.</p> <p>Domestic wastewater generated from plant will be disposed off in soak pits via septic tanks.</p> <p>No effluent will be generated from the proposed installation of Unit II project as the distillery is based on "Zero Effluent Discharge".</p>	Chapter-X, Section 10.3.1 & 10.3.2, Page no. 157 to 161.
v.	Details of stack emission and action plan for control of emissions to meet standards.	<p>Stack emission details have been incorporated in this EIA/EMP Report.</p> <p>Efficient Air Pollution Control Equipment (APCE) will be installed for the control of emissions from all the sources within the prescribed limit.</p>	Chapter-VI, Table 4.1, Page no. 113.
vi.	Measures for fugitive emission control.	Measures to control fugitive emissions have been incorporated in this EIA/EMP Report.	Chapter-X, Section 10.2.3.3, Page no. 156
vii.	Details of hazardous waste generation, and their storage, utilization and disposal. Copies of MOU regarding utilization of solid and hazardous waste in cement plant shall also be included. EMP shall include the concept of waste-minimization, recycle/ reuse/ recover techniques, Energy conservation, and natural resource conservation.	<p>Details of hazardous waste generation, their storage, utilization and disposal have been incorporated in this EIA/EMP Report.</p> <p>Copies of MOU regarding utilization of fly ash with brick manufacturers has been attached as Annexure- 6</p> <p>The concept of waste-minimization, recycle/ reuse/ recover techniques, Energy conservation and natural resource conservation have been included in this EIA/EMP Report and details regarding the same have been incorporated in this EIA/EMP Report.</p>	<p>Chapter-X, Section 10.4, Page no. 162</p> <p><b>Annexure-6</b></p> <p>Chapter-X, Section 10.8, Page no. 165 to 166.</p>
viii.	Proper utilization of fly ash shall be	Fly ash generated from the boilers will	Chapter-X,

<p><b>Proposed Installation of Unit II - Grain Based Ethanol / ENA / RS / Industrial Alcohol Plant {500 KLPD (2x250 KLPD)} &amp; Co-generation Power Plant {40MW (2x20 MW)} in Existing Distillery Plant</b>          At Village-Mansoorwal, Tehsil-Zira, District-Ferozepur (Punjab)</p>
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ToR Point No.	ToR Point	Compliance	Reference in EIA / EMP Report
	ensured as per Fly Ash Notification, 2009. A detailed plan of action shall be provided.	be given to brick manufacturers. Fly ash generated from the boiler shall be pneumatically conveyed into overhead ash silos. Proper ash quenching will be regularly done before disposal.	Section 10.2.1, Page no. 155.
ix.	Action plan for the green belt development plan in 33 % area i.e. land with not less than 1,500 trees per ha. Giving details of species, width of plantation, planning schedule etc. shall be included. The green belt shall be around the project boundary and a scheme for greening of the roads used for the project shall also be incorporated.	Out of the total plant area of 14.8 ha, 4.9 ha (i.e. 33 %) has already been developed as greenbelt/plantation. Details regarding greenbelt/plantation along with the details of species, width of plantation etc have been incorporated in this EIA/EMP Report.	Chapter-X, Section 10.7, Page no. 163 & 165.
x.	Action plan for rainwater harvesting measures at plant site shall be submitted to harvest rainwater from the roof tops and storm water drains to recharge the ground water and also to use for the various activities at the project site to conserve fresh water and reduce the water requirement from other sources.	Action plan for rainwater harvesting measures at plant site has been prepared to harvest rainwater from the roof tops and storm water drains to recharge the ground water and also to use for the various activities at the plant site to conserve fresh water and reduce the water requirement from other sources.  Proposal for Rain water Harvesting and artificial recharge to ground water for proposed extension unit have been enclosed as <b>Annexure - 7</b> along with this EIA/EMP Report.	<b>Annexure - 7</b>
xi.	Total capital cost and recurring cost/annum for environmental pollution control measures shall be included.	Cost for Environmental Protection Measures : <ul style="list-style-type: none"> <li>• Capital Cost - Rs. 58 Crores</li> <li>• Recurring Cost - Rs. 10 Crores / annum</li> </ul>	Chapter - VI, Section 6.6, Page no. 133
xii.	Action plan for post-project environmental monitoring shall be submitted.	Action plan for post-project environmental monitoring have been incorporated in this EIA/EMP Report.	Chapter-VI, Table 6.1 Page no. 130.
xiii.	Onsite and Offsite Disaster (natural and Man-made) Preparedness and	Onsite and Offsite Disaster (natural and Man-made) Preparedness and	Chapter-VII, Section 7.3,

<p><b>Proposed Installation of Unit II - Grain Based Ethanol / ENA / RS / Industrial Alcohol Plant {500 KLPD (2x250 KLPD)} &amp; Co-generation Power Plant {40MW (2x20 MW)} in Existing Distillery Plant</b>          At Village-Mansoorwal, Tehsil-Zira, District-Ferozepur (Punjab)</p>
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ToR Point No.	ToR Point	Compliance	Reference in EIA / EMP Report
	Emergency Management Plan including Risk Assessment and damage control. Disaster management plan should be linked with District Disaster Management Plan.	Emergency Management Plan including Risk Assessment and damage control have been incorporated in this EIA/EMP Report. On-Site Emergency Management Plan has been enclosed as <b>Annexure - 8</b> along with this EIA/EMP Report.	Page no. 139 to 148.  <b>Annexure 8</b>
<b>8.</b>	<b>Occupational health:</b>		
i.	Plan and fund allocation to ensure the occupational health & safety of all contract and casual workers.	Proposed budget details for expenditure on Occupational Health & Safety will be Rs 20 lacs/annum.	
ii.	Details of exposure specific health status evaluation of worker. If the workers' health is being evaluated by pre designed format, chest x rays, Audiometry, Spirometry, Vision testing (Far & Near vision, colour vision and any other ocular defect) ECG, during pre placement and periodical examinations give the details of the same. Details regarding last month analyzed data of abovementioned parameters as per age, sex, duration of exposure and department wise.	Details regarding Occupational & Safety Hazards including pre-placement and periodical examinations etc. have been incorporated in this EIA/EMP Report.	Chapter-X, Section 10.9, Page no. 166 to 169.
iii.	Details of existing Occupational & Safety Hazards. What are the exposure levels of hazards and whether they are within Permissible Exposure level (PEL). If these are not within PEL, what measures the company has adopted to keep them within PEL so that health of the workers can be preserved.		
iv.	Annual report of health status of workers with special reference to Occupational Health and Safety.	Sample Health reports have been enclosed as <b>Annexure - 9</b> along with this EIA/EMP Report.	<b>Annexure 9</b>
<b>9.</b>	<b>Corporate Environment Policy :</b>		
i.	Does the company have a well laid down Environment Policy approved	Corporate Environment Policy of the company has been incorporated in	Chapter-X, Section 10.11,

<p><b>Proposed Installation of Unit II - Grain Based Ethanol / ENA / RS / Industrial Alcohol Plant {500 KLPD (2x250 KLPD)} &amp; Co-generation Power Plant {40MW (2x20 MW)} in Existing Distillery Plant</b>          At Village-Mansoorwal, Tehsil-Zira, District-Ferozepur (Punjab)</p>
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ToR Point No.	ToR Point	Compliance	Reference in EIA / EMP Report
	by its Board of Directors? If so, it may be detailed in the EIA report.	this EIA / EMP Report.	Page no. 169 & 171.
ii.	Does the Environment Policy prescribe for standard operating process / procedures to bring into focus any infringement / deviation / violation of the environmental or forest norms / conditions? If so, it may be detailed in the EIA.		
iii.	What is the hierarchical system or Administrative order of the company to deal with the environmental issues and for ensuring compliance with the environmental clearance conditions? Details of this system may be given.		
iv.	Does the company have system of reporting of non compliances / violations of environmental norms to the Board of Directors of the company and / or shareholders or stakeholders at large? This reporting mechanism shall be detailed in the EIA report.		
10.	Details regarding infrastructure facilities such as sanitation, fuel, restroom etc. to be provided to the labour force during construction as well as to the casual workers including truck drivers during operation phase.	During construction and operation phase, various facilities will be provided to the labor force including truck drivers such as restroom, canteen, sanitation, drinking water etc.	-
11.	<b>Enterprise Social Commitment (ESC)</b>		
i.	Adequate funds (at least 2.5 % of the project cost) shall be earmarked towards the Enterprise Social Commitment based on Public Hearing issues and item-wise details along with time bound action plan shall be included. Socio-economic development activities need to be elaborated upon.	2.5% of the total project cost has been earmarked towards the Enterprise Social Commitment (ESC) based on Public Hearing issues and item-wise details along with time bound action plan has been prepared and incorporated in this EIA/EMP Report. Details reg. Socio-economic development activities have also been	Chapter-VIII, Section 8.4, Page no. 152

<p><b>Proposed Installation of Unit II - Grain Based Ethanol / ENA / RS / Industrial Alcohol Plant {500 KLPD (2x250 KLPD)} &amp; Co-generation Power Plant {40MW (2x20 MW)} in Existing Distillery Plant</b>          At Village-Mansoorwal, Tehsil-Zira, District-Ferozepur (Punjab)</p>
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ToR Point No.	ToR Point	Compliance	Reference in EIA / EMP Report
		incorporated in this EIA/EMP Report.	
12.	Any litigation pending against the project and/or any direction/order passed by any Court of Law against the project, if so, details thereof shall also be included. Has the Unit received any notice under the Section 5 of Environment (Protection) Act, 1986 or relevant Sections of Air and Water Acts? If so, details thereof and compliance/ATR to the notice(s) and present status of the case.	No litigation is pending against the project and/or any direction / order passed by any Court of Law against the project.  The Unit has not received any notice under the Section 5 of Environment (Protection) Act, 1986 or relevant Sections of Air and Water Acts.	-
13.	A tabular chart with index for point wise compliance of above TORs.	Point-wise compliance of the TORs has been given in the tabular form.	-
14.	The TORs prescribed shall be valid for a period of three years for submission of the EIA-EMP reports.	Noted	-
<b>A.</b>	<b>Specific TOR</b>		
1.	List of existing distillery Units in the study area along with their capacity and sourcing of raw material.	No distillery exists in 10 km radius of the study area.	
2.	Number of working days of the distillery Unit.	Number of working days of the distillery Unit will be 350 days/annum.	-
3.	Details of raw materials such as grains, their source with availability.	Details of raw materials, its source with availability have been incorporated in this EIA/EMP Report.	Chapter II, Section 2.4.1, Page no. 37.
4.	Details of the use of steam from the boiler.	Steam from the boiler will be used in the Liquefaction, Fermentation, Distillation, Evaporation & DDGS Dryer process and for the production of Co-generation Power.	Chapter II, Section No. 2.4.3, Page No. 38
5.	Plan to reduce spent wash generation within 6-8 KL/KL of alcohol produced.	After proposed installation the company will reduce spent wash generation within 6-8 KL/KL of alcohol production.	--
6.	Proposed effluent treatment system for grain based distillery (spent wash, spent less, condensate and utilities as	The grain based distillery will be based on "Zero Effluent Discharge". Details regarding treatment of spent	Chapter-X, Section 10.3.1 & 10.3.2,

<p><b>Proposed Installation of Unit II - Grain Based Ethanol / ENA / RS / Industrial Alcohol Plant {500 KLPD (2x250 KLPD)} &amp; Co-generation Power Plant {40MW (2x20 MW)} in Existing Distillery Plant</b>          At Village-Mansoorwal, Tehsil-Zira, District-Ferozepur (Punjab)</p>
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ToR Point No.	ToR Point	Compliance	Reference in EIA / EMP Report
	well as domestic sewage and scheme for achieving zero effluent discharge (ZLD).	wash, spent lees, condensate & utilities have been incorporated in this EIA/EMP Report.	Page no. 157-161
7.	Proposed action to restrict fresh water consumption within 10 KL/KL of alcohol production.	Fresh water consumption will be restricted within 10 KL/KL of alcohol production. Details regarding the same have been incorporated in this EIA/EMP Report.	Chapter-II, Section 2.4.4, Page No. 38 to 40
8.	Details about capacity of spent wash holding tank, material used, design consideration. No. of piezometers to be proposed around spent wash holding tank.	The spent wash storage holding tank (lined lagoon) of 5 days capacity is proposed & shall be constructed as per CPCB guidelines. Two Piezometers are proposed around the spent wash holding tank.	-
9.	Action plan to control ground water pollution.	The proposed installation of Unit II will be based on "Zero Effluent Discharge" and effective measures taken to prevent ground water pollution have been incorporated in this EIA/EMP Report.	Chapter-X, Section 10.3.4, Page no. 162.
10.	Details of solid waste management including management of boiler ash, yeast, etc.	Details of solid waste management including management of boiler ash, yeast, etc. have been incorporated in this EIA/EMP Report. No incineration of spent wash will be done as the same will be passed through decanter centrifuge followed by drying. DDGS thus produce will be sold as cattle feed.	Chapter-X, Section 10.4, Page no. 162
11.	Commitment to install dryer.	The company commits to install dryer.	--
12.	Action plan to control odour pollution.	Action plan to control odour pollution has been incorporated in this EIA/EMP Report.	Chapter X, Section 10.6, Page no. 163.
13.	Arrangements for installation of continuous online monitoring system (24x7 monitoring device).	Continuous online monitoring system for stack emissions will be installed by the Company.	--
<b>B.</b>	<b>Additional TOR</b>		
1.	Public hearing to be conducted and issues raised and commitments made	Public Hearing for the proposed project was conducted on 04 <sup>th</sup> May,	<b>Annexure – 10</b>

<p><b>Proposed Installation of Unit II - Grain Based Ethanol / ENA / RS / Industrial Alcohol Plant {500 KLPD (2x250 KLPD)} &amp; Co-generation Power Plant {40MW (2x20 MW)} in Existing Distillery Plant</b>          At Village-Mansoorwal, Tehsil- Zira, District-Ferozepur (Punjab)</p>
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ToR Point No.	ToR Point	Compliance	Reference in EIA / EMP Report
	by the project proponent on the same should be included in EIA/EMP Report in the form of tabular chart with financial budget for complying with the commitments made.	<p>2016 at project site of the industry located in the revenue estate of village Mansoorwal, Tehsil Zira, District Ferozepur (Punjab).</p> <p>Public hearing proceedings (English and Punjabi) along with attendance sheet have been enclosed as <b>Annexure - 10.</b></p> <p>Issues raised and commitments made by the project proponent during Public hearing along with financial budget for complying with the commitments made, have been prepared and the same have been incorporated in this Final EIA / EMP Report.</p>	Chapter VII, Section 7.2.4, Page no. 137.
2.	Availability of grain from the market to be assessed adequately.	<p>Raw material (Broken rice, maize, Bajra etc.) is easily available in the nearby areas.</p> <p>The details of availability of raw material and rice mills in Punjab have been attached as Annexure 11.</p>	<b>Annexure - 11</b>
3.	A separate chapter on status of compliance of Environmental Conditions granted by State/Centre to be provided. As per circular dated 30th May, 2012 issued by MoEF, a certified report by RO, MoEF on status of compliance of conditions on existing Unit to be provided in EIA-EMP report.	EC compliance report for Unit- I, duly certified by RO, MoEF&CC, Chandigarh has been enclosed as <b>Annexure - 1B</b> along with this EIA/EMP Report.	<b>Annexure-1B</b>



<p><b>Proposed Installation of Unit II - Grain Based Ethanol / ENA / RS / Industrial Alcohol Plant {500 KLPD (2x250 KLPD)} &amp; Co-generation Power Plant {40MW (2x20 MW)} in Existing Distillery Plant</b>          At Village-Mansoorwal, Tehsil- Zira, District-Ferozepur (Punjab)</p>
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Chapter-I of Final EIA/EMP Report

## CHAPTER-I INTRODUCTION

### 1.1 PURPOSE OF THE REPORT

As per the EIA Notification dated 14<sup>th</sup> September 2006; as amended from time to time; it is mandatory to have the Environmental Clearance for any new industry or the expansion of the industry from Ministry of Environment, Forest & Climate Change, Government of India, New Delhi for which Environment Impact Assessment (EIA) is required to be conducted as per guidelines given by MoEF&CC, New Delhi.

The purpose of the EIA report is to provide a coherent statement of the potential impacts of the proposed installation of Unit II project by modernizing the existing distillery and the measures that should be taken to eliminate, reduce and remedy them. It contains essential information for:

- The proponent to implement the proposal in an environmentally and socially responsible manner;
- The responsible authority to make an informed decision on the proposal, including the terms and conditions that must be attached to an approval or authorization; and
- The public to understand the proposal and its likely impacts on people and the environment.

### 1.2 IDENTIFICATION OF PROJECT AND PROJECT PROPONENT

#### 1.2.1 Identification of the Project

##### A. Details regarding the Existing Project

M/s. Malbros International Private Limited is a group company of Oasis Group. The Group is a highly reputed conglomerate with diverse interests that include Distillery, Liquor Retailing, Hotels and Constructions. The Group's rapid growth on Indian corporate scene rests on its strong foundation of professional management and astute collective enterprises. The company is engaged in manufacturing, marketing and sale of Grain based Ethanol / (Extra Neutral Alcohol) ENA / RS / Industrial Alcohol.

The company is already running an existing Unit - I 100 KLPD Grain Based Distillery along with 1.8 MW Co – generation power plant at Village Mansoorwal, Tehsil Zira, District Ferozepur (Punjab).

Details of existing Unit & its production capacity along with the necessary clearances are given below:

<b>Proposed Installation of Unit II - Grain Based Ethanol / ENA / RS / Industrial Alcohol Plant {500 KLPD (2x250 KLPD)} &amp; Co-generation Power Plant {40MW (2x20 MW)} in Existing Distillery Plant</b> At Village-Mansoorwal, Tehsil- Zira, District-Ferozepur (Punjab)
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**Table - 1.1**  
**Existing Clearances / Consents**

S. No.	Unit	Existing Clearances / Consents	Existing Clearances / Consents Letter No.
1.	100 KLPD Grain based Distillery	Environment Clearance for Existing Unit I – Grain based Distillery Capacity (100 KLPD RS/ENA ) (issued by MoEF&CC, New Delhi)	Vide MoEF Letter No. J-11011/187/2006-IA II (I) dated 25 <sup>th</sup> Sept., 2006.
		Consent to Establish (issued by PPCB)	Vide PPCB letter No: - CMC / EE- L/F. No. 24 / 5704 dated 11 <sup>th</sup> May, 2006.
		Consent to Operate (Latest Renewed) under section 25/26 of Water (Prevention & Control) Act, 1974  & Under section 21(4) of Air (Prevention & Control of Pollution) Act, 1981 (issued by PPCB)	For Water Vide PPCB Letter No.:- ZO / BTI / FDK / WPC /2012-13 / v-259 dated 9 <sup>th</sup> Dec., 2012 & Renewal /Extension Letter no. 2789 dated 22.07.2013 & Valid upto 31 <sup>st</sup> March, 2018.  For Air Vide PPCB Letter No. R15FZRCTOA2310997 - 1091 dated 01 <sup>st</sup> May, 2015 & Valid up to 31 <sup>st</sup> March, 2019.
<ul style="list-style-type: none"> <li>Compliance to the conditions stipulated in EC/CTO has been submitted to the concerned authorities on regular basis.</li> </ul>			

#### B. Project Proposal

M/s. Malbros International Private Limited is now proposing for installation of Unit II Grain based Ethanol / ENA / RS / Industrial Alcohol Plant of capacity 500 KLPD (2x250 KLPD) & Co-generation Power Plant of capacity 40 MW (2x20 MW) in the existing distillery plant site at Village Mansoorwal, Tehsil Zira, District Ferozepur (Punjab). The company is proposing to install the project in two phases:-

Phase 1:-

- 250 KLPD Ethanol/ENA/RS/ Industrial Alcohol Plant
- 20 MW Co- Generation power plant

Phase 2:-

- 250 KLPD Ethanol/ENA/RS/ Industrial Alcohol Plant
- 20 MW Co- Generation power plant

Proposed Capacity is given in below Table.

**Table - 1.2**  
**Project Proposal**

Units	Total capacity
Grain based Ethanol/ ENA/ RS/ Industrial Alcohol Plant	500 KLPD (2 x 250 KLPD)
Co-generation Power Plant	40 MW (2 x 20 MW)
CO <sub>2</sub> Plant	225 TPD (2 x 112.5 TPD)
DDGS/ Cattle Feed/ Poultry Feed	300 TPD (2 x 150 TPD)

**Proposed Installation of Unit II - Grain Based Ethanol / ENA / RS / Industrial Alcohol Plant {500 KLPD (2x250 KLPD)} & Co-generation Power Plant {40MW (2x20 MW)} in Existing Distillery Plant**

At Village-Mansoorwal, Tehsil- Zira, District-Ferozepur (Punjab)

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### **C. Screening Category**

As per EIA Notification dated 14<sup>th</sup> Sep, 2006 as amended from time to time, the project falls under Category “A”, Project or Activity 5(g), hence Environmental Clearance is required from MoEF&CC, New Delhi.

#### **1.2.2 Introduction of the Project Proponent**

M/s. Malbros International Private Limited is one among the various group of companies of Oasis Group. Pride of Indian liquors, ‘The Oasis Group of Companies’ was incepted in the year 1987. Since then the Oasis Group is growing by leaps and bounds operating in the field of Distilleries and Breweries. The group was founded by Shri Om Prakash Malhotra. It is his foresight and vision that has promoted the organization to take its present shape. Its present Chairman and Director, Mr. Deep Malhotra, a second-generation entrepreneur, carries with him rich experience coupled with sharp commercial acumen. The Group has a team highly qualified, experienced, trusted persons with a right mix of technocrats, Finance Experts and management professionals.

The Oasis Group presently operates 5 distilleries across the country with a collective production of approximately 20 crores litres of Grain Based Extra Neutral Alcohol, making it one of the largest Grain Spirit producers in the Country.

The Group enjoys a very important position amongst the liquor companies in Punjab by virtue of owning two ‘State-of-the-Art’ Grain Distilleries at Ferozepur and Bhatinda and a bottling unit at Sandhe Hasham-Ferozepur, further complemented with substantial wholesale and retail outlets which has helped the Group cover the complete channel of liquor distribution thereby making it a major player in Punjab.

Oasis Group is a significant player amongst the emerging Indian spirits market with their International quality Grain based spirits, Indian Made Foreign Liquor with consistency of quality, delivery, superior consumer experience, thereby creating maximum value amongst its connoisseurs.

With the introduction of its Premium Whisky-Blue Patrol, an Imported Vatted Malt Scotch blend this year, the Oasis Group stands firm with yet another launch of Super Premium Whisky with dynamic Packaging and blend by next year. The Oasis Group now plans to broaden its brand base by entering into Semi premium & Premium Segments in Whisky, Brandy and White Spirits.

Presently the Oasis Group operates in approximately 18 states in India, besides Union Territories and is also exporting to a number of countries. The Oasis Group operates in most of the prominent civil Indian Made Foreign Liquor markets. Since the Oasis Group is a preferred supplier to the Canteen Stores Department (CSD) which caters to the Esteemed Indian Armed Forces, the Oasis Group enjoys an absolute PAN India presence for its IMFL brands. The Oasis Group provides different varieties of whiskey, vodka, rums scotch etc. The Oasis Group supports old age homes, hospitals etc.

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### 1.3 BRIEF DESCRIPTION OF NATURE, SIZE, LOCATION OF THE PROJECT AND ITS IMPORTANCE TO THE COUNTRY AND REGION

#### 1.3.1 Brief Description of Nature, Size and Location of Project

Brief description about the nature, size and location of the project has been detailed below:

Table - 1.3

S. No.	Particulars	Details
A.	Nature & size of the Project	Proposed Installation of Unit II - Grain based Ethanol / ENA / RS / Industrial Alcohol plant {500KLPD (2x250 KLPD)} & Co-generation Power Plant {40 (2x20 MW)}
B.	Location details	
1.	Village	Mansoorwal
2.	Tehsil	Zira
3.	District	Ferozepur
4.	State	Punjab
C.	Geographical Extent of the Plant site	
1.	Latitude	30°55'02.75"N to 30°55'16.29"N
2.	Longitude	74°57'28.42"E to 74°57'48.66"E
3.	Corner Coordinates	Co-ordinates of all the corners of the site are: A. 30° 55' 16.22"N 74° 57' 33.06"E B. 30° 55' 16.29"N 74° 57' 48.60"E C. 30° 55' 13.37"N 74° 57' 48.66"E D. 30° 55' 10.37"N 74° 57' 46.87"E E. 30° 55' 09.44"N 74° 57' 41.11"E F. 30° 55' 08.55"N 74° 57' 38.69"E G. 30° 55' 04.46"N 74° 57' 37.37"E H. 30° 55' 02.75"N 74° 57' 30.78"E I. 30° 55' 03.97"N 74° 57' 28.42"E J. 30° 55' 09.27"N 74° 57' 28.47"E Co-ordinates of all four corners of the raw material & fuel storage yard are: o 30° 55' 02.12" N to 74° 57' 02.22" E o 30° 55' 02.24" N to 74° 57' 13.24" E o 30° 55' 00.82" N to 74° 57' 13.03" E o 30° 55' 00.79" N to 74° 57' 02.06" E
		o Location Map of the Plant Site has been shown in Figure – 1.1 o Google Earth downloaded map of the plant site has been shown in Figure- 1.2
C.	Area Details	
1.	Total Plant Area	<ul style="list-style-type: none"> <li>Total plant area is 14.8 ha (36.5 Acres).</li> <li>Proposed installation of Unit-II will be done within existing plant site</li> </ul>
2.	Greenbelt/Plantation Area	4.9 ha (12.10 acres) i.e. 33% of the total plant area has already been developed as greenbelt/plantation.

<b>Proposed Installation of Unit II - Grain Based Ethanol / ENA / RS / Industrial Alcohol Plant {500 KLPD (2x250 KLPD)} &amp; Co-generation Power Plant {40MW (2x20 MW)} in Existing Distillery Plant</b> At Village-Mansoorwal, Tehsil- Zira, District-Ferozepur (Punjab)
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<b>D.</b>	<b>Environmental Setting Details (with approximate aerial distance and direction from the Plant Site)</b>	
1.	Nearest Village	Ratol Rohi (1.0 km in WSW direction)
2.	Nearest Town /City	<ul style="list-style-type: none"> <li>• Nearest Town: Zira (6 km in NNE direction)</li> <li>• Nearest City: Ferozepur (32 km in West direction)</li> </ul>
3.	Nearest National/State Highway	<ul style="list-style-type: none"> <li>• NH-15 (0.7 km in West direction)</li> <li>• SH 20 (5.5 km in North direction)</li> <li>• NH 95 (8.0 km in South direction)</li> </ul>
4.	Nearest Railway Station	Talwandi Bhai Railway Station (6.5 km in SSW direction)
5.	Nearest Airport	Sri Guru Ram Dass Jee International Airport, Amritsar (88 km in NNW direction)
6.	National Parks, Reserved Forests (RF) / Protected Forests (PF), Wildlife Sanctuaries, Biosphere Reserves, etc. within 10 km radius	No National Park, Reserved Forests (RF) / Protected Forests (PF), Wildlife Sanctuary, Biosphere Reserve, etc. falls within 10 km radius of the plant site.
7.	River / Water Body (within 10 km radius)	<ul style="list-style-type: none"> <li>• No river lies in 10 km radius of the project area.</li> <li>• Canal (~ 1 km in North Direction)</li> </ul>
<i>Environmental Settings of the 10 km radius study area has been shown in Figure - 1.3</i>		
1.	Seismic Zone	Seismic Zone – III as per IS: 1893 (Part – I) : 2002
2.	Critically Polluted Area as per CEPI-CPCB	No critically polluted area declared under CEPI as per MoEF&CC Circular dated 15 <sup>th</sup> March 2010 exists within 15 km radius of study area.
<b>E.</b>	<b>Cost Details</b>	
1.	Total Cost for the proposed Installation of Unit II	Rs. 583 Crores
2.	Cost for Environmental Protection Measures	<ul style="list-style-type: none"> <li>o Capital Cost - Rs. 58 Crores</li> <li>o Recurring Cost - Rs. 10 Crores / annum.</li> </ul>
<b>F.</b>	No. of working days	350 days/annum

**Source:** Pre-Feasibility Report

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1.3.2 Location Map

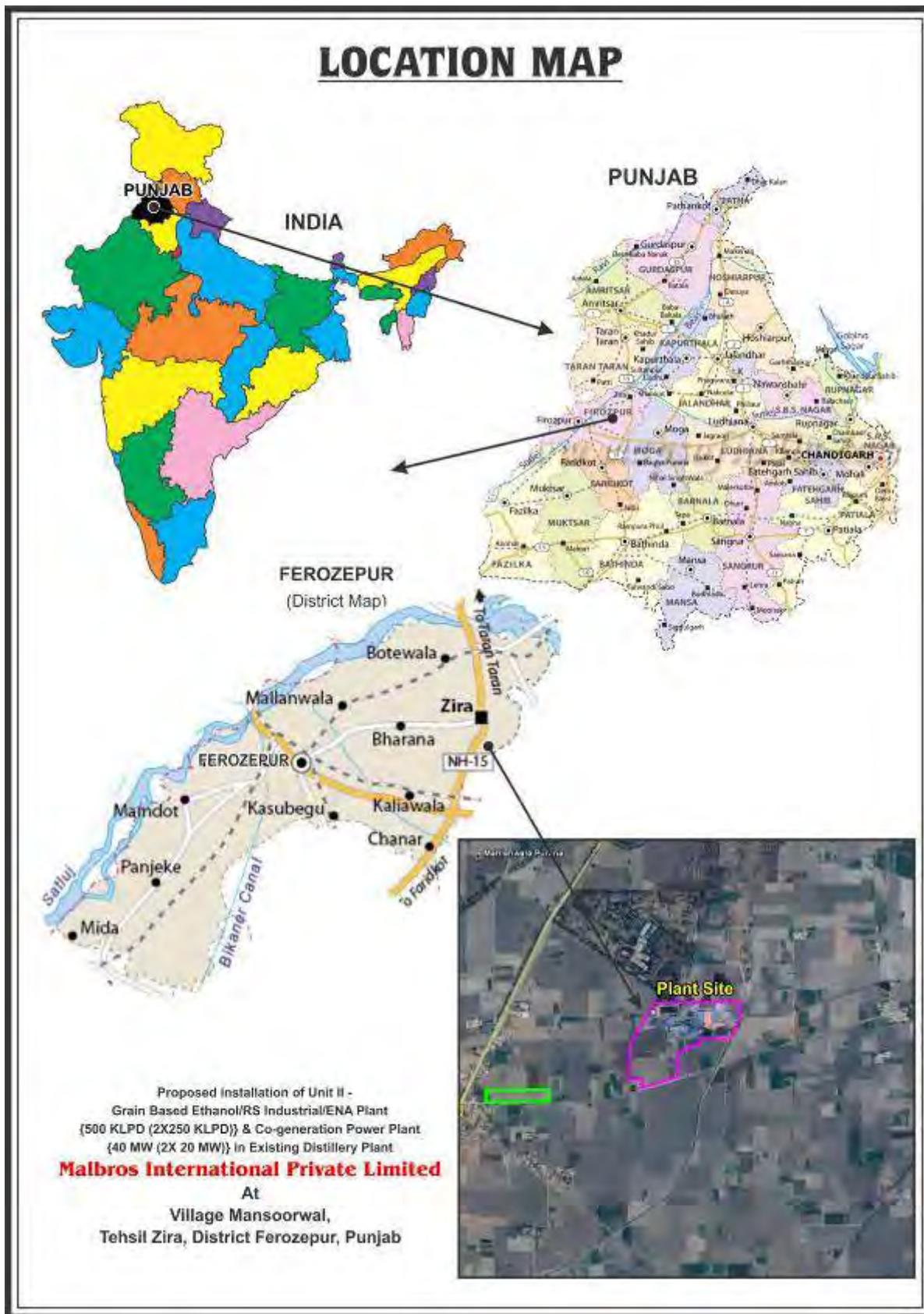


Figure - 1.1: Location Map

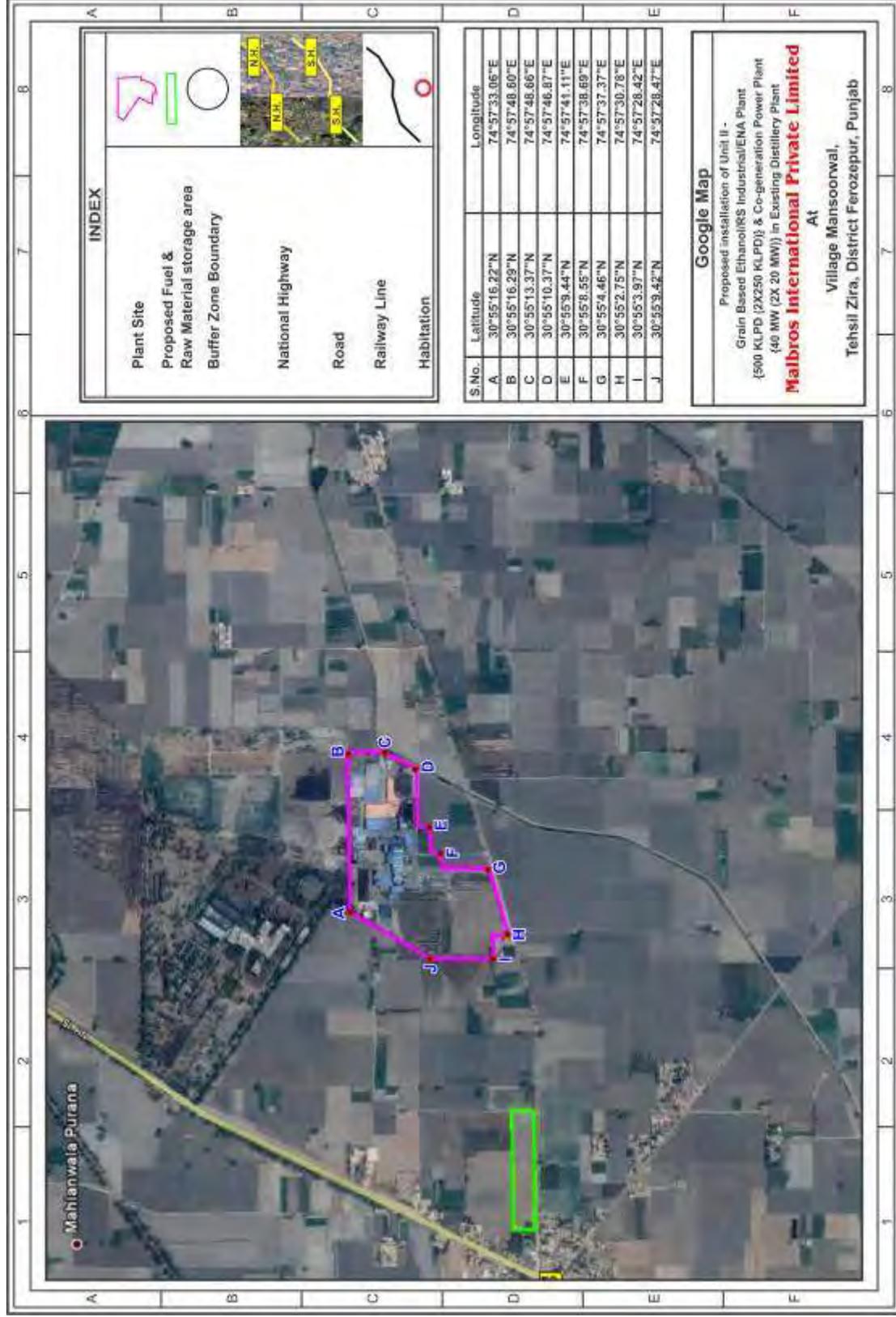


Figure - 1.2: Google-Earth Downloaded Map of the Plant Site

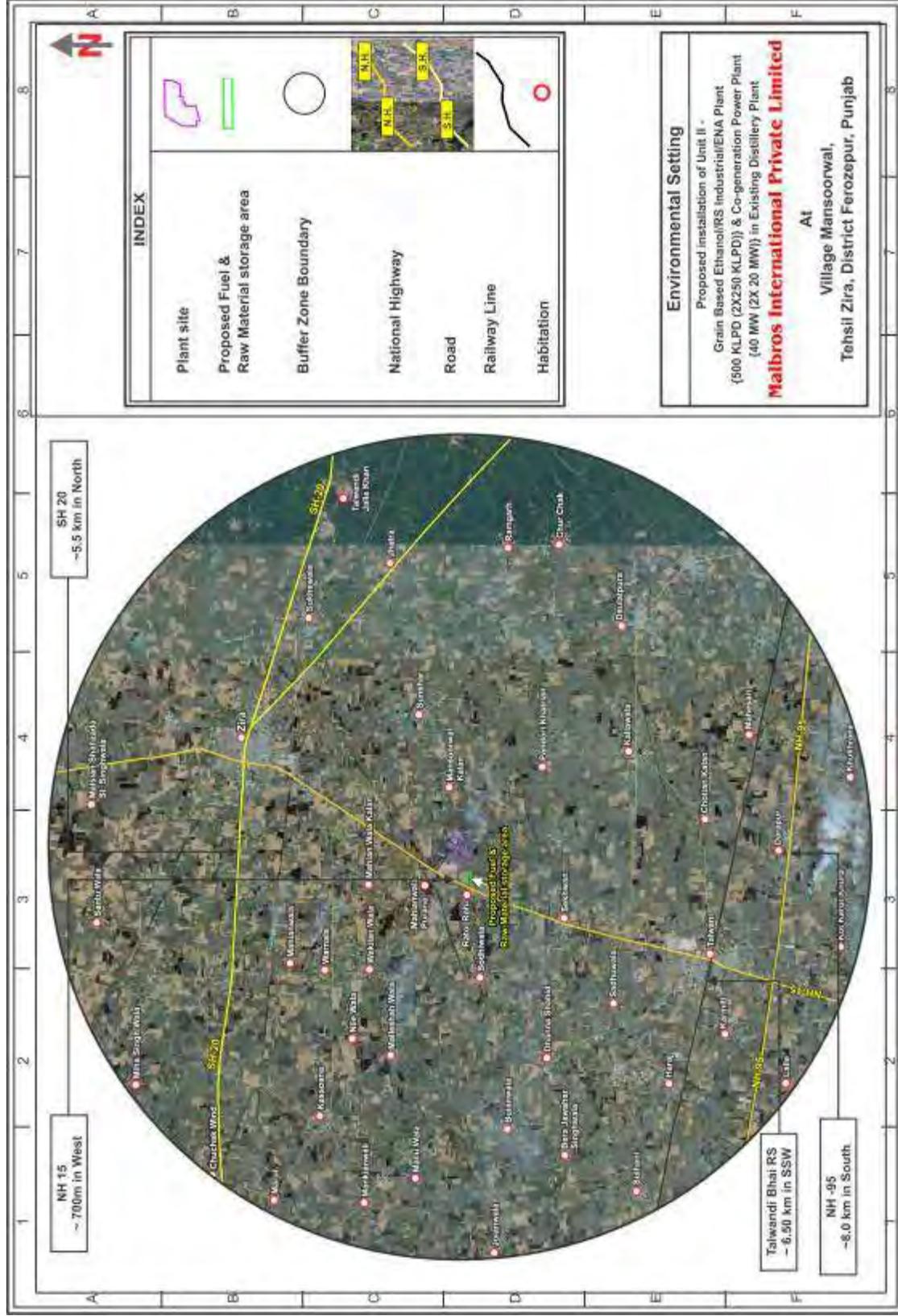


Figure - 1.3: Map showing Environmental Settings of the 10 km radius Study Area

**Proposed Installation of Unit II - Grain Based Ethanol / ENA / RS / Industrial Alcohol Plant {500 KLPD (2x250 KLPD)} & Co-generation Power Plant {40MW (2x20 MW)} in Existing Distillery Plant**  
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### 1.3.3 Site Selection

Proposed installation will be done within the existing plant site. Following factors were considered while selecting the existing plant site:-

- Easy availability of raw material.
- Surface water availability
- Markets for both products & by-products within the state
- Nearness to National Highway NH 15, SH 20 & NH 95 for easy transportation of raw material and final product.
- Availability of existing facilities like storage, infrastructure, transportation, administration etc.
- Unit- I is already existing and operational.

Photographs of existing and Proposed plant site have been shown below:-



**FIG. 1.4(a): PHOTOGRAPHS OF THE EXISTING PLANT**



**FIG. 1.4(b): PHOTOGRAPHS OF THE PROPOSED PLANT**

**Proposed Installation of Unit II - Grain Based Ethanol / ENA / RS / Industrial Alcohol Plant {500 KLPD (2x250 KLPD)} & Co-generation Power Plant {40MW (2x20 MW)} in Existing Distillery Plant**

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#### 1.3.4 Approach to the Plant Site

M/s. Malbros International Pvt. Ltd. is located at Village Mansoorwal, Tehsil Zira, District Ferozepur (Punjab). The site is well connected with NH 15 (0.7 km in West direction), SH 20 (5.5 km in North direction) & NH 95 (8.0 km in South direction). Nearest Railway Station is Talwandi Bhai Railway Station (6.5 km in SSW direction). Nearest Airport is Sri Guru Ram Dass Jee International Airport at Amritsar (88 km in NNW direction).

#### 1.3.5 Importance to the Country and Region

From decades India is known by its synonym as agrarian state and the proposed industry is based on agrarian products which is not only used as luxurious item but also used in drugs and medicinal use in various capacities. In addition, the ethanol is also being used as part of the fuel leading to saving our foreign funds stock.

The proposed project will result in growth of the surrounding areas by increasing direct and indirect employment opportunities in the region including ancillary development and supporting infrastructure. Development of social amenities will be in the form of medical facilities, education to underprivileged and creation of self help groups. Punjab state will get revenues in terms of taxes and local people will get direct & indirect employment. Business opportunities for local community will be available. No adverse effect on environment is envisaged as proper mitigation measure will be taken up for the same.

#### 1.4 Scope of the Study

The disciplines covered under the work program are prerequisite information of the plant site, manufacturing process, effluent generation, treatment and its proper disposal, impacts and management plans. This report contains data of ambient air monitoring as well as noise environment, biological environment, socio-economic study carried out during Post Monsoon Season (October to December, 2015).

Application (Appendix – I/Form – 1/ToR and Pre – Feasibility Report) for obtaining Environmental Clearance for this project proposal was submitted to Ministry of Environment, Forest & Climate Change, New Delhi on 28<sup>th</sup> August, 2015. First Technical Presentation (for ToR approval) was held before EAC (Industry - II) on 30<sup>th</sup> November, 2015. Further ToRs (Terms of References) were issued by MoEF&CC, New Delhi vide letter no. J-11011/228/2015- IA II (I) dated 28<sup>th</sup> December, 2015 and a copy of the same has been incorporated in this Final EIA/EMP Report, Page no. 1 to 8.

The reply/clarification of all the points suggested in ToR letter has been incorporated in this Final EIA/EMP Report at pages no 9 to 25.



**Proposed Installation of Unit II - Grain Based Ethanol / ENA / RS / Industrial Alcohol Plant {500 KLPD (2x250 KLPD)} & Co-generation Power Plant {40MW (2x20 MW)} in Existing Distillery Plant**  
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## CHAPTER-II

### PROJECT DESCRIPTION

#### 2.1 TYPE OF PROJECT

M/s. Malbros International Private Limited has an existing 100 KLPD Grain based Distillery at Village Mansoorwal, Tehsil Zira, District Ferozepur (Punjab).

The company is proposing to install Unit II - Grain Based Ethanol / ENA / RS / Industrial Alcohol Plant {500 KLPD (2 x 250 KLPD)} & Co-generation Power Plant {40MW (2 x 20 MW)} in Existing Distillery Plant within the same plant premises. The company is proposing to install the project in two phases:-

Phase 1:-

- 250 KLPD Ethanol/ENA/RS/ Industrial Alcohol Plant
- 20 MW Co- Generation power plant

Phase 2:-

- 250 KLPD Ethanol/ENA/RS/ Industrial Alcohol Plant
- 20 MW Co- Generation power plant

As per EIA Notification dated 14<sup>th</sup> Sep., 2006, as amended from time to time, the project falls under Category "A", Project or Activity "5(g) (ii) [Non-molasses based distilleries ≥60 KLD]", and therefore, requires Environmental Clearance from MoEFCC, New Delhi.

#### 2.2 IMPORTANCE AND BENEFITS OF PROJECT

The anthropogenic activities continuously left disastrous effect on human environment but by adopting the latest technologies timely the quality of the life is going better day by day. In Indian economy (which is agro based) many industries are dependent over agricultural produce for production of luxury and need based commodities. Alcohol has assumed a very important place in the Country's economy. It is a vital raw material for a number of chemicals. It has been a source of revenue by way of excise duty levied by the State Government on alcohol liquors. It has a potential of being used as a fuel in the form of power alcohol for blending with petrol in the ratio of 20:80. The use of alcohol for the purpose of potable liquor is as high as its use for industrial purposes. The IMIL (Indian Made Indian Liquor) is mainly used by the common masses.

According to analysts, the Indian alcoholic beverages industry is expected to witness accelerating growth in coming years with the consumer base likely to expand amidst rising disposable income. The domestic alcoholic drinks market is estimated around \$13 billion and has been growing at a compounded annual growth rate in excess of 10% in the past few years. The growth rate is higher than other major Asian markets like China and South Korea, etc.

In the path of company's growth and development this project will serve as yet another milestone.

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### 2.3 LOCATION

Location details have been incorporated in Chapter -I of this EIA/EMP Report, Table 1.3 & Figure 1.1, Page no. 29 & 31, respectively.

### 2.4 REQUIREMENTS FOR THE PROJECT

#### 2.4.1 Raw Material Requirement

Details regarding quantity of raw materials required, their source & mode of transportation for proposed installation of Unit II project are given in table below.

**Table -2.1**  
**Raw Material Requirement, Source and Mode of Transportation**

S. No	Name of raw material	Requirement for proposed project	Storage	Source & Mode of Transportation
1	Grains (Damaged grain feed stock, nakkukinki, maize, bajra, sorghum, barley etc.)	1200 – 1300 TPD	Silo & Godowns	Nearby areas via road
Details provided in Grain Availability Report enclosed as Annexure 11.				
2	<b>Chemicals</b>			
	Sodium Hydroxide (Caustic)	2000 KGS	Solid form packing in 50 kg bags & Stored Godown	Nearby areas via road
	Nutrients	800 – 1000 KGS	Solid form packing in bags & Stored Godown	
	Enzymes	2000 – 3000 KGS	Liquid form packed in cane & Stored Godown	
	Antifoam Agent	500 – 600 KGS	Semi Solid form packing in drum & Stored Godown	
	Yeast (Active Dry Yeast/Distiller's Yeast)	250 – 350 KGS	Solid form packing in bags & Stored Godown	

Source: Pre feasibility Report

#### 2.4.2 Fuel Requirement

Details regarding quantity of fuel required, their source & mode of transportation for proposed installation of unit II are given in Table - 2.2.

**Table - 2.2**  
**Fuel Requirement**

Fuel	Requirement for proposed project	Source & Mode of Transportation
Biomass/Rice Husk/ Bagasse/ Paddy & Wheat Straw along with 15% auxiliary fuel - coal/pet coke	1372 TPD as biomass	Nearby areas via road

Source: Pre feasibility Report

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#### 2.4.3 Steam Requirement

Steam from the boiler will be used in the Liquefaction, Fermentation, Distillation, Evaporation & DDGS Drier process and for the production of Co-generation Power. The total steam requirement for Unit II has been given in table below:-

**Table - 2.3**  
**Steam Requirement**

S. No.	Purpose	Requirement for proposed project	Source
1.	Cooking & Liquefaction	15.79	Own proposed 2 Nos. 100 TPH Boilers
2.	Multi-pressure Distillation	65.20	
3.	Evaporation (Integrated)	6.25	
4.	DWGS Drier (DDGS)	52.08	
5.	Boiler De-aeration	10.41	
<b>Total</b>		<b>149.74 ≈ 150</b>	

Source: Pre feasibility Report

#### 2.4.4 Water Requirement

Fresh water requirement for the proposed installation of Grain based distillery is 4110 KLPD which will be met from canal water. The project is based on 'Zero Effluent Discharge'.

Source of Water: Canal Water

Status of Approval: Canal Permission from Superintending Engineer, Sirhind Canal Circle, Ludhiana vide letter no. 5924/50-R/Sidhwa dated 22<sup>nd</sup> July, 2015 has been attached as

**Annexure- 2.**

**Table – 2.4 (A)**  
**Total Water Input**

S. No.	Description	Water Consumption (KLD)
1.	Process water in LIQN	1635
2.	Boiler feed water	3678
3.	DM water for Distillation	625
4.	Soft water for Cooling Tower	3750
5.	Soft Water Distillation	675
6.	Soft Water Pumps Sealing	250
7.	Fermenter Washing	94
8.	Floor Washing	219
9.	Domestic Consumption	32
<b>Total Water Requirement (A)</b>		<b>10958</b>

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**Table – 2.4 (B)**  
**Total Water Output**

S. No.	Description	Water Consumption (KLD)
1	Steam Condensate	2582
2	Spent Lees PR	625
3	Spent Lees Rectifer	625
4	Spent Wash (Grain Slops)	265
5	Water in DDGS Dryer	810
6	CT Evaporation & Drift Losses	3750
7	Pump Sealing	250
8	Process Condensate	2001
9	Boiler Blow Down	50
<b>TOTAL (B)</b>		<b>10958</b>

**Table – 2.4 (C)**  
**Recycling & Utilization stream**

S. No.	Recycle & Utilization Streams	Water Consumption (KLD)
1	Steam Condensate	2582
2	Thin Slops	265
3	R/E to Distillation	531
4	PR Lees to Fermentation	94
5	Pump Sealing	250
6	Boiler Blow down	50
7	Process Condensate	2001
8	Floor Washing	219
9	Prec Lees to CT	391
10	R/E to Less to CT	94
11	CT Blow down	371
<b>Total Recycling /Re-utilizations of water per day (C)</b>		<b>6848</b>
<b>Total Fresh Water Input (A-C)</b>		<b>4110</b>

Hence, Fresh Water Requirement is 4110 KLD

\* Water requirement for first run would be 10958KLD

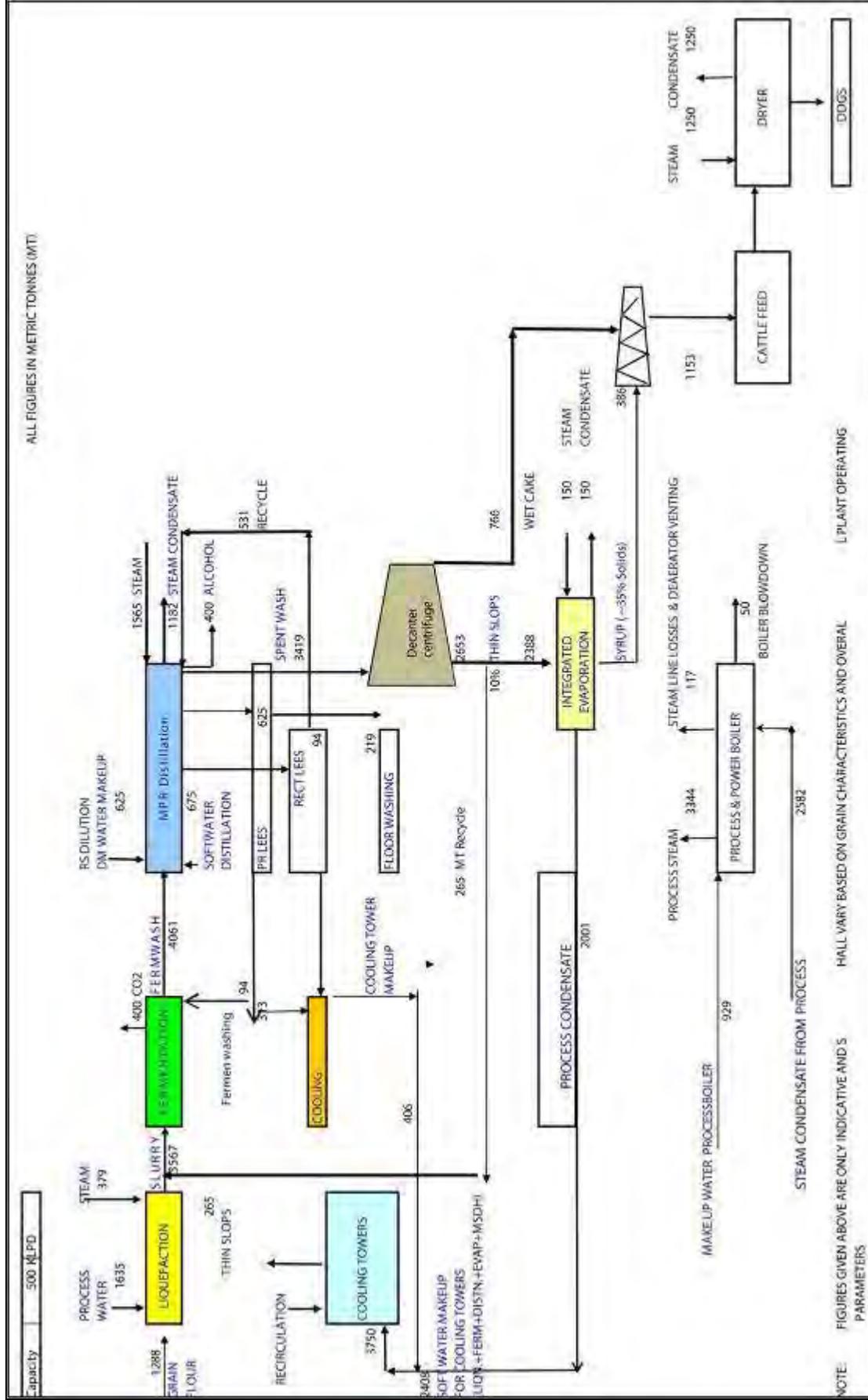


Figure 2-1: Water Balance for Grain Based Distillery

Proposed Installation of Unit II - Grain Based Ethanol / ENA / RS / Industrial Alcohol Plant {500 KLPD (2x250 KLPD)} & Co-generation Power Plant {40MW (2x20 MW)} in Existing Distillery Plant At Village-Mansoorwal, Tehsil- Zira, District-Ferozepur (Punjab)
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#### 2.4.5 Power Requirement

The total power requirement for the proposed project will be 9 MW.

**Source:** Proposed 40 MW (2x20 MW) Captive Power Plant & D.G. Sets – 3x1000 KVA (for backup purpose only)

#### 2.4.6 Manpower Requirement

The total manpower required for the proposed project will be 800 persons which include unskilled, semiskilled – Local Area; skilled personnel - outside and contract labors from nearby areas.

#### 2.5 Land Requirement

Total existing Plant area is 14.8 ha (36.5 acres). Proposed installation will be done within the existing plant site hence, no additional land will be required for the same. About 33 % of the total plant area i.e. 4.9 ha (12.10 acres) has already been covered under greenbelt/plantation.

Land area break-up is given in table below:

**TABLE - 2.5**  
**Area Break-up**

Particulars	Existing (Area in Ha.)	Additional for proposed expansion (Area in Ha.)	Total after expansion (Area in Ha.)
Main Plant & Machinery	1.0	1.4	2.4
Utilities	1.2	2.0	3.2
Raw material & Product Storages	0.3	0.5	0.8
Roads & other	1.3	1.0	2.3
Admin offices & Excise office	0.8	0.4	1.2
Greenbelt/plantation	4.9	0.0	4.9
Open Area	5.3	(-) 5.3	0
<b>Total</b>	<b>14.8 ha</b>	<b>Nil</b>	<b>14.8 ha</b>

#### 2.5.1 Plant Layout

The features of the plant layout are as follows:

- The major utilities and service facilities are centrally located;
- Sufficient space has been provided for ease of operation and maintenance;
- Safety requirements have been kept in mind while locating the workshops and vehicular movement inside the plant.

Plant Layout is shown in Figure 2.2.



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## 2.6 MANUFACTURING PROCESS DETAILS

### 2.6.1 Grain Based Distillery

Distillery Unit - Production from Grain:

- Grain storage
- Grain cleaning, milling and flour handling
- Slurry preparation & liquefaction
- Multi pressure distillation
- Alcohol (ENA & TA) daily receivers & bulk storage
- MEE & Dryer

#### MAIN PLANT & MACHINERY

##### 1. Grain Storage :

Grains are procured from various sources and are unloaded into large Storage Silos after Pre-Cleaning. Storage Silos are specially designed to keep the Grains in good condition for longer durations and also avoid its deterioration and theft, etc. It is being proposed to have 30 – 45 days of Grain Storage facility in the Distillery.

##### 2. Grain Cleaning, Milling and Flour Handling :

The grain is lifted in bucket elevators, screened followed by removal of stones and iron matter. Cleaned Grains are then milled using dry milling process in Hammer Mills. The flour is fed through the bucket elevator and conveyed to the Batch Tipping Machine through a Screw Conveyor. The flour addition is metered through the Batch Tipping Machine with load cell arrangement, before transferring the flour to the Slurry Tank through another Screw Conveyor (pre-masher) for slurry preparation process. It is being proposed to have 4 x 16 TPH as milling paraphernalia for this Distillery.

##### 3. Slurry Preparation & Liquefaction :

Grain flour and process water is fed at controlled rate to Initial Liquefaction tank. Mixed slurry is taken to the Initial Liquefaction Tank where additional quantity of water is added as per requirement. Viscosity reduction Enzyme and stabilizing chemicals and a portion of liquefying enzyme are also added at this stage. This slurry is then “cooked” in the jet cooker. The slurry is continuously pumped to a steam jet cooker where high-pressure steam rapidly raises the slurry temperature. The mixture of slurry and steam is then passed through the Retention Vessel. The retention vessel has sufficient capacity to provide the desired retention time at a given flow rate. The cooked mash is discharged to a Flash Tank.

The cooking process, accomplished in the above manner, converts the slurry into a hydrated, sterilized suspension and is therefore susceptible to enzyme attack for liquefaction.

The gelatinized mash from the Flash Tank is liquefied in the Final Liquefaction Tank where liquefying enzyme (alpha-amylase) is added. The liquefied mash is cooled in Mash Cooler and

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transferred to Saccharification cum fermentation section. This process initiates the formation of sugar. The gelatinized mash from the Flash Tank is liquefied in the Final Liquefaction Tank where liquefying enzyme (alpha-amylase) is added. The liquefied mash is cooled in Mash Cooler and transferred to Saccharification cum Fermentation section.

#### **4. Hiferm-Nm Saccharification and Instantaneous Fermentation:**

##### **Yeast Activation:**

Yeast seed material is prepared in water-cooled Yeast Activation Vessel by inoculating sterilized mash with Active Dry Yeast. Optimum temperature is maintained by cooling water. The contents of the Yeast Activation Vessel are then transferred to Fermenter.

##### **Saccharification & Instantaneous Fermentation:**

The Liquefied starch slurry comprising Dextrins is partly taken for Yeast development in Yeast Activation vessel and majorly transferred into the Fermenter. Amyloglucozydase and other nutrient Enzymes are first added to Saccharify the Starch Slurry causing formation of Sugars. Immediately, the Active Yeast is introduced in the system for simultaneous Fermentation. The process of fermentation is to convert the fermentable substrate into alcohol. To prepare the mash for fermentation, it may have to be diluted with water. The pH of the mash is adjusted by the addition of acid. Yeast is available in sufficient quantity to initiate fermentation rapidly and complete it within the cycle time.

At the start of the cycle, the fermenter is charged with mash and contents of the Yeast Activation Vessel. Significant heat release takes place during fermentation. This is removed by passing cooling water through the Fermenter PHE's to maintain an optimum temperature. The recirculating pumps also serve to empty the fermenters into Beer Well. After the fermenters are emptied, they are cleaned with water and caustic solutions and sterilized for the next batch. The carbon dioxide evolved during the process is vented to atmosphere after recovery of alcohol in a scrubber.

#### **5. Ethanol Distillation:**

Fermented wash from wash holding tank T-01 is pumped by wash feed pump P-01 to the top of degassing column (C-2) after preheating the same in beer heater E-02 and spent wash heat exchanger E-01. The vapors along with non-condensable gases from the top of degassing column (C-02) are rectified in Heads column (C-03), to expel the high volatiles, technically known as heads. Bottom liquid from the degasser flows into analyzer column (C-01) where alcohol is stripped from the liquid. The liquid from bottom of analyzer column (C-01) is completely stripped of alcohol and is pumped out by thick slop discharge pump P-02 through heat exchanger E-01 where it preheats the fermented wash before it enters degassing column. The slop from the analyser column will be feed in to decanter. The dilute alcohol vapors from near the top of analyzer column (C-01) are condensed first in beer heater (E-02) while

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exchanging heat with wash feed and then in analyzer condenser (E-03). Degasser and analyzer operate under vacuum. The condensate from E-02 and E-03 is collected in Rectifier Feed Tank V-02. The vapors for stripping alcohol are generated from analyzer column bottom liquid in the analyzer column re-boiler (E-04) by using the rectified column top vapors, as discussed subsequently.

Vapors from the top of heads column (C-03) are condensed in heads column condenser (E-06) and then in head column vent condenser (E-07). Part of the condensate is returned to column C-03 as reflux while a small portion is taken out as an impure spirit cut. Liquid from bottom of C-03 is also taken into Rectified feed tank V-02.

Dilute alcohol water mixture from rectifier feed tank (V-02) are pumped by rectifier feed pump (P-04) through rectifier feed pre-heater E-11 in to rectifying column (C-04). Rectifier and its associated equipment work under pressure so that these vapors can supply the necessary heat for generating the vapors.

The condensate from E-04 is then pumped as Reflux to rectifying column C-04. Rich alcohol vapors at a concentration of 95.5% v/v from top of rectifying column (C-04) are condensed first in Analyzer (E-04) and then in Reflux Vent Condenser (E-05). The liquid from E-04 and E-05 are collected in Rectifier Reflux Tank (V-01). Part of the liquid from E-05 may be drawn off as impure spirit. The impure spirit cut will be maintained as little as possible to maintain aldehyde levels to meet the required limits in Absolute Alcohol.

Liquid from the reflux tank (V-01) is pumped by Product Pump (P-03) partly as product and partly as reflux to the top of the Rectifying Column (C-04). The necessary rectifying vapors to C-04 are generated by boiling the C-04 bottom liquid in Rectifier Column Re-boiler E-08 using medium pressure steam. Some side streams are drawn from rectifier column as light and heavy fractions of higher alcohols called fusel oils and cooled in fusel oil coolers E-09 and E-10 and are mixed with water and allowed to separate out in fuel oil separator F-01. All vents from E-03, E-07, V-02 and E-05 are connected to Vent Gas Absorber (C-05) where the vent gases are scrubbed with water to recover entrained alcohol. The scrubber water is used for washing the fuel oils in fuel oil separator to recover alcohol from the fuel oil fractions. The absorber vent is connected to vacuum pump (G-01) which is used to create vacuum in the analyzer and degasser.

Absolute alcohol is manufactured by dehydration of Rectified Spirit. The process adopted here is based on Pressure Swing Adsorption (PSA) system using Molecular Sieves (3-A). The flow scheme is shown in above referred flow diagram.

Rectified spirit, after preheating by waste hot streams, is vaporized and superheated in E-03 and E-04 by using medium pressure steam at 6 Kg/cm<sup>2</sup>g pressure. Hot vapors at kg/cm<sup>2</sup> g pressure and 130° C temperature pass through PSA column S-01A/S-01B where the water

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vapors are retained while water free alcohol is released as vapors. The vapors are condensed in E-07 and E-08 and collected as Absolute Alcohol. When the molecular sieve bed is saturated with water the alcohol vapors are shifted to the other tower and the first tower is taken for regeneration. Regeneration is done first by pressure releasing and creating vacuum and then by elutriating with dehydrated alcohol vapors from the tower in dehydration operation. The vapors are condensed in E-06 and E-05 and the vent vapors are recovered through scrubber C-02. Vacuum can be created vacuum by P-04. (Eductor may also be considered for this duty). Product is cooled in E-09 and transferred to Absolute Alcohol receiving tank and then on to storage tank.

#### 6. Alcohol (ENA & TA) Daily Receivers & Bulk Storage :

Alcohol is first taken to Daily receiver storage tanks, which is based on the State Excise laws, storage for three days considering the weekly holidays of two days. Thereafter, the alcohol is transferred to Bulk Storage Tanks after taking the daily receiver Dip. This is transferred using flameproof pumps. Final dispatch of alcohol is metered and again is carried out using special flameproof pumps. The Bulk Spirit Storage is proposed to be set up for 30 days.

#### EFFLUENT HANDLING SECTION

##### 1. Decantation Section:

Decantation section comprises of Centrifuge Decanters, operating at high rpm which are used for separation of suspended solids from Spent Slops coming out of Distillation section. The Wet cake thus separated has 30-35% w/w solids, as removed from bottom of Decanters. This is directly loaded on the trolleys parked below. Thin slops coming out of Decanter are collected in a tank and are transferred for part recycle & further for Evaporation into thick syrup.

##### 2. Integrated Evaporation Section:

The suggested treatment scheme is a 2 FF + Finisher Evaporation Plant for Thin Slops Evaporation. The following points will elucidate the basic working principle:

- Shell & Tube type Evaporators with highly efficient liquid distributor working on the principle of Falling Film Evaporation have been used, with Plate type Preheaters for preheating of FEED stream which serves the purpose of energy conservation.
- Analyzer vapour is fed to the first effect evaporator shell side at the given pressure and temperature as the heating medium.
- The Feed from the Feed balance tank is taken to the PHCOND to make the best heat recovery.
- The Feed after getting heated to the predetermined temperature in preheater is fed from the first effect evaporator which is Falling Film Evaporator -1

The flow path is given below.

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#### **Inlet feed - pH cond – E1 – E2 – outlet product**

- Vapours generated in 1st effect VLS (Vapour Liquid Separator) are used as heat source in the 2nd effect.
- The product at the desired concentration of TS is obtained at the outlet of the second effect, which is a Falling Film evaporator.
- A Shell & tube type Multi-pass Surface condenser is employed for condensing the shell side vapours.
- The Pure and the process condensate are collected in receiving vessels.
- Highly efficient operating pumps will be provided for pumping the required fluid.
- The operation of the plant will be under vacuum. Vacuum is created with the help of a water ring vacuum pump.
- The plant will have high level of automation to get consistent output at required concentration.
- The system operates under vacuum. Water-ring vacuum pumps are used to maintain a desired vacuum.
- Cooling water from cooling tower is used in the surface condensers for condensing the vapours.

#### **Conclusion**

The thick syrup thus obtained is mixed with the Wet Cake obtained from Decanter Centrifuges using specially designed Ribbon type mixer and this enriches the protein content in the fibrous suspended solids separated earlier in Decanter. This Protein & Fibre rich DDGS is directly sellable as Cattle / Poultry Feed. However, in order to increase the shelf life of such by-product, it is necessary to dry the product, with minimum possible moisture content.

#### **System Description for DDGS dryer**

Wet distiller's grains shall be fed into the dryer housing at controlled rate through a suitable feeding system. The Rotary Tube Bundle is enclosed in an insulated dryer housing and on its outer flights is fixed. Dry saturated steam is to be supplied to the tube bundle through rotary joint at one end & the condensate is discharged through rotary joint mounted at other end.

During the course of rotation, these flights pick up the material and shower them on to the tube bundles. The heat transfer is primarily by conduction. The water vapours are exhausted through an Exhaust Blower & passed through a cyclone separator for separating fines.

Dry product partially recycled back to Feed conditioner for feed conditioning through Product Screw & Recycle Conveyor.

Entire operation of the Dryer is controlled through Control panel.

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#### SYSTEM DESCRIPTION FOR COOLING & CONVEYING

- DDGS below product screw is discharged into charging hopper of pneumatic conveying system.
- Rotary feeder feeds it into the conveying line.
- Ambient air is used for conveying.
- The material gets conveyed to product collector & discharged from rotary discharge valve.
- Exhaust air is vented to atmosphere.
- The conveying system is lean phase suction type, using centrifugal blower as prime mover. The conveying air quantity is designed considering cooling requirement & to cool the product before discharge.

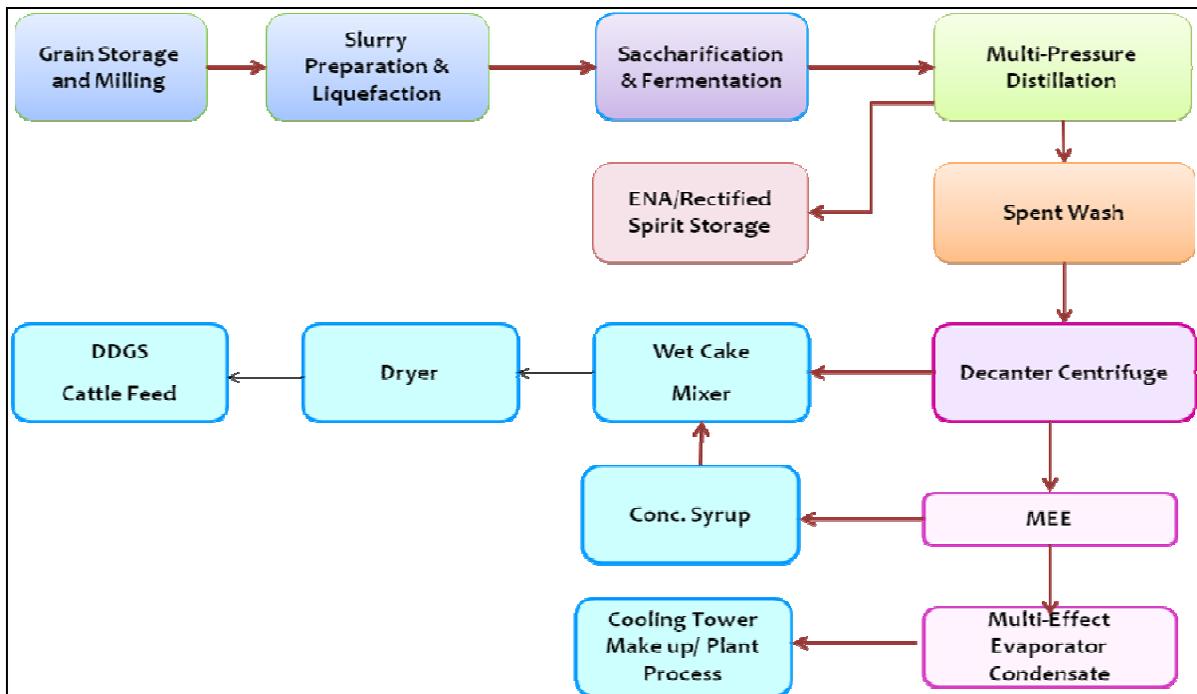


Figure 2.3: Process Flow Diagram of Grain Based Distillery

#### 2.6.2 Power Plant Co-generation 40 MW (2x20 MW)

##### Operations

The unit proposes to set-up boiler and power turbine. 2 Nos. X 100 TPH boiler will be installed and based on Biomass/Rice Husk/ Bagasse/ Paddy & Wheat Straw along with 15% auxiliary fuel - coal/pet coke. This Boiler will operate mainly to feed steam to grain based operations and 40.0 MW (2 x 20 MW) power generations from Turbine.

Proposed 40.0 MW (2 x 20 MW) co-generation plant consists of a high pressure water tube steam boiler extraction cum condensing steam turbine. Fuel in the steam boiler will be burnt with the help of air in the boiler furnace. Water will be circulated in the boiler drum and tubes thus getting heated by the flame burning in the boiler furnace. Water comes out of the boiler

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drum located at the top of the boiler as steam. Flue gases rise in the boiler furnace and come in contact with the steam coming out of boiler drum. Steam after coming in contact with flue gases gets heated up further thus getting superheated. Super heated steam leaves the boiler in a pipe. Flue gases after super heating the steam pass through economizer where they pre-heat the boiler feed water before it enters the boiler drum. After economizer, flue gases pass through air pre-heaters where they heat the air which is fed to the boiler furnace for burning the fuel. After air pre heaters flue gases pass through Bag Filter where the dust particles are collected. The dust is collected from here.

High pressure superheated steam from boiler is passed through a steam turbine, which is used for distillery process operations. While passing through the turbine, the high pressure and temperature steam rotates the turbine rotor and an electric alternator mounted on the same shaft. Electric power is generated by the alternator. This electric power generated is consumed in house i.e. for running the distillery and utilities like boiler auxiliaries etc.

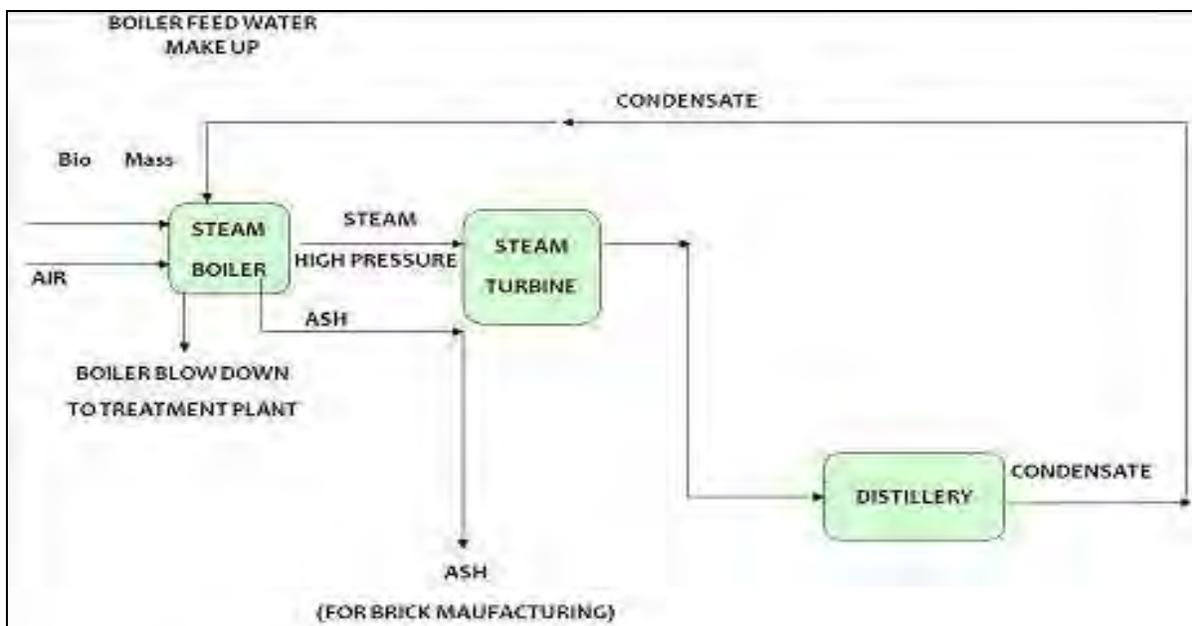


Fig 2.4: Process Flow Chart for Co-Generation Power Plant

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### 2.6.3 Boiler Details

Two Boilers of 100 TPH capacity each with ESP as APCE is sufficient to meet the requirement.

Boiler details are given in the table below:

**TABLE – 2.6**  
**Boiler Details**

S. No.	Particulars	Details
1.	Type of Fuel	Biomass/Rice Husk/ Bagasse/ Paddy & Wheat Straw along with 15% auxiliary fuel - coal/ pet coke
2.	Capacity of Boiler	Proposed 100 TPH x 2 NOS
3.	Stack Height	63 meters
4.	Pollution Control Equipment Measures	Electrostatic Precipitator (ESP)

Source: Prefeasibility Report

### 2.6.4 D.G. Sets

3 D.G. sets of 1000 KVA will be installed for the power backup. Details regarding the D.G. Sets are mentioned in the table below:

**TABLE – 2.7**  
**Details of D.G. Sets**

S. No.	Details	
1.	Type of Fuel	HSD
2.	Capacity	3 x 1000 KVA
3.	Stack Height (above roof level)	As per CPCB/SPCB norms
4.	Pollution Control Equipment Measures	Adequate stack height/ Acoustic

### 2.6.5 Storage Facilities

Adequate Storage facilities will be provided for storage of grains, alcohol and fuel. Details are given below:

**Table – 2.8**  
**Storage Facilities**

S. No.	Particular	Proposed Storage Type & Capacity
1.	Raw Material (Grain)	Closed Silo (5000*2 Nos.)
2.	Fuel (Biomass)	Fuel Yard of 1.0 Hectare
3.	Final Products (Ethanol / ENA / RS / Industrial Alcohol)	Closed Mild Steel / SS tanks (7500 KL)

## 2.7 ASSESSMENT OF NEW & UNTESTED TECHNOLOGY FOR THE RISK OF TECHNOLOGICAL FAILURE

The whole process will be based on proven technology i.e. Multi Pressure distillation with integrated evaporation followed by dryers. Thus, no new and untested technology for the risk of technology failure has been assessed.



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## CHAPTER-III

### DESCRIPTION OF THE ENVIRONMENT

#### 3.1 INTRODUCTION

In order to assess the impacts of proposed installation project on existing physical, biological and social environment, it is necessary to study the present scenario of the area by collecting information on the following parameters:

1. Land Environment
2. Meteorology
3. Air Environment
4. Noise Environment
5. Water Environment
6. Soil Environment
7. Biological Environment
8. Socio-economic Environment

The relevant information and data (both primary & secondary) were collected in core as well as buffer zone (10 km distance from the plant boundary) during Post Monsoon Season (October to December, 2015) in accordance with the guidelines for preparation of EIA studies.

#### 3.2 STUDY AREA AT A GLANCE

**Study Area:** An area of 10 km radius (aerial distance) from the plant site is marked as study area (as shown in Figure 1.3; page no. 33). The baseline information is collected for the identified study area, where plant site is considered as the core zone and area within 10 km radius of the plant site is considered as buffer zone.

The study area falls in Village Mansoorwal, Tehsil Zira, District Ferozepur (Punjab). The Plant Area extends from latitude 30°55'02.75"N to 30°55'16.29"N and through longitude 74°57'28.42"E to 74°57'48.66"E.

Location Map showing the Plant site has been given in Figure 1.1; page no.31.

#### 3.3 BASELINE DATA COLLECTION

Baseline data was collected during Post Monsoon Season (October to December, 2015) to assess the present scenario of the area.

##### 3.3.1 Primary Data

Primary data was collected by monitoring & surveying of various environmental components/ parameters in the core as well as buffer zone during the Post Monsoon Season (October to December, 2015) details of which are given in Table - 3.1.

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**Table - 3.1**  
**Primary Data Collection**

S. No.	Description
1.	<b>Meteorology</b> Meteorological parameters on hourly basis at plant site. Parameters: Temperature, Relative humidity, Wind Speed & Wind Direction.
2.	<b>Air</b> Ambient air quality monitoring (24 hourly), twice a week. Parameters: PM <sub>10</sub> , PM <sub>2.5</sub> , SO <sub>2</sub> , NO <sub>2</sub> , CO & Hydrocarbon. No. of Locations: 8 locations in core and buffer zone.
3.	<b>Noise</b> Noise level monitoring (day & night time), once in a season. No. of Locations: 8 locations in core and buffer zone.
4.	<b>Water</b> Ground water sampling, once in a season. No. of Locations: 8 locations in core and buffer zone.
5.	<b>Soil</b> Soil sampling, once in a season. No. of Locations: 8 locations in core and buffer zone.
6.	<b>Biological Environment</b> Biodiversity survey, once in a season. Location: Core and buffer zone.
7.	<b>Socio-economic Environment</b> Socio-economic survey, once in a season. Location: Core and buffer zone.

### 3.3.2 Instruments Used For Environmental Baseline Data Collection

The following instruments were used at the site for environmental baseline data collection work.

1. Respirable Dust Sampler with attachment for gaseous Pollutants, Envirotech APM 460
2. Fine Particulate Matter (FPM) Sampler APM 550
3. Sound Level Meter Model Envirotech SLM - 100
4. Digital D.O. Meter Model - 831 E (CPCB Kit)
5. Weather Monitoring Station Model Enviro WM 271
6. Water Level Indicator
7. Global Positioning System (GPS).

Apart from collecting samples of air, water, noise and soil from representative sampling points given in proceeding sections, the data on land use, vegetation and agricultural crops were also collected by the field team through interaction with a large number of local inhabitants of the study area and different Government departments / agencies. This provides an excellent opportunity to the members of the field team for obtaining clear scenario of the existing environment of the study area.

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### 3.4 LAND USE/LAND COVER STUDY

#### 3.4.1 Objective

☞ To comply the ToR points issued by MoEFCC, New Delhi vide letter no J-11011/228/2015-IAII (I) dated 28<sup>th</sup> Dec., 2015.

**ToR Point no. 4 (ix):** Land use details of the study area.

☞ To develop land use & land cover map using land coordinates of the plant area.

☞ To identify and mark important basic features according to primary and secondary data.

☞ To evaluate the plant's impact on existing land use of the plant area.

☞ To suggest measures for conservation and sustainable use of land.

#### 3.4.2 Data Used

Data of Indian Remote Sensing Satellite Multi Spectral Satellite Image has been used for preparation of Land use/ Land cover thematic map of study area.

##### Technical details of Data

- Satellite Image - RESOURCESAT-2 (L4FMX)
- Software Used - Earth Resources Data Analysis System(ERDAS) Imagine 9.2
- Satellite Data Source - NRSC, Hyderabad

3-4.2.1 Satellite Imagery of the Buffer Zone

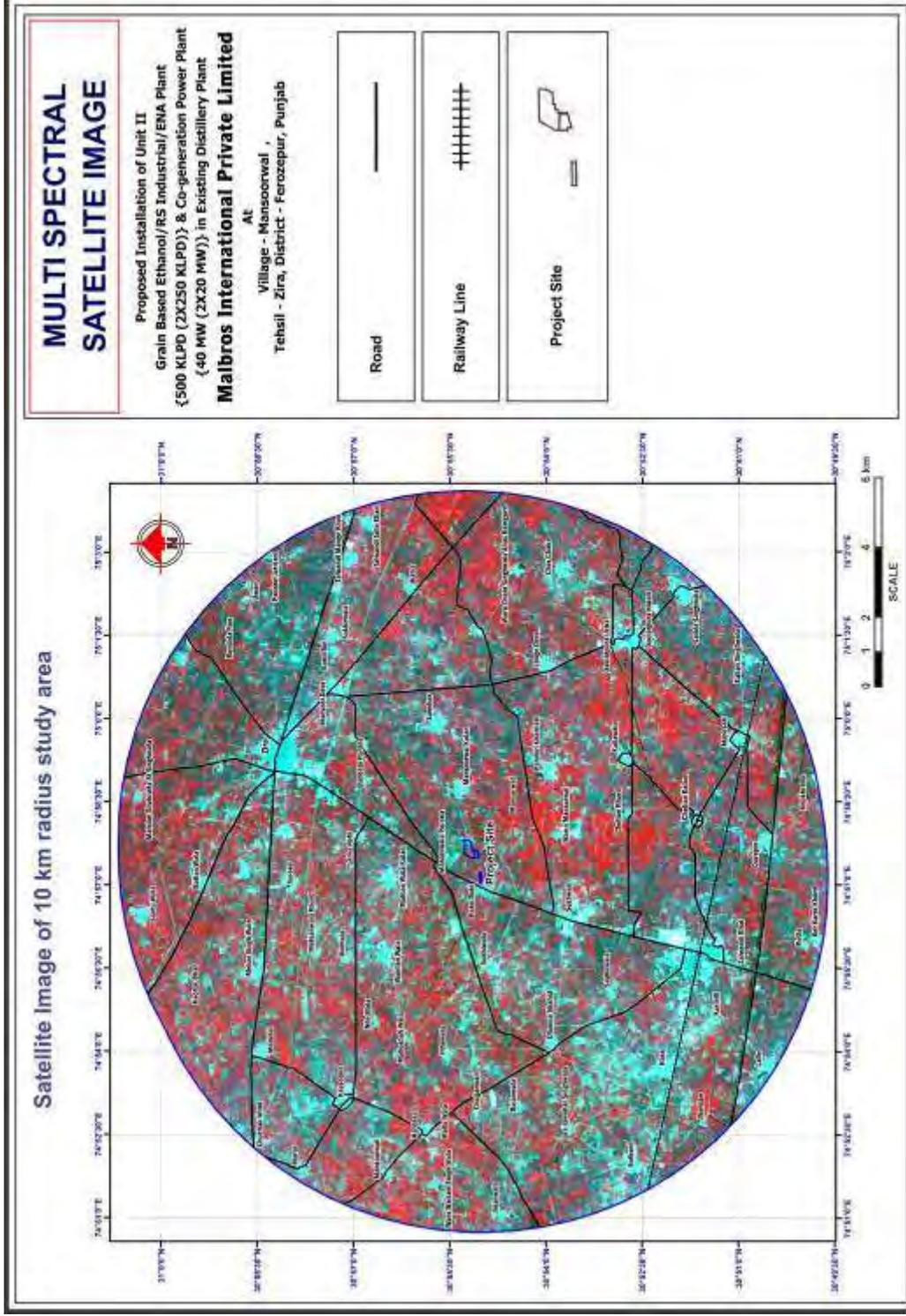


Figure 3.1 – Satellite Imagery of the Buffer Zone

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### 3.4.3 Methodology

- ∞ Preliminary / primary data collection of the study area
  - Satellite data from NRSC Hyderabad
- ∞ Secondary data collection from authorized bodies
  - Google Map
  - Plant Layout
  - Cadastral / Khasra map
  - GPS Coordinates of Plant Boundary
- ∞ Processing of satellite data using ERDAS Imagine 9.2 and to prepare the Land use & Land cover maps (e.g. Forest, agriculture, settlements, wasteland, water bodies etc.) by digital image processing (DIP) technique.
  - Enhancement of the Satellite Imagery
  - Base Map layer creation (Roads, Railway, Village Names and others Secondary data etc.)
  - Data analysis and Classification using Digital interpretation techniques.
  - Ground truth studies or field verification.
  - Error fixing / Reclassification
  - Final Map Generation

### 3.4.4 Details of LULC

#### 3.4.4.1 Land Use & Land Cover Classes

These are the following LULC Classes:-

Water Bodies, Crop land, Fallow Land, Human Settlement, Industrial Area, Scrub Land, Plantation, Stony Area, open Land etc. as per NRSC Guide Line.

#### **Definitions of LULC Classes**

(Reference- National Remote Sensing Center Guideline)

**Agriculture Land:** These are the lands primarily used for farming and for production of food, fiber, and other commercial and horticultural crops. It includes land under crops (Irrigated and non-irrigated, Fallow, Plantation etc.)

**Crop Land:** These are the areas with standing crop as on date of satellite overpass. Cropped areas appear in bright red to red in color with varying shape and size in a contiguous to non-contiguous pattern. Three cropping seasons exist in India viz., Kharif (June/July-September/October), Rabi (November-December-February-march) and Zaid (April-May).

**Fallow Land:** These are the lands, which are taken up for cultivation but are temporarily allowed to rest, un-cropped for one or more seasons. Fallow land is categorized in two classes, Current Fallow and Long Fallow.

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**Current Fallow Land:** These are the cropland areas, which are un-cropped during the agriculture year under consideration as on the date of satellite overpass.

**Long Fallow Land:** These are the croplands areas, which are un-cropped for Two to Four agriculture Years from the base year.

#### 3.4.4.2 Generation & Analysis of Data

##### ∞ ENHANCEMENT OF SATELLITE IMAGE

Satellite data is composed of substantial noise and haze errors due to various environmental factors, which affect the amount of reflectance (information) that can be deciphered. Since mapping of satellite images is based on spectral signatures, it is necessary to normalize the redundant values into near true values. This process of deriving true reflectance values is known as normalization. This enhances interpretability of the satellite image thereby facilitating better identification of land features viewed on satellite imagery. Histogram equalization and radiometric correction has been used for satellite image enhancement.

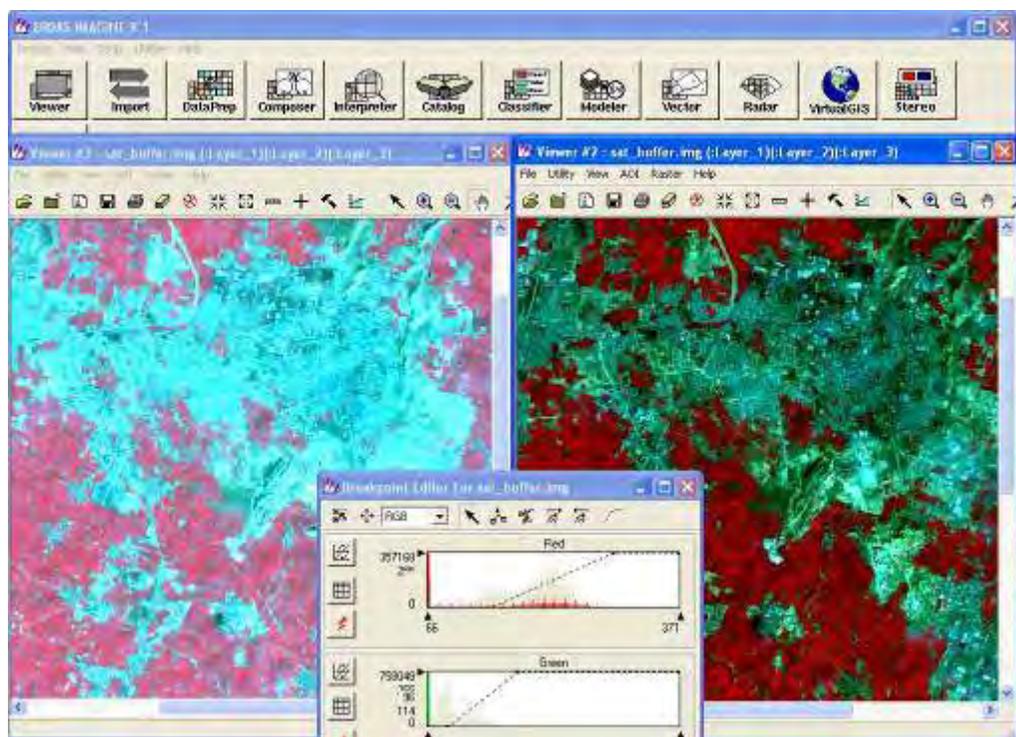


Figure 3.2: Difference between Original Image and Radiometrically Enhanced Images

##### ∞ BASE MAP LAYER CREATION

Base map has been prepared using google map as a reference map on 1:50000 scale. In base layer linear and point feature like road, rail, canal, village location and other secondary information have been created in vector data format with the help of ArcGIS Software.

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#### ∞ **DATA ANALYSIS AND CLASSIFICATION USING DIGITAL INTERPRETATION TECHNIQUE**

Image interpretation is the process of identifying objects or conditions in images and determining their meaning or significance. Satellite imagery are composed of array of grid, each grid have a numeric value that is known as digital number. Smallest unit of this grid is known as a pixel that captures reflectance of ground features represented in terms of Digital number, which represent a specific land features.

Using image classification technique, the satellite data is converted into thematic information map based on the user's knowledge about the ground area.

Hybrid technique has been used i.e. visual interpretation and digital image processing for identification of different land use and vegetation cover classes based on spectral signature of geographic feature. Spectral signature represents various land use classes. Image interpretation keys are developed for better Interpretation/Classification scheme which is Shape, Size, Color, Tone, Texture Pattern, Association etc. Based on the Interpretation key and Spectral signature Entire satellite imagery is classified in different classes like Water Bodies, Crop land, Fallow Land, Human Settlement, Industrial Area, Scrub Land, Plantation, Railway Line, Road Network, Forest Land, Stony Waste Land, Open Land etc.

#### ∞ **GROUND DATA COLLECTION AND VERIFICATION**

Ground truth/ field verification is an important component in mapping and its validation exercise. Utmost care and planning is required for collecting ground data and verification. To facilitate a good ground truthing exercise the following steps were followed:

- Identifying and listing all the doubtful areas for the ground verification and referring all such areas with respect to the toposheet to know their geographical location and accessibility on the ground.
- Field traverse plan was prepared to cover maximum doubtful areas in the field in such a way that each traverse covers, as many land use and land cover classes as possible, apart from the doubtful areas
- The sufficient number of points was covered for each Land Use Class as required for quality checking as well as accuracy assessment.

#### ∞ **ERROR FIXING / RECLASSIFICATION**

Reclassification of Land Use classes was done on the basis of data collected / verified during ground truthing.

#### ∞ **FINAL MAP GENERATION**

Final maps are generated for the core area as well as Buffer area. 3 Pixels is Filtered using Clump and Eliminate Process after ensuring to maintain crucial classes of importance. Base map layers is overlaid on the classified raster data and then thematic maps is generated on the layout consisting of Project name, legend, source of data, Index map, scale bar and North arrow.

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#### 3.4.4.3 Land Use / Land Cover Details & Map of Buffer Zone / Study Area

The land use & land cover details of the buffer zone are given in Table - 3.2.

Table - 3.2

##### Land Use / Land Cover Details of Study Area

S. No.	LU/LC Class	Area in hectare	% Area
1.	Ponds/ Reservoir	85.37	0.25
2.	River / Canal	75.70	0.22
3.	Plantation	812.25	2.37
4.	Fallow Land	16098.63	46.93
5.	Crop Land	15432.20	44.97
6.	Human Settlement	1727.57	5.04
7.	Industrial Area	74.73	0.22
<b>Total</b>		<b>34306.27</b>	<b>100</b>

Source: LU/LC Map for Study Area

The study area of 10 km radius mainly comprises of 46.93% of Fallow land, 44.97% of Crop land, 5.04% of area is covered by Human Settlement, 2.37% of area by Plantation and 0.22% under Industrial area. Thus other classes occupy only 0.47% of the total area.

Land Use / Land Cover Map & Details of Buffer Zone

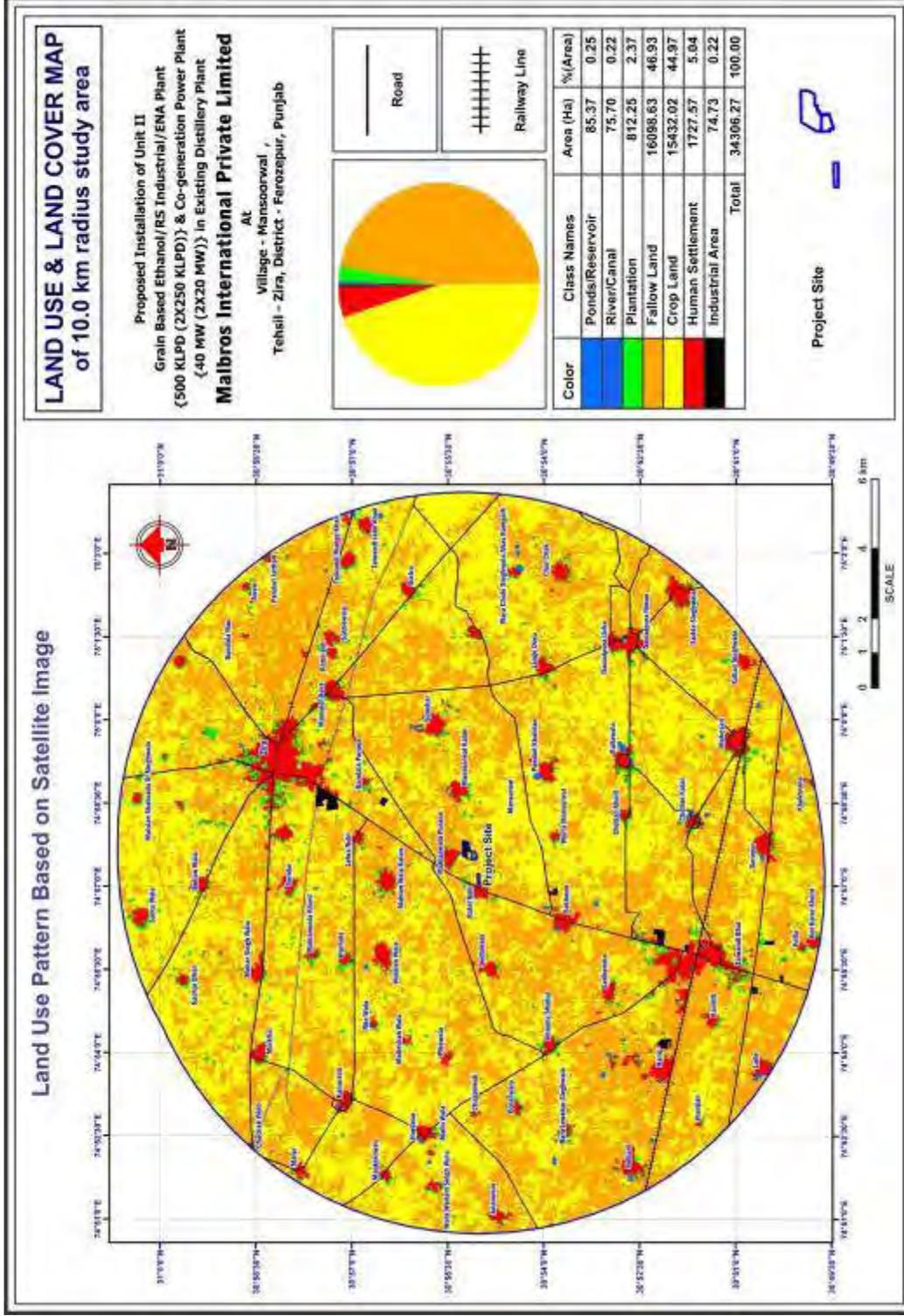


Figure 3-3: Land Use / Land Cover Map of the Buffer Zone

Source: Satellite Imagery

Proposed Installation of Unit II - Grain Based Ethanol / ENA / RS / Industrial Alcohol Plant {500 KLPD (2x250 KLPD)} & Co-generation Power Plant {40MW (2x20 MW)} in Existing Distillery Plant  
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#### 3.4.5 Observation of the LULC Data

- ☞ The study area of 10 km radius mainly comprises of 46.93% of Fallow land, 44.97% of Crop land, 5.04% of area is covered by Human Settlement, 2.37% of area by Plantation and 0.22% under Industrial area. Thus other classes occupy only 0.47% of the total area.
- ☞ Buffer area seems flat.
- ☞ Mansoorwal Kalan, Mahianwala Purana, Ratol Rohi and Sodhiwala are the nearest villages from the plant site.
- ☞ There are no Ecological Sensitive Areas (National Park, Wildlife Sanctuary, Biosphere Reserve etc.) within 10 km radius of the study area.

#### 3.4.6 Identification of Impacts on Land Use Pattern Due to Project Activity

- ☞ *Impact on Core Zone:*
  - ✓ Total plant area is 14.8 ha and proposed installation will be done within the existing plant site hence there will be no change in the land use as the existing land use is Industrial only.
  - ✓ In addition, some infrastructure activities will also be dwelt wherever required.
- ☞ *Impact on Buffer Zone:*
  - ✓ Particulate matter definitely has some environmental hazards for the flora and fauna of the vicinity of the project site. It is predicted that there will be increase in the vehicular movement due to the proposed installation activity which may cause incremental dust deposition on the near by area.
  - ✓ Main impact on the agriculture land will be on surrounding villages such as Mansoorwal Kalan, Mahianwala Purana, Ratol Rohi and Sodhiwala.

#### 3.4.7 Recommendations

- ☞ Air pollution control equipments will be installed to maintain the pollution level within limits.
- ☞ New infrastructure will be developed without affecting the crop lands (public awareness and consultation to local villagers).
- ☞ Already developed thick Greenbelt / Plantation in the total plant area i.e. Unit I & same will be maintained & made denser in the plant area and along the roads to reduce the dust emission impact on surrounding crop lands.
- ☞ The following practices shall be carried out to increase the productivity of the study area:
  - ✓ Awareness for new methodologies of the agricultural practices viz. mixed farming, crop rotation and agricultural cropping pattern suitable for the lease area.
  - ✓ Providing seeds, manure and fertilizers from different sources.
  - ✓ Rainwater harvesting practices shall be encouraged which will lead to ground water recharge and ultimately increased productivity in the study area.

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### 3.4.8 Conclusion

Remote Sensing data provides real time information pertaining to aspects of Land use & Land cover. Precise quantitative information could be extracted about existing land use & land cover in context to spatial dimension. Integration of various data layers gives proper understanding of the problems.

## 3.5 SEISMICITY AND FLOOD HAZARD ZONATION OF THE AREA

### 3.5.1 Seismicity of the Area

Many parts of the Indian subcontinent have historically high seismicity. Seven catastrophic earthquakes of magnitude greater than 8 (Richter scale) have occurred in the western, northern and eastern parts of India and adjacent countries in the past 100 years.

Approx. 59 % of the land area of India is liable to seismic hazard damage. In India, seismic zones are divided into four zones i.e. V, IV, III and II. Details of the seismic zone are given in Table - 3.3.

**Table - 3.3**  
**Seismic Zones in India**

S. No.	Seismic Zone	Risk	Intensity on MMI scale
1.	Zone – V	Very High Risk Zone	IX & above
2.	Zone – IV	High Risk Zone	VIII
3.	Zone – III	Moderate Risk Zone	VII
4.	Zone – II	Low Risk Zone	VI & below

**Source:** IMD & NIDM

The state of Punjab falls in a region of High to Moderate Damage Risk zone. Punjab state is situated at Seismic Zone III & IV. The plant site as well as study area lies in **Zone – III** of Seismic Zoning Map of India, updated by India Metrological Department (IMD) and National Institute of Disaster Management (NIDM), and thus can be said to be located in an area at Moderate Damage Risk of seismic hazard by national standards.

Seismic Zoning Map of India showing the plant site (Ferozepur, Punjab) is given in Figure below.

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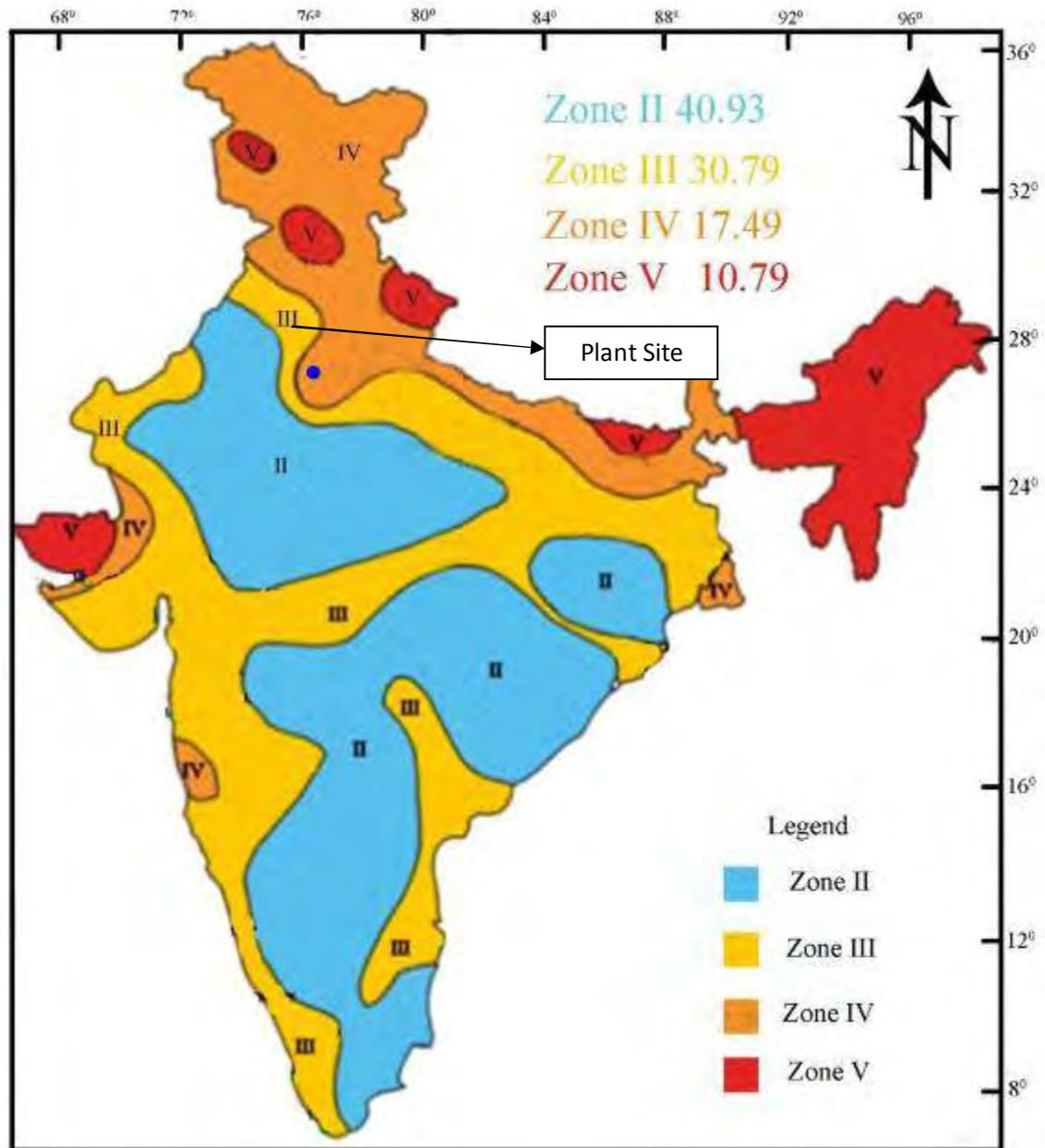


Fig. 3-4: Seismic Zone map

### 3.5.2 Flood Hazard Zonation of the Area

As per the “Vulnerability Atlas - 2<sup>nd</sup> Addition; Peer Group, MoH and UPA; based on digitized data of SOI, GOI; Flood Atlas, Task Force Report, C.W.C., GOI” the plant site does not fall under “area liable to flood”. Flood Hazard Zonation Map showing the plant site is given in Figure below:-

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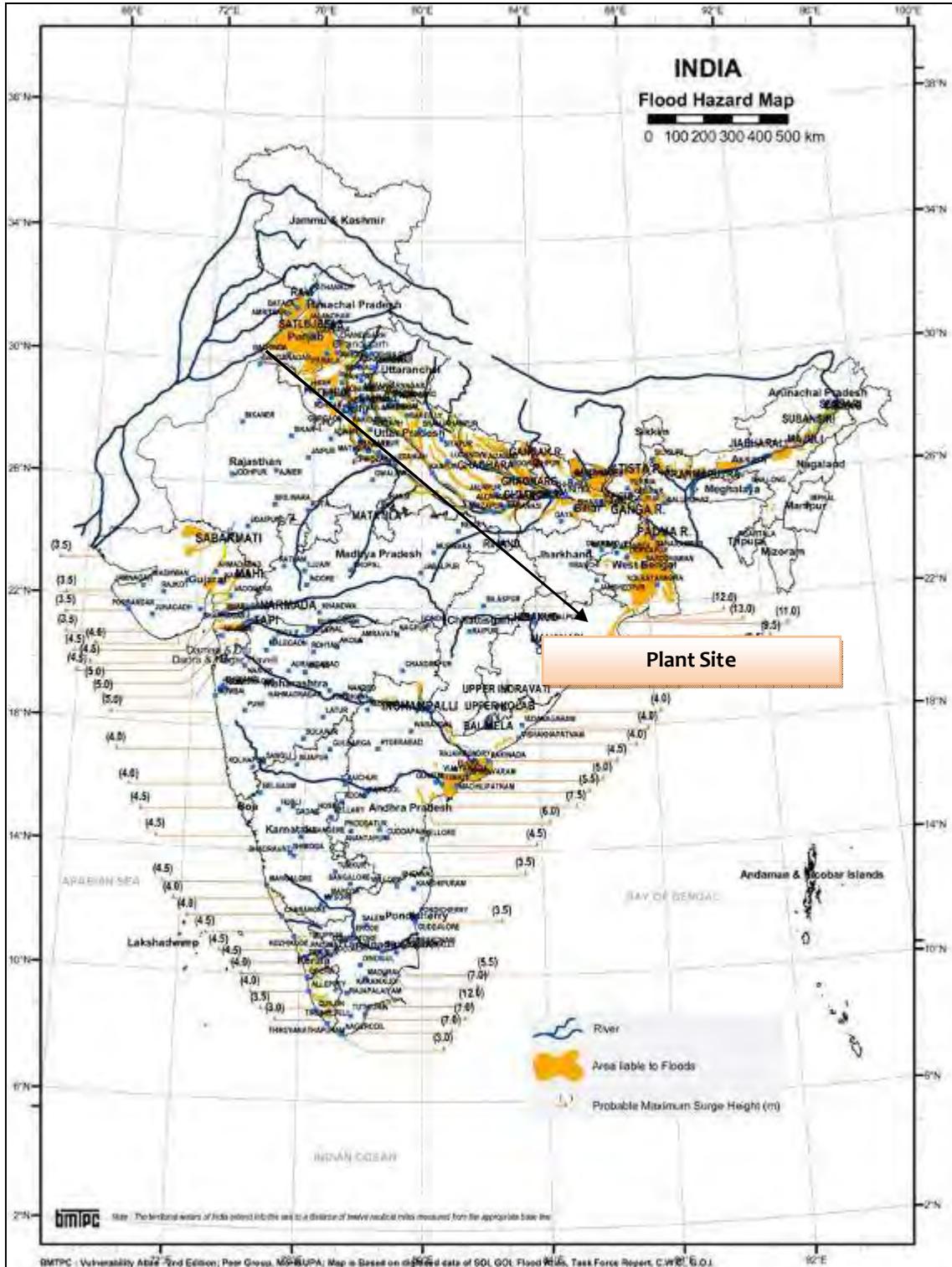


Figure 3.5: Flood Hazard Zonation Map of the Area

No River lies within the 10 km radius of the project area.

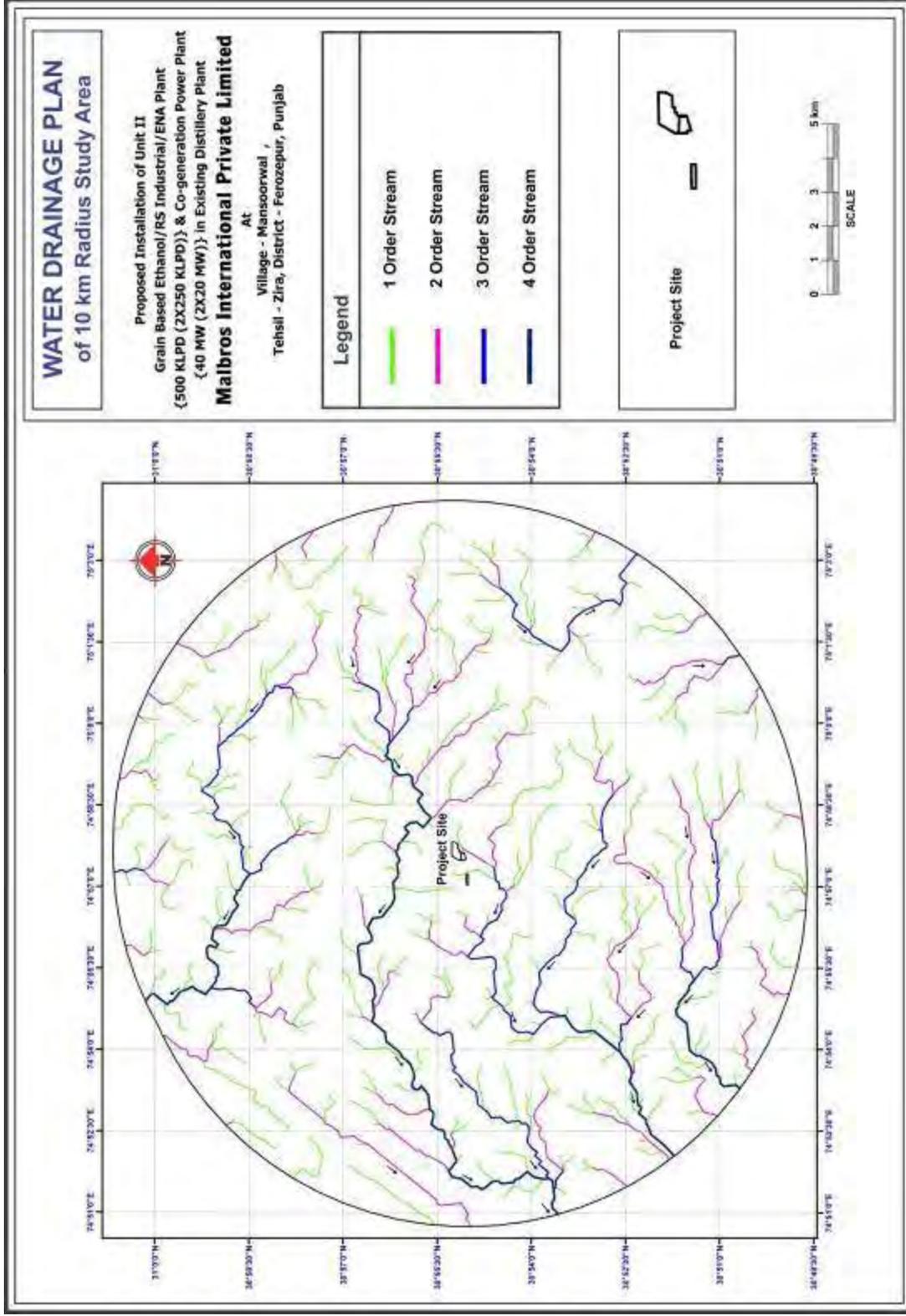


Figure 3-6: Drainage Map of the Area

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### 3.6 GEOLOGICAL & GEO-HYDROLOGICAL FEATURES

Study area, falling in district Ferozpur constitutes part of the Punjab plain, which is largely flat and featureless terrain and is formed of Pleistocene and Sub-recent alluvial deposits of the Indo-Gangetic system. The geological formations prevailing in and around study area comprised of unconsolidated alluvial deposits of Quaternary age. These alluvial deposits comprise of sand, silt, clay and often associated with kankar. Fine to medium grained sand horizon forms potential aquifer in the area.

The general ground elevation of the study area ranges from 205 meters in the west/southwest direction to about 212 meters in the north/north-east with elevation of 210 m at plant site, giving a north-east to south-west gradient of one meter in 4 km. Physiography of the study area is apparently a homogeneous plain, in general.

The area has both unconfined/ semi unconfined and confined/ leaky confined aquifers. The alluvium forms the principal groundwater reservoir and the principal aquifer material comprises fine to medium sand and sand often mixed with kankar. This aquifer is either in the form of isolated lenses of sand embedded in clay beds or well connected granular zones that have a pinching and swelling disposition.

The occurrence of clay beds is rather irregular and on a regional scale their extensions are limited. Thus, locally the presence of such beds can give rise to leaky confined or confined conditions. The thickness of the alluvium varies from 200 to 300 m in tube wells drilled up to the depth of 454 m. The thickness of alluvial formation increases towards north.

The major source of recharge to groundwater in the area is inflow of groundwater from north eastern and northern parts, rainfall, seepage from canals, return seepage through irrigation and percolation from surface water bodies. The water level in the area is ranging from 1.6 to 11.07 m bgl in pre-monsoon and 0.75 to 10.57 m bgl after post monsoon at different places in buffer zone. However, water level in study area is ranging around 7.52 m bgl in pre-monsoon and 6.28 m bgl after post monsoon. The groundwater in unconfined condition is abstracted through hand pumps (up to 30 m) and through shallow and medium depth tube wells up to the depth of 175 meters depth. Aquifer up to the depth of 175 m is leaky aquifer. Water from aquifer below the depth of 200 m is saline to highly saline and these aquifers are confined aquifer.

### 3.7 CLIMATE AND RAINFALL

The climate of the district can be classified as tropical desert, arid and hot. The area receives about 389 mm annual normal rainfalls which is unevenly distributed over the area in 23 days, out of which about 79% occurs during south west monsoon. Rain fall in the district decreases from north east to south west.

- Normal Annual Rainfall : 389 mm
- Rainy Days : 23 Days

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Avg. annual rainfall data of District Ferozepur for last 5 years is given in Table below:-

**Table - 3.4**  
**Rainfall Data (in mm) of District Ferozepur**

Year	Avg. Annual Rainfall
2010	164.2
2011	281.5
2012	65.5
2013	333.7
2014	204.7

Source: IMD Data

### 3.8 METEOROLOGY

Meteorology plays a vital role in determining the transport and diffusion pattern of air pollutants released into atmosphere. The principal variables include horizontal convective transport (average wind speed and direction), vertical convective transport (atmospheric stability) and topography of the area.

Meteorological characteristics of an area are very much important in assessing possible environmental impacts and in preparing environmental management plan.

Since meteorological factors show wide fluctuations with time, meaningful interpretation can be drawn only from long-term reliable data. Such source of data is India Meteorological Department (IMD), which maintains a network of meteorological stations at several important locations. The nearest IMD station from the Plant Site is located in Amritsar. The Meteorological data i.e. temperature, relative humidity, rainfall, wind speed, and wind direction, recorded at two synoptic hours i.e. 08:30 and 17:30 during Post Monsoon Season (October to December, 2015) was obtained from this station to study meteorology of the study area.

#### 3.8.1 Micro-Meteorology at Site

Meteorological station was set-up at site, to record surface meteorological data; during Post Monsoon Season (October to December, 2015). Wind speed and wind direction data recorded during the study period has enabled identifying the influence of meteorology on the air quality of the area. Based on the collected meteorological data, relative percentage frequencies of different wind directions were calculated and plotted as wind roses for twenty four hour duration. Maximum and minimum temperatures including percentage relative humidity were also recorded simultaneously.

It was observed that the predominant over all wind patterns for the study period was from North-West. Wind Rose Diagram showing the wind pattern during the study period is shown in Figure: 3.7.

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Summary of the micro-meteorology at site is given in Table no 3.5. Detailed Hourly Meteorological Data has been enclosed as **Annexure – 4** with this Final EIA / EMP Report.

The wind recorded during the survey period at the site is more or less according to the trend indicated in IMD data.

**Table - 3.5**

**Micro-Meteorology at Site**

**Study Period: Post Monsoon Season (October to December, 2015)**

Month	Temperature (°C)		Relative Humidity (%)		Wind Speed (m/sec.)	Predominant Wind Direction (From)
	Max.	Min	Max.	Min		
October, 2015	37.8	14.0	90	20	0 – 7.7	NW
November, 2015	32.8	10.4	95	22	0 – 7.2	NW
December, 2015	26.7	3.4	100	28	0 – 5.1	NW

*Source: Meteorological Station at Site*

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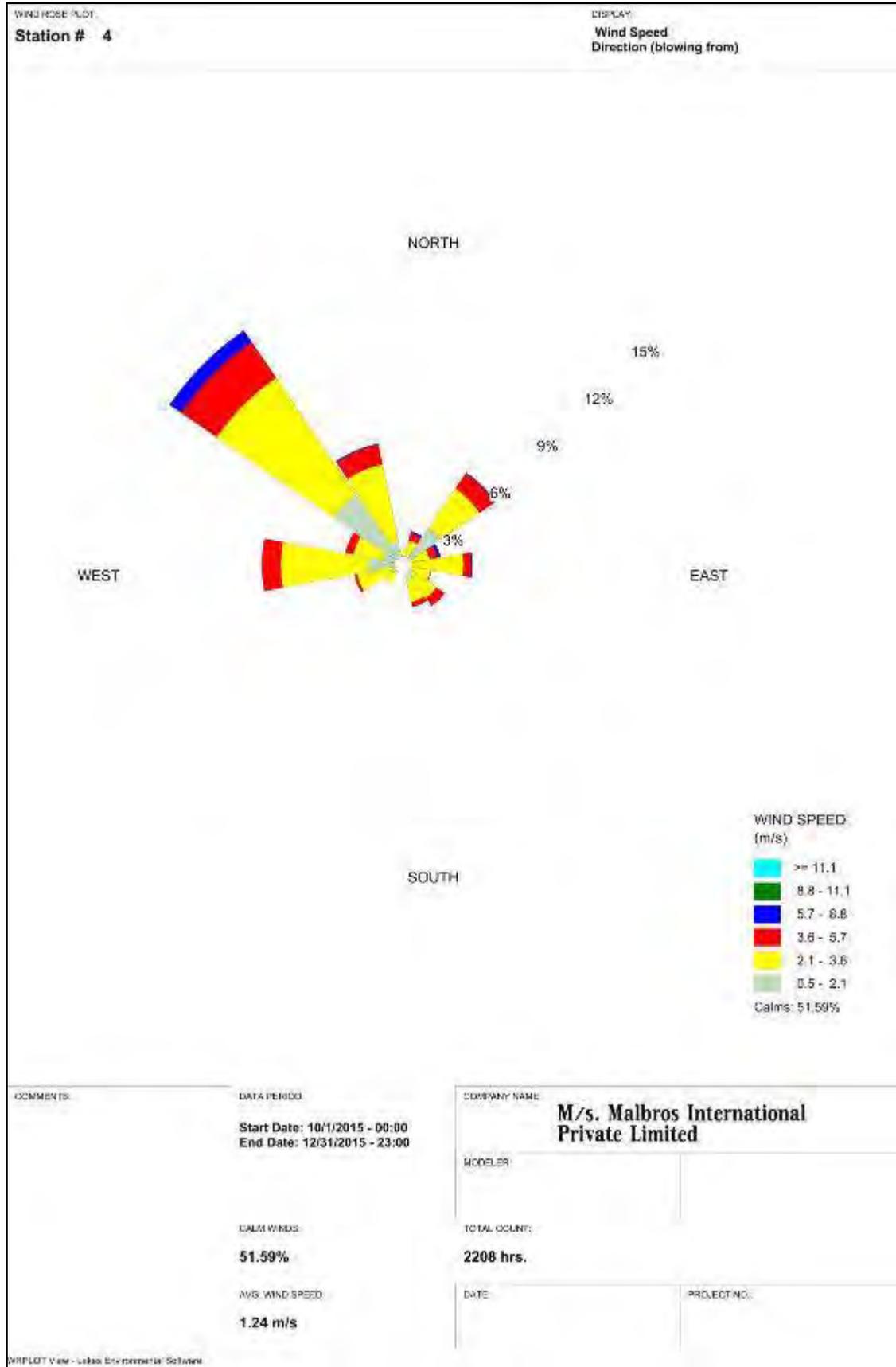


Figure 3.7 - Windrose Diagram at Site during Study Period

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### 3.9 AMBIENT AIR ENVIRONMENT

Ambient air quality monitoring is done to determine the general background concentration levels. Samples were collected in the 10 km study area to observe pollution trends throughout the region. It helps in providing a data base for evaluation of effects of a plant activity in that region. It will be also useful in ascertaining the quality of air environment in conformity to standards of the ambient air quality during operation phase of plant.

#### **Methodology**

The air quality monitoring and survey was done during Post Monsoon Season (October to December, 2015) within 10 km radius study area as per the Terms of Reference (ToR) issued by MoEF&CC, New Delhi vide their letter no J-11011/228/2015 - I All (I) dated 28<sup>th</sup> Dec., 2015. The samples were collected for the following air quality determinants:

- ☞ Sulphur Dioxide (SO<sub>2</sub>)
- ☞ Oxides of Nitrogen (NO<sub>x</sub>)
- ☞ Particulate Matter (PM<sub>10</sub> and PM<sub>2.5</sub>)
- ☞ Carbon Monoxide (CO)
- ☞ Hydrocarbon

The sources of air pollution in the region are dust rising from unpaved roads, domestic fuel burning, vehicular traffic, agricultural activities, emission from other industries, etc.

#### **Sampling Schedule**

The sampling was done continuously for 24 hours for the above mentioned parameters with a frequency of twice a week for three months (24 observations for one location). The details of measurement methodology and test procedure are given in Chapter - VI (Environmental Monitoring Programme) of this report.

#### **Sampling Locations**

Sampling locations were selected for AAQ Monitoring keeping in view the pre-dominant wind direction prevailing in the area during the study period.

It can be observed from the wind rose diagram (Figure - 3.6) that the predominant wind direction during the study period was from North-West. Villages / locations have been selected in the downwind direction as well as in the upwind direction for AAQ monitoring from the plant site.

Monitoring stations selected for Ambient Air Quality Monitoring during the study period are given in Table - 3.6 & shown in Figure - 3.8.

#### 3.9.1 Methodology Adopted

Ambient air quality monitoring was conducted by deploying Respirable dust samplers and Fine particulate samplers with required accessories for collection of particulate as well as gaseous pollutants. Sampling and analysis was done as per the recommended methods in line with NAAQS.

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PM<sub>10</sub> and PM<sub>2.5</sub> were collected at a suitable sampling rate on pre-weighed filter paper and estimated gravimetrically while gaseous pollutants were absorbed in suitable absorbing solutions and analyzed colorimetrically with the help of a spectrophotometer (capable to give absorbance at required wave length). Respirable Suspended particulate matter and gaseous samples were collected on 24 hours basis, at a frequency of twice a week and compared with National Ambient Air Quality standards.

### 3.9.2 Ambient Air Monitoring

To know the ambient air quality in the study area of 10 km. radius, air quality survey has been conducted at 8 locations during Post Monsoon Season (October to December, 2015). The AAQ monitoring stations were set up at the following locations which are shown in key plan (Fig. No. 3.8) & their direction & distance are shown in Table no 3.6. The details of ambient air quality for all the villages for the study period are enclosed as **Annexure - 5**.

Table - 3.6

Locations of Ambient Air Quality Monitoring Stations

Stations	Sampling Locations	Direction from site	Aerial distance from Plant Site (km)	Criteria for selection of Sampling locations
S1	Plant Site	--	--	▪ Core Zone
S2	Village Mahianwala Kalan	NW	~2.0 Km	▪ Falls in Upwind of first dominant wind direction
S3	Sampling Location in 500 m in SE	SE	~0.5 Km	▪ Falls in Downwind of first dominant wind direction
S4	Village Chotian Kalan	SE	~6.0 Km	▪ Falls in Downwind of first dominant wind direction ▪ Near Railway Line
S5	Village Sodhiwala	West	~3.0 Km	▪ Falls near to in Upwind of second dominant wind direction
S6	Village Mansoorwal	East	~ 1.5 Km	▪ Falls in Downwind of second dominant wind direction ▪ Nearest Village
S7	Near Ratol Rohi	WSW	~ 1.0 Km	▪ Nearest Village ▪ Near National Highway
S8	Zira	NNE	~ 5.0 Km	▪ Nearest Town

Source: Toposheet & Site Visit

### Ambient Air Quality Monitoring

The table number 3.7 show the max. & min. concentration of the air pollutants monitored at different locations during the study period. All 24 observations of pollutants for each location are detailed in Ambient Air Quality Monitoring Tables enclosed as **Annexure -5** along with this report.

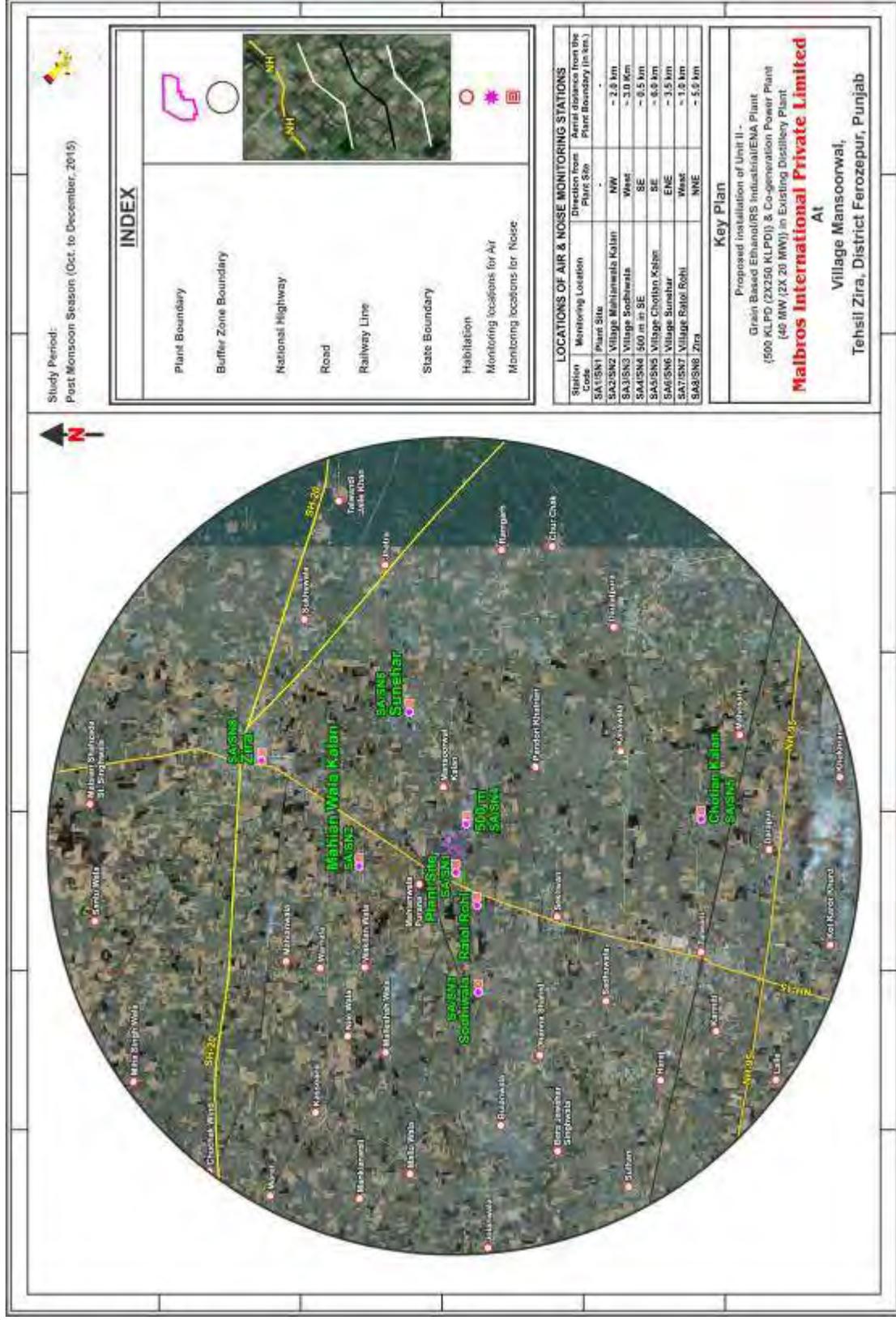


Figure 3-8: Key plan showing Ambient Air Quality & Noise Monitoring Stations

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Table - 3.7

### Ambient Air Quality Monitoring

Study Period – Post Monsoon Season (October to December, 2015)

S. No.	Sampling Locations	PM <sub>10</sub>		PM <sub>2.5</sub>		SO <sub>2</sub>		NO <sub>2</sub>		CO (mg/m <sup>3</sup> )		Hydrocarbon (mg/m <sup>3</sup> )
		Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	
S1	Plant Site	88.5	76.2	42.3	35.1	10.8	6.8	23.1	16.2	0.67	0.53	BDL
S2	Village Mahianwala Kalan	73.2	66.3	35.2	27.3	8.5	6.2	19.2	15.3	BDL	BDL	BDL
S3	500 m in SE	85.2	74.2	40.1	34.2	10.3	6.5	22.8	16.0	0.62	0.50	BDL
S4	Village Chotian Kalan	81.3	68.5	38.5	33.2	9.5	6.0	20.4	15.8	BDL	BDL	BDL
S5	Village Sodhiwala	70.5	65.0	33.4	26.5	8.2	5.8	18.4	14.7	BDL	BDL	BDL
S6	Village Mansoorwal	82.5	69.9	39.8	34.0	9.8	6.2	21.2	16.0	BDL	BDL	BDL
S7	Near Ratol Rohi	87.2	75.1	41.5	35.0	10.5	7.1	23.8	17.0	BDL	BDL	BDL
S8	Zira	78.2	69.2	37.8	33.6	9.2	6.8	19.8	15.8	BDL	BDL	BDL
	<b>NAAQS*</b>	100		60		80		80		4		-

Source: Ambient Air Quality Monitoring

\*NAAQS - National Ambient Air Quality Standards; Schedule-VII, [Rule 3 (3B)], [Part-II-sec-3(i)] 16<sup>th</sup> Nov., 2009.

#### BDL – Below Detection Limit

Graphs showing Concentrations (Max. and Min.) of PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub>, NO<sub>2</sub>, CO & Hydrocarbon at different monitoring stations are given in Figure - 3.9 (A to D), respectively.

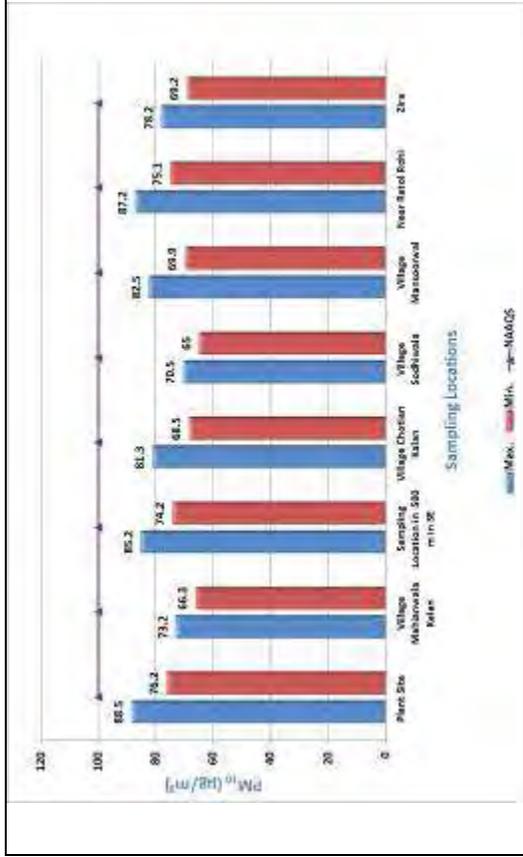


Fig. 3.9 (A): Graphs showing PM<sub>10</sub> conc.



Fig. 3.9 (B): Graphs showing PM<sub>2.5</sub> conc.

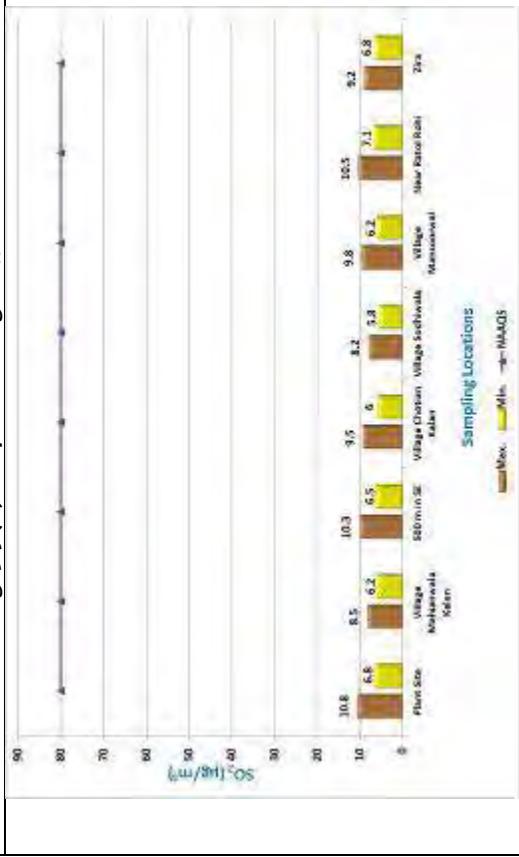


Fig. 3.9 (C): Graphs showing SO<sub>2</sub> conc.

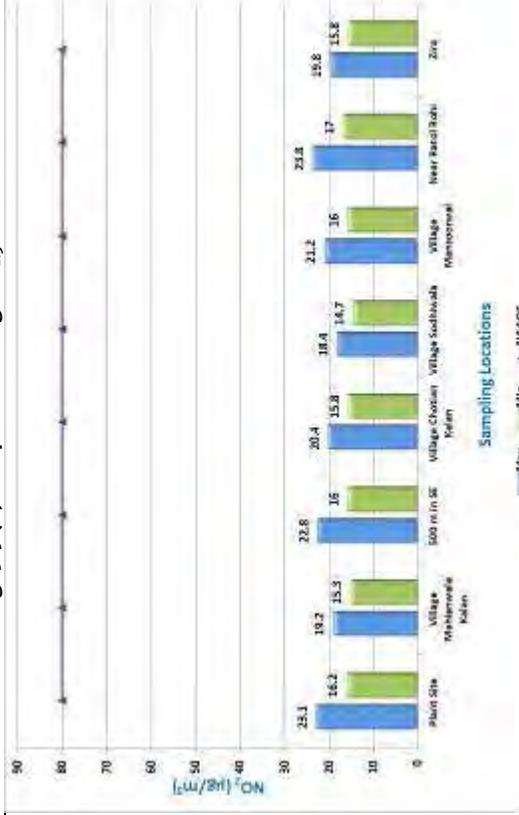


Fig. 3.9 (D): Graphs showing NO<sub>2</sub> conc.

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### National Ambient Air Quality Standards

Table below shows the NAAQS prescribed by CPCB.

Table - 3.8  
National Ambient Air Quality Standards

S. No.	Pollutant	Time Weighted Average	Concentration in Ambient Air		Method of Measurement
			Industrial Area, Residential Rural & Other Areas	Ecologically Sensitive Area (Notified by Central Govt.)	
(1)	(2)	(3)	(4)	(5)	(6)
1	Sulphur Dioxide (SO <sub>2</sub> ), µg/m <sup>3</sup>	Annual Average * 24 hours **	50 80	20 80	1. Improved West and Geake Method. 2. Ultraviolet fluorescence
2	Oxides of Nitrogen as NO <sub>2</sub> , µg/m <sup>3</sup>	Annual Average * 24 hours **	40 80	30 80	1. Modified Jacob & Hochheiser (Narsenite) Method 2. Chemiluminescence (Gas phase)
3	Particulate Matter (size less than 10µm) or PM <sub>10</sub> , µg/m <sup>3</sup>	Annual Average * 24 Hours **	60 100	60 100	1. Gravimetric, 2. TOEM, 3. Beta attenuation.
4	Particulate Matter (size less than 2.5µm) or PM <sub>2.5</sub> , µg/m <sup>3</sup>	Annual Average * 24 Hours **	40 60	40 60	1. Gravimetric, 2. TOEM, 3. Beta attenuation.
5	Ozone (O <sub>3</sub> ), µg/m <sup>3</sup>	8 Hours ** 1 Hours *	100 180	100 180	1. UV Photometric, 2. Chemiluminescence, 3. Chemical Method.
6	Lead (Pb), µg/m <sup>3</sup>	Annual Average * 24 Hours **	0.50 1.0	0.50 1.0	1. AAS/ICP Method after sampling on EPM 2000 or equivalent filter paper. 2. ED-XRF using Teflon filter
7	Carbon Monoxide (CO), mg/m <sup>3</sup>	8 Hours** 1 Hours	02 04	02 04	Non Depressive Infrared (NDIR) Spectroscopy
8	Ammonia (NH <sub>3</sub> ), µg/m <sup>3</sup>	Annual Average* 24 hours **	100 400	100 400	1. Chemiluminescence (Gas phase) 2. Indophenol blue method

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S. No.	Pollutant	Time Weighted Average	Concentration in Ambient Air		Method of Measurement
			Industrial Area, Residential Rural & Other Areas	Ecologically Sensitive Area (Notified by Central Govt.)	
(1)	(2)	(3)	(4)	(5)	(6)
9	Benzene (C <sub>6</sub> H <sub>6</sub> ), µg/m <sup>3</sup>	Annual Average*	05	05	1. Gas Chromatography based continuous analyzer, 2. Adsorption and Desorption followed by GC analysis.
10	Benzo(a) Pyrene (BaP) – Particulate Phase only, ng/m <sup>3</sup>	Annual Average*	01	01	Solvent extraction followed by HPLC/GC analysis
11	Arsenic (As), ng/m <sup>3</sup>	Annual Average*	05	06	AAS/ICP Method after sampling on EPM 2000 or equivalent filter paper.
12	Nickel (Ni), ng/m <sup>3</sup>	Annual Average*	20	20	AAS/ICP Method after sampling on EPM 2000 or equivalent filter paper.

- Annual arithmetic mean of minimum 104 measurements in a year at a particular site taken twice a week 24 hourly at uniform intervals.
- 24 hourly or 08 hourly or 01 hourly monitored values, as applicable, shall be complied with 98% of the time in a year. 2% of the time, they may exceed the limits but not on two consecutive days of monitoring.

**Note:** Whenever and wherever monitoring results on two consecutive days of monitoring exceed the limits specified above for the respective category, it shall be considered adequate reason to institute regular or continuous monitoring and investigation.

<p><b>Proposed Installation of Unit II - Grain Based Ethanol / ENA / RS / Industrial Alcohol Plant {500 KLPD (2x250 KLPD)} &amp; Co-generation Power Plant {40MW (2x20 MW)} in Existing Distillery Plant</b>          At Village-Mansoorwal, Tehsil- Zira, District-Ferozepur (Punjab)</p>
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### 3.9.3 Result & Summary

Ambient Air Quality Monitoring reveals that the concentrations of PM<sub>10</sub> and PM<sub>2.5</sub> for all the 8 AAQM stations were found between 65 to 88.5 µg/m<sup>3</sup> and 26.5 to 42.3 µg/m<sup>3</sup> respectively.

The concentrations of SO<sub>2</sub> and NO<sub>2</sub> were found to be in range of 5.8 to 10.8 µg/m<sup>3</sup> and 14.7 to 23.8 µg/m<sup>3</sup> respectively, CO in the range of 0.50 to 0.67 mg/m<sup>3</sup>. Hydrocarbon was found below detection limit.

Since the values are within the permissible limit because of the use of pollution control measures; the impact on the surrounding environment will be minimal. In addition, these results further reveal that the air pollutants being generated from existing unit has very minimal effect on the environment and the same will be maintained after completion of installation of proposed unit. It will be solmonised that pollution control measures will be carried and the monitoring results for the distillery will be submitted to the regulatory authorities as per mandate.

As per the analytical reports of the Plant Site and the surrounding areas the ambient air quality is well below the NAAQS limits, further to maintain the ambient air quality of the area, the latest / modern APCM will be adopted, which will be described in detail in chapter X of the report.

### 3.10 NOISE ENVIRONMENT

Noise often defined as unwanted sound, interferes with speech communication, causes annoyance, distracts from work, and disturbs sleep, thus deteriorating quality of human environment.

#### **Source of Noise**

There are several sources of noise in the 10 km radius of study area, which contribute to the local noise level of the area. Ambient noise sources in the vicinity of the Plant Site include the noise from traffic on road, human activities in villages and agricultural fields.

#### **Ambient Noise Level**

In order to know the baseline noise levels, in and around the plant site, noise levels were measured at site and villages in the study area.

#### **Sampling Schedule**

The sampling was done during day time & night time once in the study period.

#### **Sampling Locations**

Locations / stations selected for noise level monitoring are given in below Table.

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**Table - 3.9**  
**Locations of Noise Monitoring Stations**

S. No.	Sampling Location	Aerial distance & Direction from Plant Site (approx km.)
S1	Plant Site	--
S2	Village Mahianwala Kalan	~2.0 Km in NW direction
S3	500 m in SE	~0.5 Km in SE direction
S4	Village Chotian Kalan	~6.0 Km in SE direction
S5	Village Sodhiwala	~3.0 Km in West direction
S6	Village Mansoorwal	~ 1.5 Km in East direction
S7	Near Ratol Rohi	~ 1.0 Km in West direction
S8	Zira	~ 5.0 Km in NNE direction

**Source:** Toposheet & Site Visit

There are several sources in the 10 km radius of study area, which contributes to the local noise level of the area. Noise monitoring data along with relevant standards are given in Tables 3.10 and 3.11, respectively.

**Table - 3.10**  
**Ambient Noise Level Monitoring Results**  
**Study Period: Post Monsoon Season (October to December, 2015)**

S.No	Locations	Noise Level Leq. dB (A)	
		Day Time (6:00 am to 10:00 pm) Leq. dB (A)	Night Time (10:00 pm to 6:00 am) Leq. dB (A)
S1	Plant Site	58.7	51.6
S2	Village Mahianwala Kalan	54.9	44.4
S3	500 m in SE	56.6	47.9
S4	Village Chotian Kalan	54.8	44.7
S5	Village Sodhiwala	52.4	43.6
S6	Village Mansoorwal	52.1	43.2
S7	Near Ratol Rohi	54.9	44.5
S8	Zira	54.7	44.8

**Source:** Noise Monitoring

**Table - 3.11**  
**CPCB NOISE STANDARDS**

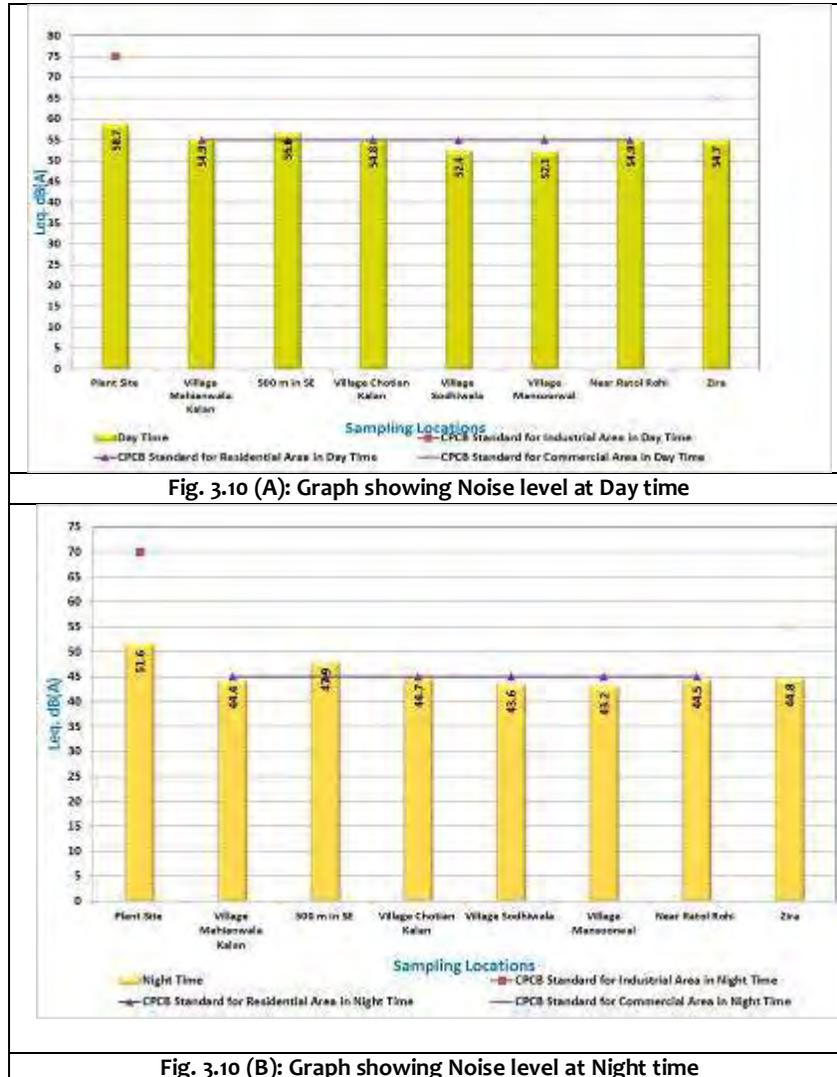
Category of Zones	Leq in dB(A)	
	Day	Night
Industrial	75	70
Commercial	65	55
Residential	55	45
Silence Zone	50	40

1. Day Time is from 6:00 AM to 10:00 PM  
2. Night Time is reckoned between 10:00 PM to 6:00 AM  
3. Silence Zone is defined as an area up to 100m around premises of Hospitals, Educational Institutions and Courts. Use of vehicle horn, loudspeaker and bursting of crackers is banned in these zones.  
Note: Mixed categories of areas be declared as one of the four above mentioned categories by the competent Authority and the corresponding standards shall apply

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### Results and Summary

During the baseline study it was seen that in day time noise level varies from 52.1 to 58.7 Leq. dB (A) in day time and in night time 43.2 to 51.6 Leq. dB (A). The noise levels are well within the prescribed limits and there will be minimal impact of the proposed installation project on the site after adopting the noise control measures.

### 3.11 WATER ENVIRONMENT

#### 3.11.1 Ground Water

The Quality of ground water was studied by collecting eight water samples from representative hand pumps, tube wells. Sampling points were decided using google image, Sol toposheet & field survey.

Standard procedures were followed for the sampling and analysis of physico-chemical parameters of water. Table 3.12 shows the details of location of water sampling stations and results of different parameters are given in Table 3.13.

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Table – 3.12

## Location of Ground Water Sampling Stations

Stations	Sampling Locations	Direction from site	Aerial distance from Plant Site (approx km.)
S1	Plant Site	-	-
S2	Village Mansoorwala Kalan	East	~1.5 Km
S3	Village Pandori khatrian	SE	~ 3.0 Km
S4	Village Nil Wala	WNW	~ 5.0 Km
S5	Village Ratol Rohi	West	~ 1.0 Km
S6	Village Dhanna Shahid	SW	~ 5.5 Km
S7	Village Buianwala	WSW	~ 7.0 Km
S8	Zira	NNE	~ 5.0 Km

Source: Toposheet & Site Visit

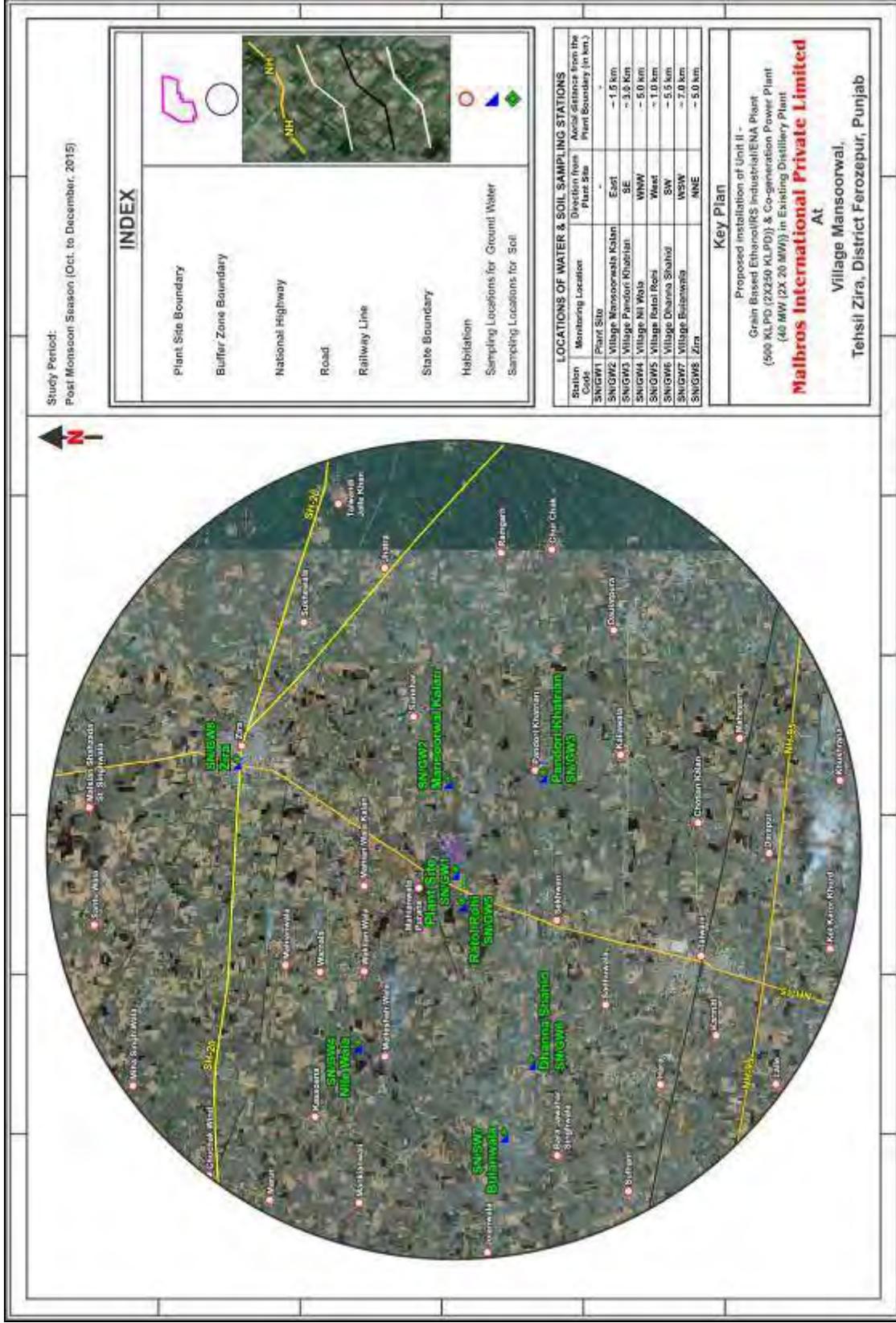


Figure 3-11: Key plan showing Ground Water and Soil Sampling Stations

Table - 3.13  
Ground Water Quality Analysis  
Study Period: Post Monsoon Season (October to December, 2015)

S. No	Parameters	Unit	Plant Site	Village Mansoorwala Kalan	Village Pandori khatrian	Village Nil Wala	Village Ratol Rohi	Village Dhanna Shahid	Village Buianwala	Zira	Specification as per IS 10500-2012		Remarks
											Desirable limits	Permissible limit (Max.)	
1	pH (at 25°C)	-	7.25	7.13	7.20	7.12	7.49	7.15	7.15	7.22	6.5 to 8.5	No Relaxation	
2	Colour	Hazen Unit	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	5	15	DL 5.0 Hazen
3	Turbidity	NTU	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	1	5	DL 1.0 NTU
4	Odour	-	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	
5	Taste	-	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	
6	Total Hardness as CaCO <sub>3</sub>	mg/l	185.20	241.28	145.20	332.80	191.36	245.44	270.40	186.20	200	600	
7	Calcium as Ca	mg/l	35.20	86.70	35.20	35.01	44.31	42.30	50.02	52.30	75	200	
8	Alkalinity as CaCO <sub>3</sub>	mg/l	233.16	518.40	415.20	392.96	464.40	345.20	313.60	245.20	200	600	
9	Chloride as Cl	mg/l	49.28	141.81	116.56	280.4	56.91	123.42	186.50	157.36	250	1000	
10	Cyanide as CN	mg/l	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.05	No Relaxation	DL 0.02 mg/l
11	Magnesium as Mg	mg/l	23.66	6.49	13.94	20.97	19.63	34.00	35.18	13.53	30	100	
12	Total Dissolved Solids	mg/l	352.0	684.0	548.0	778.0	468.0	525.0	678.0	525.0	500	2000	
13	Sulphate as SO <sub>4</sub>	mg/l	14.65	34.45	33.86	23.66	33.82	13.01	43.20	18.62	200	400	
14	Fluoride as F	mg/l	0.31	0.34	0.48	0.66	0.32	0.35	0.37	0.34	1.0	1.5	
15	Nitrate as NO <sub>3</sub>	mg/l	1.17	1.12	2.09	1.20	1.16	1.17	1.20	1.42	45	No Relaxation	
16	Iron as Fe	mg/l	0.15	0.15	0.28	0.18	0.28	0.10	0.18	0.15	0.3	No Relaxation	
17	Aluminium as Al	mg/l	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.03	0.2	DL 0.03 mg/l

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S. No	Parameters	Unit	Plant Site	Village Mansoorwala Kalan	Village Pandori Khatrian	Village Nil Wala	Village Rato Rohi	Village Dhanna Shahid	Village Buianwala	Zira	Specification as per IS 10500-2012		Remarks
											Desirable limits	Permissible limit (Max.)	
18	Boron as B	mg/l	0.22	0.29	0.32	0.29	0.32	0.28	0.29	0.24	0.50	1.0	
19	Phenolic Compounds	mg/l	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.001	0.002	DL 0.001 mg/l
20	Anionic Detergents as MBAS	mg/l	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.2	1.0	DL 0.002 mg/l
21	Hexa Chromium as Cr+6	mg/l	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	-	-	DL 0.03 mg/l
22	Zinc as Zn	mg/l	0.16	0.24	0.21	0.24	0.15	0.16	0.14	0.12	5	15	
23	Chromium as Cr	mg/l	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.05	No Relaxation	DL 0.002 mg/l
24	Copper as Cu	mg/l	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.05	1.5	DL 0.02 mg/l
25	Manganese as Mn	mg/l	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.1	0.3	DL 0.1 mg/l
26	Cadmium as Cd	mg/l	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.003	No Relaxation	DL 0.0005 mg/l
27	Lead as Pb	mg/l	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.01	No Relaxation	DL 0.0008 mg/l
28	Arsenic as As	mg/l	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.01	0.05	DL 0.0005 mg/l
29	Mercury as Hg	mg/l	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.001	No Relaxation	DL 0.0001 mg/l
30	Sodium as Na	mg/l	48.30	75.20	61.20	145.20	35.20	65.30	120.10	98.20	-	-	
31	Potassium as K	mg/l	1.30	2.40	2.10	4.50	2.10	3.20	3.40	2.10	-	-	
32	Phosphate as PO4	mg/l	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	-	-	DL 0.02 mg/l
33	Nickel as Ni	mg/l	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.02	No Relaxation	DL 0.005 mg/l
34	Conductivity	µS/cm	538.0	1048.0	838.0	1140.0	715.0	788.0	1038.0	789.0	-	-	

Source: Ground water quality analysis

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A review of the above mentioned chemical analysis of ground water samples reveals that there is not much variation in chemical composition of water samples from hand pump and bore wells from nearby villages. Analysis results of ground water reveal the following:

- pH varies from 7.12 to 7.49
- Total hardness varies from 145.20 to 332.80 mg/l
- Total dissolved solids vary from 352.0 to 778.0 mg/l

Doubtless for fulfilling the guidelines requirements these parameters were monitored however, in the present project no groundwater is being harnessed thus, having no effect on the groundwater scenario.

### 3.12 SOIL ENVIRONMENT

Samples have been obtained by combining portion of multiple grab samples, sequential samples are collected by mixing equal soil volumes collected at regular time intervals.

#### 3.12.1 Soil Quality and Characteristics

Agriculture is the main occupation of people in the study area, hence it is essential to determine the soil quality in the area and identify the impact of urbanization and industrialization on this area. The information on soils has been collected from various secondary sources and also through sampling from the study area and its analysis.

The sampling locations were finalized using following objectives:

- To determine the baseline soil characteristics of the study area; and
- To determine the impact of the proposed installation project on soil characteristics.

Representative soil samples were collected from eight different specified locations within the study area of the plant site. Standard procedures were followed for the sampling and analysis of physico-chemical parameters. Table 3.14 shows the location of soil sampling stations.

Table – 3.14

Soil Sampling Stations

Stations	Sampling Locations	Direction from site	Approx aerial distance from Plant Site (approx km.)
S1	Plant Site	-	-
S2	Village Mansoorwala Kalan	East	~1.5 Km
S3	Village Pandori khatrian	SE	~ 3.0 Km
S4	Village Nil Wala	WNW	~ 5.0 Km
S5	Village Ratol Rohi	West	~ 1.0 Km
S6	Village Dhanna Shahid	SW	~ 5.5 Km
S7	Village Buianwala	WSW	~ 7.0 Km
S8	Zira	NNE	~ 5.0 Km

Source: Google Image& Site Visit

The analysis results of the soil samples collected from the core zone and buffer zone are given in table 3.15.

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**Table - 3.15**  
**Soil Analysis Report**  
**Study Period: Post Monsoon Season (October to December, 2015)**

S. No.	Parameters	Unit	Sampling Locations									
			Plant Site	Village Mansoorwala Kalan	Village Pandori khatrian	Village Nil Wala	Village Ratol Rohi	Village Dhanna Shahid	Village Buianwala	Zira		
1.	pH	-	7.24	7.48	6.92	7.74	7.50	7.62	7.43	7.92		
2.	Conductivity	mS/cm	0.25	0.28	0.29	0.32	0.34	0.37	0.28	0.23		
3.	Soil Texture	-	Silty Loam	Silty Loam	Silty Loam	Silty Loam	Silty Loam	Silty Loam	Silty Loam	Silty Loam		
4.	Colour		Blackish Brown	Blackish Brown	Blackish Brown	Blackish Brown	Blackish Brown	Blackish Brown	Blackish Brown	Blackish Brown		
5.	Water holding capacity	%	36.44	35.77	37.18	34.14	35.14	31.48	35.68	33.66		
6.	Bulk density	g/cc	1.31	1.32	1.30	1.33	1.31	1.34	1.30	1.33		
7.	Chloride as Cl	mg/kg	48.57	77.71	145.70	271.97	106.85	126.27	145.70	97.13		
8.	Calcium as Ca	mg/kg	559.08	682.48	421.44	622.52	607.21	477.67	564.77	644.40		
9.	Sodium as Na	mg/kg	45.61	102.50	48.25	91.46	101.41	84.50	38.60	98.40		
10.	Potassium as K	kg./hec	271.94	338.69	226.69	271.49	251.90	98.13	85.12	193.54		
11.	Organic matter	%	1.23	1.13	1.28	0.84	0.99	0.74	0.94	0.79		
12.	Magnesium as Mg	mg/kg	34.73	64.50	69.46	68.15	54.57	39.69	24.81	84.34		
13.	Available Nitrogen as N	kg./hec	255.10	274.10	229.21	204.14	239.45	205.21	218.14	258.10		
14.	Available Phosphorus as P	kg./hec	15.46	16.74	14.24	18.69	15.68	16.48	13.88	15.33		
15.	Zinc as Zn	mg/kg	25.56	29.14	24.96	36.47	33.47	31.45	28.41	30.66		
16.	Manganese as Mn	mg/kg	278.10	264.14	298.64	208.46	254.14	268.69	226.84	251.81		
17.	Chromium as Cr	mg/kg	5.46	6.14	4.96	6.98	5.88	5.16	4.10	4.98		
18.	Lead as Pb	mg/kg	8.66	9.25	7.46	10.14	7.66	7.34	6.84	8.62		
19.	Cadmium as Cd	mg/kg	2.77	3.64	2.96	4.85	3.87	3.96	3.24	4.39		
20.	Copper as Cu	mg/kg	32.46	28.63	23.14	29.14	25.14	23.88	21.08	24.62		
21.	Organic Carbon	%	0.71	0.66	0.74	0.49	0.58	0.43	0.54	0.46		

**Source: Soil Analysis**

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Table - 3.16

## Standard Soil Classification

S. No.	Parameters	Classification
1.	pH	<4.5 extremely acidic 4.51 – 5.0 very strong acidic 5.01 – 5.5 strongly acidic 5.51-6.0 moderately acidic 6.1 – 6.5 slightly acidic 6.51-7.3 Neutral 7.31-7.8 slightly alkaline 7.81-8.5 moderately alkaline 8.51 – 9.0 strongly alkaline >9.0 Very strongly alkaline
2.	Salinity Electrical Conductivity (milli ho/cm) 1 mho/cm = 640 ppm	Up to 1.0 average 1-2 harmful to germination 2-3 harmful to crops
3.	Nitrogen (kg/ha)	Up to 50 very less 51-100 less 110-150 good 151-300 better >300 sufficient
4.	Phosphorus (kg/ha)	Up to 15 very less 15 – 30 less 31-50 medium 51-65 on average sufficient 66-80 sufficient >80 more than sufficient
5.	Potassium (kg/ha)	0-120 very less 120-180 less 180-240 medium 241-300 average 301-360 better >360 more than sufficient

## 3.12.2 Summary

The analysis of the soil samples collated for the characterization of the soil varies from place to place and has been analysed as Neutral, slightly alkaline and moderately alkaline. This soil is of blackish brown colour and is slightly alkaline in nature. Nitrogen is found to be in better amount and Phosphorous is found to be in less quantity, whereas the Potassium is more than sufficient.

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### 3.13 BIOLOGICAL ENVIRONMENT

#### 3.13.1 Introduction

Biodiversity is the variety and variability of life on Earth. This includes all the plants and animals that live and grow on the Earth, all the habitats in which they survive, and all the natural processes of which they are a part. The earth supports an incredible array of biodiversity. Unfortunately, the earth's biodiversity is disappearing, with an estimated 1,000 species per year becoming extinct.

Conserving biodiversity is especially crucial in developing countries where people's livelihoods are directly dependent on natural resources such as forests, fisheries and wildlife. Any strategy to slow the loss of biodiversity and to enhance its contribution to development must integrate three essential elements: conservation of biodiversity, sustainable use of its components and the equitable sharing of benefits. This demands on priority the knowledge of the actual biodiversity surviving in an area. Species inventories will remain perhaps the largest part of assessment and are of value in conservation of protected, threatened areas and ecologically and economically sensitive areas.

#### 3.13.2 Floral Diversity

The area is covered with different types of vegetation viz. trees, shrubs, herbs and climbers. Green belt and afforested land are restricted to town and the plant site. Vegetative cover is mainly found in the form of agricultural crops in the alluvial plains. Scrubs with high density are observed in the lowly populated south eastern part as compared to sparse scrub in the rurally habited central and northern portion of the study area. Scrub is also observed in relatively smaller proportion along the village /habitation fringes. No sensitive or critical floral species are observed in the study area.

Buffer zone of study area is mostly dominated by industrial and commercial activities. In the intermediate zone, agricultural activities are also in existence. The semi-arid hot climate of the area largely results in thorny scrub vegetation of xerophytic character.

The relatively dominant tree species found in the region are *Azadirachta indica* (Neem), *Acacia arabica* (Gum arabic) and *Prosopis cineraria* (Khejri). Other tree species along with shrubs is mentioned in the below cited table.

Table - 3.17

Inventory of Floral Diversity in the Core & Buffer Zone of Plant Site

S. No.	Scientific Name	Local Name	Family	Habit	Core	Buffer
1.	<i>Acacia nilotica</i>	Babool	Fabaceae	T	+	+
2.	<i>Acacia catechu</i>	Khair	Fabaceae	T	+	+
3.	<i>Albizia lebbek</i>	Siris	Mimosaceae	T	-	+
4.	<i>Azadirachta indica</i>	Neem	Meliaceae	T	-	+

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S. No.	Scientific Name	Local Name	Family	Habit	Core	Buffer
5.	<i>Aegle marmelos</i>	Bel	Rutaceae	T	-	+
6.	<i>Alstonia scholaris</i>	Devli Tree	Apocynaceae	T	-	+
7.	<i>Butea monosperma</i>	Dhak	Fabaceae	T	-	+
8.	<i>Casuarina equisetifolia</i>	Rhu	Casuarinaceae	T	+	+
9.	<i>Caryota mitis</i>	Fish tail palm	Arecaceae	T	+	+
10.	<i>Cocos nucifera</i>	Coconut	Arecaceae	T	-	+
11.	<i>Cassia siamea</i>	Kassod	Caesalpiniaceae	T	-	+
12.	<i>Cassia fistula</i>	Amaltash	Caesalpiniaceae	T	+	+
13.	<i>Dalbergia sissoo</i>	Shesham	Fabaceae	T	+	+
14.	<i>Delonix regia</i>	Gulmohar	Caesalpiniaceae	T	+	+
15.	<i>Eucalyptus globulus</i>	Safeda	Myrtaceae	T	+	+
16.	<i>Emblica officinalis</i>	Amla	Phyllanthaceae	T	-	+
17.	<i>Ficus benghalensis</i>	Bargad	Moraceae	T	-	+
18.	<i>Ficus elastica</i>	Ruber Plant	Moraceae	T	-	+
19.	<i>Ficus religiosa</i>	Pipal	Moraceae	T	-	+
20.	<i>Ficus glomerata</i>	Gular	Moraceae	T	-	+
21.	<i>Grevillea robusta</i>	Silver -oak	Protaceae	T	+	+
22.	<i>Holoptelea integrifolia</i>	Papri, Chilbul	Utreaceae	T	-	+
23.	<i>Leucaena leucocephala</i>	Subabul	Fabaceae	T	+	+
24.	<i>Mangifera indica</i>	Aam	Anacardiaceae	T	-	+
25.	<i>Morus alba</i>	Shahtoot	Moraceae	T	-	+
26.	<i>Pithecellobium dulce</i>	Jungal jalebi	Fabaceae	T	-	+
27.	<i>Polyalthia longifolia</i>	Ashok	Annonaceae	T	+	+
28.	<i>Pongamia pinnata</i>	Karanj	Fabaceae	T	-	+
29.	<i>Phoenix sylvestris</i>	Khajoor	Arecaceae	T	-	+
30.	<i>Prosopis juliflora</i>	Vilayati babool	Mimosaceae	T	+	+
31.	<i>Tectona grandis</i>	Sagwan	Lamiaceae	T	-	+
32.	<i>Terminalia arjuna</i>	Arjun	Combretaceae	T	-	+
33.	<i>Tamaridus indica</i>	Imli	Fabaceae	T	-	+
34.	<i>Citrus deliciosa</i>	Kinnow	Rutaceae	T	-	+
35.	<i>Prunus persica</i>	Peach	Rosaceae	T	-	+
36.	<i>Syzygium cumini</i>	Jamun	Myrtaceae	T	-	+
37.	<i>Ziziphus mauritiana</i>	Ber	Rhamnaceae	T	+	+
38.	<i>Cestrum diurnum</i>	Din Ka raja	Solanaceae	S	-	+
39.	<i>Callistemon lanceolatus</i>	Bottle brush	Myrtaceae	S	+	+
40.	<i>Carissa carandas</i>	Karonda	Apocynaceae	S	-	+
41.	<i>Calotropis procera</i>	Aak	Asclepiadaceae	S	-	+
42.	<i>Carica papaya</i>	Papaya	Caricaceae	S	+	+
43.	<i>Lantana camara</i>	Raimunia	Verbenaceae	S	-	+

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S. No.	Scientific Name	Local Name	Family	Habit	Core	Buffer
44.	<i>Ipomoea carnea</i>	Behaya	Convolvulaceae	S	+	+
45.	<i>Nerium oleander</i>	Kaner	Apocynaceae	S	+	+
46.	<i>Nyctanthes arbor-tristis</i>	Harsingar	Oleaceae	S	+	+
47.	<i>Ricinus communis</i>	Arandi	Euphorbiaceae	S	+	+
48.	<i>Ziziphus nummularia</i>	Jharberi	Rhamnaceae	S	-	+
49.	<i>Jasminum polyanthum</i>	Chamali	Oleaceae	S	+	+
50.	<i>Hibiscus rosa sinensis</i>	Gudhal	malvaceae	S	+	+
51.	<i>Plumeria alba</i>	Champa	Apocynaceae	S	-	+
52.	<i>Psidium guajava</i>	Amrud	Myrtaceae	S	-	+
53.	<i>Citrus limon</i>	lemon	Rutaceae	S	-	+
54.	<i>Aerva tomentosa</i>	Bui	Amaranthaceae	H	-	+
55.	<i>Agave angustifolia</i>	Caribben Agave	Asparagaceae	H	-	+
56.	<i>Amaranthus spinosus</i>	Jangli chaulai	Amaranthaceae	H	-	+
57.	<i>Achyranthes aspera</i>	Latjira	Amaranthaceae	H	-	+
58.	<i>Acalypha indica</i>	Muktajhuri	Euphorbiaceae	H	-	+
59.	<i>Adhatoda vasica</i>	Vasaka	Acanthaceae	H	-	+
60.	<i>Boerhavia diffusa</i>	Punarnava	Nyctaginaceae	H	-	+
61.	<i>Datura metel</i>	Dhatura	Solanaceae	H	+	+
62.	<i>Sesamum indicum</i>	Til	Pedaliaceae	H	-	+
63.	<i>Rosa chinensis</i>	Rose	Rosaceae	H	+	+
64.	<i>Tagetes minuta</i>	Marigold	Asteraceae	H	-	+
65.	<i>Tecoma gaudichaudi</i>	Yellow Bell	Bignoniaceae	H	-	+
66.	<i>Tephrosia purpurea</i>	Sarphonk	Fabaceae	H	-	+
67.	<i>Tephrosia villosa</i>	Sarapunkha	Fabaceae	H	+	+
68.	<i>Thevetia peruviana</i>	Peeli Kaner	Apocynaceae	H	+	+
69.	<i>Euphorbia hirta</i>	Badi Dudhi	Euphorbiaceae	H	-	+
70.	<i>Helianthus annuus</i>	Sunflower	Asteraceae	H	-	+
71.	<i>Indigofera cordifolia</i>	Gokhru	Fabaceae	H	+	+
72.	<i>Mollugo pentaphylla</i>	Jharasi	Molluginaceae	H	-	+
73.	<i>Mukia maderaspatana</i>	Bilari	Cucurbitaceae	H	-	+
74.	<i>Withania somnifera</i>	Ashwagandha	Solanaceae	H	-	+
75.	<i>Leucas aspera</i>	Kubi	Lamiaceae	H	-	+
76.	<i>Pupalia lappacea</i>	Nagadaminee	Amaranthaceae	H	-	+
77.	<i>Tephrosia strigosa</i>	-	Fabaceae	H	-	+
78.	<i>Commelina undulata</i>	Jalapippalinguli	Commelinaceae	H	-	+
79.	<i>Hibiscus lobatus</i>	Lobed Leaf Mallow	Malvaceae	H	-	+
80.	<i>Physalis minima</i>	Rasbhari	Solanaceae	H	-	+
81.	<i>Corchorus aestuans</i>	Chonch	Tilaceae	H	-	+
82.	<i>Euphorbia parviflora</i>	-	-	H	-	+

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S. No.	Scientific Name	Local Name	Family	Habit	Core	Buffer
83.	<i>Sida cordifolia</i>	Kharethi	malvaceae	H	-	+
84.	<i>Triumfetta rhomboidea</i>	Chiki Habit	Tiliceae	H	-	+
85.	<i>Aristida funiculata</i>	-	Poaceae	G	+	+
86.	<i>Aristida adscensionis</i>	Bristle grass	Poaceae	G	+	+
87.	<i>Brachiaria ramosa</i>	-	Poaceae	G	-	+
88.	<i>Cynodon dactylon</i>	Doob ghas	Poaceae	G	-	+
89.	<i>Cyperus compressus</i>	-	Cyperaceae	G	-	+
90.	<i>Desmostachya bipinnata</i>	Dab	Poaceae	G	-	+
91.	<i>Dichanthium annulatum</i>	Sheda Grass	Poaceae	G	-	+
92.	<i>Sorghum halepense</i>	Jungli-jowar	Poaceae	G	-	+
93.	<i>Sporobolus helvolus</i>	Okrich	Poaceae	G	-	+
94.	<i>Parthenium hysterophorus</i>	Gajar Ghas	Asteraceae	G	-	+
95.	<i>Cyperus rotundus</i>	Motha	Cyperaceae	G	+	+
96.	<i>Saccharum spontaneum</i>	Kans	Poaceae	G	-	+
97.	<i>Adiantum Species</i>	Fern	Pteridaceae	F	-	+

(+) Shows: Presence of the species in the Core and Buffer are (0 - 5 & 5 - 10 km radius)

(-) Shows: Absence of the species in the Core and Buffer are (0 - 5 & 5 - 10 km radius)

**Habit: Tree (T), Shrub (S), Herb (H) and Grass (G)**

### 3.13.3 Faunal Diversity

The area hosts various types of animals. The species of fauna generally found in the area are given in table:

TABLE NO. – 3.18

#### Inventory of Faunal Diversity in the Core & Buffer Zone of Plant Site

S. No.	Scientific name	Common name	Status according to IWPA-1972	Core	Buffer
<b>Mammals</b>					
1.	<i>Felis chaus</i>	Jungle cat	Sch.II	-	+
2.	<i>Herpestes edwardsii</i>	Common Mongoose	Sch.II	-	+
3.	<i>Funambulus pennanti</i>	Five Striped Palm Squirrel	Sch.IV	+	+
4.	<i>Rattus rattus</i>	House Rat	Sch.V	+	+
5.	<i>Mus booduga</i>	Indian Field Mouse	Sch.V	+	+
6.	<i>Macaca radiata</i>	Bonnet Macaque	Sch.II	-	+
7.	<i>Boselaphus tragocamelus</i>	Nilgai	Sch.III	-	+
8.	<i>Vulpes bengalensis</i>	Indian Fox	Sch.II	-	+
9.	<i>Presbytis entellus</i>	Common Langur	Sch.II	+	+
10.	<i>Sus scrofa</i>	Wild boar	Sch.III	-	+
11.	<i>Lepus nigricollis</i>	Indian hare	Sch. IV	-	+

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S. No.	Scientific name	Common name	Status according to IWPA-1972	Core	Buffer
12.	<i>Cervus unicolor</i>	Sambar deer	Sch.III	-	+
13.	<i>Canis aureus</i>	Jackal	Sch.II	-	+
14.	<i>Muntiacus muntjak</i>	Barking Deer	Sch.III	-	+
<b>Reptiles</b>					
15.	<i>Ptyas mucosus</i>	Rat Snake	Sch.II	-	+
16.	<i>Mabuya carinata</i>	Brahminy Skink	-	+	+
17.	<i>Hemidactylus flaviviridis</i>	House Gecko/ Chhipkali	-	-	+
18.	<i>Naja naja</i>	Kobra	Sch.II	-	+
19.	<i>Calotes jerdoni</i>	Green Lizard	-	+	+
20.	<i>Nilssonia gangetica</i>	Soft shelled turtle	-	-	+
<b>Amphibians</b>					
21.	<i>Rana hexadactyla</i>	Indian Pond Frog	Sch.IV	-	+
22.	<i>Rana limnocharis</i>	Indian cricket Frog	Sch.IV	+	+
<b>Butterfly</b>					
23.	<i>Danaus chrysippus</i>	Plain Tiger	-	+	+
24.	<i>Ixias Marianne</i>	White –orange Tip	-	-	+
25.	<i>Precis orithya</i>	Blue pansy	-	+	+
26.	<i>Phalanta phalantha</i>	Plain leopard	-	-	+
27.	<i>Eurema blanda</i>	Three –Spot Grass Yellow	-	+	+
28.	<i>Papilio polytes</i>	Common Mormon	-	-	+
<b>Arthropods and Crustacean</b>					
29.	<i>Buthus sp.</i>	Scorpion	-	-	+
30.	<i>Brachyura sp.</i>	Crab	-	-	+
31.	<i>Stegodyphus sp.</i>	Social Spider	-	-	+
32.	<i>Scolopendrid centipedes</i>	Kan khajura	-	+	+
33.	<i>Sympetrum fonscolombii</i>	Red veined darter (Dragonfly)	-	+	+

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Table - 3.19

## Inventory of Avifaunal Diversity in the Core &amp; Buffer Zone of Plant Site

S. No.	Scientific Name	Common Name	Status according to IWPA-1972	Core	Buffer
1.	<i>Larus cachinnans</i>	Yellow legged gull	Schedule IV	-	+
2.	<i>Tachybaptus ruficollis</i>	Little grebe	Schedule IV	-	+
3.	<i>Amaurornis phoenicurus</i>	White –breasted waterhen	Schedule IV	-	+
4.	<i>Vanellus indicus</i>	Red-wattled lapwing	-	-	+
5.	<i>Ardeola grayii</i>	Indian Pond Heron	Schedule IV	-	+
6.	<i>Ardea cinerea</i>	Grey Heron	Schedule IV	-	+
7.	<i>Ocyrceros birostris</i>	Indian grey hornbill	Schedule IV	-	+
8.	<i>Ploceus philippinus</i>	Baya weaver	Schedule IV	-	+
9.	<i>Francolinus pondicerianus</i>	Grey francolin	Schedule IV	-	+
10.	<i>Upupa epops</i>	Common hoopoe	Schedule IV	-	+
11.	<i>Coracias benghalensis</i>	Indian Roller	Schedule IV	-	+
12.	<i>Halcyon smyrnensis</i>	White -throated kingfisher	Schedule IV	-	+
13.	<i>Merops orientalis</i>	Green bee-eater	Schedule IV	-	+
14.	<i>Centropus bengalensis</i>	Lesser coucal	Schedule IV	-	+
15.	<i>Psittacula krameri</i>	Rose-ringed parakeet	Schedule IV	-	+
16.	<i>Apus affinis</i>	House swift	Schedule IV	+	+
17.	<i>Columba livia</i>	Blue Rock pigeon	Schedule IV	+	+
18.	<i>Streptopelia senegalensis</i>	Laughing dove	Schedule IV	-	+
19.	<i>Streptopelia decaocto</i>	Eurasian collared dove	Schedule IV	+	+
20.	<i>Egretta garzetta</i>	Little egret	Schedule IV	-	+
21.	<i>Mesophoyx intermedia</i>	Intermediate egret	Schedule IV	-	+
22.	<i>Bubulcus ibis</i>	Cattle egret	Schedule IV	+	+
23.	<i>Milvus migrans</i>	Black Kite	Schedule IV	+	+
24.	<i>Corvus splendens</i>	House crow	Schedule V	+	+
25.	<i>Dicrurus macrocercus</i>	Black drongo	Schedule IV	-	+
26.	<i>Saxicoloides fulicata</i>	Indian robin	Schedule IV	-	+
27.	<i>Sturnus pagodarum</i>	Brahminy starling	Schedule IV	+	+
28.	<i>Sturnus contra</i>	Asian Pied starling	Schedule IV	-	+
29.	<i>Acridotheres tristis</i>	Common myna	Schedule IV	+	+
30.	<i>Pycnonotus cafer</i>	Red-vented bulbul	Schedule IV	-	+
31.	<i>Turdoides striatus</i>	Jungle babbler	Schedule IV	+	+
32.	<i>Nectarinia asiatica</i>	Purple sunbird	Schedule IV	-	+
33.	<i>Passer domesticus</i>	House sparrow	Schedule IV	+	+
34.	<i>Motacilla maderaspatensis</i>	White-browed wagtail	-	-	+
35.	<i>Microcarbo niger</i>	Little cormorant	Schedule IV	-	+
36.	<i>Actitis hypoleucos</i>	Common Sandpiper	Schedule IV	-	+

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S. No.	Scientific Name	Common Name	Status according to IWPA-1972	Core	Buffer
37.	<i>Philomachus pugnax</i>	Ruff	Schedule IV	-	+
38.	<i>Himantopus himantopus</i>	Black wing Stilt	Schedule IV	-	+
39.	<i>Saxicola caprata</i>	Pied Bush chat	Schedule IV	-	+
40.	<i>Prinia socialis</i>	Ashy Warn- Warbler	Schedule IV	-	+
41.	<i>Chrysocola ptes festivus</i>	Woodpecker	Schedule IV	-	+
42.	<i>Apus apus</i>	Common swift	Schedule IV	-	+
43.	<i>Dromaius novaehollandiae</i>	Emu	-	-	+
44.	<i>Anas platyrpynchos domesticus</i>	Domestic Duck	Schedule IV	-	+
45.	<i>Pseudibis papillosa</i>	Black ibis	Schedule IV	-	+

Table – 3.20

## Inventory of Ichthyo-Faunal Diversity in the Core &amp; Buffer Zone

S. No.	Scientific Name	Common Name	Family
1	<i>Channa punctatus</i>	Snakehead fish	Channidae
2	<i>Catla catla</i>	Indian Carp	Cyprinidae
3	<i>Labio rohita</i>	Rohu	Cyprinidae
4	<i>Labio bata</i>	-	Cyprinidae
5	<i>Labio calbasu</i>	-	Cyprinidae
6	<i>Anguilla bangalensis</i>	Raj Bam	Anguillidae
7	<i>Tor ater</i>	Mahseer	Cyprinidae
8	<i>Cyprinus carpio</i>	Common carp	Cyprinidae
9	<i>Ctenopharyngodon idella</i>	Grass carp	Cyprinidae
10	<i>Gambusia affinis</i>	Mosquito fish	Poeciliidae
11	<i>Cirrhina reba</i>	Reba Carp	Cyprinidae
12	<i>Wallago attu</i>	Lanchi	Siluridae

## 3.13.4 Ecological Sensitive Areas

No National Park, Biosphere reserve, Wildlife Sanctuary, Reserved Forest, Protected Forest, Migratory route for birds falls within the 10 km. radius study area.

## 3.13.5 Cropping Pattern of the Study Area

In general the soil is loamy and slightly to moderately alkaline. Single crop during winter is sown of Wheat (*Triticum aestivum*), Barley (*Hordeum vulgare*) or Mustard (*Brassica juncea*). Farming is done in very little areas only during rains due to scarcity of water as the area lies in the zone of low rainfall.

In Kharif season Bajra (*Pennisetum typhoides*), Maize (*Zea maize*), Jowar (*Sorghum vulgare*), Kharif pulses, Arhar (*Cajanus cajan*), Til (*Sesamum indicum*), Cotton (*Gossypium hirsutum*),

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Cluster beans (*Cyamopsis tetragonoloba*) etc. are sown and in Rabi season Wheat (*Triticum aestivum*), Barley (*Hordeum vulgare*), Gram (*Cicer arietinum*), Mustard (*Brassica juncea*), Taramira (*Eruca sativa*), Rabi pulses etc. are sown. The main source of irrigation is Openwells and Tubewells.

### 3.14 SOCIO-ECONOMIC ENVIRONMENT

Socio-economic environment, an essential part of environmental study incorporating various facts related to socio-economic conditions in the area, which deals with the total environment.

Socio economic study includes demographic study of the area, provision of basic amenities viz., housing, education, health and medical services, occupation, water supply, sanitation, communication etc. at the baseline level. This would help in visualizing and predicting the possible impact depending upon the nature and magnitude of the project.

Socio-economic study of an area provides a good opportunity to assess the socio-economic conditions of an area. This study will possibly help in changing the living and social standards of the particular area. Economic condition of the area will be improved substantially due to the existence of this project. It can undoubtedly be said that this plant will provide direct and indirect employment and improve the infrastructural facilities and standards of living of the area.

The fabrics of socio-economic changes are so complicated that this study would seem to be extremely limited, almost superficial and at time subjective in nature. More thorough and quantified socio-economic study will undoubtedly require vastly longer time and resources, and is, therefore, beyond the scope of the present EIA study. The EIA will give a reasonably clear picture of the socio-economic conditions prevailing in the study area.

#### 3.14.1 Objectives of the Study

The objectives of this socio-economic report consist of:

- ☞ To conduct socio-economic assessment study in Project Area and assessing the current socio-economic situation in the region.
- ☞ To help in providing better living standards by incorporating CSR based on the assessment.

#### 3.14.2 Scope of Work

- ☞ To study the Socio-economic Environment of area from the secondary sources
- ☞ Prediction of proposed installation project impact
- ☞ Mitigation Measures

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### 3.14.3 Methodology

#### ☞ Collection of Data

Data for this project were collected via secondary source (i.e. Government department, maps, literature research etc) in the study area.

#### ☞ Presentation of Data & Analysis

The data collected were presented in a suitable, concise form for further analysis. The collected data were presented in the form of tabular or diagrammatic or graphic form. These tabulated data were interpreted and analyzed with the help of various qualitative techniques and ideographic approaches.

### 3.14.4 Background Information of the Area

Study area (buffer zone) is the area within 10 km radius of the plant site. It covers 53 villages of Ferozepur district. The socio-economic parameters i.e. population growth, density, literacy etc. plays an important role in determining the impact of the proposed activity directly or indirectly on the human population of the study area. These impacts may be beneficial or detrimental.

Ferozpur, the south western most district of Punjab State with a total geographical area of 5850 sq.km. is located between 29°56'47" and 31°0'7" North latitudes and 72°52'54" and 75°01'11" East longitudes . The district area falls in Survey of India degree sheet Nos. 44 J, 44F, 44I.

The Ferozpur district forms a part of Sutlej sub basin of main Indus basin and is interrupted by clusters of sand dunes. The district area is an almost a flat terrain with a gentle slope towards south west direction. Physiographically, it is characterized by four distinct features i.e. the upland plain, sand dune tracts, younger flood plain and active flood plain.

Table - 3.21

Socio-Economic Profile of Study Area

Particular	Punjab	Ferozepur	Study Area
Area sq km	50,362	5,305	314
Population	2,77,04,236	2,029,074	163613
Male	1,46,34,819	1,071,637	84,699
Female	1,30,69,417	957,437	76,498
Literacy Rate (%)	76.68 %	68.92 %	60.78 %
Sex Ratio (Females per 1000 Males)	893	893	904

Source: Census of India, 2011

#### 3.14.4.1 Baseline Data & Analysis

The socio-economic study has been conducted on the basis of secondary data available. The study area was categorized on the basis of the distance of the villages from plant site. Primary zone was indentified from 0 to 3 km radius area, Secondary zone in 3 to 7 km and Outer zone

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in 7 to 10 km radius area from the plant site. Information was collected from the data of census 2011 and the secondary information collected from various government departments like health department, agriculture department, IMD etc.

#### **3.14.4.2 Demography of the study area**

The population as per 2011 Census records is 161197 (for 10 km radius buffer zone). Scheduled Caste fraction of the population of the study area (10 km) is 55,151 (34.21%) and Scheduled Tribe 0(0%). Percentage of literacy is 60.78% and that of workers those actually engaged in occupation is 58,534(36.31%) including 48,567(82.97 %) of Main workers & 9967(17.02%) of marginal workers. Rest 63.68 % of the total population, are considered as non-workers.

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Demographic profile of study area is given in table below:

Table - 3-22  
Demographic Profile of Study Area

S. No.	Name	No. of House hold	Total Population	Total Male	Total Female	Sex Ratio	Total SC Pop.	Total ST Pop.	Total Literacy Rate	Male Literacy Rate	Female Literacy Rate	Total Working Pop.	Total Main Worker	Total Marginal Worker	Total Non-Worker
<b>0-3 km</b>															
1.	Mahianwal aPurana	447	2644	1417	1227	901	846	0	66.23	70.64	61.12	740	680	60	1904
2.	RotalRohi	281	1415	739	676	915	733	0	61.98	66.04	57.54	416	228	188	999
3.	Mansurwal	330	1960	1027	933	908	592	0	58.57	59.98	57.02	683	629	54	1277
4.	PandoriKhatrian	273	1573	822	751	914	636	0	59.57	63.87	54.86	639	286	353	934
5.	Mahianwal aKhurd	98	514	280	234	836	26	0	64.01	68.93	58.12	164	161	3	350
6.	Sekhwan	443	2416	1280	1136	888	1106	0	57.86	61.25	54.05	919	789	130	1497
	sub-total	1872	10522	5565	4957	5362	3939	0	61.37	65.11	57.12	3561	2773	788	6961
<b>3-7 km</b>															
7.	Sunehar	571	2997	1579	1418	898	929	0	59.66	62.82	56.14	999	890	109	1998
8.	Sodhiwala	316	1735	923	812	880	661	0	59.65	61.97	57.02	522	468	54	1213
9.	Nakilanwala	398	2050	1072	978	912	411	0	63.76	68.00	59.10	662	543	119	1388
10.	BundalaPurana	103	589	304	285	938	172	0	70.29	75.66	64.56	184	175	9	405
11.	Warnala	169	936	500	436	872	274	0	59.62	65.20	53.21	240	225	15	696
12.	Mahianwal aKhurd	98	514	280	234	836	26	0	64.01	68.93	58.12	164	161	3	350
13.	Pheroke	397	1930	1009	921	913	448	0	60.52	63.03	57.76	634	622	12	1296
14.	Kaliewala	222	1097	549	548	998	569	0	62.72	68.49	56.93	476	271	205	621
15.	Chohlah	154	932	471	461	979	344	0	55.36	59.87	50.76	653	292	361	279

Proposed installation of Unit II - Grain Based Ethanol/RS Industrial/ENA Plant {500 KLPD (2X250 KLPD)} & Co-generation Power Plant {40 MW (2X 20 MW)} in Existing Distillery Plant At Village Mansoorwala, Tehsil Zira, District Ferozepur, Punjab												
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S. No.	Name	No. of House hold	Total Population	Total Male	Total Female	Sex Ratio	Total SC Pop.	Total ST Pop.	Total Literacy Rate	Male Literacy Rate	Female Literacy Rate	Total Working Pop.	Total Main Worker	Total Marginal Worker	Total Non-Worker
16.	Sadhuwala	291	1589	849	740	871	721	0	50.91	52.77	48.78	772	567	205	817
17.	DhanaShahid	200	1090	578	512	886	293	0	64.13	68.17	59.57	359	251	108	731
18	MalheShahwala	89	479	246	233	947	168	0	65.76	70.73	60.52	146	138	8	333
19	Nilewala	102	632	342	290	848	342	0	57.12	61.11	52.41	192	155	37	440
20	Zira	13073	68339	35776	32563	910	21565	0	65.12	68.46	61.45	23047	20399	2648	45292
21.	Longe Deva	298	1617	846	771	839	534	0	58.87	61.82	55.64	506	500	6	1111
22	Taiwandi Mange Khan	377	1856	943	913	968	843	0	65.57	68.72	62.32	820	532	288	1036
23	Talwandija Ile Khan	527	2797	1487	1310	881	1110	0	58.96	61.94	55.57	1624	903	721	1173
24	Daulatpura	477	2607	1413	1194	845	1230	0	50.21	56.76	42.46	1150	930	220	1457
25	Wara Chain Singhwala Alias Ramgarh	241	1190	619	571	922	771	0	48.15	50.73	45.36	739	293	446	451
26	Sukhwala	275	1345	692	653	944	786	0	56.88	62.57	50.84	702	312	390	643
27	Buianwala	195	1085	564	521	924	295	0	60.18	66.67	53.17	328	199	129	757
	sub-total	18573	99822	52322	47500	1989	33598	0	59.78	63.89	55.26	35838	29615	6223	63984
7-10 km															
28	Karmiti	127	705	364	341	937	176	0	59.15	61.81	56.30	188	185	3	517
29	Haraj	670	3218	1701	1517	892	1974	0	58.55	64.61	51.75	1244	1207	37	1974
30	JawaharSinghwala	226	1284	674	610	905	412	0	53.89	56.82	50.66	497	404	93	787

Proposed installation of Unit II - Grain Based Ethanol/RS Industrial/ENA Plant {500 KLPD (2x250 KLPD)} & Co-generation Power Plant {40 MW (2X 20 MW)} in Existing Distillery Plant At Village Mansoorwala, Tehsil Zira, District Ferozepur, Punjab												
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S. No.	Name	No. of House hold	Total Population	Total Male	Total Female	Sex Ratio	Total SC Pop.	Total ST Pop.	Total Literacy Rate	Male Literacy Rate	Female Literacy Rate	Total Working Pop.	Total Main Worker	Total Marginal Worker	Total Non-Worker
31	Malhuwala	22	137	72	65	903	0	0	76.64	83.33	69.23	36	36	0	101
32	Kasoana	341	1694	833	861	1034	921	0	53.36	58.22	48.66	803	714	89	891
33	Jhatra	247	1347	698	649	930	206	0	66.07	70.92	60.86	636	463	173	711
34	Ramgarh	181	1024	540	484	896	125	0	51.46	57.22	45.04	323	320	3	701
35	ChuharChakk	320	1760	940	820	872	455	0	57.95	59.89	55.73	549	469	80	1211
36	Maheshari	599	3109	1636	1473	900	1396	0	59.63	62.41	56.55	969	924	45	2140
37	Darapur	354	2028	1059	969	915	819	0	61.14	64.97	56.97	572	525	47	1456
38	TalwandiBhai	3359	17285	9202	8083	878	5461	0	68.67	71.08	65.92	5767	5267	500	11518
39	Mankianwali	121	653	343	310	904	208	0	63.71	67.64	59.35	385	380	5	268
40	BundalaPurana	103	589	304	285	938	172	0	70.29	75.66	64.56	184	175	9	405
41	TalwandiJale Khan	527	2797	1487	1310	880	1110	0	58.96	61.94	55.57	1624	903	721	1173
42.	Sulhani	377	1974	1049	925	881	803	0	63.17	67.30	58.49	843	540	303	1131
43	Joianwala	195	993	505	488	966	127	0	62.94	68.32	57.38	328	324	4	665
44	Marur	138	696	381	315	827	174	0	60.92	65.35	55.56	259	149	110	437
45.	MihanSinghwala	216	1163	612	551	900	503	0	58.64	64.54	52.09	490	368	122	673
46.	Chuchak Wind	261	1391	747	644	862	223	0	64.20	69.48	58.07	698	649	49	693
47	Santuwala	347	1777	913	864	946	759	0	60.83	65.17	56.25	1018	571	447	759
48	MalsianShahzadaSantSinghwala	314	1814	963	851	883	552	0	59.26	62.62	55.46	584	577	7	1230
49	PandoriJattan	100	522	277	245	884	247	0	56.90	58.12	55.51	254	168	86	268

Proposed installation of Unit II - Grain Based Ethanol/RS Industrial/ENA Plant {500 KLPD (2X250 KLPD)} & Co-generation Power Plant {40 MW (2X 20 MW)} in Existing Distillery Plant At Village Mansoorwala, Tehsil Zira, District Ferozepur, Punjab												
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S. No.	Name	No. of House hold	Total Population	Total Male	Total Female	Sex Ratio	Total SC Pop.	Total ST Pop.	Total Literacy Rate	Male Literacy Rate	Female Literacy Rate	Total Working Pop.	Total Main Worker	Total Marginal Worker	Total Non-Worker
50	Kahansinghwala	140	706	362	344	950	301	0	56.80	58.84	54.65	249	177	72	457
51	Khukhrana	346	1999	1042	957	918	479	0	61.13	64.49	57.47	655	609	46	1344
52	KotKarorKurd	156	914	490	424	865	252	0	65.54	67.35	63.44	331	315	16	583
53	Lalle	278	1690	898	792	882	865	0	66.15	69.82	61.99	568	549	19	1122
	<b>Sub-total</b>	<b>10065</b>	<b>53269</b>	<b>28092</b>	<b>25177</b>	<b>2358</b>	<b>18720</b>	<b>0</b>	<b>61.38</b>	<b>65.30</b>	<b>57.05</b>	<b>20054</b>	<b>16968</b>	<b>3086</b>	<b>33215</b>
	<b>Total</b>	<b>30,510</b>	<b>163613</b>	<b>84,699</b>	<b>76,498</b>	<b>904</b>	<b>55151</b>	<b>0</b>	<b>60.78</b>	<b>64.77</b>	<b>56.37</b>	<b>58534</b>	<b>48567</b>	<b>9967</b>	<b>102663</b>

Source: Census of India, 2011

Proposed Installation of Unit II - Grain Based Ethanol / ENA / RS / Industrial Alcohol Plant {500 KLPD (2x250 KLPD)} & Co-generation Power Plant {40MW (2x20 MW)} in Existing Distillery Plant  
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#### 3.14.4.3 Demographic Profile

The population as per 2011 Census records is 161197 (for 10 km radius buffer zone). Total no. of households are 1872, 18573 and 10065, respectively, in primary, secondary and outer zone. Demographic profile of study area is given in table below:

Table - 3.23

Demographic Profile of the Study Area

Zone	No. of Villages	Total Household	Total Population	Total Male Population	Total Female Population
Primary Zone (0 - 3 Km)	6	1872	10522	5565	4957
Secondary Zone (3 - 7 Km)	21	18573	99822	52322	47500
Outer Zone (7 - 10 Km)	26	10065	53269	28092	25177

Source: Census of India, 2011

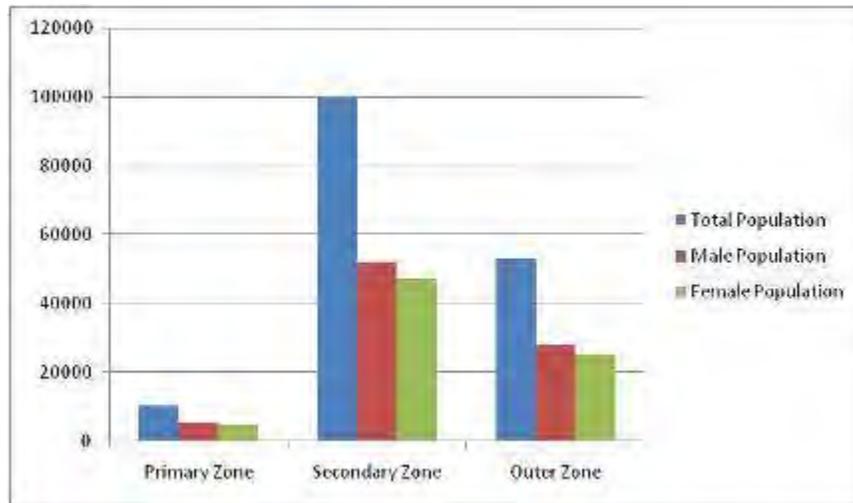


Figure 3.12: Demographic Profile of the Study Area

#### 3.14.4.4 Vulnerable Group

While developing an Action Plan, it is very important to identify the population who fall under the marginalized and vulnerable groups and special attention has to be given towards these groups while making action plans. Special provisions should be made for them. Scheduled Caste fraction of the population of the study area (10 km) is 56257 (34.38%) and Scheduled Tribe 0 (0%) while others are 84.88 %.

Table - 3.24

SC/ST Population of the Study Area

Zone	No. of Villages	Total Population	SC Population	ST Population	Other Population
Primary Zone (0 - 3 Km)	6	10522	3939	0	6583
Secondary Zone (3 - 7 Km)	21	99822	33598	0	6624
Outer Zone (7 - 10 Km)	26	53269	18720	0	34549

Source: Census of India, 2011

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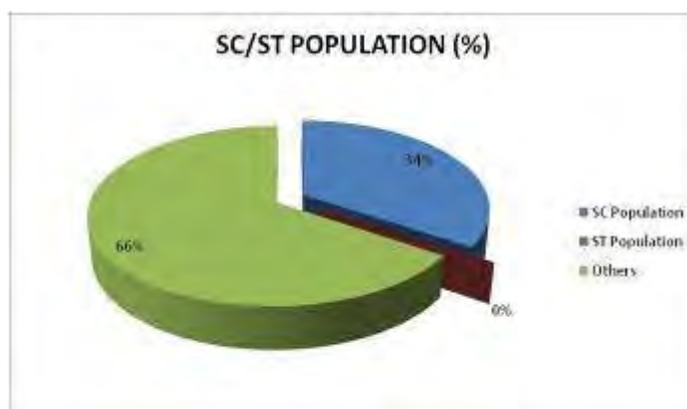


Fig 3.13 SC/ST Population in Study Area Zone

#### 3.14.4.5 Literacy Rate

Literacy Rate is the amount of people in a country with the ability to read and write. The 10 km radius study area demonstrates a literacy rate of 60.78 % as per survey data. The male literacy rate in the study area works out to be 64.77 % whereas the female literacy rate, which is an important indicator for social change, is observed to be 56.37 % in the study area. This indicates that there is a need to focus in sociological aspect in the region and enhance further development. In the present study, the literacy rate is quiet moderate in the study area. Male and Female literacy rate of villages are varying place to place. Female literacy rate in the region is coming out low as compared to male.

Table - 3.25

Literacy Level of the Study Area

Zone	Total Population	Total Literacy Rate (%)	Male Literacy Rate (%)	Female Literacy Rate (%)	Illiteracy Rate (%)
Primary Zone (0 - 3 Km)	10522	61.37	39.92	21.45	38.63
Secondary Zone (3 - 7 Km)	99822	59.78	38.19	21.59	40.22
Outer Zone (7 - 10 Km)	53269	61.78	40.01	21.76	38.22

Source: Census of India, 2011

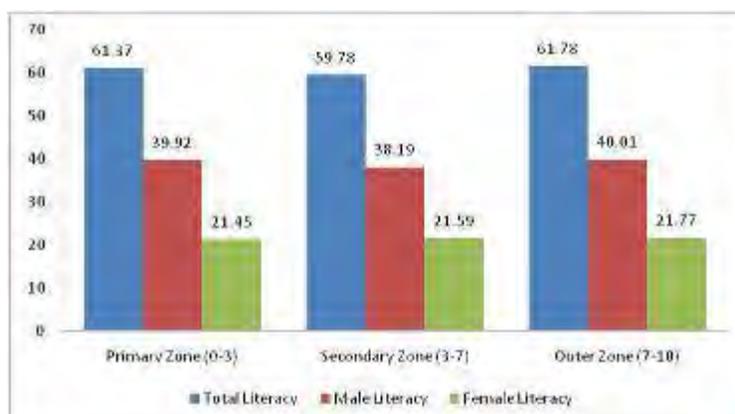


Fig 3.14 Graphical Representation of Male Literacy/ Female literacy in Study Area Zone

Proposed Installation of Unit II - Grain Based Ethanol / ENA / RS / Industrial Alcohol Plant {500 KLPD (2x250 KLPD)} & Co-generation Power Plant {40MW (2x20 MW)} in Existing Distillery Plant  
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#### 3.14.4.6 Economic Activities

The economy of an area is defined by the occupational pattern and income level of the people in the area. The occupational structure of residents in the study area is studied with reference to work category. The population is divided occupation wise into three categories, viz., main workers, marginal workers and non-workers. The main workers include cultivators, agricultural laborers, those engaged in household industry and other services.

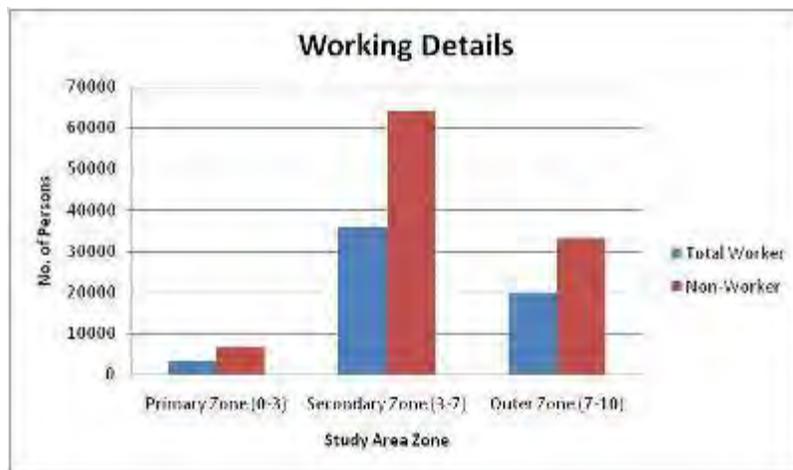
The marginal workers are those engaged in some work for a period of less than 180 days during the reference year. The non-workers include those engaged in unpaid household duties like, students, retired persons, dependents, beggars, vagrants etc. besides institutional inmates or all other non-workers who do not fall under the above categories.

Table - 3.26

Work Forces of the Study Area

Zone	Total Population	Total Worker	Main Worker	Marginal Worker	Non Worker
Primary Zone (0 - 3 Km)	10522	3561	2773	787	6961
Secondary Zone (3 - 7 Km)	99822	35838	29615	6223	63984
Outer Zone (7 - 10 Km)	53269	20054	16968	3086	33215

Source: Census of India, 2011



Source: Census of India, 2011

Figure 3.15: Working Details within 10 Km study area

The above table shows that the in primary, secondary & outer zone, working population is more than the non-working population.

#### 3.14.4.7 Annual Income from Various Sources

The Income & Expenditures of an area is defined by the occupational pattern and income level of the people in the area. The occupational structure of residents in the study area is studied with reference to income sources. Most of the people are involved in agriculture and wage labor as occupational pattern, while some are earning from government services, private business, poultry farming etc. for livelihood in study area .

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### 3.14.5 Basic Amenities

A better network of physical infrastructure facilities (well-built roads, rail links, irrigation, power and telecommunication, information technology, market-network and social infrastructure support, viz. health and education, water and sanitation, veterinary services and co-operative) is essential for the development of the rural economic.

Infrastructure facilities available in the area have been described in the subsequent sections as below:

#### 3.14.5.1 Educational Facilities

Most of the surveyed villages have primary, middle and senior secondary schools. For higher education people have to commute the other villages.



#### 3.14.5.2 Health Facilities

In the study area medical facilities are not satisfactory. In some villages primary health sub-centre and primary health centre are available but no other facility available there. Maternity home is also available in the study area and most of the villages are having Aanganbari centers. Other health centers i.e. Ayurvedic center, homeopathic dispensary and private clinic and medical stores also available in the study area. People have to go to above 10 km from their place to avail medical facility.

#### 3.14.5.3 Other Infrastructure Facilities

Basic facilities are available in study area as educational facilities, health, transportation, electricity, drinking water, market, bank, post office, petrol pump; Administrative office, Aanganbari Centers, Community hall, Co-operative bank and Commercial Bank etc. are available.

##### a) Transport Facilities

The study area is served by road transport. Most of the villages are connected by bus/other transport services. Most of the villages connected by bus/other transport services. The area has a moderate road network, which includes National highway,

<p><b>Proposed Installation of Unit II - Grain Based Ethanol / ENA / RS / Industrial Alcohol Plant {500 KLPD (2x250 KLPD)} &amp; Co-generation Power Plant {40MW (2x20 MW)} in Existing Distillery Plant</b></p> <p>At Village-Mansoorwala, Tehsil- Zira, District-Ferozepur (Punjab)</p>
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major District Roads and other roads. Some villages have local auto rickshaw and bus facilities available to travel nearby villages.

**b) Post and Telegraphs**

The study area has an average level of post services. Altogether there are few Post Offices in the study area. The study area is served by adequate telephone and mobile network.

**c) Electrification in the area**

All villages in the study area are electrified. Electricity is available for domestic, commercial, industrial agricultural and public lighting purposes.

**d) Drinking Water Facility**

Village people are availing drinking water facilities generally from the Hand pump, open well, tube well and tap. The water is also supplied through tanker in few villages. Drinking water is vital requirement for humans as well as animals.

**3.14.6 Summary**

The socio economic study of the study area on behalf of observed villages gives clear picture of its population, average household size, literacy rate, sex ratio, schedule tribe and schedule castes etc. A major part of population is suffering from the lack of permanent job to run their day to day life and get basic facility.

The infrastructure and amenities available in the area denotes the economic well-being of the region. The study area as a whole possesses average of infrastructural facilities. However, in comparison with the facilities available in other parts of the districts this area has higher level of amenities like higher education, health, drinking water and communication network. The area is well connected with road transport and communication facilities.

**3.14.7 Recommendation and Suggestion**

- ☞ Education Awareness program can be conducted to make the population aware of the need of education and better treatment for livelihood.
- ☞ Vocational training session can be organized to provide self-employment to the women and unemployment youth.
- ☞ Health care centre and ambulance facility can be provided to make the population get easy medical facilities.
- ☞ On the basis of qualification and skills local youths can be employed.
  - Long term and short term employments can be generated.
  - Maternity facility can be made available to avoid going far off places and unnecessary risks to get treatment at Tehsil headquarters.

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### 3.15 LIST OF INDUSTRIES

In the 10 Km radius study area there are majorly two kinds of industries viz. Rice Mills and Cattle Feed Plants. List is given in table below:-

**Table - 3.27**  
**List of Industries**

S. No.	Company Name	Type	Location
1	Kuber Rice Mills	Manufacture of grain mill products, starches and starch products, and prepared animal feeds	Village Sekhwan
2	Jai Ambe	-	Village Sekhwan
3	Kwality Rice Mills	Manufacture of grain mill products, starches and starch products, and prepared animal feeds	Zira Road Talwandi bhai
4	Shah Rice Mill	Manufacture of grain mill products, starches and starch products, and prepared animal feeds	Zira Road Talwandi bhai
5	Dashmesh rice Mill	Manufacture of grain mill products, starches and starch products, and prepared animal feeds	Zira Road Talwandi bhai
6	Thakur Sanga Rice Mill	Manufacture of grain mill products, starches and starch products, and prepared animal feeds	Zira Road Talwandi bhai
7	Aggarwal Rice Mill	Manufacture of grain mill products, starches and starch products, and prepared animal feeds	Khosa Dal singh Road Talwandi bhai
8	Arora Rice Mill	Manufacture of grain mill products, starches and starch products, and prepared animal feeds	Khosa Dal singh Road Talwandi bhai
9	Rama rice Mill	Manufacture of grain mill products, starches and starch products, and prepared animal feeds	Khosa Dal singh Road Talwandi bhai
10	Bhaskar Rice Mill	Manufacture of grain mill products, starches and starch products, and prepared animal feeds	Khosa Dal singh Road Talwandi bhai
11	Freinds Rice Mill	Manufacture of grain mill products, starches and starch products, and prepared animal feeds	Khosa Dal singh Road Talwandi bhai
12	Prem Singh Rice mill	Manufacture of grain mill products, starches and starch products, and prepared animal feeds	Khosa Dal singh Road Talwandi bhai
13	Bedi Rice Mill	Manufacture of grain mill products, starches and starch products, and prepared animal feeds	Khosa Dal singh Road Talwandi bhai
14	Khurana Rice Mill	Manufacture of grain mill products, starches and starch products, and prepared animal feeds	Khosa Dal singh Road Talwandi bhai
15	Satluj Rice Mill	Manufacture of grain mill products, starches and starch products, and prepared animal feeds	Village Haraj
16	Jeetvansh Rice Mills	Manufacture of grain mill products, starches and starch products, and prepared animal feeds	Village Haraj
17	Jagdambey Rice Mills	Manufacture of grain mill products, starches and starch products, and prepared animal feeds	Village Haraj
18	A. One Rice Mills	Manufacture of grain mill products, starches and starch products, and prepared animal feeds	Village Haraj
19	Sharda Rice Mills	Manufacture of grain mill products, starches and starch products, and prepared animal feeds	Village Haraj
20	Saraswati Rice Mills	Manufacture of grain mill products, starches and starch products, and prepared animal feeds	Village Haraj

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S. No.	Company Name	Type	Location
21	Sham Sunder Rice Mill	Manufacture of grain mill products, starches and starch products, and prepared animal feeds	Village Haraj
22	R.U. Rice Mills	Manufacture of grain mill products, starches and starch products, and prepared animal feeds	Village Kotta ,
23	Bansal Rice Mill	Manufacture of grain mill products, starches and starch products, and prepared animal feeds	Village Kotta ,
24	Narsingh Rice Mill	Manufacture of grain mill products, starches and starch products, and prepared animal feeds	Talwandi bhai
25	Krishna Rice Mills	Manufacture of grain mill products, starches and starch products, and prepared animal feeds	Talwandi bhai
26	Ganesh Rice Mil	Manufacture of grain mill products, starches and starch products, and prepared animal feeds	Talwandi road Zira
27	Punjab Rice and general Mills	Manufacture of grain mill products, starches and starch products, and prepared animal feeds	Talwandi road Zira
28	Tara rice Mills	Manufacture of grain mill products, starches and starch products, and prepared animal feeds	Talwandi road Zira
29	Vardhman rice Mills	Manufacture of grain mill products, starches and starch products, and prepared animal feeds	Kot Isse khan Road Zira
30	Gurudatt and Shanti kumar Rice Mill	-	Kot Isse khan Road Zira
31	Paras rice Mil	Manufacture of grain mill products, starches and starch products, and prepared animal feeds	-
33	Goka Cattle feed Mills	-	Maachi Burga
34	Jagdambey feed Mill	-	Khosa Dal singh Road Talwandi bhai

### 3.16 TRAFFIC STUDY

The site is well connected with NH-15, which is passing at a distance of 1.0 km in West direction from the plant site. The Traffic Study was conducted there only. Proper parking Provision has been provided for the additional vehicles during Operation phase.

**Table - 3.28**  
**Traffic Study**

S. No.	Time	Two wheeler	4- wheeler	Heavy Vehicles	Others	No. of Vehicles
1.	6.00-7.00 AM	34	53	82	22	191
2.	7.00-8.00 AM	58	92	98	37	285
3.	8.00-9.00 AM	78	104	107	24	313
4.	9.00-10.0 AM	97	122	105	48	372
5.	10.00-11.00 AM	94	108	115	62	379
6.	11.00-12.00 AM	122	118	97	65	402
7.	12.00-1.00 PM	88	110	113	31	342
8.	1.00-2.00 PM	93	114	86	39	332

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S. No.	Time	Two wheeler	4- wheeler	Heavy Vehicles	Others	No. of Vehicles
9.	2.00-3.00 PM	98	124	102	27	351
10.	3.00-4.00 PM	86	115	123	42	366
11.	4.00-5.00 PM	105	140	118	33	396
12.	5.00-6.00 PM	74	89	127	22	312
13.	6.00-7.00 PM	86	115	125	43	369
14.	7.00-8.00 PM	62	75	117	45	299
15.	8.00-9.00 PM	53	89	78	31	251
16.	9.00-10.00 PM	40	55	87	28	210
17.	10.00-11.00PM	23	41	57	19	140
18.	11.00-12.00 PM	16	25	63	13	117
19.	12.00-1.00 AM	8	20	37	2	67
20.	1.00-2.00 AM	0	14	28	0	42
21.	2.00-3.00 AM	0	8	22	0	30
22.	3.00-4.00 AM	2	5	15	0	22
23.	4.00-5.00 AM	5	9	13	3	30
24.	5.00-6.00 AM	17	20	23	5	65
	<b>Total</b>	<b>1339</b>	<b>1765</b>	<b>1938</b>	<b>641</b>	<b>5683</b>

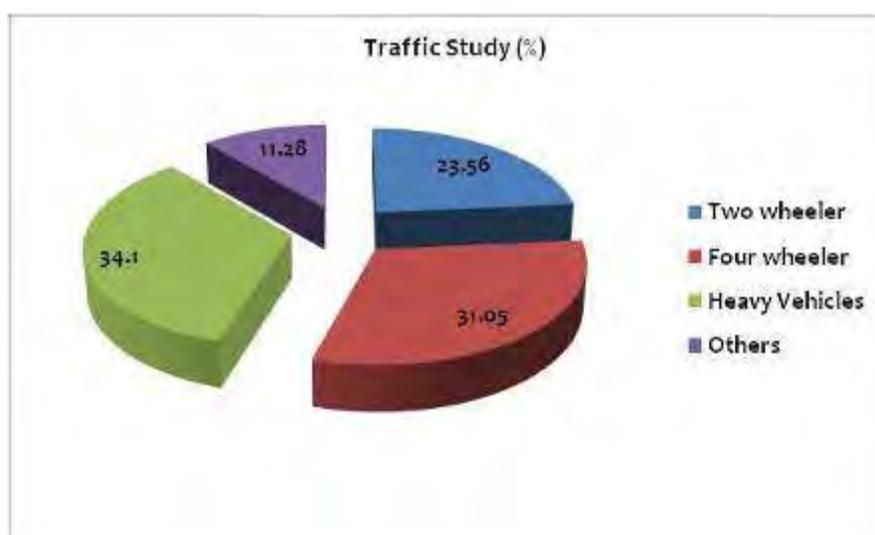


Figure 3.16: Traffic Volume Count

#### Traffic Analysis

From the study, it was observed that traffic movement in the area is average. At present, the traffic load calculated at NH-15 is 5683 vehicles per day approximately. The majority of vehicles include heavy vehicles. The above figure clearly shows that mainly heavy vehicles run on NH-15 (34.1 %) followed by four wheelers (31.05 %) and two wheeler (23.56%). Barely, 11.28% of the total traffic comprises of others, which includes three wheelers, tractors, animal drawn vehicles etc.

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Details regarding additional traffic due to proposed project, anticipated impacts and appropriate measures to reduce the impact of transportation have been discussed in Chapter 4.

### 3.17 SUMMARY

The environment baseline study was conducted in the project area by both secondary data and primary data collection. Abiotic factors including air, water and soil were studied for the core and buffer zone. It was found that most of the parameters were within the limits as per the Indian Standards. In general, there is no major threat to the quality of these parameters. Similarly, the study for the biotic factors was conducted. Hence it can be concluded that the present environment status of the study area is good enough for the project activity. Adoption of adequate pollution control measures will prevent significant harm to the environment due to the the proposed installation project.



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## CHAPTER – IV

### ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

#### 4.1 ENVIRONMENTAL IMPACT STUDY

M/s Malbros International Pvt. Ltd. has an existing plant of 100 KLPD of Grain Based Ethanol / ENA / RS / Industrial Alcohol Plant at Village Mansoorwal, Tehsil Zira, District Ferozepur (Punjab). The environment impact study for the existing unit has been undertaken during construction as well as operation phase and same will be undertaken for the proposed installation project.

Construction as well as operation activity of the project could have an impact on the environment in various ways, such as effect on air, noise level; water & soil quality of the immediate area.

However, for the purpose of development and economic Upliftment of people, there is need for establishment of industries, but such activity has to be undertaken in an environmental friendly manner. Therefore, it is essential to assess the impacts of project on different environmental parameters, so that abatement measures could be planned accordingly thereby paving way for the eco-friendly operation in the area.

#### 4.2 IMPACT DUE TO EXISTING ACTIVITY

Impacts due to the existing project activity have been assessed by surveying of various environmental components/ parameters (For Air, Noise, Water, Soil) in the core as well as buffer zone during the Post Monsoon Season (October to December, 2015) summarised as;

**Air Environment:** Ambient Air Quality Monitoring reveals that the concentrations of PM<sub>10</sub> and PM<sub>2.5</sub> for all the 8 AAQM stations were found between 65 to 88.5 µg/m<sup>3</sup> and 26.5 to 42.3 µg/m<sup>3</sup> respectively.

The concentrations of SO<sub>2</sub> and NO<sub>2</sub> were found to be in range of 5.8 to 10.8 µg/m<sup>3</sup> and 14.7 to 23.8 µg/m<sup>3</sup> respectively, CO in the range of 0.50 to 0.67 mg/m<sup>3</sup>. Methane was found below detection limit.

Since, the results are within the permissible limit. It is revealed that air pollutants being generated from existing unit has very minimal effect on the environment. It is solemnized that continuous pollution control measures will be carried out to maintain the results within the limits as prescribed by the regulatory authorities.

**Noise Environment:** Day time noise level varies from 52.1 to 58.7 Leq. dB (A) in day time and in night time 43.2 to 51.6 Leq. dB (A). The noise levels are well within the prescribed limits and there hence is minimal impact due to existing project as necessary measures are undertaken.

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**Water Environment:** By chemical analysis of ground water samples reveals that there is not much variation in chemical composition of water samples from hand pump and bore wells from nearby villages. Analysis results of ground water reveal the following:

- pH varies from 7.12 to 7.49
- Total hardness varies from 145.20 to 332.80 mg/l
- Total dissolved solids vary from 352.0 to 778.0 mg/l

**Soil Environment:** This soil is of blackish brown colour and is slightly alkaline in nature. Nitrogen is found to be in better amount and Phosphorous is found to be in very less quantity, whereas the Potassium is more than sufficient.

#### 4.3 IMPACT DUE TO PROPOSED ACTIVITY

Impacts due to the proposed project activity have been divided according to the temporal scale into 'Impacts during Construction Phase' & 'Impacts during Operation Phase'.

The impacts on different environmental parameters, due to the project, will be due to various activities carried out during construction phase & operation phase; Construction activity covers pre-construction, machinery installation and commissioning stages and ends with the induction of manpower and start-up. During operation phase of the project, the impacts will be mostly permanent and irreversible in nature.

#### 4.4 ANTICIPATED IMPACTS DURING CONSTRUCTION PHASE & PROPOSED MITIGATION MEASURES

##### 4.4.1 Impact on Topography and Land Use

Topography of the site is flat. Some level of cutting and filling will need to be done to maintain an even topography within the plant site. No major change in topography of the site is envisaged due to proposed project as the same takes place within the existing plant site.

##### 4.4.2 Impact on Air Quality

The main sources of emission during the construction phase are the movement of equipment at site and dust emitted during the leveling grading, earthwork and foundation works. Exhaust emissions from vehicles and equipment to be deployed during the construction phase is also likely to result in marginal increase in the levels of SO<sub>2</sub>, NO<sub>x</sub>, Particulate Matter and CO. The impact will be for short duration. This will be confined within the plant site and is expected to be negligible outside the plant boundary. The impact will, however, be marginal and temporary in nature.

Measures such as proper maintenance of vehicle, checking for the PUC at the entrance, proper training of the drivers so as to ensure adherence to speed limit, covered storage facilities, will be provided to abate dust emissions. Adequate maintenance and regular oiling/greasing of construction equipments will help in controlling the gaseous emissions. Water spraying on roads and construction site will prevent fugitive dust as well.

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#### 4.4.3 Impact on Noise Levels

Heavy construction traffic for loading & unloading and material handling of equipments/ materials is likely to cause an increase in the ambient noise levels. The vehicles used for movement will be taken for preventive maintenance and regular oiling/greasing will be done to reduce noise generation at source. Minor noise generation during construction phase will be temporary and will be restricted to plant site.

#### 4.4.4 Impact on Soil and Water Quality

There may be impact on soil due to disturbance/ removal of topsoil during construction phase. This may result in higher suspended solids and turbidity in runoff water during the monsoon period. However, there are storm water drains to collect runoff from impervious surfaces which is separated of the hoggins and used for other utilities within the plant site. Hence the company is using adequate drainage system for runoff water during construction phase and will maintain the same in the future as well.

Storm water is a leading cause for water pollution. Its runs off collects pollutants and then discharge the same to surface water. This runoff can effect aquatic life, and make the waterways an unhealthy place. However, with the availability of proper separation system of storm water drains there will not be any impact on the surface water. In addition, there will be no exploitation of ground water resources during the construction phase as the mode of water during construction as well as operation phase will be canal water. Hence the groundwater will not have any adverse impact due to the construction phase on the surface water quality.

#### 4.5 ANTICIPATED IMPACTS DURING OPERATION PHASE & PROPOSED MITIGATION MEASURES

The process involved has varying impacts on the different components of the environment. All these impacts will be considered for impact assessment and accordingly the mitigation measures will be adopted. The design basis for all process units will lay special emphasis on measures to minimize the impact at source itself.

##### 4.5.1 Impact on Land Use Pattern

- Since the proposed installation will be done within the existing plant site therefore; there will be no permanent change in land use; only activity intensity will increase due to proposed installation project.
- Besides, no adverse impact on the surrounding land is anticipated. It will be ensured that there would not be any effluent discharge from the plant during operation and management will adopt and practice best measures to prevent release of pollutants outside the plant premises.

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#### 4.5.2 Impact on Air Quality & Mitigation Measures

The operational phase of the project comprises of various activities each of which will have an impact on air quality. The impact on air quality can be due to:

- ∞ Dust emissions
- ∞ Stack emissions

##### A) Dust Emissions

The source of dust emissions is loading/unloading, transportation and storage of raw material & finished product.

Adequate pollution control measures will be taken to keep the emissions from all sources within the statutory norms. Spraying of water on roads will be done to control such emissions.

##### B) Stack Emissions

In a plant, the major emission from stack is Particulate Matter (PM) emissions. In addition, gaseous pollutants (SO<sub>2</sub>, NO<sub>x</sub> and CO) are also anticipated from stack emissions and vehicular emissions.

Efficient Air Pollution Control Equipment (APCE) like ESP will be installed at stacks to keep the emissions within the permissible limits. Stack emissions will be maintained below 50 µg/Nm<sup>3</sup>.

Vehicles and machineries will be regularly maintained. Proper upkeep and maintenance of vehicles will be done.

Hence, the overall quality of the ambient air will be maintained within the limit prescribed by CPCB/SPCB after the commencement of the operation of proposed expansion project.

#### 4.5.2.1 Air Quality Predictions through Mathematical Modeling

The present study assesses the impact on air environment due to the project.

This report gives the peak incremental ground level concentrations of PM<sub>10</sub>, SO<sub>2</sub> & NO<sub>x</sub> up to a distance of 10 km radius from the plant site.

The concentrations have been predicted in all directions covering all types of weather conditions.

##### Air Pollution Modeling

Prediction of impacts on air environment has been carried out employing mathematical model based on a steady state Gaussian plume dispersion model designed for multiple point sources for short term. In the present case, AERMOD version 8.1 dispersion model based on steady state Gaussian plume dispersion, designed for multiple sources and developed by United States Environmental Protection Agency [USEPA] has been used for simulations from Industrial sources.

#### 4.5.2.1.1 Pollutants/Model Options Considered For Computations

The model simulations deal with major pollutant Particulate Matter (PM<sub>10</sub>), SO<sub>2</sub> & NO<sub>x</sub> emitted from the plant.

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#### 4.5.2.1.2 Model Options Used For Computations

The options used for short-term computations are:

- The plume rise is estimated by Briggs formulae, but the final rise is always limited to that of the mixing layer;
- Stack tip down-wash is not considered;
- Buoyancy Induced Dispersion is used to describe the increase in plume dispersion during the ascension phase;
- Calms processing routine is used by default;
- Wind profile exponents is used by default, 'Irwin';
- Flat terrain is used for computations;
- It is assumed that the pollutants do not undergo any physico-chemical transformation and that there is no pollutant removal by dry deposition;
- Washout by rain is not considered;
- Cartesian co-ordinate system has been used for computations; and

#### 4.5.2.1.3 Model Input Data

##### a) Meteorological Data

Meteorological inputs required are Temperature, Relative Humidity, Wind Speed & Wind Direction etc. which was recorded at site during Post Monsoon Season (October to December, 2015). Hourly Meteorological Data has been enclosed as **Annexure - 4** with this Final EIA / EMP Report.

##### b) Stack Emissions

The emission details are given in Table - 4.1:

TABLE - 4.1

Proposed Stack Emission Details

Stack attached to.	Height from ground level (m)	Internal Diameter (Top) (m)	Emission Rate (g/sec)			Velocity (m/sec)	Exhaust Gas			
			PM10	NO <sub>2</sub>	SO <sub>2</sub>		Temp (°C)	Density (Kg/m <sup>3</sup> )	Specific Heat (KJ/Kg °C)	Volumetric Flow (Nm <sup>3</sup> /sec)
Boiler - II (100 TPH)	63	2.5	2.58	104.35	15.87	15	140	0.85	0.406	51.75

#### 4.5.2.1.4 Modeling Procedure

Prediction of ground level concentrations (GLC's) due to plant has been made by AERMOD version 8.1 as per CPCB guidelines. It is US-EPA approved model to predict the air quality. The model uses rural dispersion and regulatory defaults options as per guidelines on air quality models (PROBES/70/1997-1998). Meteorological inputs required are hourly wind speed and direction, ambient temperature, stability class, and mixing height. The model details are as follows.

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### Gaussian Plume Model

The AERMOD version 8.1 model is based on a numerical integration over the study area in the upwind and downwind directions by Gaussian plume formula. This can be applied to the Point, Area, Line, Volume sources (& other forms of area sources) simultaneously and their resultant incremental concentration of the pollutant can be predicted.

### Extrapolation of Wind Speed

Wind speed at stack level is calculated by power law as given below.

$$U_{\text{stack}} = U_{10}(\text{Stack height}/10)^p$$

Where  $U_{10}$  is the wind speed at 10 meter level and  $p$  is the power law coefficient (0.07, 0.07, 0.10, 0.15, 0.35 and 0.55 for stability classes A,B,C,D,E and F respectively) as per Irwin for rural areas (USEPA, 1987).

### Stability Classification

Hourly stability is determined by wind direction fluctuation method as suggested by Slade (1965) and recommended by CPCB (PROBES/70/1997-1998).

$$\sigma_a = W_{dr}/6$$

$\sigma_a$ , is standard deviation of wind direction fluctuation,  $W_{dr}$  is the overall wind direction fluctuation or width of the wind direction in degrees. The table for stability classes is given as under:

Stability Class	$\sigma_a$ (degree)
A	> 22.5
B	22.4 – 17.5
C	17.4 – 12.5
D	12.4 – 7.5
E	7.4 – 3.5
F	< 3.5

### Dispersion Parameters

Dispersion parameters  $\sigma_y$  and  $\sigma_z$  for open country conditions (Briggs, 1974) are used as the project is located on a flat terrain in a rural area. Atmospheric dispersion coefficients vary with downwind distance ( $x$ ) from emission sources for different atmospheric stability conditions. (CPCB – PROBES/70/1997-98).

#### Rural Conditions

Stability Class	$\sigma_y$	$\sigma_z$
A	$0.22x(1+0.0001x)^{-5}$	$0.20x$
B	$0.16x(1+0.0001x)^{-5}$	$0.12x$
C	$0.11x(1+0.0001x)^{-5}$	$0.08x(1+0.0002x)^5$
D	$0.08x(1+0.0001x)^{-5}$	$0.06(1+0.0015x)^5$
E	$0.06x(1+0.0001x)^{-5}$	$0.03x(1+0.0003x)^1$
F	$0.04x(1+0.0001x)^{-5}$	$0.16x(1+0.0003x)^1$

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### Mixing Height

As site specific mixing heights were not available, mixing heights based on IMD publication, “Atlas of Hourly Mixing Height and Assimilative Capacity of Atmosphere in India”, has been considered for Industrial Source Complex model to establish the worst case scenario.

TABLE - 4.2

#### Mixing Height for the Plant Site

##### Post Monsoon Season

Time (Hours)	Mixing Height (m)
0700	70
0800	125
0900	320
1000	450
1100	840
1200	1125
1300	1815
1400	1755
1500	1885
1600	1835
1700	1715
1800	1230
1900	595

Source: IMD publication, “Atlas of Hourly Mixing Height and Assimilative Capacity of Atmosphere in India”

### Presentation of Results

Short-term simulations were carried to estimate concentrations at the receptors to obtain an optimum description of variations in concentrations over the site in 10 km radius covering 16 directions.

The incremental concentrations are estimated for the monitoring period. For each time scale, i.e. for 24 hr the model computes the highest concentrations observed during the period over all the measurement points.

Existing value has been covered in the Background Ambient Air Quality Monitoring.

TABLE - 4.3

#### Peak Incremental Concentration for Different Scenarios

Scenarios	Incremental Concentration of Pollutants ( $\mu\text{g}/\text{m}^3$ )		
	PM <sub>10</sub>	SO <sub>2</sub>	NO <sub>2</sub>
Maximum Background Concentrations (24 Hrs.)	88.5	10.8	23.1
Predicted Max. GLC (24 Hrs.)	0.43	2.57	2.43
Total Concentration	88.93	13.37	25.53
NAAQS - Industrial Limits	100	60	80

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Thus, prediction of maximum incremental GLCs has been done for the project.

The maximum incremental GLCs due to the project for Particulate Matter (PM) are  $0.43 \mu\text{g}/\text{m}^3$ ; for  $\text{SO}_2$  &  $\text{NO}_2$  is  $2.57 \mu\text{g}/\text{m}^3$  &  $2.43 \mu\text{g}/\text{m}^3$  respectively at 990 m in downwind direction. There are no other sensitive receptors like Reserved Forests, Protected Forests, Wild Life Sanctuary and National Park etc, hence impact on ecological health of the area shall be minimum. Pollution Mitigation and Management Plan should be followed to curtail the impact of gaseous and dust emissions in the study area.

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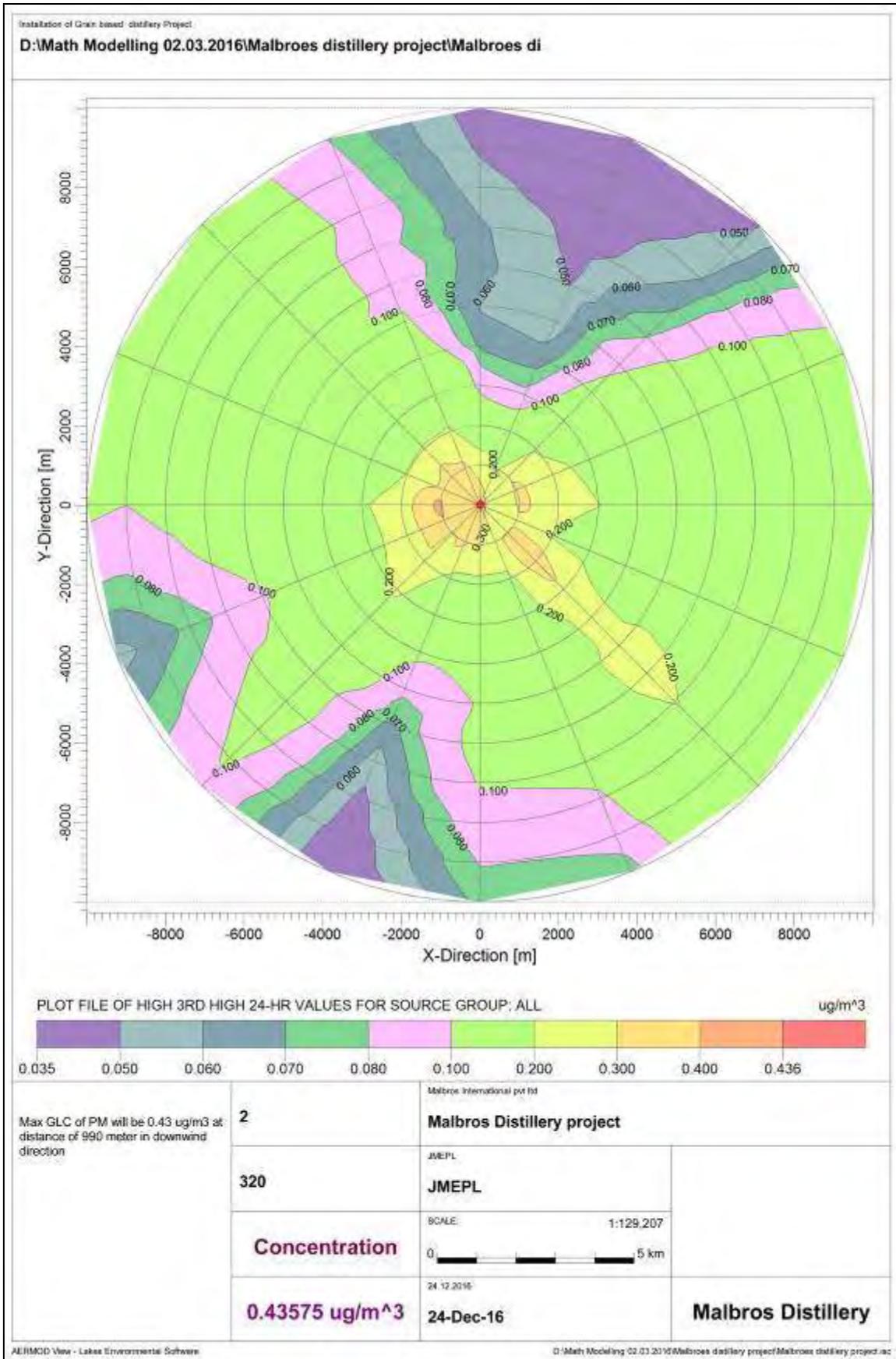


Figure 4.1: Isopleth showing maximum predicted GLC of PM

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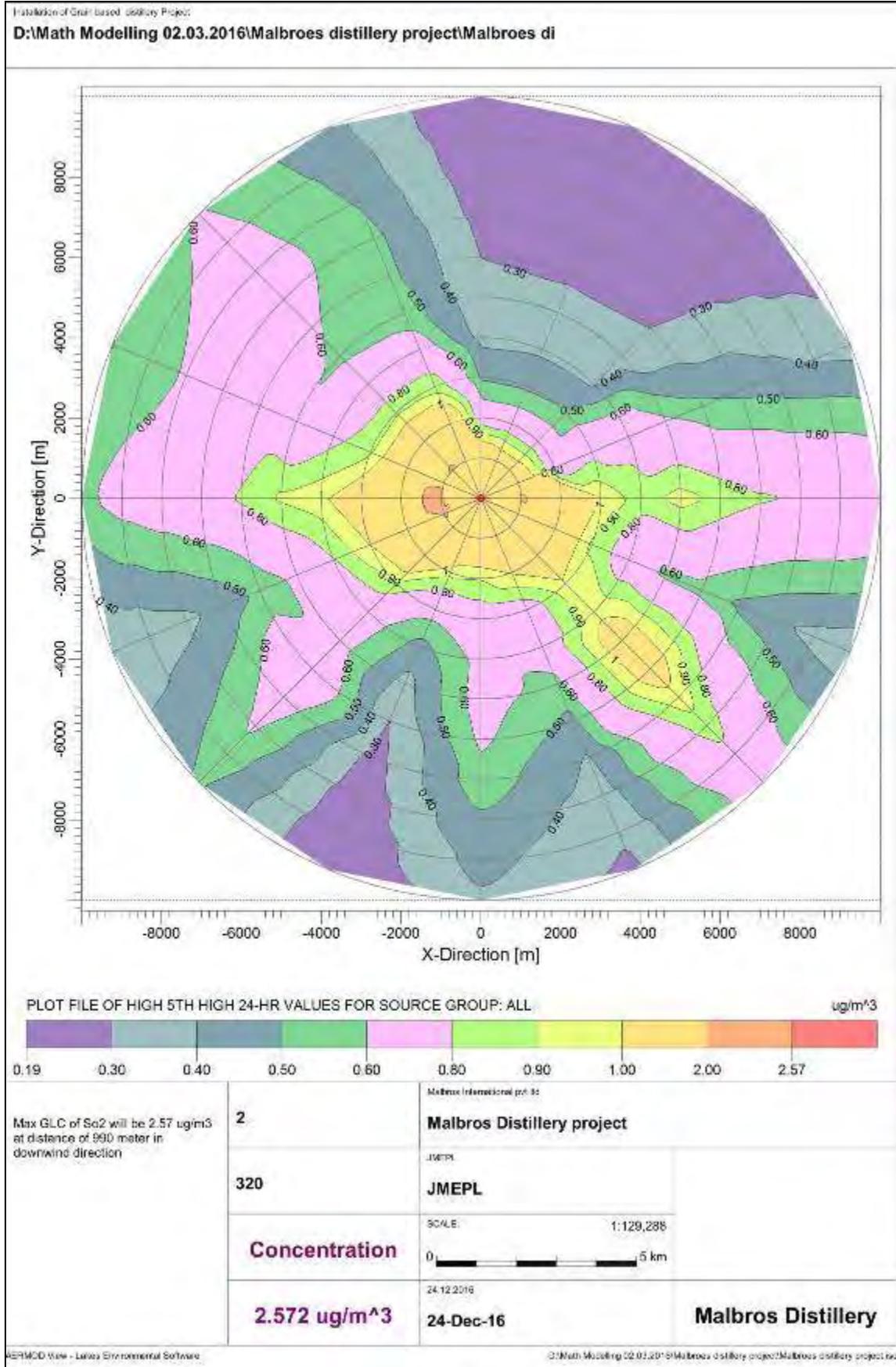


Figure 4.2: Isopleth showing maximum predicted GLC of SO<sub>2</sub>

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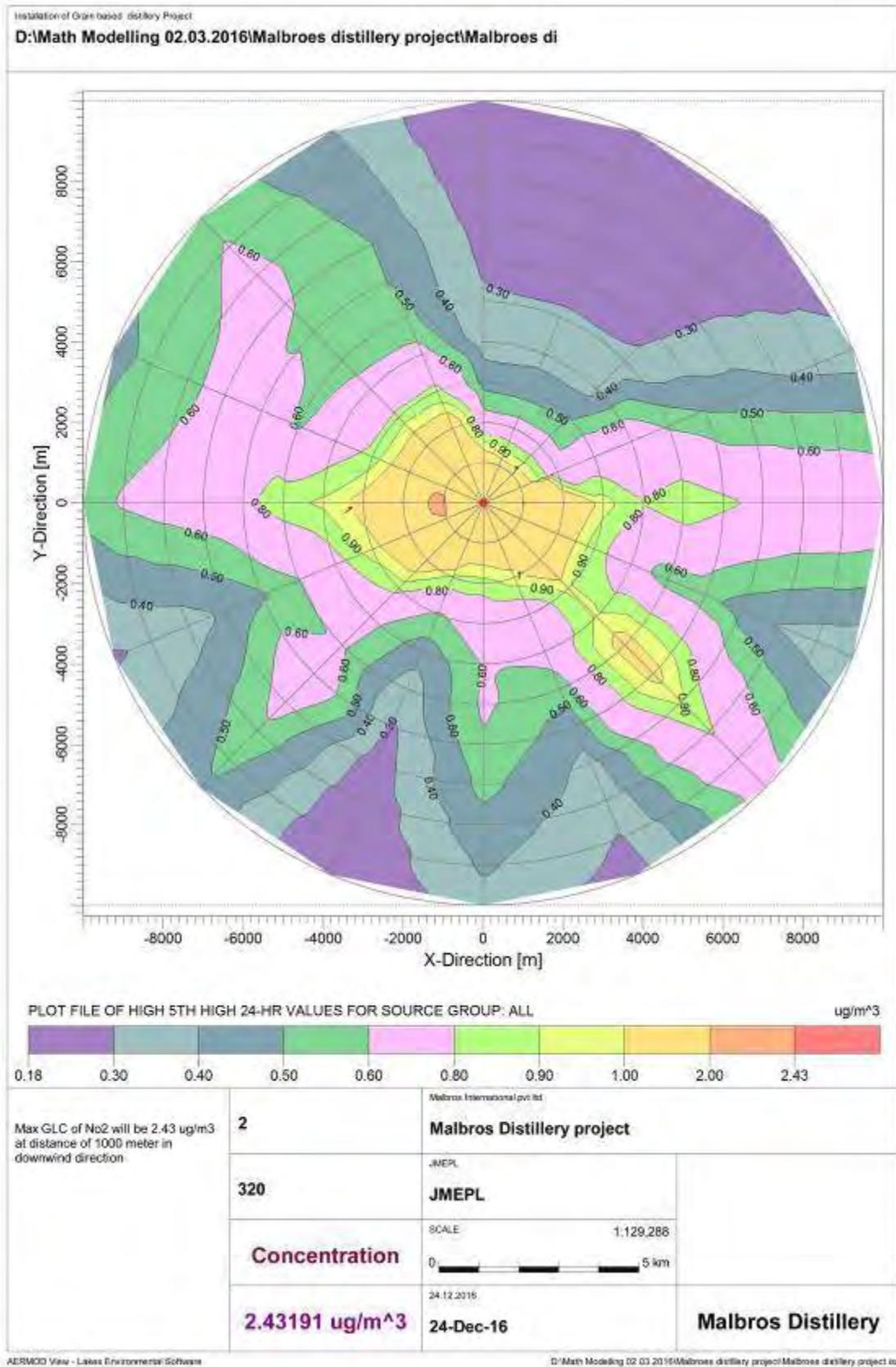


Figure 4.3: Isopleth showing maximum predicted GLC of NO2

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Resultant concentration calculated after adding the predicted incremental value to the existing ambient air quality baseline value, results to be within the prescribed National Ambient Air Quality Standards. Particulate matter as well as gaseous emission shall be within the specified standards and hence the impact on air quality of the study area due to the proposed project shall not be significant enough. More importantly, mitigation plan for the stack emissions, environment management plan and post project monitoring shall ensure the desired ambient air quality.

#### 4.5.2.2 Impact due to Transportation of Raw Material & Finished Product

The unit is located at Village-Mansoorwal, Tehsil- Zira, District-Ferozepur (Punjab). The site is well connected with NH-15 (1.0 km in West direction). Nearest Railway Station is Talwandi Bhai Railway Station (7 km in SSW direction). Nearest Airport is Sri Guru RamDass Jee International Airport, Amritsar (88 km in NNW direction).

Major raw material used for production of alcohol i.e. Grains will be transported by local suppliers through trucks; thus, there will be little impact due to transportation of the same.

Fly ash will be supplied to nearby brick manufacturers in a covered manner; thus, no harmful effect is anticipated on the surrounding environment due to transportation of fly ash.

##### Existing traffic count survey

Existing traffic load survey has been incorporated in Chapter-III of Draft EIA/EMP report.

##### Additional Traffic due to Proposed Project:

The proposed project will have some impact on transportation as movement of raw materials for finished products will be involved. The number of trucks, passenger cars and scooters would increase due to new plant activities in the area. Proper arrangements for movement of vehicles and parking have been proposed in the MIPL complex.

Additional Traffic during operation of the plant due to raw material and finished products transportation has been given in table below.

**Table - 4.4**  
**Additional Traffic due to the proposed project**  
**Raw Material & Finished Product Transportation**

Material	Additional		Type of Vehicle and capacity	Source
	Requirement	No. of Trips per Day		
<b>Raw Material Requirement</b>				
Grain	1250 TPD	62	Truck / 20 Tonnes	Near-by areas via road
Fuel (Biomass)	1372 TPD	91	Truck / 15 Tonnes	From Authorized dealers via Truck
<b>Products</b>				
Alcohol	500 KLPD	25	Tanker / 20 Tonnes	
<b>Solid Waste</b>				
Fly Ash	200	20	Tanker / 10 Tonnes	
<b>By-product</b>				
DDGS	300	30	Truck / 10 Tonnes	
<b>Total no of Trips per Day</b>		<b>228</b>		

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MIPL will take all appropriate measures to reduce the impact of transportation. Proper mitigation measures will be adopted by the company to minimize traffic flow to the best possible extent resulting in low level of dust, noise & gaseous emissions.

#### **Anticipated Impacts**

- ⊗ Increase in traffic density will lead to air pollution.
- ⊗ Movement of vehicles will cause noise pollution.
- ⊗ No direct impact envisaged on the flora and fauna of the area.
- ⊗ Increased traffic may cause accidental incidences and public health problems.

#### **Mitigation Measures**

- ⊗ Vehicles with PUC Certificate will be hired.
- ⊗ Regular maintenance of vehicles will be done to ensure smooth running of vehicle.
- ⊗ Vehicles will be covered with a tarpaulin & not over loaded.
- ⊗ Vehicular emissions will be kept under control and regularly monitored.
- ⊗ Un-necessary blowing of horn will be avoided.
- ⊗ Roads will be maintained in good condition to reduce noise due to traffic.
- ⊗ Greenbelt of appropriate quality & width has already been developed & same will be maintained.
- ⊗ To avoid accidents the speed of vehicles will be low near habitation areas.

#### **4.6 IMPACT ON WATER ENVIRONMENT AND SUGGESTED MITIGATION MEASURES**

Since, distillery is intensive water utilizing industry which results in generation of Grain Slop and Thin Slop, which if discharged untreated can contaminate the ground and surface water quality in terms of increase in BOD, COD, TDS, etc. However, with the help of improved technology for wastewater treatment and recycling as well as reuse of water, the project will be based on “Zero Effluent Discharge” which will prevent any adverse impact on the water quality of the area.

- Fresh water requirement will be met by canal water which will be optimally used into the process and it will be looked upon that the same is recycled into the process.
- Grain Slops (Spent Wash) will be taken care through Centrifuge Decanters for separation of Suspended Solids separated as Wet Cake and which will be used as cattle feed as it contains higher protein. (Also known as DWG- Distillers Wet Grains).
- Thin Slops from the Decanter Centrifuge will be partly recycled back to process (30-35%) and partly taken to Thin Slops Evaporation Plant for concentration of remaining solids to form a Syrup. This syrup is also mixed into the Wet Cake coming out of Centrifuge and forms part of Cattle Feed. (Also known as Soluble – Collectively known as DWGS).

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- DWGS Drier - Wet cake / DWGS will be passed through steam tube bundle drier for drying into cake with 10-12% moisture (max.) to give higher shelf life. Solid dry cakes will be obtained finally.
- The process condensate will be cooled and collected into a neutralization tank with sufficient residence time. After neutralization and filtration this process condensate will be recycled into process use.

#### 4.7 IMPACT DUE TO NOISE AND MITIGATION MEASURES

The baseline data (pre-project scenario) for noise are given in Chapter III of this EIA/EMP Report. After commencement of the plant there will be an increase in the noise levels. The expected noise levels of some of the equipment are given below.

**Table - 4.5**  
**Anticipated Noise Level of Equipment**

S. No.	Name of source equipment	Noise level at 1 meter distance
1.	Pumps	85-100
2.	Forced draft fans	85-100
3.	Induced draft fans	77-97
4.	Compressors	82-105
5.	Boiler feed pump.	90-95
6.	Turbo-generator	90-100
7.	Diesel generator	90-95
8.	Cooling towers	80-85

In this project the installation of equipment/ machinery are new with low generation of noise as per design and also will be housed in acoustically sealed rooms or acoustic enclosures etc. So the propagation of noise to the surrounding area will be reduced to the extent of 20 -30 dB (A).

The general noise level generated from equipment in the Plant (with CPP) would usually be below 85 Leq dB (A) in working area. These noise levels will get reduced to about 75 Leq dB (A) near periphery of the plant.

The above noise levels worked out are without mitigation measures. With the mitigation measures the noise levels will be further restricted within very short distance from the source. The operators/personnel working near the noise sources in the Plant will be provided with earmuffs and earplugs. Green belt will be maintained & further enhanced around the plant premises and all internal roads etc. which act as noise abatement measures. Regular monitoring of noise level will be carried out and corrective measures in concerned machinery to be adopted accordingly.

**Proposed Installation of Unit II - Grain Based Ethanol / ENA / RS / Industrial Alcohol Plant {500 KLPD (2x250 KLPD)} & Co-generation Power Plant {40MW (2x20 MW)} in Existing Distillery Plant**

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#### 4.8 IMPACT ON SOCIO – ECONOMIC CONDITIONS

The project activity and the management will support the local administration and provide other form of assistance for the development of public amenities in the region. The company will actively contribute to improve the socio – economic conditions of the area by providing increased employment opportunities. The management will support for basic amenities to nearby villagers for upgradation of education level, community health, vocational trainings, infrastructure development etc. Therefore, the project will help in many ways for improving the overall status of the area.

#### 4.9 OCCUPATIONAL HEALTH AND SAFETY

- In order to ensure good health of workers, regular health check-up of the plant workers will be carried out.
- Occupational health surveillance programme will be taken as a regular exercise for all the employees and their records maintained.
- Proper storage and handling precautions will be taken. The storage area will be kept cool, dry and well ventilated and away from source of heat, flame or oxidizers.
- Use of Personal Protective Equipment (PPEs) will be encouraged. Proper training programme on use of PPEs, characteristics of the material handled and safety precautions will be arranged.
- Fire safety measures will be taken within the factory premises. All the fire extinguishing media such as water, dry chemicals, CO<sub>2</sub>, sand, dolomite, foam etc. will be kept in vital locations.
- Mock drills will be arranged for the worker to test the effectiveness of the training program from time to time and the way to react in case of emergency.
- Safety precautions will be displayed in the premises on the banners, boards etc.

#### 4.10 SUMMARY

Though every development activity has some negative impact on the environment of the project area, with the use of proper mitigative measures and environment management systems negative impacts shall be checked to acceptable levels. In this project activity use of latest technology, appropriate pollution control equipment, proper operation and maintenance of green belt development (33% of the total project area) will help in reducing the generation at source not to cause any significant impact on the environment and human health of the study area.

Proposed Installation of Unit II - Grain Based Ethanol / ENA / RS / Industrial Alcohol Plant {500 KLPD (2x250 KLPD)} & Co-generation Power Plant {40MW (2x20 MW)} in Existing Distillery Plant At Village-Mansoorwal, Tehsil- Zira, District-Ferozepur (Punjab)
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Table - 4.6

## Anticipated Adverse Environmental Impacts and Mitigation

Discipline	Anticipated Impact	Mitigation Measures
<b>Construction Phase</b>		
Air	Increase in dust concentration due to Leveling activity and Heavy vehicular movement.	<ul style="list-style-type: none"> <li>* Spraying of water in the construction area and on unpaved roads.</li> <li>* Proper maintenance of vehicles will be done. Use of vehicles meeting PUC norms.</li> </ul>
Noise	Increase in noise level due to Construction Equipment.	<ul style="list-style-type: none"> <li>* Equipment will be kept in good condition to keep the noise level within 90 dB(A).</li> <li>* Workers will be provided necessary protective equipments e.g. ear plugs, earmuffs.</li> </ul>
Water	Increase in suspended solids due to soil run-off during heavy precipitation due to loose soil at construction site	<ul style="list-style-type: none"> <li>* Adequate drainage system as storm water drains for runoff water during construction phase and operation phase will be maintained.</li> </ul>
<b>Operation Phase</b>		
Air	Probable increase in concentration of air pollutants	<ul style="list-style-type: none"> <li>* Better maintenance and installation of pollution control equipment i.e. ESP.</li> <li>* Covered storage facilities for raw material &amp; product.</li> <li>* Water spraying for abatement of PM emission.</li> <li>* CPCB &amp; CREP guidelines will be followed.</li> </ul>
Noise	Increase in noise level within the plant area	<ul style="list-style-type: none"> <li>* Ear plugs will be provided to persons working in high noise zone.</li> <li>* Properly insulated enclosures will be provided to equipments making excessive noise.</li> <li>* Greenbelt development/ plantation will help in attenuating noise.</li> </ul>
Water	Generation of waste water	<ul style="list-style-type: none"> <li>* Domestic wastewater generated from the plant office and colony is being / will be treated in STP and treated effluent is being / will be utilized in process (CPP).</li> <li>* Wastewater generated from CPP is being / will be treated in the ETP and treated effluent is being / will be utilized in process (CPP).</li> <li>* No effluent is being / will be discharged</li> </ul>

<b>Proposed Installation of Unit II - Grain Based Ethanol / ENA / RS / Industrial Alcohol Plant {500 KLPD (2x250 KLPD)} &amp; Co-generation Power Plant {40MW (2x20 MW)} in Existing Distillery Plant</b> At Village-Mansoorwal, Tehsil- Zira, District-Ferozepur (Punjab)
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Discipline	Anticipated Impact	Mitigation Measures
		outside the plant premises.
Soil	Degradation of soil quality due to settling of air borne dust	<ul style="list-style-type: none"> <li>* Use of efficient pollution control systems</li> <li>* Maintaining proper stack height so as to ensure there is no deposition of dust in the nearby areas.</li> <li>* Soil samples will be collected periodically and soil quality will be tested.</li> </ul>
Biological Environment	Positive as greenbelt of appropriate width has been developed and maintained by MIPL in the area	-
Socio-economic Environment	Overall development of the area in respect of the infrastructure development, educational growth, health facilities etc.	-

Though every development activity has some negative impact on the environment of the project area, with the use of proper mitigative measures and environment management systems negative impacts shall be checked to acceptable levels. In this project activity use of latest technology, appropriate pollution control equipment, proper operation and maintenance of greenbelt development (>33% of the total project area) will help in reducing the generation at source not to cause any significant impact on the environment and human health of the study area.



<p><b>Proposed Installation of Unit II - Grain Based Ethanol / ENA / RS / Industrial Alcohol Plant {500 KLPD (2x250 KLPD)} &amp; Co-generation Power Plant {40MW (2x20 MW)} in Existing Distillery Plant</b>          At Village-Mansoorwal, Tehsil- Zira, District-Ferozepur (Punjab)</p>
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## CHAPTER V

### ANALYSIS OF ALTERNATIVES (TECHNOLOGY AND SITE)

#### 5.1 INTRODUCTION

As per EIA Notification dated 14<sup>th</sup> Sept., 2006; as amended from time to time; the Chapter on “Analysis of Alternatives (Technology & Site)” is applicable only, if the same is recommended at the Scoping stage.

As per the ToR points issued by MoEF&CC, New Delhi Delhi vide letter no. J-11011/228/2015-IA II (I) dated 28<sup>th</sup> December, 2015 for the proposed installation of Unit II - grain based distillery, the Analysis of Alternatives (Technology & Site) is not required.

M/s. Malbros International Private Limited has proposed an installation of Unit II of {500 KPLD (2 x 250 KLPD)} Grain based Distillery along with {40 MW (2 x 20 MW)} Co-generation Power Plant in Existing Distillery Plant at Village Mansoorwal, Tehsil Zira, District Ferozepur (Punjab). Since the proposed installation will be done within the existing plant site, therefore, no alternative site has been considered for the same.



<p><b>Proposed Installation of Unit II - Grain Based Ethanol / ENA / RS / Industrial Alcohol Plant {500 KLPD (2x250 KLPD)} &amp; Co-generation Power Plant {40MW (2x20 MW)} in Existing Distillery Plant</b></p> <p>At Village-Mansoorwal, Tehsil- Zira, District-Ferozepur (Punjab)</p>
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## CHAPTER-VI

### ENVIRONMENTAL MONITORING PROGRAMME

#### 6.1 INTRODUCTION

Post Project Monitoring is considered an essential part to check the impact of any project activity and compliance to conditions of environmental clearance and consent to operate. Hence, monitoring of various environmental parameters is being/will be carried out on a regular basis to ascertain the following:

- State of Pollution within the plant site and in its vicinity.
- Generate data for predictive or corrective purpose in respect of pollution.
- Examine the efficiency of pollution control system adopted at the site.
- To assess environmental impacts.

Monitoring is being/will be carried out at the site as per the norms of CPCB. Environmental Monitoring Program is being/will be conducted for various environmental components as per the conditions stipulated in Environmental Clearance Letter issued by MoEFCC, New Delhi & Consent to Establish/ Consent to Operate issued by PPCB.

Six monthly compliance reports is being/will be submitted on regular basis to MoEFCC, New Delhi by 1<sup>st</sup> of June & 1<sup>st</sup> of December. Quarterly compliance Report for conditions stipulated in Consent to operate is being / will be submitted to PPCB on regular basis.

Various environmental components and pollution sources, which is being / will be monitored under environmental monitoring program are stack emission, ambient air quality, water quality and noise levels. Details of the Environmental Monitoring program, which will be undertaken for various environmental components, are detailed below.

#### 6.2 FORMATION OF EMC (ENVIRONMENT MANAGEMENT CELL)

In order to maintain the environmental quality within the standards, regular monitoring of various environmental components is necessary. M/s. Malbros International Private Limited has a full-fledged Environmental Management Cell (EMC) reporting directly to Functional/Technical Head for environmental monitoring and control. The EMC team takes care/will take care of pollution monitoring aspects and implementation of control measures.

A group of qualified and efficient engineers and officers with technicians have been deputed for maintenance, up keeping and monitoring the pollution control equipment, to keep them in working at the best of their efficiencies.

##### 6.2.1 Structure of EMC

Structure of Environment Management Cell is given in Fig 6.1.

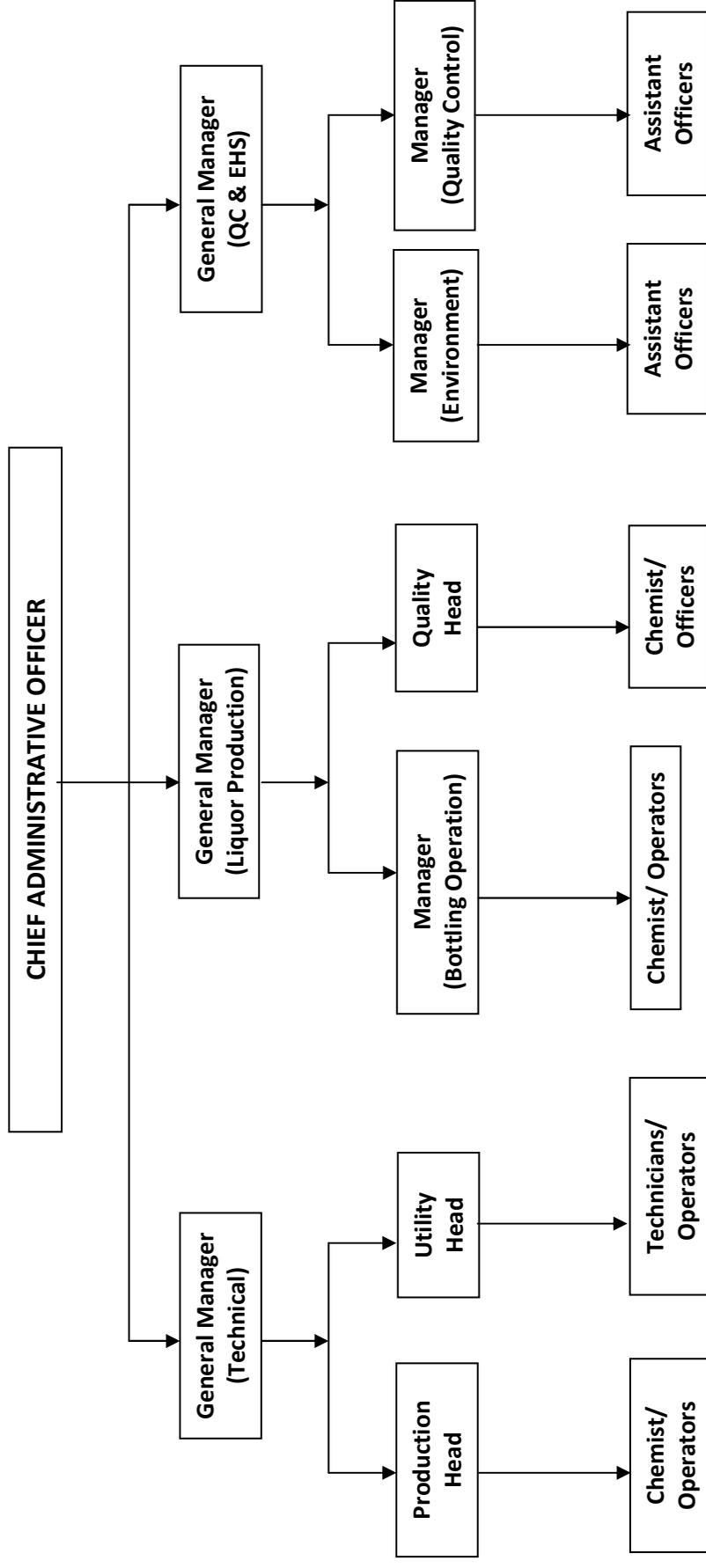


Figure 6.1 – Structure of Environment Management Cell

**Proposed Installation of Unit II - Grain Based Ethanol / ENA / RS / Industrial Alcohol Plant {500 KLPD (2x250 KLPD)} & Co-generation Power Plant {40MW (2x20 MW)} in Existing Distillery Plant**

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### 6.2.2 Responsibilities of EMC

The responsibilities of the EMC include the following:

- i. Ambient air quality monitoring in core as well as in buffer zone.
- ii. Statistical interpretation of monitoring results & up-gradation in air pollution control measures accordingly.
- iii. Submission of monitoring results to the regulatory authorities on regular basis.
- iv. Specification and regulation of maintenance schedules for pollution control equipment.
- v. Maintenance of the greenbelt/plantation.
- vii. Proper implementation of the Environmental Management Plan.
- viii. Organizing meetings of the Environmental Management Committee and reporting to the management.

## 6.3 MEASUREMENT METHODOLOGIES

### 6.3.1 Instruments to be/being Used

The following instruments are being/will be used for data collection work in the monitoring schedule:

1. Respirable Dust Collector with attachment for gaseous Pollutants
2. Fine Particulate Matter (FPM) Sampler
3. Micro Meteorological Station
4. Sound Level Meter
5. Digital D.O. Meter
6. Water Level Indicator
7. Global Positioning System (GPS)

In addition to the above instruments, the data on land use, vegetation and agricultural crops to be collected by the field team by meeting with a large number of local inhabitants in the study area and different government departments / agencies.

### 6.3.2 Monitoring Program

The post project Monitoring includes/will include details of all major/ minor impact in the core zone and area within buffer zone for the following parameters: -

- Micro - meteorological data
- Ambient Air Quality Monitoring
- Water Quality Monitoring – Ground water
- Soil Quality Monitoring
- Noise Level Monitoring
- Demography and socio-economic analysis based on last available census data for entire study area.
- Medical Check-up for the employees

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### 6.3.2.1 Monitoring Schedule

Details of the Environmental Monitoring schedule / frequency, which is being/will be undertaken for various environmental components as per conditions of EC / CTE / CTO, are detailed below:

**Table No.: 6.1**  
**Post Project Monitoring**

S. No.	Description	Frequency of Monitoring
1.	Ambient Air Quality	as per EC/CTO conditions
2.	Stack Monitoring	Continuous Monitoring
3.	Water Quality	Quarterly
4.	Noise Level Monitoring	Quarterly as per CPCB guidelines
5.	Soil Quality	Yearly
6.	Medical Checkup of Employees	Yearly

### 6.3.3 Methodology Adopted

Post project monitoring is being/will be carried out as per conditions stipulated in Environmental Clearance Letter issued by MoEFCC, New Delhi; Consents issued by PPCB as well as according to CPCB guidelines.

The Plant site is considered as core zone and the area lying within 10 km radius from the plant site is considered to be the buffer zone where slight impacts may be observed on physical and biological environment and that too occasional.

The following table gives details of Post Project Monitoring program:

**Table No.: 6.2**  
**Monitoring Methodology**

Attributes	Sampling		Measurement Method	Test Procedure
	Network	Frequency		
<b>A. Air Environment</b>				
<b>Pollutants</b>	4 to 6 locations in the plant impact area (One location in upwind side, one in downwind side / impact zone, other nearby receptors)	As per revised National Ambient Air Quality Standards (NAAQS) vide MoEFCC circular, dated 16.11.2009		
• PM <sub>10</sub>			Gravimetric method	-
• PM <sub>2.5</sub>			Gravimetric method	-
• SO <sub>2</sub>			EPA Modified West & Geake method	Absorption in Potassium Tetra Chloromercurate followed by Colorimetric estimation using P-Rosaniline hydrochloride and Formaldehyde (IS: 5182 Part - II).
• NO <sub>2</sub>			Arsenite modified	Absorption in dill NaOH and then

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			Jacob & Hochheiser	estimated colorimetrically with sulphanimide and N (1-Nepthyle) Ethylene diamine Dihydrochloride and Hydrogen Peroxide (CPCB Method).
• CO	-	-	Non Dispersive Infra Red (NDIR) Spectroscopy	-
<b>B. Stack Monitoring</b>				
<b>Pollutant</b> PM	4 to 6 locations in the plant impact area	As per CPCB Guideline and Indian Standard 11255 (1985).	As Per CPCB Guideline	Gravimetric method
SO <sub>2</sub>	4 to 6 locations in the plant impact area	As per CPCB Guideline and Indian Standard 11255 (1985).	As Per IS-11255 part (2) 1985 (Absorbing Solution of H <sub>2</sub> O <sub>2</sub> , Isopropanol Reagent)	Absorption in H <sub>2</sub> O <sub>2</sub> , Isopropanol followed by Colorimetric estimation using Sulphuric acid and Barium Chloride as Per IS-11255 part (2) 1985
NO <sub>2</sub>	4 to 6 locations in the plant impact area	As per CPCB Guideline and Indian Standard 11255 (1985).	As Per IS-11255 part (7) 2005 with NOx flask assembly.	Absorption of Sample in NOx flask assembly Followed by Colorimetric estimation using Phenol-di-sulphonic acid and other reagent as Per IS-11255 part (7) 2005
<b>C. Water Environment</b>				
pH, Turbidity, Colour, Odour, Taste, TDS, Total Hardness, Calcium hardness, Magnesium hardness, Chloride, Fluoride, Sulphate, Nitrates, Alkalinity, Iron, Copper, Manganese, Mercury, Cadmium, Selenium, Arsenic, Lead, Cyanide, Zinc, Chromium, Aluminum, Boron, Phenolic compounds.	Set of grab samples during pre and post-monsoon for ground and surface water for 10 km distance	Diurnal and Season wise	As per IS 10500	Samples for water quality shall be collected and analyzed as per: IS : 2488 (Part 1-5) Methods for sampling and testing of Industrial effluents Standard methods for examination of water and wastewater analysis published by American Public Health Association.

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<b>D. Noise</b>				
Noise levels at Day & night time -Leq dB (A)	Plant Boundary, High noise generating areas within the core zone	Quarterly / Half yearly	As per CPCB norms	As per CPCB norms
<b>E. Soil</b>				
pH, Bulk Density, Soil texture, Nitrogen, Available Phosphorus, Potassium, Calcium, Magnesium, Sodium, Electrical Conductivity, Organic Matter, Chloride	4 to 6 locations in the plant impact area	Yearly/half yearly	As per USDA Method	As per USDA Method

#### 6.4 LOCATIONS OF MONITORING STATIONS

The location of the monitoring stations have been/will be selected on the basis of prevailing micro – meteorological conditions of the area like; wind direction & wind speed, relative humidity, temperature.

3 to 4 AAQM stations have been/will be selected (including 1 location in upwind side and downwind side / impact zone) to assess ambient air quality of the area. Noise level monitoring is being/will be carried out on plant site and in high noise generating area within the plant site. Water & soil monitoring locations have been/will be decided on the basis of general slope of the area & drainage pattern. Locations for the post project monitoring after the proposed installation of unit II project will be as under:

**Table: 6.3**

**Location of Post-Project Monitoring Stations**

S. No.	Description	Location
1.	Ambient Air Quality	Plant site & as per EC/CTO conditions
2.	Stack emissions	Plant site
3.	Noise Level Monitoring	Plant Boundary & as per EC/CTO conditions
4.	Water Level & Quality	Nearby Ground water sources
5.	Health Check-up	Nearby Hospitals

#### 6.5 DATA ANALYSIS

Monitoring data analysis is being/will be done by MoEFCC approved laboratory as per CPCB guidelines & timely submitted to concerned authority (specified in Environment Clearance Letter issued by MoEFCC, New Delhi and Consent issued by PPCB on regular basis.

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## 6.6 BUDGETARY PROVISION FOR ENVIRONMENT MANAGEMENT

The budget proposed for the proposed installation project and that for the environmental protection measures is given as below:

- Capital Cost for the Proposed Installation project: Rs. 583 Crores
- **Cost for Environmental Protection Measures:**
  - ✓ Capital Cost: Rs. 58 Crores
  - ✓ Recurring Cost: Rs. 10 Crores/annum

### 6.6.1 EMP Cost break-up is given in Table below:

**Table 6.4**  
**Breakup of EMP cost**

S. No.	Description	Proposed Capital Cost (Crores)	Recurring Cost / annum (Crores)
1.	Air Pollution Control	16.5	4.0
2.	Water Pollution Control (Effluent Treatment System)	21.0	3.0
3.	Solid Waste Management	15.0	2.0
4.	Environment Monitoring and management	1.5	0.2
5.	Green Belt Development	2.8	0.4
6.	Rain Water Harvesting Measures & Others	1.2	0.4
<b>Total</b>		<b>58 Crores</b>	<b>10 Crores</b>



<p><b>Proposed Installation of Unit II - Grain Based Ethanol / ENA / RS / Industrial Alcohol Plant {500 KLPD (2x250 KLPD)} &amp; Co-generation Power Plant {40MW (2x20 MW)} in Existing Distillery Plant</b>          At Village-Mansoorwal, Tehsil- Zira, District-Ferozepur (Punjab)</p>
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## CHAPTER VII

### ADDITIONAL STUDIES

#### 7.1 INTRODUCTION

As per the EIA notification dated 14<sup>th</sup> September 2006, as amended from time to time; the first technical presentation (for Tor approval) was held before EAC (II) on 30<sup>th</sup> November, 2015. The Committee had issued Terms of Reference (ToR) vide their letter no. J-11011/228/2015-IA II (I) dated 28<sup>th</sup> December, 2015 for the preparation of the EIA/EMP Report.

As per ToRs prescribed by MoEFCC, New Delhi, the following additional studies were carried out:-

- A) Public Consultation
- B) Risk Assessment and Hazard Management
- C) Rain Water Harvesting

#### 7.2 Public Consultation

Public Hearing for Proposed installation of Unit II Grain based Ethanol / ENA / RS / Industrial Alcohol Plant of capacity 500 KLPD (2x250 KLPD) & Co-generation Power Plant of capacity 40 MW (2x20 MW) in the existing distillery plant site at Village Mansoorwal, Tehsil Zira, District Ferozepur (Punjab) by M/s. Malbros International Private Limited was conducted on 04<sup>th</sup> May, 2016 at 12.30 pm at the project site of the industry at Village Mansoorwal, Tehsil Zira, District Ferozepur (Punjab).

Following details of the Public Hearing Proceedings are appended herewith the Final EIA/EMP Report:

- Public Hearing Proceedings
- Public Hearing Notice published in Newspapers “The Tribune” and “Ajit” dated 03<sup>rd</sup> April, 2016.
- Photographs of Public Hearing
- Action Plan for the issues raised during Public Hearing.

#### 7.2.1 Public Hearing Proceedings

Public Hearing Proceeding along with attendance sheet has been enclosed as **Annexure 10** along with this Final EIA/EMP Report.



7-2-3 Photographs of Public Hearing



<b>Proposed Installation of Unit II - Grain Based Ethanol / ENA / RS / Industrial Alcohol Plant {500 KLPD (2x250 KLPD)} &amp; Co-generation Power Plant {40MW (2x20 MW)} in Existing Distillery Plant</b> At Village-Mansoorwal, Tehsil- Zira, District-Ferozepur (Punjab)
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#### 7.2.4 Action Plan for the issues raised during Public Hearing

S. No.	Name of the Person	Issues / Points raised	Reply to the Issues / points raised	Action Plan
1.	Sh. Sarabjit Singh S/o Darshan Singh, r/o Zira, District Ferozepur.	<ul style="list-style-type: none"> <li>How much paddy straw will be procured by the company from this area</li> <li>Whether the company will provide the machines for preparing the paddy straw bales.</li> </ul>	<p>These machines are costly. One machine is already available with the company, which is working in district Bathinda. Some of the private agencies in the field are coming up in the market at their own for profit purpose. In future more companies are likely to come up but till such time the promoter company will make own arrangements.</p> <ul style="list-style-type: none"> <li>About 800 workers are proposed to be employed. Preference will be given to local residents based on their skill and qualification.</li> <li>The company will purchase the food grains which are unfit for human consumption.</li> <li>The purchase of corn will be as per policy/directions of State Govt.</li> </ul>	<p>Private agencies already doing the jobs. Company will also be engaged their agencies to choppe and bale the paddy straw.</p> <ul style="list-style-type: none"> <li>The company proposes to provide direct &amp; indirect employment to more than about 800 persons.</li> <li>Local People are employed on the basis of their skill / qualification and as per requirement.</li> <li>DDGS will be used as Cattle Feed.</li> </ul>
2.	Sh. Harmit Singh S/o Sh. Buta Singh, r/o Zira, District Ferozepur.	<ul style="list-style-type: none"> <li>Whether the work force to be employed by the promoter company will be local or engaged from outside.</li> <li>Whether the company will procure 2<sup>nd</sup> grade quality food grains.</li> <li>Whether the DDGS will be given to the farmers on subsidized rates.</li> </ul>	<p>Mr. Gaurav Saini, Senior Manager, J.M. Environment consultant stated that as per the guidelines of Central Pollution Control Board an Electrostatic Precipitator (ESP) will be installed which will arrest even very small unburnt particles. As such, there will be no harmful effect in the areas due to particulate matter.</p> <p>Since, it is a grain based processing unit and not molasses based unit, as such there will be no odour problem with the operations of plant.</p>	<ul style="list-style-type: none"> <li>ESP will be installed with the boiler equipped with adequate stack height.</li> <li>Continuous online stack monitoring system will be installed.</li> <li>The cost allocated for control of air pollution is Rs. 16.4 Crores.</li> </ul>
3.	Sh. Jasbir Singh S/o Sh. Sucha Singh, r/o Zira, District Ferozepur.	Will there be smoke emissions from the industry. If yes, then what will be its effects on the surrounding areas		
4.	Sh. Gurmel Singh, Ex. Sarpanch, Village Mansoorwala, District Ferozepur.	Whether there will be any odour problem due to Operations of proposed industrial plant.		

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5.	Sh. Rajwinder Singh S/o Sh. Jang Bahadur Singh, r/o Zira, District Ferozepur.	<ul style="list-style-type: none"> <li>How much quantity of Ethanol will be mixed with petrol and what will be the quality of fuel.</li> <li>Who will be offered employment</li> </ul>	<ul style="list-style-type: none"> <li>Ethanol will be mixed in petroleum products as per specifications of Petroleum Ministry and will be purchased by Govt. of India agencies.</li> <li>As already stated, preference in employment will be given to locals based on their skill and qualification. Moreover, CSR activities will be undertaken for the development of the area.</li> </ul>	<ul style="list-style-type: none"> <li>Local People are employed on the basis of their skill / qualification and as per requirement.</li> <li>Total budget earmarked towards Enterprise Social Commitment is Rs. 14.57 Crores which will be bifurcated for various activities like education, community health, sustainable community development &amp; building infrastructure. Details of the same are given in Chapter-VIII.</li> </ul>
6.	Sh. Jaspal Singh Pannu S/o Sh. Jagdev Singh Pannu r/o Mansoorwal, District Ferozepur.	He thanked the project proponent stating that he has always supported the area people and removed their difficulties. Industry is necessary for development of the area and he requested the project proponent to continue their support to the area people.	--	--
7.	Sh. Simaranpreet Singh S/o Sh. Kanwarjit Singh, r/o Zira, Science studies	What kind of chemicals wastes will be generated from the industry and how will those wastes be handled and disposed off.	<p>It will be a zero liquid discharge plant as entire wastewater will be reused after treatment in R.O. &amp; Multiple Effect Evaporator (MEE). Only slurry of MEE will be Centrifuged and formed into thick sludge which again will be cattle feed by-product. No other chemical waste will be generated.</p>	<ul style="list-style-type: none"> <li>The distillery will be based on Zero Effluent Discharge. No industrial waste water will be discharged from the plant.</li> <li>Grain Slops (Spent Wash) will be taken through Centrifuge Decanters for separation of Suspended Solids separated as Wet Cake &amp; will then be treated in Multi Effect Evaporator followed by dryer.</li> <li>The company has proposed a capital cost of Rs. 58 Crores and Rs. 10 Crores / annum as recurring cost for Environment protection measures. Details of the same have been given in Chapter – VI.</li> </ul>

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### 7.3 RISK ASSESSMENT AND HAZARD MANAGEMENT

Hazard analysis involves the identification and quantification of the various hazards (unsafe condition) that exist in the plant. On the other hand, risk analysis deals with the identification and quantification of the risk, the plant equipment and Personnel are exposed to, due to accidents resulting from the hazards present in the plant.

Risk analysis involves the identification and assessment of risks to the population exposed to hazards present. This requires an assessment of failure probability, credible accident scenario, vulnerability of population etc. Much of this information is difficult to get or generate consequently, the risk analysis in present case is confined to maximum credible accident studies and safety and risk aspect related to proposed installation unit and Co-Generation power plant.

Activities requiring assessment of risk due to occurrence of most probable instances of hazard and accident are both onsite and off-site.

#### On-site

- Exposure to fugitive dust, noise, and other emissions
- Housekeeping practices requiring contact with solid and liquid wastes
- Emission/spillage etc. from storage & handling

#### Off-site

- Exposure to pollutants released from offsite/ storage/related activities
- Contamination due to accidental releases or normal release in combination with natural hazard
- Deposition of toxic pollutants in vegetation / other sinks and possible sudden releases due to accidental occurrences.

#### 7.3.1 Risk Analysis Methodologies

Risk assessment often requires the synthesis of risk profiles, which represent the probability distribution of total annual loss due to a certain set of events or activities. These assessments usually involve estimation of losses for several sub-classifications of the overall process and synthesis of the results into an aggregate risk profile.

Main risk assessment technologies are:

- Hazard and operability study (Hazop), and
- Fault Tree Analysis (FTA)

##### 7.3.1.1 Hazop Study

The hazop study is a systematic technique of identifying hazards of operability problems of a process and lists all possible deviations from normal operating condition and how they might occur. The consequences of the process are assessed and the means available to detect and correct the deviations are examined. Thus, within the entire process all “credible” deviations that could lead to hazardous events or operability problems are identified.

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### 7.3.1.2 Fault Tree Analysis (FTA)

FTA is primarily a means of analyzing non-identifiable hazards. Hazards of top events (the ultimate happening that is to be avoided) are first identified by other techniques such as HAZOP. Then all combinations of individual failures that can lead to that hazardous event show the logical format of the fault tree. Estimating the individual probabilities and then using the appropriate arithmetical expressions can calculate the top event frequency.

### 7.3.2 Disaster Management Plan

#### 7.3.2.1 Definition

A major emergency in an activity/project is one which has the potential to cause serious injury or loss of life. It may cause extensive damage to property and serious disruption both inside and outside the activity/project. It would normally require the assistance of emergency services to handle it effectively.

#### 7.3.2.2 Scope

An important element of mitigation is emergency planning i.e. identifying accident possibility, assessing the consequences of such accidents and deciding on the emergency procedures, both on site and off site that would need to be implemented in the event of an emergency. Emergency planning is just one aspect of safety and cannot be considered in isolation from the proposed project and hence before starting to prepare the plan, works management will ensure that the necessary standards, appropriate to safety legislation, are in place.

#### 7.3.2.3 Objectives

The overall objectives of the emergency plan will be:

- To localize the emergency and, eliminate it; and
- To minimize the effects of the accident on people and property.

Elimination will require prompt action by operations and works emergency staff using, for example, fire-fighting equipment, water sprays etc.

Minimizing the effects may include rescue, first aid, evacuation, rehabilitation and giving information promptly to people living nearby.

#### 7.3.2.4 Identification of Hazards

The following types of hazards may be identified at M/s. Malbros International Private Limited.

- Fire in Electric Panels, Oil room and alcohol storage.
- Waste treatment processes.
- Cleaning of barrels, which have held chemical substances.

To deal the above emergencies, the Emergency Plan is prepared.

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### 7.3.2.5 Safety Measures for Storage & Handling of Alcohol

The alcohol will be directly fed to the bottling unit mechanically and no manual handling will be involved which will reduce the risk of spillage in the storage area. Following precautionary measures would be taken for safety:

- **HANDLING AND STORAGE;** Keeping away from heat, sparks and open flame, care will be taken for avoidance of spillage, skin and eye contact, well ventilation, Use of approved respirator if air contamination is above acceptable level will be promoted. For Storage and handling following precautions will be taken:
  - Keeping away from oxidizers, heat and flames.
  - Avoidance of plastics, rubber and coatings in the storage area.
  - Cool, dry, & ventilated storage and closed containers.
  - Grounding of the container and transferring of equipment to eliminate static electric sparks.

In case of any emergency following measures would be taken:

- **FIRST AID MEASURES:** For Skin contact, Eye contact, & Inhalation.
- **FIRE FIGHTING MEASURES:**
  - Use of extinguishing media surrounding the fire as water, dry chemicals (BC or ABC powder), CO, Sand, dolomite, etc
  - Foam System for firefighting will be provided to control fire from the alcohol storage tank. The foam thus produced will suppress fire by separating the fuel from the air (oxygen), and hence avoiding the fire & explosion to occur in the tank. Foam would blanket the fuel surface smothering the fire. The fuel will also be cooled by the water content of the foam.
  - The foam blanket suppresses the release of flammable vapors that can mix with the air.
  - Special Fire Fighting Procedures; Keeping the fire upwind. Shutting down of all possible sources of ignition, keeping of run-off water out of sewers and water sources. Avoidance of water in straight hose stream which will scatter and spread fire. Use of spray or fog nozzles will be promoted, cool containers will be exposed to flames with water from the side until well after the fire is out.
  - Hazardous Decomposition Products: gases of Carbon Monoxide (CO) & Carbon Dioxide (CO<sub>2</sub>).
- **ACCIDENTAL RELEASE MEASURES:** For Spill Cleanup well Ventilation, Shutting off or removal of all possible sources of ignition, absorbance of small quantities with paper towels and evaporate in safe place like fume hood and burning of these towels in a safe manner), Use of respiratory and/or liquid-contact protection by the Clean-up personnel will be promoted.

### 7.3.3 Emergency Planning

#### 7.3.3.1 General

Disaster Management Plan for an industrial unit is necessarily a combination of various actions which are to be taken in a very short time but in a present sequence to deal effectively and efficiently with any disaster, emergency or major accident with an aim to keep the loss of men, material, plant/machinery etc. to the minimum.

The main functions of the Disaster Management Cell are to prepare a detailed Disaster Management Plan, which includes:

- Identification of various types of expected disaster depending upon the type of the industrial unit.
- Identification of various groups, agencies, departments etc. necessary for dealing with a specific disaster effectively.
- Preparation – by intensive training of relevant teams/groups within the organization to deal with a specific disaster and keep them in readiness.
- Establishment of an early detection system for the disaster.
- Development of a reliable instant information/communication system.
- Organization and mobilization of all the concerned departments/ organizations / groups and agencies instantly when needed.
- A major disaster that can be expected due to fire in this proposed distillery.

#### 7.3.3.2 Emergency Planning For Disaster Due To Fire

Cable rooms, transformer, unit, auxiliary transformers, oil tanks, etc. within the plant are the likely areas for which disaster management plan is to be made to deal with any eventuality of fire. Stores, workshop, canteen and administrative building will be included.

#### 7.3.3.3 Classification of Fire

##### Class (A)

Fire involving combustible materials like wood, paper, cloth etc.

##### Class (B)

Fire due to liquid materials like oil, diesel, petroleum products and all inflammables.

##### Class (C)

Fires involving domestic and industrial gases like butane and propane etc.

##### Class (D)

Metal fires etc.

##### Class (E)

Electrical fires due to short circuiting etc.

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#### **7.3.3.4 Need of Establishing a Fire Fighting Group**

A small spark of fire may result into loss of machines and the damage by fire may high economic losses. This type of losses can be avoided by preventing and controlling the fire instantly for which fire-fighting group will be established.

Establish which would house and keep in readiness, the following types of equipment and arrangements.

- CO<sub>2</sub> extinguishers
- Dry powder chemical extinguishers
- Foam extinguishers
- 80 mm. spray hoses
- Fire brigade
- Fire hydrant
- Protocol (chemical to combat oil fires).

In order to avoid fire in cable galleries, all the power and control cables of FRLS type (Fire Resistant Low Smoke) will be used.

#### **7.3.3.5 Inspection**

Fire alarm panel (electrical) will cover the entire plant. The inspection group will periodically inspect fire extinguishers in fire stations and machines and other places.

The groups will display emergency telephone number boards at vital points.

The group will regularly carry out general inspection for fire.

#### **7.3.3.6 Procedure for Extinguishing Fire**

The following steps will be taken during a fire accident in the system:

As soon as the message is received about fire, one of the systems will be diverted to the place of the fire accident along with a staff member.

Simultaneously plant fire station will be informed by phone walkie for fire brigades and fire stations of nearby area.

In the meanwhile, the pipe system will be operated to obtain maximum pressure on output. In case cables are within the reach of fire, power supply will be tripped and the cables shifted.

#### **7.3.3.7 Fire Fighting With Water**

Adequate and reliable arrangement is required for fighting the fire with water such as:

1. Provision for Fire brigade and Fire hydrant.
2. Arrangement of pipelines along and around all vulnerable areas.
3. Provision of valves at appropriate points to enable supply of water at the required place/area or divert the same to another direction/pipe line.
4. Provision of overhead tanks which will be providing with the water during power failure and it would work by the gravitational force.

### 7.3.3.8 SOURCES OF WATER FOR FIRE FIGHTING

The following two sources of water have been considered for firefighting:

- Overhead Tank
- Raw Water Reservoir

### 7.3.3.9 Fire Fighting With Fire Extinguishers

To deal with fire – other than carbonaceous fires, which can be dealt with by water – suitable fire extinguishers are required to do the job effectively. It is therefore, necessary to keep adequate number of extinguishers in readiness at easily approachable places. Adequate number of fire stations would be:

- Further, other spray groups from the system will be diverted to the spot.
- In case of fire in the belt, belt will be cut near the burning portion to save the remaining parts.
- After extinguishing the fire, the area will be well prepared for reuse.
- Foam System for firefighting will be provided to control fire from the alcohol storage tank. The foam thus produced will suppress fire by separating the fuel from the air (oxygen), and hence avoiding the fire & explosion to occur in the tank. Foam would blanket the fuel surface smothering the fire. The fuel will also be cooled by the water content of the foam.
- The foam blanket suppresses the release of flammable vapors that can mix with the air.

### 7.3.4 ENVIRONMENTAL MANAGEMENT CELL

Apart from having an EMP, it is also necessary to have a permanent organizational set up charged with the task of proposed plant with a department consisting of officers from various disciplines to co-ordinate the activities concerned with the management and implementation of the environmental control measures.

Basically this department will undertake to monitor the environmental pollution levels by measuring stack emissions, ambient air quality, water and effluent quality, noise level etc. either departmentally or by appointing external agencies wherever necessary.

In case the monitored results of environmental pollution are found exceeding the allowable values, the environmental management cell will suggest remedial action and get these suggestions implemented through the concerned plant authorities. The actual operation and maintenance of pollution control equipment of each unit will be under the respective plant managers.

The Environmental Management Cell (EMC) will handle of all the related activities such as collection of statistics of health of workers and population of the region, afforestation and green belt development.

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### 7.3-5 On-Site Emergency Plan

#### 7.3-5.1 Introduction

The views of the possible hazards that can arise out of the daily operations in the distillery plant, various measures are adopted to prevent the occurrence of a major accident. This comprises of:

- Built in safety measures, alarms, trips and interlocks etc.
- Standard safe operating and maintenance procedures permit system etc.
- Training of all the involved staff in normal and emergency operating procedures.
- Training of all employees in safety, fire fighting and first aid.

However, in spite of these precautions, it is required to foresee situation of major accident and plan for taking timely action to minimize the effects of such incident on the safety and health of persons working in the plant as well as those living around the premises.

#### 7.3-5.2 Preparation of Plan

##### 7.3-5.2.1 Alarm System

A siren shall be provided under the control of Security office in the plant premises to give warning. In case of emergencies this will be used on the instructions to shift in charge that is positioned round the clock. The warning signal for emergency shall be as follows:

- Emergency Siren: Waxing and waning sound for 3 minutes.
- All clear signal: Continuous siren for one minute.

#### 7.3-5.3 Communication

Walkies& Talkies are located at strategic locations; internal telephone system EPBX with external P&T telephones would be provided.

#### 7.3-5.4 Fire Protection System

##### 7.3-5.4.1 Fire Fighting System

The fire protection system for the unit is to provide for early detection, alarm, containment and suppression of fires. The fire detection and protection system has been planned to meet the above objective an all-statutory and insurance requirement of Tariff Advisory Committee (TAC) of India. The complete fire protection system will comprise of the following.

##### (a) Fire brigade

Automatic / manual fire detection & alarm system

##### (b) Fire Hydrant

Fire hydrant will be provided at all around in the plant as per TAC Norms.

##### (c) Portable fire extinguishers

Various areas of the plant will have one or more of the above system depending upon the particular nature of risk involved in that area.

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**(d) Portable Chemical Fire Extinguishers**

These are intended as a first line of defense, and hence will be stationed at strategic locations in different buildings and also for outdoor facilities. Portable fire extinguishers will be foam type; carbon dioxide type and multipurpose dry chemical (MPDC) type.

**(e) Fire Detection and Alarm System**

Fire detection and alarm system an effective means of detection, visual indication of fire location and audible alarm of any fire at its incipient stage. This system will comprise fire alarm panels, automatic fire detectors, manual call points and fire siren (hooter).

The main fire alarm panel will provide both visual and audible alarm of fire in any protected areas of the plant.

Manual break glass type fire alarms will be provided at strategic locations where high hazards exits.

Automatic fire detectors will be provided for coal handling areas and in plant areas such as control rooms, switchgear rooms, cable galleries etc.

**7.3.5.5 First Aid**

A first aid centre with adequate facilities shall be provided. It shall be maintained round the clock by a compounder cum dresser and a doctor. An Ambulance shall also be provided at site to carry affected people to hospital.

**7.3.5.6 Security**

The security requirements of the company premises shall be taken care of by CSO assisted by a Fire In charge. The team, apart from the normal security functions will manage the role required during a disaster management operation as a part of the crisis control team.

**7.3.5.7 Safety**

The safety wing led by a Safety Manager will meet the requirement of emergencies round the clock. The required safety appliances shall be distributed at different locations of the plant to meet any eventualities. Poster/placards reflecting safety awareness will be placed at different locations in the plant area.

**7.3.5.8 Evacuation Procedure**

As the major hazard is only due to fire, which has more or less localized impact no mass evacuation, procedures are required. Evacuation would involve only the people working very close to the fire area.

**7.3.5.9 Emergency Control Center**

Provision is made to establish an Emergency Control Centre (ECC) from which emergency operations are directed and coordinated. This centre is activated as soon as on-site emergency is declared.

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The ECC consists of one room, located in an area that offers minimal risk being directly exposed to possible accidents.

During an emergency, the Emergency Management Staff, including the site controller will gather in the ECC. Therefore, the ECC is equipped with adequate communication systems in the form of telephones and other equipments to allow unhampered organisations and other nearby facility personnel.

The ECC provides shelter to its occupants against the most common accidents; in addition, the ECC's communication systems are protected from possible shutdown. The ECC has its own emergency lighting arrangement and electric communication systems operation.

Only a limited and prearranged number of people are admitted to the ECC, when in use. This eliminates unnecessary interference and reduces confusion.

The ECC is always ready for operation and provided with the equipment and supplies necessary during the emergency such as:

- Updated copies of the On-site Disaster Management Plan.
- Emergency telephone numbers.
- The names, phone number, and address of external agencies, response organizations and neighboring facilities.
- The adequate number of telephone (more than two).
- Emergency lights, Clocks, Personal protective equipment.
- List of fire extinguishers with their type no. and location, capacity, etc.
- Safety helmets – List of quantity & location.
- Status boards/message board.
- Material safety data sheets for chemicals handled at the facility.
- Several maps of the facility including drainage system for surrounding area showing:
  - Areas where hazardous materials are stored.
  - Plot plans of storage tanks, routes of pipelines, all water permanent lines etc.
  - The locations where personal protective equipment are stored.
  - The position of pumping stations and other water sources.
  - Roads and plant entrances.
  - Assembly areas & layout of Hydrant lines.

#### **7.3.5.10 Communication Equipment and Alarm Systems**

This kind of equipment is absolutely vital for notifying accident; make the emergency known both inside and outside of the facility, and coordinating, the response actions among the various groups involved in response operations.

In particular, this equipment is used to communicate within the facility; communicate between the facility and outside organizations; and inform the public.

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Different communications systems can vary in effectiveness, depending on the task. The most common types installed in the plant are given below.

#### 7.3.5.10.1 Sirens

These are audible alarm systems commonly used in facilities. In case of any emergency siren will be operated short intermittently for 1.5 minutes.

An alarm does more than just emergency warning. It also instructs people to carry out specific assignments, such as reach to assembly point for further instructions and actions, or carry out protective measures; this can be achieved only if the people are familiar with the alarm systems and are trained to respond to it.

#### 7.3.5.11 Personal Protective Equipments

This equipment is used mainly for three reasons; to protect personnel from a hazard while performing rescue/accident control operations, to do maintenance and repair work under hazardous conditions, and for escape purposes. The list of Personal Protective Equipment provided at the facility and their locations are available in ECC.

Effective command and control accomplish these functions necessitates personal trained in this On-site Disaster Management Plan with adequate facilities and equipments and equipment to carry out their duties and functions. These organizations and the facilities required to support their response are summarized in the following subsections.

#### 7.3.5.12 Procedure for Testing & Updating the Plan

Simulated emergency preparedness exercises and mock fire fighting exercises including mutual aid scheme resources and in conservation with district emergency authority to be carried out time to time.

#### 7.3.5.13 Disclosure of Information to Worker and Public Awareness System Anticipated

- Safety awareness among workers by conserving various training programs and Seminars, competition, slogans etc.
- Practical exercise.
- Distribution and practices of safety Instructions.
- Safety Quiz contests.
- Display of Safety Posters & Safety Slogans.
- Developing Safety Instructions for every Job and ensuring these instructions/booklets or manuals by the workers.

#### 7.4 RAINWATER HARVESTING PLAN

Rainwater Harvesting Plan has been enclosed as **Annexure – 7** along with this Final EIA / EMP Report.



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## CHAPTER – VIII

### PROJECT BENEFITS

#### 8.1 INTRODUCTION

M/s. Malbros International Private Limited has proposed installation of Grain based Ethanol / ENA / RS / Industrial Alcohol Plant {500 KLPD (2x250 KLPD)} & Co-generation plant {40 MW (2x20 MW)} within the existing distillery plant site at Village Mansoorwal, Tehsil Zira, District Ferozepur (Punjab). The project will be based on ‘Zero Effluent Discharge’ and ‘Biomass’ will be used as a fuel in boilers which will eventually make the process environment friendly. Following are the benefits of the proposed installation of Grain based distillery plant.

#### 8.2 PROJECT BENEFITS

Benefits of the project are listed below:

- Ethanol production will add to revenue of the country.
- Out of the total plant area of 14.8 ha, 4.9 ha i.e. 33% of the total plant area has already been developed under greenbelt/plantation development. This helps in attenuation of noise, air & water pollution and adds to the aesthetics of the place. Trees act as settling medium for air borne dust particles and thus attenuate the pollutant concentration. Also trees act as shelter against heavy wind and thus prevent soil erosion, damages of structures due to wind etc. Treated water from the plant will be utilized by the greenbelt/plantation making the distillery zero discharge.
- Rice Husk will be used as fuel for boiler which is agro wastes. It will help in reducing pressure on non renewable fuels.
- With the onset of new unit there will be economic growth of the nearby areas.
- Malbros International Private Limited will actively contribute to improve the economic conditions of the area by providing direct and indirect employment for local persons preferable from the nearby villages.
- Also because of the increasing market demand, the proposed installation of Unit II – Grain based distillery plant would contribute to the excise and revenue of the country.

#### 8.3 PROMOTION OF SOCIAL & ECONOMIC STATUS

Malbros International Private Limited is committed to community development through adoption of an effective CSR approach and activities that contribute to the development of people, upliftment of their social status, improved health conditions, educational development etc.

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### 8.3.1 CSR ACTIVITIES CARRIED OUT BY MALBROS INTERNATIONAL PRIVATE LIMITED

The company has carried out following CSR activities:

S. No.	Activities	Amount (in Rs.)
<b>Corporate social activities for the year 2014-15</b>		
1.	Plantation and protection of soil erosion	3,72,172
2.	Women development and education promotion	1,20,200
	<b>Total</b>	<b>4,92,372</b>
<b>Corporate social activities for the year 2015-16</b>		
1.	Plantation and protection of environment with green belt	2,42,601
2.	Education promotion	2,00,000
3.	Sports promotion	5,21,000
4.	Health checkup and awareness	21,503
	<b>Total</b>	<b>9,85,104</b>

Photographs of the CSR activities carried out are given below:



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### 8.3.2 CSR ACTIVITIES TO BE CARRIED OUT

The company has been carrying out various activities for community welfare & development. Total project cost is 583 Crores. Approx. 2.5 % of the total project cost 14.57 crores have been earmarked under CSR activities.

#### **Promoting Education and Employment Enhancing Skills**

- Scholarships for the Meritorious Students
- Pre School education for rural children
- Career Counseling/ Mass Awareness camps
- Education support to promote education for needy children
- Teaching aids in schools/college
- Health Checkup of Students
- Logistic educational support to Schools
- Plantation at Schools
- Computer Training for the rural youth
- Infrastructure support for sustainable development
- Training on water Harvesting and Managements

#### **Promoting Preventive Health Care and Sanitation**

- Mobile Health Service
- Immunization Awareness Program for children
- General Health Awareness Camp
- Important Health Day Celebration
- AIDS Awareness Program
- Health and Safety Education Training
- Logistic support to hospitals

#### **Women Empowerment & Development Programme**

- Formation of Self Health Group (SHG) including documentation
- Exposure visit of SHG
- Income Generation programmes

#### **Contribution in Religious & Social Programmes**

- Contribution in religious festivals, Melas e.g. Local fares and sports activities
- Contribution for various programmes which organized by other social groups & samitis such as Mass Marriages etc.

#### **Community Infrastructure Development Projects**

- Promotion of Rural Sports
- Animal Vaccination & treatment camp
- Safe drinking water facilities

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- Renovation of community places
- Renovation of Panchayat Bhavan
- Provision of Water Tank
- Renovation/Construction of Rural Roads
- Address community infrastructure needs

#### 8.4 YEAR WISE EXPENDITURE FOR ECS ACTIVITIES

The company will spent Rs. 14.57 Crores in the next 10 years from the commencement of the project for carrying out various activities under Enterprise Social Commitment. Proposed Year wise action plan for all developmental activities under “Enterprise Social commitment” are as follows:

**Table: 8.1**  
**Summary of Proposed Expenditure on ESC activities**

(Rs. in Lacs)

S. No.	Activity Heads	Years						Total Amount
		1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>	5 <sup>th</sup>	6 <sup>th</sup> to 10 <sup>th</sup>	
1.	Health & Family Welfare Programmes	7	9.8	12.5	15.3	17.5	110	172.1
2.	Education Promotion Programmes	3.5	4.8	6.2	8.2	9.2	86	117.9
3.	Women Empowerment & Development Programme	4.5	5.8	7	8.2	9.5	75	110.0
4.	Contribution in Religious & Social Programmes	5	7	9	12	15	60	108.0
5.	Community Infrastructure Development Projects	60	75	86	92	98	538	949.0
<b>GRAND TOTAL (@2.5% of Total Project Cost)</b>		<b>80.0</b>	<b>102.4</b>	<b>120.7</b>	<b>135.7</b>	<b>149.2</b>	<b>869</b>	<b>1457.0</b>

#### 8.5 CONCLUSION

Due to the proposed installation of Grain based distillery plant, there shall be an improvement in the standard of living viz. better education, improved health and sanitation facilities housing and acquisition of consumer durable. This is envisaged as a major positive benefit, which will ultimately lead to the sustainable development of the region.



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## CHAPTER IX

### ENVIRONMENTAL COST BENEFIT ANALYSIS

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#### 9.1 ENVIRONMENTAL COST BENEFIT ANALYSIS

As per EIA Notification dated 14<sup>th</sup> September, 2006; as amended from time to time; the Chapter on “Environmental Cost Benefit Analysis” is applicable only, if the same is recommended at the Scoping stage.

As per the ToR points issued by MoEF&CC, New Delhi vide letter no. J-11011/228/2015-IA II (I) dated 28<sup>th</sup> December, 2015 for the Proposed installation of Unit II – Grain based Ethanol / ENA / RS / Industrial Alcohol Plant {500 KLPD (2x250 KLPD)} & Co-generation Power Plant {40 MW (2x20 MW)} in existing distillery plant at Village Mansoorwal, Tehsil Zira, District Ferozepur (Punjab); the Environmental Cost Benefit Analysis is not required.



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## CHAPTER –X

### ENVIRONMENT MANAGEMENT PLAN

#### 10.1 INTRODUCTION

The environmental management plan consists of the set of mitigation, management, monitoring and institutional measures to be taken during implementation and operation to eliminate adverse environmental impacts or reduce them to acceptable levels. The present environmental management plan addresses the components of environment affected during installation of project of the plant and by the different activities forming part of the manufacturing and plant operation.

**The aims of EMP are:**

- Overall conservation of environment.
- Minimization of waste generation and pollution.
- Judicious use of natural resources and water.
- Safety, welfare and good health of the work force and populace.
- Ensure effective operation of all control measures.
- Continuous online monitoring of stack emissions.
- Vigilance against probable disasters and accidents.
- Monitoring of cumulative and long time impacts.
- Ensure effective operation of all control measures.

Environmental Management Plan is detailed under the following heads:

- Air Quality Management
- Noise Management
- Wastewater Management
- Solid & Hazardous Waste Management
- Energy Conservation
- Greenbelt Development & Plantation Programme
- Occupational Health & Safety Measures

#### 10.2 Air Environment

**A) Possible sources**

The major pollutants of air in distillery plant are the suspended particulate matters from boiler stacks and fugitive emissions due to material handling and vehicular movement.

**B) Management plan**

- A stack of adequate equipped with Electrostatic Precipitator (ESP) will be installed to encounter the emission from boiler stack.

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- CO<sub>2</sub> generated during the fermentation process will be scrubbed, purified & collected for sale as by-product.
- DG Sets will have adequate height of stack as per CPCB Guidelines.
- Adequate measures for control of Fugitive Dust Emissions will be taken.
- All the internal roads will be asphalted and swept regularly
- Green belt around the periphery and within the premises is already in place and same will be maintained.
- Continuous online monitoring system for stack emissions will be installed by the company.
- Ambient air quality and stack emissions will be regularly monitored to ensure that ambient air quality standards and suggested limits for stack emission loads would be met honestly at all the time.

#### 10.2.1 Boiler Ash Handling & Management

- The ash collected from ESP will be disposed to impermeable site i.e. silos where there will be loading arrangement, closed from at least three sides and a roof with access only from the front side for ash removal purpose from where after dry collection it will be sold to the brick manufacturers.
- Conveyors/vehicles conveying ash within or outside the plant premises will be covered to prevent blowing of ash particles due to wind.
- The boiler ash will be disposed off in such a way that secondary emissions of the ash do not occur due to wind blowing effect. The following disposal practices will be followed.
- Ash generated will be stored in silo & thereafter given to bricks manufacturers

#### 10.2.2 Stack Emissions and Control Technologies

A stack is a type of chimney, a vertical pipe, channel or similar structure through which combustion product gases called flue gases are emitted to the outside air.

To keep the PM emissions from stack low, all major sources of air pollution will be provided with Bag filters.

**Table - 10.1**  
**Air Quality Management**

S. No.	Particulars	Proposed
1.	Boiler	100 TPH x 2 nos
	Type of Fuel	Biomass/Rice Husk/ Bagasse/ Paddy & Wheat Straw along with 15% auxiliary fuel - coal/ pet coke
	Stack Emission Limit	50 mg/Nm <sup>3</sup>

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	Stack Height	63 meter each
	Pollution Control Equipment Measures	Electrostatic Precipitator (ESP)
2.	D.G. sets for emergency only	3 x 1000 KVA
3.	Greenbelt development/Plantation	33 % of the total plant area
4.	Post Project Monitoring	As per MoEF&CC guidelines

### 10.2.3 Fugitive Emissions, Sources and Control Technologies

#### 10.2.3.1 Fugitive Emissions

Fugitive emissions are the air pollutants released in the air other than those from stacks or vents. Fugitive dust may be defined as “any solid particulate matter that becomes airborne by natural or man-made activities, excluding particulate matter emitted from an exhaust stack”.

#### 10.2.3.2 Sources of Fugitive Emissions in Distillery Plant

In distillery, the fugitive dust is emitted primarily from the following operations:

- **Transportation:** Movement of heavy trucks/vehicles on the roads generates substantial quantity of dust. This is due to the presence of dust over the road, which is carried away by wind.
- **Fuel Material Handling:** Through release of previously generated dust during operations such as loading, dumping and transferring of fuel material like Coal, Rice Husk etc.
- **Fly Ash Handling**

The amount of dust emitted by these activities depends on the physical characteristics of the material and the way in which the material is handled.

#### 10.2.3.3 Action Plan to Control Fugitive Emission

To control fugitive emissions following measures will be adopted.

- The roads within the premises will be asphalted.
- Use of covered conveyors in all material handling & transfers for grains, fuel (Biomass, Rice Husk etc and Coal/Petcoke) & DDGS.
- All transportation vehicles to carry a valid PUC (Pollution under Control) Certificate.
- Water will be sprayed occasionally to suppress dust.
- Grain will be pre-cleaned & stored in silos. Air Aspiration system will be provided.
- Adequate greenbelt/plantation will be developed in the project area. Greenbelt act as surface for settling of dust particle and thus will reduce the particulate matter in air.

### 10.3 Water Environment

Fresh water requirement for the proposed installation of Grain based distillery is 4110 KLPD which will be met from canal water. The proposed installation of grain based distillery will be based on “ZERO EFFLUENT DISCHARGE”.

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- Efforts will be made to conserve as much water as possible by 3R's (Reduce, Reuse & Recycle).
- Record of wastewater returned back to process for utilization in Liquefaction/Fermentation/Cooling Tower and to gardening would be kept.
- Domestic waste water generated from the plant will be treated in Septic Tank and treated water will be used in greenbelt development.
- Online flow meters will be installed for regular monitoring of inlet and outlet flow rates of the effluent.
- Rainwater harvesting will be done and the water will be utilized in process/irrigation or to recharge the underground resource through scientifically designed rain water harvesting system.

#### 10.3.1 Treatment of Effluent

Efforts are being/ will be made to conserve as much water as possible by recycling and reuse.

- Grain Slops (Spent Wash) will be taken through Centrifuge Decanters for separation of Suspended Solids separated as Wet Cake.
- Thin Slops from the Decanter Centrifuge are partly recycled back to process and partly taken to Thins Slops Evaporation Plant for concentration of remaining solids to form Syrup. This Syrup is also mixed into the Wet Cake coming out of Centrifuge and forms part of Cattle Feed which is high in protein. (Also known as Soluble – Collectively known as DWGS)
- DWGS Drier – Wet cake / DWGS will be passed through steam tube bundle drier for drying into cake with 10-12% moisture (max.) to give higher shelf life. Solid dry cakes (DDGS) will be obtained finally.
- The Process condensate will be cooled and collected into a neutralization tank with sufficient residence time. After Neutralization and filtration (UF+RO) this process condensate will be recycled into process use.
- Spent Lees: The spent lees from primary distillation column (pre-rectifier) and FOC lees are recycled into liquefaction process and are utilized as dilution water for incoming flour to make slurry. The rectifier column lees (~20%) is of soft water norms in terms of its TDS and can be best utilized as cooling tower make-up water. 80% of rectifier lees will be recycled in extractive distillation column as dilution medium for RS. Hence 100% spent lees will be recycled and utilized in distillation plant & its cooling tower.
- Boiler Blow down: The proposed boilers of 2 x 100 TPH is expected to blow down 2%, which shall be cooled, filtered and recycled as cooling tower makeup.

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- Cooling Tower Blow down: The cycle of concentration (COC) is maintained in such a way to restrict the TDS of soft water in recirculation below 2100 mg/ltr, which is the prescribed limit of utilization of this water for plant activity. Hence, CT blow down will be utilized internally completely.

### 10.3.2 Process Condensate treatment plant

Plant will treat evaporation condensate effluent which will be passed through respective units:

#### **Biological System:**

Initially cooled effluent from effluent inlet PHE is transferred to buffer tank at temperature around 28 – 32°C.

#### ➤ **Buffer Tank: (BT)**

Buffer tank of adequate retention time is provided before the UASB reactor. The part of the overflow from the UASB is recycled back to the buffer tank. The tank helps in preconditioning the effluent before entering to the UASB reactor.

#### ➤ **ECOMET - SB: (UASB Reactor)**

UASB reactor consists of mainly feed distribution network at the bottom, Sludge blanket at mid height of the reactor and the gas, liquid, solid separator (GLSS) at the top of the reactor. In UASB process, the bacteria responsible for digestion are present in the form of sludge blanket. The bacteria grow and reside as bacterial flocs suspended in the up-flow effluent stream. The bacteria consume organic content of wastewater and metabolize it to produce biogas and biomass.

UASB operates in the mesophilic range of temperature, i.e. 28° - 40°C. The pH inside the reactor is usually kept around 7.2 while proper ratio of volatile acid and alkalinity is maintained.

Biogas generated is collected at the top of the reactor and send to the flare stack. The anaerobically digested effluent is collected from the network of gutters and launders and taken to the aeration tank for further treatment. The excess sludge from the bottom of the reactor is periodically taken out and sent to the sludge handling facility.

#### ➤ **Aeration tanks**

The effluent from the UASB will flow in to the extended aeration Tanks by gravity. Aeration serves the dual purposes of providing dissolved oxygen and mixing of the mixed liquor suspended solids in the aeration tank. The oxygen is supplied with the help of proposed Surface aerators for satisfying the air requirements of the Aeration Tank. The dissolved organic matter is subject to biological degradation by bacterial action in presence of oxygen & nutrients. This will convert dissolved organic matter into stable settable matter.

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➤ **Clarifier:**

The biological treated effluent from aeration tank will be conveyed to the clarifier to allow the settling of suspended solids (MLSS). In the clarifier, the solids and liquid gets separated, the over flow from the clarifier shall enter into the treated water tank for further treatment. The settled sludge from the bottom of clarifier will be drain to the sludge sump.

➤ **Tube Settler: (TS)**

In tube settler the solids and liquid gets separated, the over flow from tube settler shall enter into the filter feed tank for further treatment. The settled sludge from the bottom for tube settler shall be drain to the sludge handling system.

➤ **Sludge Drying Bed :**

The sludge from the Tube Settler & UASB will be discharged to the sludge drying bed.

**UF-RO System:**

The biologically treated effluent from ETP will be passed through respective units:

➤ **Filter feed Tank:**

The clear supernatant from the tube settler is collected in the filter feed tank provided with adequate retention time.

➤ **MGF/UF Feed Pump:**

The effluent from filter feed tank will be first pumped to multi grade filter and then to Ultra filtration system for removal of suspended solids.

➤ **Multi Grade Filter (MGF):**

The filter is provided as primary filtering unit. Biologically treated effluent shall be filtered by MGF in order to remove suspended matters & turbidity present in the effluent.

➤ **MGF Backwash Pump:**

The filter unit is isolated for backwash using the Backwash pumps when the pressure drop across the bed increases the specified limit (0.8 Kg/cm<sup>2</sup>). Backwash stream is discharged to the Break tank and then it is pumped back to Flash mixer unit via. Pump.

➤ **UF System:**

UF is a skid mounted membrane system, which comprises mainly of the hollow fiber UF membrane modules, re-circulation and pneumatically actuated valves. All these are neatly interconnected into a compact and modular train, which comes complete with a self-control system.

Each UF membrane module consists of thousands of hollow fibre membranes that are capable of removing virtually all suspended solids, colloids, bacteria and viruses bigger than 0.01-0.015 micron from the feed stream and to bring down the SDI Less than 3 .

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➤ **UF Back Wash Pump:**

In the filtration process, the rejected suspended solids form a layer on the surface of the membrane which reduces the membrane permeation rate. This layer is to be dislodged to maintain the membrane permeation rate. This can be achieved through a method called backwash or reverse flow. Service interval is set at 30 - 60 minutes with a backwash interval of 120 seconds, before service is again resumed.

Backwash stream is discharged to the Break tank and then it is pumped back to Flash mixer unit via pump.

➤ **UF CIP Unit:**

With every filtration cycle, the membrane permeability decreases slightly due to membrane fouling. When the allowable trans-membrane pressure (TMP) reaches the maximum limit or set-point, it is time to chemically clean the membrane. The purpose of the membrane cleaning process is to remove foulants and restore productivity.

Cleaning effectiveness is a function of cleaning agents, chemical concentration and factors such as cleaning time, frequency, temperature, circulation rate and pressure.

➤ **UF Permeate Tank:**

Permeate from UF system is collected in this tank and then feed to RO plant.

➤ **RO Priming Pump:**

The UF Permeate is pumped via priming pump to the cartridge filter.

➤ **Antiscalant dosing unit:**

During Reverse Osmosis process, dissolved salts are concentrated on reject side as permeate water is being drawn at specific recovery. As a result of this, dissolved salts concentration increases on reject end and may precipitate if saturation limit exceeds due to any reason. As a resultant effect of salt concentration, scaling (deposition) occurs on membrane surface which results in inferior performance of RO system. For prevention of scaling a special antiscalant formulation is dosed online in specific proportion. Normally 5% concentrated solution is prepared and about 3 – 5 mg/lit of special antiscalant is dosed with the help of dosing pump in line.

➤ **Cartridge Filter:**

The filtered stream is then passed through the cartridge filter to arrest suspended solids, if any.

➤ **High Pressure Pump:**

The clear stream after cartridge filter is now pumped using high pressure pumps to the membrane modules for the treatment.

➤ **Permeate Tank:**

Permeate coming out of RO system is collected in this tank. One stream is tapped out and utilized as Soft water via pump.

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➤ **Membrane Skid:**

Membrane skid consists of membranes housed in membrane housings. The feeding logistics to the various membrane housings depends on the scheme configuration. Part of the reject from the membrane ETP is recycled back to the suction of high pressure pump whereas the balance is suitably discharged for further treatment.

➤ **RO CIP System:**

A Clean in Place System is provided to clean both the RO systems at regular intervals. It consists of CIP tank & CIP pumps.

**Design Data & Performance Projections**

Wastewater Treatment plant is designed for following parameters & will perform as under upon reaching steady state of its operation:

**Effluent Characteristics**

Parameters	Raw Wastewater	Treated Wastewater
pH	3.9 – 4.2	7.0 – 8.0
BOD (mg/l)	2000 -2500	< 30
COD (mg/l)	3000 – 3500	< 250
Temperature	--	Ambient

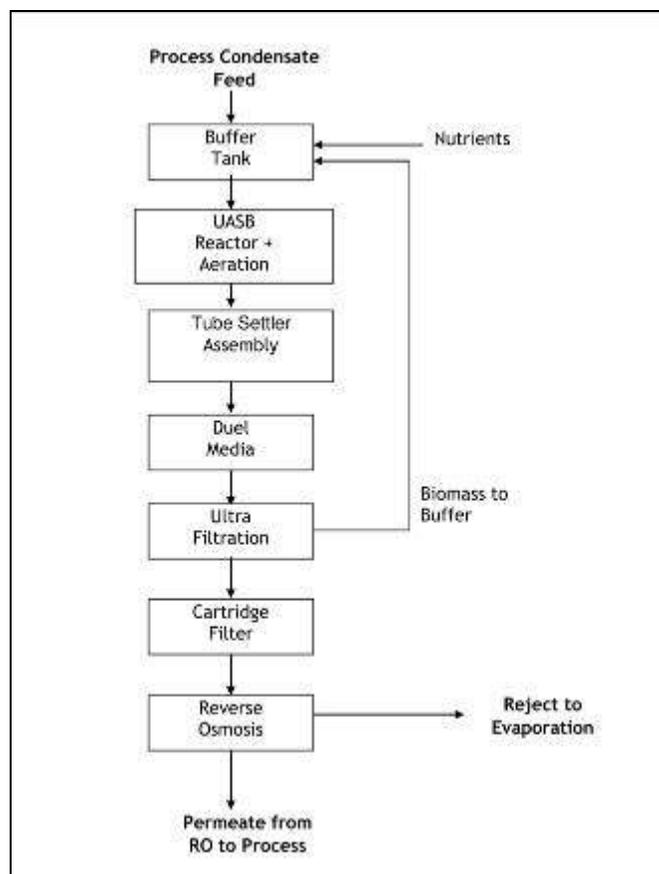


Figure 10.1 - Schematic Block Diagram of the Process Condensate treatment plant

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### 10.3.3 Water Conservation Measures

The following measures are being/ will be adopted to conserve water-

- Maximum recycling and reuse of wastewater after treatment.
- Periodic preventive maintenance of water distribution system.
- Optimum use of process cooling water.
- Training and awareness on water conservation measures.
- Water will be conserved at every stage of process. Condensate water will be re-used & recycled.
- Rainwater is being/will be used to recharge the ground water source through scientifically designed rain water harvesting system.

### 10.3.4 Action plan to control ground water pollution

The proposed Project will be based on “Zero Effluent Discharge”. The following measures will be adopted to conserve water-

- Maximum recycling and reuse of wastewater after treatment.
- Impervious lagoon (lined lagoon) as per CPCB guidelines.
- Two peizometers are proposed to be installed near lagoon as well as borewells.
- Spillage of chemicals/oils/alcohol etc. will be avoided as best possible.
- Treatment of secondary streams like spent lees, condensates, blow downs, etc. shall be closed loop & any discharge outside the distillery shall not be done.
- Ash/Coal quenching shall be carried out carefully.

### 10.4 SOLID AND HAZARDOUS WASTE DISPOSAL

Solid waste generated would be wet cake, yeast sludge and ash from the boiler. The following are the management measures that will be taken up by the company:

- Solid waste from the grain based operations generally comprises of fibres and proteins in the form of DDGS, which will be ideally used as cattle feed.
- Ash from the boiler will be supplied to brick manufacturers.
- The Yeast sludge will be added to the Wet Cake.

#### HAZARDOUS WASTE MANAGEMENT

- Used oil/ spent oil generated from plant machinery/Gear boxes as hazardous waste will be sold out to the CPCB authorized recycler.

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### 10.5 Noise Environment

Various components of industrial operations cause some amount of noise, which will be controlled by proper maintenance and compact technology. Measures to be taken by the company are:

- Properly acoustic enclosures will be provided to equipment making excessive noise.
- Personal Protective Equipment like earplugs and earmuffs will be provided to the workers exposed to high noise level.
- Proper maintenance, oiling and greasing of machines at regular intervals to reduce generation of noise.
- Greenbelt development/plantation of appropriate width inside the plant premises and at the plant boundary has been developed and same will be maintained in future.
- Regular monitoring of noise level will be carried out.

### 10.6 Odour Management

Odour Management Plan outlines the methods by which odorous emissions will systematically be assessed, reduced and prevented potentially from the distillery unit.

- Adequate greenbelt all around the periphery of the plant.
- Efficient CO<sub>2</sub> scrubbing to avoid carry over of alcohol vapours & other fumes.
- DWGS Dryer will be installed for complete drying of solids.
- Better housekeeping will maintain good hygiene condition by regular steaming of all fermentation equipment.
- Longer storages of any product/by-products will be avoided & use of efficient biocides to control bacterial contamination.
- Regular use of bleaching powder/formalin in the drains to avoid generation of putrefying micro-organisms.

### 10.7 Greenbelt/Plantation Development

A greenbelt or tree plantation around the plant site shall help to arrest the effects of particulate matter and gaseous pollutants in the area besides playing a major role in environmental conservation efforts.

For effective control of air pollutants in and around the existing plant, a suitable greenbelt has been developed by taking into consideration the following criteria. The greenbelt/plantation would;

- Mitigate gaseous emissions
- Have sufficient capability to arrest accidental release.
- Effective in wastewater reuse.
- Maintain the ecological balance.

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- Control noise pollution to a considerable extent.
- Prevent soil erosion.
- Improve the aesthetics.

Taking the above-mentioned criteria into consideration, the greenbelt/plantation has already been developed in 33% of the total plant area which will be maintained and further enhanced after proposed installation of project. Indigenous species have been planted in consultation with horticulturist & DFO. The greenbelt consists of shrubs, trees, avenue trees, crops etc. All the species are pollution tolerant, besides having an aesthetic appeal.

Greenbelt planning has been done with ecological perspectives for distillery plant of Malbros International Private Limited, taking into consideration the nature of pollutants, availability of space and dominant wind directions. This will help in reducing the concentration of pollutants and will also be effective in attenuating noise levels.

#### 10.7.1 Greenbelt/Plantation Techniques

Greenbelt/plantation has been developed within the plant premises covering a total area of about 33% of total plant area.

##### **Guidelines for Greenbelt/Plantation Development**

Following guidelines were/will be followed for the Greenbelt/Plantation Development Plan in the plant area.

- All the uncovered areas should be vegetated by way of landscaping and by way of plantation of various herbs trees etc. as per suggested by horticulturist. Areas other than this are having good natural vegetation. Soil and other environment are very encouraging and the expected growth rate should be more than 90%.
- Trees growing to a height of 5 m or more should be planted.
- Plantation of trees should be undertaken in and around the area in alternating rows to prevent horizontal pollution dispersion.
- Trees should be planted along road sides, to arrest auto-exhaust and noise pollution, and in such a way that there is no direct line of sight to the installation when viewed from a point outside the foliage perimeter.
- Since tree trunks are normally devoid of foliage (upto 3 m), it should be appropriated to have shrubbery in form of such trees to give coverage to this portion.
- Fast growing trees with thick perennial foliage should be grown, as it will take many years for trees to grow to their full height.

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TABLE- 10.2

## List of Species in Existing Greenbelt

S. No.	Species	Number of Trees	S. No.	Species	Number of Trees
1.	<i>Ficus Sp.</i>	1438	10.	<i>Chameli</i>	120
2.	<i>Alstonia</i>	283	12.	<i>Arjun</i>	10
4.	<i>Neem</i>	145	14.	<i>Champa</i>	180
5.	<i>Ashoka</i>	567	15.	<i>Gulmohar</i>	216
6.	<i>Babool</i>	27	16.	<i>Hibiscus</i>	140
7.	<i>Kachnar</i>	75	18.	<i>Kaner</i>	286
8.	<i>Jamun</i>	150	19.	<i>Silver Oak</i>	350
9.	<i>Tahli</i>	26	20.	<i>Others</i>	2357
				<b>Total</b>	<b>6370</b>

## 10.7.2 Photographs showing Existing Greenbelt Development/Plantation



Fig. 10.2: Photographs Showing Existing Greenbelt/Plantation

## 10.8 CONCEPT OF WASTE MINIMIZATION, 3R'S (REUSE, RECYCLE &amp; RECOVER TECHNIQUES), ENERGY &amp; NATURAL RESOURCE CONSERVATION MEASURES

## 10.8.1 3R'S (Reuse/Recover/Recycle Techniques)

- Ash will be given to brick manufactures & Cement Plant.
- Wet cake / DWGS will be passed through steam tube bundle drier for drying into DDGS which will be used as cattle feed as it contains higher protein and fibre content.
- Maximum recycling and reuse of wastewater after treatment.

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- The entire process condensate will be treated in CPU and reused in process, cooling tower makeup etc.

#### 10.8.2 Energy Conservation

The following measures will be adopted by Malbros International Private Limited, for reduction in specific energy consumption:

- Installation of energy efficient lightings with the use of LED lighting.
- Use of energy efficient electric motors.
- Use of DCS controls & highly efficient VFD will ensure optimum energy consumption.
- Use of highly efficient VFD, minimizing idle running of machines.
- Optimizing loads and periodic preventive maintenance & lubrication.
- Prevention of leakages of compressed air with optimized compressed air pressure.
- Periodic energy audits.
- Training, awareness and motivational programmes.
- Layout is designed for gravitation flow.

#### 10.8.3 Natural Resource Conservation

- Usage of Biomass (Rice Husk/ Bagasse/ Paddy & Wheat Straw) as a fuel.
- Use of solar energy will be promoted.
- Rain water harvesting pits will be constructed to conserve water & to replenish ground water resources of the area for long term sustenance of the industry.

#### 10.9 OCCUPATIONAL HEALTH & SAFETY

Production of ethanol involves storage handling and use of several chemicals. Some of these chemicals are corrosive in nature. Information about these chemicals is therefore important for the safety of the employees and the plant. Besides, the health status of the employees is also important which may be affected due to exposure to these chemicals. The exposures may be sudden and accidental or for a long period. In both of the cases, there will be different health effects. Therefore safety measures dealing with these chemicals are of vital importance and will be followed judiciously.

1. In order to ensure good health of workers, regular health check-up of the plant workers will be carried out.
2. Occupational health surveillance programme will be taken as a regular exercise for all the employees and their records maintained.
3. Proper storage and handling precautions will be taken. The storage area will be kept cool, dry and well ventilated away from any source of heat, flame or oxidisers.

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4. Use of Personal Protective Equipment (PPEs) will be exercised. Proper training on use of PPEs, characteristics of the material handled and safety precautions will be given to the workers.
5. Fire safety measures will be incorporated within the factory premises. All the fire extinguishing media such as water, dry chemicals, CO<sub>2</sub>, sand, dolomite etc. will be kept in vital locations.
6. Mock drills will be arranged for the workers to test the effectiveness of the training program from time to time and the way to react in case of emergency.
7. Safety precautions will be displayed in the premises on the banners, boards etc.
8. Both On-site & Off-site emergency preparedness plan will be followed.

#### 10.9.1 Personnel Protective Equipment (PPE's)

##### **Goggles:**

The workers will be asked to use goggles who work on washing of bottles, filling, sealing of bottles cap for protection of their eyes in case bottles are broken.

##### **Rubber Gumboots:**

These will be provided to person who handles sulphuric acid. Full suit having hand-gloves, goggles, helmet and aprons will be provided.

##### **Face Shield Helmet:**

The person deputed for welding work will be provided with face shield helmet.

#### 10.9.2 Medical Facilities

The Factory will be provided with the following medical facilities to handle any emergency:

1. Well equipped First Aid Boxes in each Section of the factory.
2. The First Aid Boxes will be distinctively marked with a Red Cross on green background and contain the following equipment/accessories:

In case of need factory has a dispensary to give effective medical facility to workers. In dispensary, sufficient stocks of medicines are made available for workers in case of any major emergency situation. A vehicle will be always available to shift the sick/injured person to District Hospital.

##### **List of equipment for Occupational Health Monitoring**

- ECG
- Analytical Pan Balance
- Spectrophotometer
- Noise Monitoring device (dosimeter)
- Spiro meter
- Audiometric device
- Vision screener

**Proposed Installation of Unit II - Grain Based Ethanol / ENA / RS / Industrial Alcohol Plant {500 KLPD (2x250 KLPD)} & Co-generation Power Plant {40MW (2x20 MW)} in Existing Distillery Plant**

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### 10.9.3 Expenditure on Occupational Health & Safety

Proposed budget details for expenditure on Occupational Health & Safety will be Rs 20 lacs/annum.

### 10.9.4 Details of Occupational Health Programme

- Company is using all required instruments to control the emissions to be well within prescribed limit
- Company is doing yearly periodical medical examinations for all workers and twice in a year for workmen working in Hazardous Area.
- At the time of pre-placement, Company does number of tests compulsorily which includes BP, CBC, RBS, Urine Routine, Blood Group, HIV, ECG, X - Ray Audio & Eye Check-up.

### 10.9.5 Implementation of OHS standards as per OSHAS

The overall objective of the company is to provide a system that is capable of delivering healthy and safe workplace. Following measures have been adopted for implementation of OHS standards.

- Well-equipped Occupational Health Centre with adequate paramedical staff.
- Routine and special investigation related to occupational health.
- Health surveillance and maintenance of Health record.
- Rules and procedure for effective implementation of Safety Health & Environment policy and made to know all employees.
- Round the clock Ambulance facility.
- Sufficient number of First aid boxes.
- Implementation of OHSAS 18001 for Occupational Health and Safety Management System.
- Implementation of ISO 14001 for Environment Management System.
- Risk assessment of each and every activity.
- Implementation of OHS management system.
- Training, awareness program and work place talk.

### 10.9.6 First Aid Boxes

First aid boxes are being/ will be provided at prominent places with following items:

- Small size sterilized dressing.
- Medium size sterilized dressing.
- Large size sterilized dressing.
- Burnol Ointment.

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- Packets of sterilized cotton wool.
- Bottle (120 ml) of cetramide solution (1%) of suitable antiseptic solution.
- Mercurochrome solution (in 2% water).
- Scissors.
- Adhesive plaster (2cm x 1 m).
- Sterilized eye pads in separate sealed packets.
- Aspirin tablets.
- Potassium Permanganate crystals.

First aid boxes have been/ will be kept in every department for emergency. First aid training is being/ will be organized for the employees.

#### 10.10 OVERALL RECOMMENDATION AND IMPLEMENTATION SCHEDULE

The mitigation measures suggested in earlier Chapters shall be implemented so as to reduce the impact on the environment due to the proposed installation of project. The implementation of these recommendations will be done in phases so that, the most important mitigation measures are implemented first and the mitigation measures, which are less important, are implemented afterwards. These details are discussed in the earlier Chapters.

Along with the implementation of these mitigation measures, monitoring schedule and infrastructural requirements for environmental protection detailed in previous chapter are important for environmental control measures. The total capital cost of the proposed installation of project is ₹ 583 Crores and the total amount earmarked for the environment management plan is ₹ 58 Crores with a recurring cost of ₹ 10 Crores/annum.

#### 10.11 CORPORATE ENVIRONMENT POLICY

MIPL has a well-defined Corporate Environmental policy by which the company is committed to conduct business with strong environmental conscience towards community, customer & employees.

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**Malbros**

International Pvt. Ltd.

Village Mansoorwal, Tehsil Zira

District Ferozepur, Punjab

Phone : 01682 - 262007, 262107

Email : malbros@ymail.com

#### CORPORATE ENVIRONMENTAL POLICY

Malbros International Pvt.Ltd. is committed to environmental leadership in all of its business activities and provides policies to provide safe, healthy, workplace, protecting the environment, conserve energy & natural resources. With These policies in place we believe that Malbros International Pvt.Ltd shall achieve a safe environment.

Malbros International Pvt.Ltd is committed to do and will

- ❖ Integrate the consideration of environmental concerns and impacts in to all the decision making and activities.
- ❖ Provide a safe and healthful workplace and ensure that personnel are properly trained with the appropriate safety & emergency equipment.
- ❖ Conserve natural resources by adopting pollution prevention practices.
- ❖ Develop and improve operations and technologies to minimise waste and other pollution, minimise health and safety risks and dispose of waste safely and responsibly
- ❖ Promptly report all non compliance issues in accordance with applicable governmental reporting requirements, evaluate causes of non compliance, and implement corrective actions.
- ❖ Establish procedures for periodic review of environmental compliance with all laws and regulations.
- ❖ Promptly correct any practice or condition not in compliance with the policy.

Corp. Office: 40, North Avenue Road, West Punjabi Bagh, New Delhi 110026, Telefax: 011-25229720

Correspondence Address : VIA-Speedpost at Village Mansoorwal - 142050, Tehsil Zira, District Ferozepur (Punjab) Mobile No: 99148\*00006.

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#### Safety, Health & Environment (SHE) Policy :

At Malbros International Pvt.Ltd. the values which assist are :

- ❖ Protecting the health and safety of the employees, contractors, customers and neighbours,
- ❖ Maintain the security of people and assists
- ❖ Protecting the environment.

In addition to compliance with laws and regulatory requirements the company will pursue the following objectives;

- ❖ Ensure that business activities are conducted to prevent harm to employees, contractors the public , other stakeholders and the environment.
- ❖ Set targets and measures progress to ensure continuous improvement in HSE performance.
- ❖ Provide safe and healthy work place for our employees and contractors.
- ❖ Provide information, instruction and training to enable employees to meet their responsibility to contribute to compliance with the policy.
- ❖ Provide appropriate HSE Information for all contractors and others who work for us.
- ❖ Protect the environment by preventing or minimizing the environmental impact due to our activities and products through appropriate design manufacturing, distribution and by promoting responsible use and disposal practices.
- ❖ Develop products and processes that help preserve resources and the environment.

For Malbros International Pvt Ltd

  
Pawan Bansal  
CAO

Proposed Installation of Unit II - Grain Based Ethanol / ENA / RS / Industrial Alcohol Plant {500 KLPD (2x250 KLPD)} & Co-generation Power Plant {40MW (2x20 MW)} in Existing Distillery Plant

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#### 10.12 VEHICULAR POLLUTION CONTROL AND ITS MANAGEMENT

Vehicle emissions are responsible for 70% of the country's air pollution. Various laws in this regard have been laid out by the government. Air pollution from vehicle exhaust and industry is a worsening problem for India. Exhaust from vehicles has increased eight-fold over levels of twenty years ago; industrial pollution has risen four times over the same period. The economy has grown two and a half times over the past two decades.

The Company will take care of all the measures to take up the vehicular pollution control in addition to the pollution from the plant processes. All the vehicles will be kept environmentally compliant. The details are as below:

##### **Vehicular pollution control measures:**

1. **Inspection and maintenance (I&M) programme for vehicles:** The first and most important step towards emission control for the large in-use fleet of vehicles is the formulation of an inspection and maintenance system. It is possible to reduce 30-40% pollution loads generated by vehicles through proper periodical inspections and maintenance of vehicles. It should include testing of various elements of safety, road worthiness and compliance to pollution norms. Renewal of permits and registration.
2. **Emission norms:** Emission norms for all categories of petrol and diesel vehicles should be followed. Bharat stage emission standards are emission standards instituted by Government of India to regulate the output of air pollutants from internal combustion engine equipment, including motor vehicles. The standards and the timeline for implementation are set by the Central Pollution Control Board under the MoEFCC.
3. **Appropriate Fuel**
  - ∞ Diesel with lower sulphur content should be used.
  - ∞ Pre-mixed fuels (petrol and oil mixture) for use of two stroke vehicles.
4. **Periodical Checking of Vehicles**

Vehicles will be checked internally or outsourced for the safety check as per the guidelines and the below mentioned checklist in the table below. Corrective measures shall be taken for the 'Unfit vehicles'.

Table - 10.3

Vehicle Check Sheet for Fitness Certificate

S. No.	Particular	Checks
1.	Tyres	Cut, deformation, thread ease wear
2.	Steering	Gear backlash, kingpin, stub axle, steering free play
3.	Engine	Noise level 85 dB
4.	Suspension	Leaf spring position, clamping, shock absorber, bushes, shackle, center bolt
5.	Horn	Electrical, bulb, pressure horn

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6.	Brake	Total brake effort > 45%, stopping distance at 30 kmph < 13 mtrs, parking brake, brake oil leakage
7.	Lamps/signals	Headlamps, parking, turn signal, top lights, reflectors
8.	Embossing of chassis	Chassis and engine no. identification plate, month and year of mfg.
9.	Speedometer	Functioning, speed governors
10.	Painting	As per Act and rules
11.	Wiper	Wiper fitment and functioning
12.	Body	Seating, mudguard, emergency gate, window size, glasses, floor, etc.
13.	Electrical	Insulations, switches, doom light, spark arrester
14.	Finishing	Riveting, welding, bonnet, crankcase cover, etc.
15.	Road Test	Clutch, transmission, axels and performance
16.	Others	As per specifications

#### 5. Management Measures

- ⌘ Traffic will be minimized inside and outside the premises
- ⌘ Keep a check on adulteration of fuel
- ⌘ Concretization of roads
- ⌘ Development of Green belt and plantation around roads and plant periphery as a mitigative measure
- ⌘ Awareness programmes in the plant and nearby villages regarding speed limit, traffic rules etc.

#### 10.13 Conclusion

As discussed, it is safe to say that the proposed project will not be likely to cause any significant impact on the ecology of the area, as adequate preventive measures will be adopted to contain various pollutants within the permissible limits. Green belt development around the area would also be taken up as an effective pollution mitigative technique, as well as to control the pollutants released from the premises of M/s. Malbros International Private Limited.



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## CHAPTER – XI

### SUMMARY AND CONCLUSION

#### 11.1 INTRODUCTION

M/s. Malbros International Private Limited is a group company of Oasis Group. The Group is a highly reputed conglomerate with diverse interests that include Distillery, Liquor Retailing, Hotels and Constructions. The company is engaged in manufacturing, marketing and sale of Grain based Ethanol / (Extra Neutral Alcohol) ENA / RS / Industrial Alcohol.

The company is already running an existing Unit - I Grain Based Distillery (100 KLPD) along with Co-generation power plant (1.8 MW) at Village Mansoorwal, Tehsil Zira, District Ferozepur (Punjab). Environment Clearance for the same was acquired vide MoEF Letter No. J-11011/187/2006- IA II (I) dated 25<sup>th</sup> September, 2006.

The company is now proposing installation of Unit II – Grain based Ethanol / ENA / RS / Industrial Alcohol Plant of capacity 500 KLPD (2x250 KLPD) & Co-generation Power Plant of capacity 40 MW (2x20 MW) in the existing distillery plant premises. The company is proposing to install Unit II in two phases:-

Phase 1:-

- 250 KLPD Ethanol/ENA/RS/ Industrial Alcohol Plant
- 20 MW Co- Generation power plant

Phase 2:-

- 250 KLPD Ethanol/ENA/RS/ Industrial Alcohol Plant
- 20 MW Co- Generation power plant

As per EIA Notification dated 14<sup>th</sup> Sep, 2006 & as amended from time to time, the project falls under Category “A”, Project or Activity 5(g), hence Environmental Clearance is required from MoEFCC, New Delhi.

The project has been considered by the Expert Appraisal Committee (EAC) (Industry II) for its ToR approval) on 30<sup>th</sup> Nov., 2015.

ToR Letter was issued by MoEFCC, New Delhi vide letter no. J-11011/228/2015- IA II (I) dated 28<sup>th</sup> December, 2015 for the preparation of EIA / EMP Report.

#### 11.2 JUSTIFICATION FOR THE IMPLEMENTATION OF THE PROJECT

The following points justify implementation of this project:

- The proposed installation will be done within existing plant site; hence, no additional land is required.
- Easy availability of raw material Grain for Distillery & Fuel for Co-generation Power Plant from nearby area.

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- Nearness to NH-15 makes it easier to transport raw materials & final product to market.
- Availability of existing facilities like storage, infrastructure, transportation, administration, etc.
- The distillery is based on zero effluent discharge as no waste water will be discharged outside the plant site.
- Approximately 33% of the total plant area has already been covered under greenbelt development/ plantation. Same will be maintained and further enhanced after the installation.
- CPCB guidelines for fugitive emissions will be followed.
- The project will generate employment for the local people.
- There will be no major pollution due to the plant activity, as it will be implemented with environment friendly technology.

### 11.3 Details of the Project

Brief description about the Project is given in Table – 11.1.

**TABLE – 11.1**  
**Project and Environmental Settings**

S. No.	Particulars	Details	
<b>A.</b>	<b>Nature &amp; size of the Project</b>	Proposed Installation of Unit II – Grain based Ethanol / ENA / RS / Industrial Alcohol plant {500KLPD (2x250 KLPD)} & Co-generation Power Plant {40 (2x20 MW)} within existing distillery plant.	
		<b>Units</b>	<b>Total capacity after Proposed Installation</b>
		Grain based Ethanol/ ENA/ RS/ Industrial Alcohol Plant	500 KLPD (2 x 250 KLPD)
		Co-generation Power Plant	40 MW (2 x 20 MW)
		CO <sub>2</sub> Plant	225 TPD (2 x 112.5 TPD)
		DDGS/ Cattle Feed/ Poultry Feed	300 TPD (2 x 150 TPD)
<b>B.</b>	<b>Location details</b>		
1.	Village	Mansoorwal	
2.	Tehsil	Zira	
3.	District	Ferozepur	
4.	State	Punjab	
<b>C.</b>	<b>Geographical Extent of the Plant site</b>		
1.	Latitude	30°55'02.75"N to 30°55'16.29"N	
2.	Longitude	74°57'28.42"E to 74°57'48.66"E	
<b>C.</b>	<b>Area Details</b>		

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1.	Total Plant Area	<ul style="list-style-type: none"> <li>Total Plant area is 14.8 ha (36.5 acres)</li> <li>Proposed installation of Unit II will be done within the existing plant premises</li> </ul>
2.	Greenbelt/Plantation Area	4.9 ha (12.10 acres) i.e. 33% of the total plant area has already been developed as greenbelt/plantation.
<b>D.</b>	<b>Environmental Setting Details (with approximate aerial distance and direction from the Plant Site)</b>	
1.	Nearest Village	Ratol Rohi (1.0 km in WSW direction)
2.	Nearest Town /City	<ul style="list-style-type: none"> <li>Nearest Town: Zira (6 km in NNE direction)</li> <li>Nearest City: Ferozepur (32 km in West direction)</li> </ul>
3.	Nearest National/State Highway	<ul style="list-style-type: none"> <li>NH-15 (0.7 km in West direction)</li> <li>SH 20 (5.5 km in North direction)</li> <li>NH 95 (8.0 km in South direction)</li> </ul>
4.	Nearest Railway Station	Talwandi Bhai Railway Station (6.5 km in SSW direction)
5.	Nearest Airport	Sri Guru Ram Dass Jee International Airport, Amritsar (88 km in NNW direction)
6.	National Parks, Reserved Forests (RF) / Protected Forests (PF), Wildlife Sanctuaries, Biosphere Reserves, etc. within 10 km radius	No National Park, Reserved Forests (RF) / Protected Forests (PF), Wildlife Sanctuary, Biosphere Reserve, etc. falls within 10 km radius of the plant site.
7.	River / Water Body (within 10 km radius)	<ul style="list-style-type: none"> <li>No river lies in 10 km radius of the project area.</li> <li>Canal (~ 1 km in North Direction)</li> </ul>
8.	Seismic Zone	Seismic Zone – III as per IS: 1893 (Part – I) : 2002
9.	Critically Polluted Area as per CEPI-CPCB	No critically polluted area declared under CEPI as per MoEF&CC Circular dated 15 <sup>th</sup> March 2010 exists within 15 km radius of study area.
<b>E.</b>	<b>Cost Details</b>	
1.	Total Cost for the proposed Installation of Unit II	Rs. 583 Crores
2.	Cost for Environmental Protection Measures	<ul style="list-style-type: none"> <li>Capital Cost - Rs. 58 Crores</li> <li>Recurring Cost - Rs. 10 Crores / annum.</li> </ul>
<b>F.</b>	No. of working days	350 days/annum

**Source:** Site Visit and Pre-Feasibility Report

#### 11.4 REQUIREMENTS FOR THE PROJECT

##### 11.4.1 Raw Material Requirement

Details regarding quantity of raw materials required their source along with distance & mode of transportation for the project are given in Table below.

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TABLE: 11.2

## Raw Material Requirement, Sources and Transportation

S. No	Name of raw material	Requirement for proposed project	Storage	Source & Mode of Transportation
1	Grains (Damaged grain feed stock, nakkukinki, maize, bajra, sorghum, barley etc.)	1200 – 1300 TPD	Silo & Godowns	Nearby areas via road
2	<b>Chemicals</b>			
	Sodium Hydroxide (Caustic)	2000 KGS	Solid form packing in 50 kg bags & Stored Godown	Nearby areas via road
	Nutrients	800 – 1000 KGS	Solid form packing in bags & Stored Godown	
	Enzymes	2000 – 3000 KGS	Liquid form packed in cane & Stored Godown	
	Antifoam Agent	500 – 600 KGS	Semi Solid form packing in drum & Stored Godown	
	Yeast (Active Dry Yeast/Distiller's Yeast)	250 – 350 KGS	Solid form packing in bags & Stored Godown	

Source: Pre feasibility Report

## 11.4.2 Other basic requirements for the project

Other basic requirements for the project are as follows:

TABLE: - 11.3

## Basic Requirement for the Project

S. No.	Utility	Total Requirement for Unit II	Source
1.	Water	4110 KLPD	Canal Water
2.	Power	9 MW	Proposed 40 MW (2x20 MW) Co generation Power Plant & D.G. Sets – 3x1000 KVA (for backup purpose only)
3.	Man-Power	800	Unskilled / Semi-skilled – Local area; Skilled – Local and Outside areas
4.	Fuel - Biomass/Rice Husk/ Bagasse/ Paddy & Wheat Straw along with 15% auxiliary fuel - coal/pet coke	1372 TPD as biomass	Nearby areas via road
5.	Steam	150 TPH	Own proposed 2 Nos. 100 TPH Boilers

Source: Pre feasibility Report

## 11.5 PROCESS DESCRIPTION

Distillery Unit - Production from Grain:

- Grain storage
- Grain cleaning, milling and flour handling
- Slurry preparation & liquefaction

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- Multi pressure distillation
- Alcohol storage
- MEE & Dryer

The process flow diagram is as given in the Figure below:-

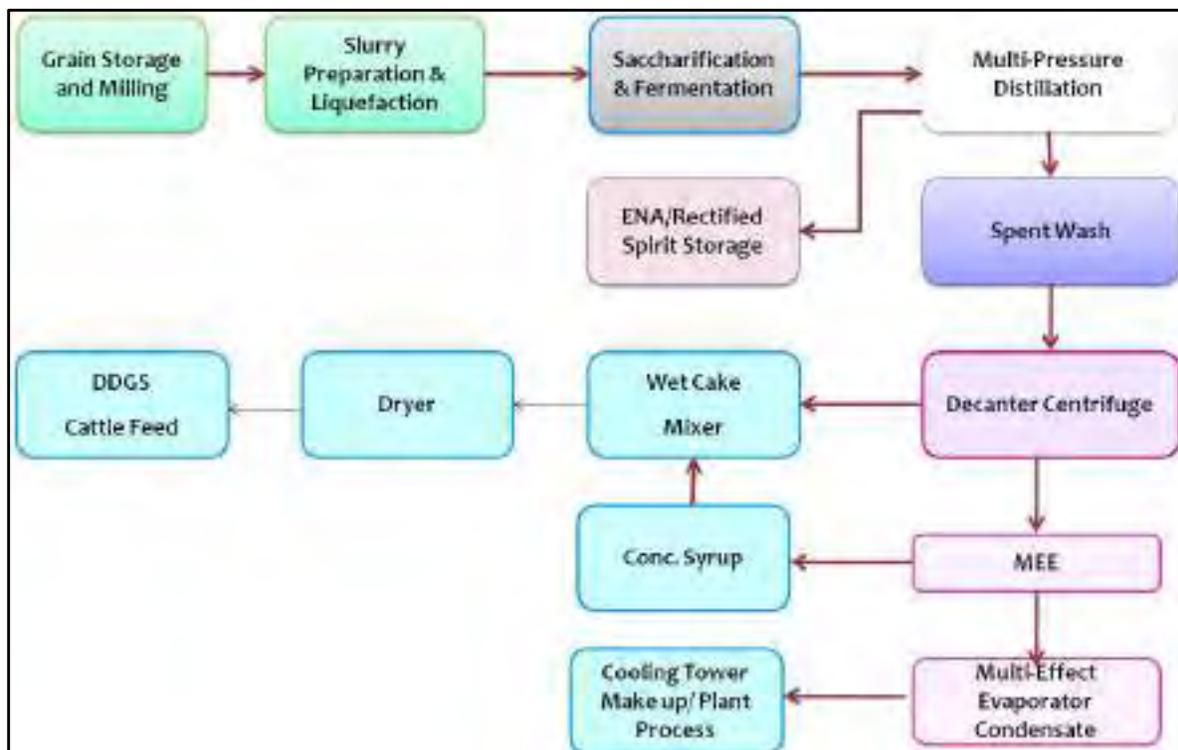


Figure 11.1: Grain Based Distillery Process

## 11.6 DESCRIPTION OF THE ENVIRONMENT

### 11.6.1 Presentation of Results (Air, Noise, Water & Soil)

Baseline study of the study area was conducted during Post Monsoon Season (Oct. to Dec., 2015). The concentration for all 8 AAQM stations for  $PM_{10}$  and  $PM_{2.5}$  ranges from  $65 \mu\text{g}/\text{m}^3$  to  $88.5 \mu\text{g}/\text{m}^3$  and  $26.5 \mu\text{g}/\text{m}^3$  to  $42.3 \mu\text{g}/\text{m}^3$  respectively.  $SO_2$  ranges from  $5.8 \mu\text{g}/\text{m}^3$  to  $10.8 \mu\text{g}/\text{m}^3$  and  $NO_x$  ranges from  $14.7 \mu\text{g}/\text{m}^3$  to  $23.8 \mu\text{g}/\text{m}^3$ . Hydrocarbon was found below detection limit.

Since the values are within the permissible limit because of the use of pollution control measures; the impact on the surrounding environment will be minimal. In addition, these results further reveals that even the air pollutants being generated from existing unit has very minimal effect on the environment and the same will be maintained after completion of proposed plant. It will be solemnized that pollution control measures will be carried and the results for the distillery will be submitted to the regulatory authorities on regular basis.

During the baseline study it was seen that in day time noise level varies from 52.1 to 58.7 Leq dB (A) during day time and in night time 43.2 to 51.6 Leq dB (A). The noise levels are well within the prescribed limits and there will be minimal impact of the proposed expansion project on the site after adopting the noise control measures.

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All the Parameters of groundwater like TDS (vary from to 352 mg/l to 778 mg/l), pH (varies from 7.12 to 7.49), Total Hardness (varies from 145.20 mg/l to 332.80 mg/l), etc. are found within the permissible limits.

Doubtless for fulfilling the guidelines requirements these parameters were monitored however, in the present project no groundwater is being harnessed thus, having no effect on the groundwater scenario.

The analysis of the soil samples collated the characterization of the soil is arid and brown soil so it is suitable for industrial purpose and further after adopting the proposed environmental conservation measures there will not be any adverse impact on the land / soil of in vicinity / surrounding area of the distillery. Nitrogen is found to be in better amount and Phosphorous is found to be in very less quantity, whereas the Potassium is more than sufficient.

#### 11.7 ANTICIPATED ENVIRONMENTAL IMPACTS

Anticipated environmental impacts due to operation of the distillery are given in below Table.

**TABLE: 11.4**

**Anticipated Environmental Impacts and Mitigation Measures**

Discipline	Anticipated Impact	Mitigation Measures
<b>Construction Phase</b>		
Air	Increase in dust concentration due to Leveling activity and Heavy vehicular movement.	<ul style="list-style-type: none"> <li>* Spraying of water in the construction area and on unpaved roads.</li> <li>* Proper maintenance of vehicles will be done. Use of vehicles meeting PUC norms.</li> </ul>
Noise	Increase in noise level due to Construction Equipment.	<ul style="list-style-type: none"> <li>* Equipment will be kept in good condition to keep the noise level within 90 dB(A).</li> <li>* Workers will be provided necessary protective equipments e.g. ear plugs, earmuffs.</li> </ul>
Water	Increase in suspended solids due to soil run-off during heavy precipitation due to loose soil at construction site	<ul style="list-style-type: none"> <li>* Adequate drainage system as storm water drains for runoff water during construction phase and operation phase will be maintained.</li> </ul>
<b>Operation Phase</b>		
Air	Probable increase in concentration of air pollutants	<ul style="list-style-type: none"> <li>* Better maintenance and installation of pollution control equipment i.e. ESP.</li> <li>* Covered storage facilities for raw material &amp; product.</li> <li>* Water spraying for abatement of PM emission.</li> <li>* CPCB &amp; CREP guidelines will be followed.</li> </ul>
Noise	Increase in noise level within the plant area	<ul style="list-style-type: none"> <li>* Ear plugs will be provided to persons working in high noise zone.</li> <li>* Properly insulated enclosures will be provided to equipments making excessive</li> </ul>

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Discipline	Anticipated Impact	Mitigation Measures
		noise. * Greenbelt development/ plantation will help in attenuating noise.
Water	Generation of waste water	* Domestic wastewater generated from the plant office and colony is being / will be treated in STP and treated effluent is being / will be utilized in process (CPP). * Wastewater generated from CPP is being / will be treated in the ETP and treated effluent is being / will be utilized in process (CPP). * No effluent is being / will be discharged outside the plant premises.
Soil	Degradation of soil quality due to settling of air borne dust	* Use of efficient pollution control systems * Maintaining proper stack height so as to ensure there is no deposition of dust in the nearby areas. * Soil samples will be collected periodically and soil quality will be tested.
Biological Environment	Positive as greenbelt of appropriate width has been developed and maintained by MIPL in the area	-
Socio-economic Environment	Overall development of the area in respect of the infrastructure development, educational growth, health facilities etc.	-

#### 11.8 ENVIRONMENTAL MONITORING PROGRAMME

Details of the environmental monitoring schedule / frequency, which will be undertaken for various environmental components, as per conditions of EC / CTE / CTO are given in Table below.

**TABLE – 11.5**  
**Post Project Monitoring**

S. No.	Description	Location
1.	Ambient Air Quality	Plant site & as per EC/CTO conditions
2.	Stack emissions	Plant site
4.	Noise Level Monitoring	Plant Boundary & as per EC/CTO conditions
5.	Water Level & Quality	Nearby Ground water sources
6.	Health Check-up	Nearby Hospitals

#### 11.9 ADDITIONAL STUDIES

Additional Studies conducted as per ToR Letter No. J-11011/228/2015- IA II (I) dated 28<sup>th</sup> December, 2015, issued by MoEF&CC, New Delhi are Public Hearing, Action Plan for Rain Water Harvesting and Risk Assessment & Disaster Management Plan.

**Proposed Installation of Unit II - Grain Based Ethanol / ENA / RS / Industrial Alcohol Plant {500 KLPD (2x250 KLPD)} & Co-generation Power Plant {40MW (2x20 MW)} in Existing Distillery Plant**

At Village-Mansoorwal, Tehsil- Zira, District-Ferozepur (Punjab)

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#### 11.10 PUBLIC CONSULTATION

Public Hearing was conducted on 04<sup>th</sup> May, 2016 at 12:30 PM at project site of the industry at Village Mansoorwal, Tehsil Zira, District Ferozepur (Punjab). Major issues raised during Public hearing were of Employment, Water and Environment related plantation and ESC activities related. Detailed action plan for the same has been prepared.

#### 11.11 RISK ASSESSMENT AND DISASTER MANAGEMENT PLAN

There will be no major risk involved due to proposed project. Proper precautionary measures will be taken to minimize risks. Personal Protective Equipment (PPEs) will help to minimize the health hazards and accidental casualties. So it is safe to say that there will be no major risk involved due to the proposed project.

#### 11.12 PROJECT BENEFITS

The distillery project of M/s. Malbros International Pvt. Ltd. project will result in growth of the surrounding areas by increasing direct and indirect employment opportunities in the region including ancillary development and supporting infrastructure. Development of social amenities will be in the form of medical facilities, education to underprivileged and creation of self help groups. Punjab state will get revenues in terms of taxes and local people will get direct & indirect employment. Business opportunities for local community will be available. No adverse effect on environment is envisaged as proper mitigation measure will be taken up for the same.

#### 11.13 ENVIRONMENTAL MANAGEMENT PLAN

Following mitigation measures will be adopted by the company to minimize the impact of project on the surrounding environment:

**TABLE -11.6**

**Environmental Management Plan**

Particulars	Details
Air Quality Management	<ul style="list-style-type: none"> <li>➤ ESP will be installed with the proposed boilers in Unit II.</li> <li>➤ Adequate boiler stack height will be maintained.</li> <li>➤ DG Sets will have adequate stack of height as per CPCB Guidelines.</li> <li>➤ Adequate measures for Fugitive Dust Emissions will be taken.</li> <li>➤ All the internal roads will be paved.</li> <li>➤ Development of greenbelt/plantation around the periphery &amp; within the premises of the plant will help in attenuating the pollutants emitted by the plant.</li> <li>➤ Continuous online monitoring system for stack emissions will be installed by the company.</li> <li>➤ All the raw material and products will be properly stored in tanks/ covered yards.</li> </ul>
Water Management	<ul style="list-style-type: none"> <li>➤ The Grain based distillery will be based on "Zero Effluent Discharge".</li> <li>➤ Fresh water requirement of the project will be met by Canal Water. Efforts will be made to conserve as much water as possible by 3R's (Reduce, Reuse &amp; Recycle).</li> <li>➤ Grain Slops (Spent Wash) will be taken through Centrifuge Decanters for separation</li> </ul>

<b>Proposed Installation of Unit II - Grain Based Ethanol / ENA / RS / Industrial Alcohol Plant {500 KLPD (2x250 KLPD)} &amp; Co-generation Power Plant {40MW (2x20 MW)} in Existing Distillery Plant</b> At Village-Mansoorwal, Tehsil- Zira, District-Ferozepur (Punjab)
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	<p>of Suspended Solids separated as Wet Cake.</p> <ul style="list-style-type: none"> <li>➤ Thin Slops from the Decanter Centrifuge are partly recycled back to process and partly taken to Thins Slops Evaporation Plant for concentration of remaining solids to form a Syrup. This Syrup is also mixed into the Wet Cake coming out of Centrifuge and forms part of Cattle Feed which is high in protein. (Also known as Soluble – Collectively known as DWGS)</li> <li>➤ DWGS Drier – Wet cake / DWGS will be passed through steam tube bundle drier for drying into cake with 10-12% moisture (max.) to give higher shelf life. Solid dry cakes (DDGS) will be obtained finally.</li> <li>➤ The Process condensate will be cooled and collected into a neutralization tank with sufficient residence time. After Neutralization and filtration (UF+RO) this process condensate will be recycled into process use.</li> <li>➤ Rainwater harvesting will be practiced so as to recharge ground water.</li> </ul>
Noise Management	<ul style="list-style-type: none"> <li>➤ Proper maintenance, oiling and greasing of machines at regular intervals.</li> <li>➤ PPEs like earplugs and earmuffs to the workers exposed to high noise level.</li> <li>➤ Development of greenbelt/plantation for 33% of the total plant area.</li> <li>➤ D.G sets will be provided with acoustic enclosures to control the noise level within the prescribed limit.</li> <li>➤ Regular monitoring of noise levels will be carried out and corrective measures in concerned machinery will be adapted accordingly to the possible extent.</li> </ul>
Solid Waste Management	<ul style="list-style-type: none"> <li>➤ Solid waste from the Grain based operations generally comprises of fibres and proteins in the form of DDGS, which will be ideally used as Cattle Feed/ Poultry Feed/ Fisheries etc.</li> <li>➤ Ash from the boiler will be sold to brick manufacturers.</li> <li>➤ Used oil &amp; grease generated from plant machinery/gear boxes as hazardous waste will be sold out to the authorized recycler.</li> </ul>
Greenbelt Development / Plantation	<ul style="list-style-type: none"> <li>➤ 33% of total plant area has been developed under greenbelt/plantation. Same will be maintained &amp; further enhanced.</li> <li>➤ All the barren areas are will be vegetated.</li> <li>➤ Native plant species are planted in consultation with local horticulturist.</li> <li>➤ Greenbelt development along with the road &amp; plant boundary will attenuate noise level arrest dust and improve the environment in surrounding.</li> <li>➤ 80% survival rate will be maintained with all possible efforts.</li> </ul>

#### 11.14 OCCUPATIONAL HEALTH AND SAFETY

To control and minimize the risks at workplace, M/s. Malbros International Pvt. Ltd. has implemented Health, Safety and Environment Policy with the following objectives:

- ∞ To prevent hazards
- ∞ To provide safe and healthy environment to all the employees.

The company, therefore, has adopted the policy for the purpose of creating and maintaining safe and healthy environment.

#### 11.15 CONCLUSION

The proposed project will prove beneficial to the local people as more infrastructure development, improvement in education and health facilities, roads, availability of drinking water, etc. in near-by villages will be done. There will be increase in revenue generation to the government by way of royalty, excise and government taxes etc.

**Proposed Installation of Unit II - Grain Based Ethanol / ENA / RS / Industrial Alcohol Plant {500 KLPD (2x250 KLPD)} & Co-generation Power Plant {40MW (2x20 MW)} in Existing Distillery Plant**

At Village-Mansoorwal, Tehsil- Zira, District-Ferozepur (Punjab)

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There will be no significant impact on the area, as adequate preventive measures will be adopted to contain the various pollutants within permissible limits. Regular monitoring of all the components of environment will be done. Increased social welfare measures taken by the company will bring development in the near-by villages.

Greenbelt development around the area will be also taken up as an effective pollution mitigative technique, as well as to control the pollutants released from the premises of the company.



<p><b>Proposed Installation of Unit II - Grain Based Ethanol / ENA / RS / Industrial Alcohol Plant {500 KLPD (2x250 KLPD)} &amp; Co-generation Power Plant {40MW (2x20 MW)} in Existing Distillery Plant</b>          At Village-Mansoorwal, Tehsil- Zira, District-Ferozepur (Punjab)</p>
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## CHAPTER–XII

### DISCLOSURE OF CONSULTANTS ENGAGED

#### 12.1 DISCLOSURE OF CONSULTANTS ENGAGED

J.M. EnviroNet Pvt. Ltd. (JMEPL), one of the companies of JM Group, was established in the year 1993. 'JM' in the name of the Company is derived from the name of 'Lord Shiva' - the Temple of 'Jharkhand Mahadev' (JM). The Temple is located at Queens Road, Vaishali Nagar, Jaipur.

The Registered office of JMEPL is at 7-CH-10, Jawahar Nagar, Jaipur. Its Delhi-NCR Corporate office is at SCO-16, Sector 10A, Gurgaon (Haryana).

J.M. EnviroNet Pvt. Ltd. is accredited with ISO-9001: 2008 for EIA Division. EIA Division is also approved by National Accreditation Board for Education & Training (NABET) formerly NRBPT (Quality Council of India), Certificate no. NABET/EIA/1417/RA028.

J.M. EnviroNet Pvt. Ltd. is listed at serial no. "86" of the list of Accredited EIA Consultant Organization displayed on MoEF&CC website (<http://www.qcin.org/nabet/EIA/documents/Accredited%20consultants.pdf>) updated as on November 7, 2016.

JMEPL is offering environmental consultancy services in various sectors viz. industrial projects/Chemical industries/ cement plants/ Thermal power plants/ mining projects/ coal washeries project/ real estate projects/ distilleries/ steel plants/ chemical fertilizers/ mineral beneficiation etc.

In the mining sector, JMEPL has a highly qualified team of subject experts. As faculty heads of the EIA division, we have Retd. General Managers of the reputed cement companies, ex-head, EIA division of big business group, STP & ETP Designing experts, Retd.

JM Group's business is spread over 22 states viz:- Andhra Pradesh, Kerala, Gujarat, Maharashtra, Orissa, Tamil Nadu, Goa, Jammu & Kashmir, Himachal Pradesh, Punjab, Haryana, Delhi, Rajasthan, Uttar Pradesh, Madhya Pradesh, Chattisgarh, Assam, West Bengal, Karnataka, Jharkhand, Bihar & Uttarakhand.

The JM Group has its own Environmental Laboratory at Gurgaon (Haryana) approved under EPA (Environment Protection Act) from the Ministry of Environment & Forests, Govt. of India, New Delhi and by the National Accreditation Board of Testing and Calibration Laboratories, Govt. of India (NABL). Besides this, its MoEF&CC and NABL approved Environmental Laboratory of JM Group is also providing Analytical Laboratory Services of various elements and environmental parameters.

Annual monitoring as per MoEF&CC/CPCB/SPCB guidelines, Risk Assessment and Disaster Management Plan, consultancy for Rain Water Harvesting Plan, detailed Hydro-geological study, preparation of Environmental Statement Reports (Environmental Clearance Compliance Conditions) etc. are amongst the various other consultancy services offered by the company.



## Annexure – 10 - Public Hearing proceedings

M/s Malbros International Mansoorwal (Unit-II)  
Village Mansoorwal, Tehsil Zira, District Ferozepur

	<b>PUNJAB POLLUTION CONTROL BOARD</b> <b>VATAVARAN BHAWAN, PATIALA</b>
Tel. Fax : 0175- 2215802 PBX : 2200282, 2200557	Web: <a href="http://www.ppcb.gov.in">http:// www.ppcb.gov.in</a>

No. EE (Mega)/2016/\_\_\_\_\_ Dated \_\_\_\_\_

Regd.

To

The Secretary to Govt. of India,  
Ministry of Environment, Forests & Climate Change,  
Indira Paryavaran Bhavan, Jorbagh Road,  
New Delhi - 110 003.

**Subject: Proceedings of the Public Hearing conducted on 04.05.2016 in connection with application filed by M/s Malbros International Pvt. Ltd., for obtaining environmental clearance under EIA Notification dated 14/9/2006 for installation of Unit-II grain based ethmol/ENA/RS/ Industrial Alcohol Plant in the existing distillery unit located in the revenue estate of Village Mansoorwal, Tehsil Zira, District Ferozepur, Punjab.**

It is intimated that the subject cited industry, has applied for obtaining environmental clearance as required under the EIA notification dated 14.9.2006 for installation of Unit-II grain based ethmol/ENA/RS/ Industrial Alcohol Plant in the existing distillery unit located in the revenue estate of Village Mansoorwal, Tehsil Zira, District Ferozepur, Punjab. The project is covered under EIA notification no. 1533 (E) dated 14.9.2006 and the Terms of Reference for preparing draft EIA study report for the said project have been prescribed by the EAC of MoEF. Accordingly, the industry had submitted draft rapid EIA study report alongwith summary report of the same to the Board and requested for conduct of the public hearing for expansion plan of the project.

In compliance to provision of the EIA notification dated 14.9.2006, the Board issued public notice of 30 days in two daily newspapers for getting responses from public and intimating time, date & venue of the public hearing fixed for 04.05.2016 at the site of the project. A copy of the public notices is enclosed herewith as **Annexure-I**. Thereafter, public hearing for the said project was conducted on 04.05.2016, which was attended by 172 persons. A copy of the attendance sheet containing the details of persons, who attended the said hearing, is enclosed herewith as **Annexure-II**.

The public hearing process was supervised and presided over by the Additional Deputy Commissioner, Ferozepur, Environmental Engineer (Mega), PPCB, Patiala and Environmental Engineer, PPCB, Regional Office, Faridkot. The summary of the public hearing proceedings reflecting all the views and concerns expressed during the public hearing, duly signed by the Additional Deputy Commissioner (D), Ferozepur is enclosed herewith as **Annexure-III**.

The Punjab Pollution Control Board had made arrangement to carry out video recording of the entire public hearing process and a copy of the same is also enclosed herewith as **Annexure-IV** for further necessary action at the end of the Ministry of Environment & Forests, Govt. of India, New Delhi.

DA/- As above

  
**(Dr. Babu Ram)**  
**Member Secretary**

Endst. No. \_\_\_\_\_

Dated \_\_\_\_\_

A copy of the above alongwith a copy of proceedings is forwarded to the Deputy Commissioner, Ferozepur for information and necessary action. He is requested to get a copy of the proceeding of the public hearing displayed conspicuously at his office.

DA/- As above

sd/-  
(Dr. Babu Ram)

Member Secretary

Endst. No. 31568-71Dated 10/6/16

A copy of the above alongwith a copy of proceedings is forwarded to the following for information and necessary action:

1. The Senior Environmental Engineer, Punjab Pollution Control Board, Zonal Office, Bathinda.
2. The Environmental Engineer (Computers), Punjab Pollution Control Board, Head Office, Patiala for displaying the proceeding of public hearing on the website of the Board.
3. The Environmental Engineer, Punjab Pollution Control Board, Regional Office, Faridkot. He is also requested to get a copy of the proceeding of the public hearing displayed conspicuously at his office. Also, a copy of the proceedings may be sent to the concerned Zila Parishad and Village Panchayat for displaying the same conspicuously.
4. ✓ M/s Malbros International Pvt. Ltd., Village Mansoorwal, Tehsil Zira, District Ferozepur. The industry is advised to submit final EIA report after incorporating the grievances/suggestions raised by the public in the public hearing to the Ministry of Environment, Forests & Climate Change, New Delhi for obtaining the environmental clearance, before starting any developmental activities on its proposed project.

DA/- As above.

sd/-  
(Dr. Babu Ram)  
Member Secretary

The TRIBUNE

03/04/2016

**PUNJAB POLLUTION CONTROL BOARD**

VATAVARAN BHAWAN, NABHA ROAD, PATIALA

Phone: 2222222

**PUBLIC NOTICE**

It is for the information of all concerned that M/s. Manros International Pvt. Ltd., has proposed to install Unit-II grain based ethanol/ENA/RS/ Industrial Alcohol Plant ((500 KLPD (2x250 KLPD)), Co-generation power plant of 40 MW (2x20 MW), CO<sub>2</sub> plant of capacity 225 TPD (2x112.5 TPD) and DDGS/cattle feed/poultry feed @ 300 TPD (2x150 TPD) in the existing distillery unit located in the revenue estate of Village Mansoorwal, Tehsil Zira, District Ferozepur. The project is covered under the EIA notification No. S.O. 1533(E) dated 14.9.2006 issued by Ministry of Environment, Forests & Climate Change, Govt. of India, New Delhi and the promoter company is, thus, required to obtain environmental clearance from Ministry of Environment, Forests & Climate Change, New Delhi.

As a part of the procedure for seeking environmental clearance, as notified by Ministry of Environment & Forests, Govt. of India, New Delhi, the promoter company has applied to the Punjab Pollution Control Board for conduct of public hearing of the above mentioned project. The draft Rapid Environment Impact Assessment study report alongwith executive summary of the project submitted by the Company is available in the following offices, which can be perused during the office hours on any working day:

1. The Deputy Commissioner, Ferozepur
2. The Executive Officer, Municipal Council, Zira,
3. The Chairman, Zila Parishad, Ferozepur
4. The General Manager, District Industries Centre, Ferozepur
5. Regional Office, Ministry of Environment & Forests, Govt. of India, Bays No. 24 & 25, Sector 31-A, Chandigarh.
6. Environmental Engineer, Punjab Pollution Control Board, Regional Office, Ferozepur.

Notice is, hereby, given to all concerned to file suggestions, views, comments and objections, if any, on the proposed project, to the Member Secretary, Punjab Pollution Control Board, Vatavaran Bhawan, Nabha Road, Patiala, within 30 days of the publication of this notice. **Besides, a public hearing will also be held on 04.05.2016 at 12.30 PM at the project site of the industry located in the revenue estate of Village Mansoorwal, Tehsil Zira, District Ferozepur, which can be attended by any person including bonafide residents, environmental groups, and others, located at the project site/sites of displacement/sites likely to be affected. Oral/written suggestions, if any, can also be made during the public hearing.**

**No TA/DA will be admissible for attending the public hearing.**

**MEMBER SECRETARY**

DPR/Pb/986-D

AJIT

# ਪੰਜਾਬ ਪ੍ਰਦੂਸ਼ਣ ਰੋਕਥਾਮ ਬੋਰਡ

ਵਾਤਾਵਰਨ ਭਵਨ, ਨਾਭਾ ਰੋਡ, ਪਟਿਆਲਾ



ਫੋਨ : 0175-2200282, ਟੈਲੀ ਫੈਕਸ : 0175-2215802

## ਜਨਤਕ ਸੂਚਨਾ

ਸਾਰੇ ਸੰਬੰਧਿਤਾਂ ਦੀ ਜਾਣਕਾਰੀ ਲਈ ਸੂਚਿਤ ਕੀਤਾ ਜਾਂਦਾ ਹੈ ਕਿ ਮੈਂਸ: ਮਾਲਬੋਜ਼ ਇੰਟਰਨੈਸ਼ਨਲ ਪ੍ਰਾਈ. ਲਿਮ. ਨੇ ਪਿੰਡ ਮਨਸੂਰਵਾਲ, ਤਹਿਸੀਲ ਜ਼ੀਰਾ, ਜ਼ਿਲ੍ਹਾ ਫਿਰੋਜ਼ਪੁਰ ਦੀ ਮਾਲੀਆ ਐਸਟੇਟ ਵਿਚ ਸਥਾਪਿਤ ਮੌਜੂਦਾ ਡਿਸਟਿਲਰੀ ਯੂਨਿਟ ਵਿਚ ਯੂਨਿਟ-1 ਗਰੇਨ ਬੇਸਿਡ ਐਥਨੋਲ/ਈ ਐਨ ਏ/ਆਰ ਐਸ/ਇੰਡਸਟਰੀਅਲ ਅਲਕੋਹਲ ਪਲਾਂਟ ((500 ਕੇ ਐਲ ਪੀ ਡੀ (2x250 ਕੇ ਐਲ ਪੀ ਡੀ)) 40' ਮੈਗਾਵਾਟ (2x20' ਮੈਗਾਵਾਟ) ਦਾ ਕੋ-ਜਨਰੇਸ਼ਨ ਪਾਵਰ ਪਲਾਂਟ, 225 ਟੀ ਪੀ ਡੀ (2x112.5 ਟੀ ਪੀ ਡੀ) ਸਮਰੱਥਾ ਦਾ ਸੀ ਓ, ਪਲਾਂਟ ਅਤੇ ਡੀ ਡੀ ਜੀ ਐਸ/ਕੈਟਲ ਫੀਡ/ਪੋਲਟਰੀ ਫੀਡ 300 @ ਟੀ ਪੀ ਡੀ (2x150 ਟੀ ਪੀ ਡੀ) ਲਗਾਉਣ ਦਾ ਪ੍ਰਸਤਾਵ ਹੈ। ਪ੍ਰੋਜੈਕਟ ਵਾਤਾਵਰਨ ਅਤੇ ਜੰਗਲਾਤ ਅਤੇ ਜਲਵਾਯੂ ਤਬਦੀਲੀ ਮੰਤਰਾਲਾ, ਭਾਰਤ ਸਰਕਾਰ, ਨਵੀਂ ਦਿੱਲੀ ਦੁਆਰਾ ਜਾਰੀ ਈ ਆਈ ਏ ਨੋਟੀਫਿਕੇਸ਼ਨ ਨੰ: ਐਸ. ਓ. 1533 (ਈ) ਮਿਤੀ 14.09.2006 ਅਧੀਨ ਸ਼ਾਮਲ ਹੈ ਅਤੇ ਪ੍ਰੋਮੋਟਰ ਕੰਪਨੀ ਨੂੰ ਇਸ ਲਈ ਵਾਤਾਵਰਨ ਅਤੇ ਜੰਗਲਾਤ ਅਤੇ ਜਲਵਾਯੂ ਤਬਦੀਲੀ ਮੰਤਰਾਲਾ ਨਵੀਂ ਦਿੱਲੀ ਤੋਂ ਵਾਤਾਵਰਨਿਕ ਕਲੀਅਰੈਂਸ ਪ੍ਰਾਪਤ ਕਰਨ ਦੀ ਲੋੜ ਹੈ।

ਵਾਤਾਵਰਨ ਅਤੇ ਜੰਗਲਾਤ ਮੰਤਰਾਲਾ, ਭਾਰਤ ਸਰਕਾਰ, ਨਵੀਂ ਦਿੱਲੀ ਦੁਆਰਾ ਅਧਿਸੂਚਿਤ ਅਨੁਸਾਰ ਵਾਤਾਵਰਨਿਕ ਕਲੀਅਰੈਂਸ ਪ੍ਰਾਪਤ ਕਰਨ ਲਈ ਪ੍ਰਕਿਰਿਆ ਦੇ ਹਿੱਸੇ ਵਜੋਂ ਪ੍ਰੋਮੋਟਰ ਕੰਪਨੀ ਨੇ ਉਪਰੋਕਤ ਦਰਸਾਏ ਪ੍ਰਾਜੈਕਟ ਦੀ ਜਨਤਕ ਸੁਣਵਾਈ ਆਯੋਜਿਤ ਕਰਨ ਲਈ ਪੰਜਾਬ ਪ੍ਰਦੂਸ਼ਣ ਰੋਕਥਾਮ ਬੋਰਡ ਨੂੰ ਬਿਨੈ ਕੀਤਾ ਹੈ। ਕੰਪਨੀ ਦੁਆਰਾ ਪੇਸ਼ ਕੀਤੀ ਪ੍ਰੋਜੈਕਟ ਦੀ ਐਗਜ਼ੀਕਿਊਟਿਵ ਸਮਰੀ ਸਹਿਤ ਡਰਾਫਟ ਰੈਪਿਡ ਇਨਵਾਇਰਨਮੈਂਟ ਇੰਪੈਕਟ ਅਸੈਸਮੈਂਟ ਸਟੱਡੀ ਰਿਪੋਰਟ ਹੇਠਾਂ ਲਿਖੇ ਦਫ਼ਤਰਾਂ ਵਿਚ ਉਪਲਬਧ ਹੈ, ਜਿਸ ਦੀ ਜਾਂਚ ਕਿਸੇ ਵੀ ਕੰਮ ਵਾਲੇ ਦਿਨ ਦਫ਼ਤਰੀ ਸਮੇਂ ਦੌਰਾਨ ਕੀਤੀ ਜਾ ਸਕਦੀ ਹੈ।

1. ਡਿਪਟੀ ਕਮਿਸ਼ਨਰ, ਫਿਰੋਜ਼ਪੁਰ
2. ਕਾਰਜਕਾਰੀ ਅਧਿਕਾਰੀ, ਮਿਊਂਸਪਲ ਕੌਂਸਲ, ਜ਼ੀਰਾ
3. ਚੇਅਰਮੈਨ, ਜ਼ਿਲ੍ਹਾ ਪ੍ਰੀਸ਼ਦ, ਫਿਰੋਜ਼ਪੁਰ
4. ਜਨਰਲ ਮੈਨੇਜਰ, ਡਿਸਟ੍ਰਿਕਟ ਇੰਡਸਟਰੀਜ਼ ਸੈਂਟਰ, ਫਿਰੋਜ਼ਪੁਰ
5. ਰਿਜਨਲ ਆਫਿਸ, ਵਾਤਾਵਰਨ ਅਤੇ ਜੰਗਲਾਤ ਮੰਤਰਾਲਾ, ਭਾਰਤ ਸਰਕਾਰ, ਬੇਅਜ਼ ਨੰ: 24 ਅਤੇ 25, ਸੈਕਟਰ 31-ਏ, ਚੰਡੀਗੜ੍ਹ

6. ਵਾਤਾਵਰਨਿਕ ਇੰਜੀਨੀਅਰ, ਪੰਜਾਬ ਪ੍ਰਦੂਸ਼ਣ ਰੋਕਥਾਮ ਬੋਰਡ, ਖੇਤਰੀ ਦਫ਼ਤਰ, ਫਰੀਦਕੋਟ ਸਾਰੇ ਸੰਬੰਧਿਤਾਂ ਨੂੰ ਇਸ ਦੁਆਰਾ ਸੂਚਿਤ ਕੀਤਾ ਜਾਂਦਾ ਹੈ ਕਿ ਉਹ ਪ੍ਰਸਤਾਵਿਤ ਪ੍ਰਾਜੈਕਟ 'ਤੇ ਸੁਝਾਅ, ਵਿਚਾਰ, ਟਿੱਪਣੀਆਂ ਅਤੇ ਇਤਰਾਜ਼ ਜੇਕਰ ਕੋਈ ਹੋਣ, ਮੈਂਬਰ ਸਕੱਤਰ, ਪੰਜਾਬ ਪ੍ਰਦੂਸ਼ਣ ਰੋਕਥਾਮ ਬੋਰਡ, ਵਾਤਾਵਰਨ ਭਵਨ, ਨਾਭਾ ਰੋਡ, ਪਟਿਆਲਾ ਕੋਲ ਇਸ ਨੋਟਿਸ ਦੀ ਪ੍ਰਕਾਸ਼ਨਾ ਦੇ 30 ਦਿਨਾਂ ਦੇ ਅੰਦਰ-ਅੰਦਰ ਪੇਸ਼ ਕਰਨ। ਇਸ ਤੋਂ ਇਲਾਵਾ ਪਿੰਡ ਮਨਸੂਰਵਾਲ, ਤਹਿਸੀਲ ਜ਼ੀਰਾ, ਜ਼ਿਲ੍ਹਾ ਫਿਰੋਜ਼ਪੁਰ ਵਿਖੇ ਦੀ ਮਾਲੀਆ ਐਸਟੇਟ ਵਿਚ ਸਥਿਤ ਇੰਡਸਟਰੀ ਦੀ ਪ੍ਰੋਜੈਕਟ ਸਾਈਟ 'ਤੇ ਸਿਤੀ 04.05.2016 ਬਾਅਦ ਦੁਪਹਿਰ 12.30 ਵਜੇ ਇਕ ਜਨਤਕ ਸੁਣਵਾਈ ਵੀ ਆਯੋਜਿਤ ਕੀਤੀ ਜਾਵੇਗੀ, ਜਿਸ ਵਿਚ ਪ੍ਰਾਜੈਕਟ ਸਥਾਨ/ਡਿਸਪਲੇਸਮੈਂਟ ਦੇ ਸਥਾਨਾਂ/ਪ੍ਰਭਾਵਿਤ ਹੋਣ ਵਾਲੇ ਸਥਾਨਾਂ 'ਤੇ ਸਥਿਤ ਅਸਲ ਨਿਵਾਸੀ, ਵਾਤਾਵਰਨਿਕ ਗਰੁੱਪ ਅਤੇ ਹੋਰਨਾਂ ਸਹਿਤ ਕੋਈ ਵੀ ਵਿਅਕਤੀ ਹਾਜ਼ਰ ਹੋ ਸਕਦਾ ਹੈ। ਜਨਤਕ ਸੁਣਵਾਈ ਦੌਰਾਨ ਮੌਖਿਕ/ਲਿਖਤੀ ਸੁਝਾਅ ਜੇਕਰ ਕੋਈ ਹੋਣ, ਵੀ ਪੇਸ਼ ਕੀਤੇ ਜਾ ਸਕਦੇ ਹਨ। ਜਨਤਕ ਸੁਣਵਾਈ ਵਿਚ ਹਾਜ਼ਰ ਹੋਣ ਲਈ ਕੋਈ ਟੀ ਏ/ਡੀ ਏ ਨਹੀਂ ਦਿੱਤਾ ਜਾਵੇਗਾ।

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2.	विमलेश वि.सं. 5/1 - मांडवी वि.सं. मि	98550-14825	जुहुरे/मांडवी
3.	चक्रवर्ती वि.सं. 5/1 - मांडवी वि.सं.	44173-25379	मांडवी
4.	विमलेश वि.सं. 7/1 - मांडवी वि.सं. मांडवी रोड/मांडवी एअर वॉटर	98729-30031	मांडवी
5.	विमलेश वि.सं. 5/1 - मांडवी वि.सं. मांडवी रोड - मांडवी एअर वॉटर	94640-09919	मांडवी
6.	विमलेश वि.सं. 5/1 - मांडवी वि.सं. मांडवी रोड/मांडवी एअर वॉटर	94173 26635	मांडवी
7.	विमलेश वि.सं. 6/1 - मांडवी वि.सं. मांडवी रोड/मांडवी एअर वॉटर	94175-33165	मांडवी
8.	विमलेश वि.सं. 5/1 - मांडवी वि.सं. मांडवी रोड/मांडवी एअर वॉटर	94176-31140	मांडवी
9.	विमलेश वि.सं. 5/1 - मांडवी वि.सं. मांडवी रोड/मांडवी एअर वॉटर	98729-54204	मांडवी

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11	उत्तरांचल विद्युत सं. राज. विद्युत नगरीय विद्युत वि. सं. अ. अ.	94654-33448	Tarun Singh
(12)	रा. विद्युत सं. अ. अ. अ. अ. अ. अ. नगरीय विद्युत सं. अ. अ. अ.	98140-52748	Hardy Singh
(13)	उत्तरांचल विद्युत सं. अ. अ. अ. अ. अ. वि. सं. अ. अ. अ. अ. अ. अ.	98786-02004	Hardy Singh
(14)	उत्तरांचल विद्युत सं. अ. अ. अ. अ. अ. वि. सं. अ. अ. अ. अ. अ. अ.	98764-96531	Hardy Singh
(15)	उत्तरांचल विद्युत सं. अ. अ. अ. अ. अ. वि. सं. अ. अ. अ. अ. अ. अ.	94788-15387	Hardy Singh
(16)	उत्तरांचल विद्युत सं. अ. अ. अ. अ. अ. वि. सं. अ. अ. अ. अ. अ. अ.	95926, 91493	Hardy Singh
(17)	उत्तरांचल विद्युत सं. अ. अ. अ. अ. अ. वि. सं. अ. अ. अ. अ. अ. अ.	98142-20375	Hardy Singh
18	उत्तरांचल विद्युत सं. अ. अ. अ. अ. अ. वि. सं. अ. अ. अ. अ. अ. अ.	9463432304	Hardy Singh

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20	उषा सिने सु. माधसिने रेडर को	89683-16672	गंगा सिने
21	एच सिने सु. गंगा सिने	84871-95929	- रेडर
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38	ਮਠੋਰਨਿੰਮਤਾ ਠਾਣੀਨਿੰਮ ਕੀਰਤ ਕਮਲ	98156-18043	ਮਠੋਰਨਿੰਮ
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43	ਕੇਰਨਿੰਮ ਪੱਕੀ ਕਮਲ	99154-64068	ਕੇਰਨਿੰਮ
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47	महेश्वर सिंह मंडल सिद्धपुरा	89689-07952	Jesul Singh
48	महेश्वर सिंह S/o राम सिंह	89689-07952	
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50	यशवंत सिंह मंडल सिद्धपुरा रावत	99149-32855	Yashwanth
51	Pratmanj - Singh Gaur S. Jimer Smt Kulimmar	98146-22800	Pratmanj
52	Bukhinder Singh Pannu Wasti Machhianwali 21RAC Firuzpur	87259-45745	Bukhinder
53	Harmeet Singh 870 S. Bhatia Dera	98154-06203	Harmeet
54	महेश्वर सिंह S/o महेश्वर सिंह पुत्र मंडल सिद्धपुरा	94651-17965	महेश्वर सिंह

55	हरमल सिंह s/o. जियन सिंह पुंड्र नगर 21वा	94175-46084	हरमल सिंह
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64	Ravinder Kumar W.No 7 Talwandi Bhai	98152-47400	Ravinder
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68	Davendra Kumar / mam Chand Maku	—————	SD
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70	Brajesh Kumar / madhav Pandai	7837286896	PB
71	Santosh S/o Suresh Shankar Zera	7508636569	Sony
72	Chandana Singh S/o Sh. Sonu Singh, Khosa Dal Singh	9855562684	S
73	Paramjit Singh S/o S. Rangit Singh Sodhi wala.	88726-33387	JS
74	Rajni Kumar / Karmar Jale Bachan	98149 13639	JS
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77	Amu Kaur & Anurag Kaur P.O. Anandpur	94176-84308	Amu Kaur
78	Amu Kaur & Anurag Kaur P.O. Anandpur	98141-35529	Anurag Kaur
79	Amu Kaur & Anurag Kaur P.O. Anandpur	no. / .	Anurag Kaur
80	Anurag Kaur & Amu Kaur P.O. Anandpur	Anurag Kaur 94173-19480	Anurag Kaur
81	Anurag Kaur & Amu Kaur P.O. Anandpur	—	Anurag Kaur
82	Anurag Kaur & Amu Kaur P.O. Anandpur	93577-25500	Anurag Kaur
83	Anurag Kaur & Amu Kaur Village Anandpur (Sicr)	9465557031	Anurag Kaur
84	Anurag Kaur & Amu Kaur P.O. Anandpur	94780-10094	Anurag Kaur
85	Anurag Kaur & Amu Kaur Sangli G.P. Vill. Madhu.	94171-47950	Anurag Kaur
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89	Brijesh Kumar Srivastava S/O Sri L.P. Srivastava Jera	9914919007	Brijesh
90	Ashwani Awasthi S/O Late J.N. Awasthi Mathra	8194940806	Ashwani
91	DUSHYANT K.R. S/O Sh. Rajeev Singh ZIRA	9041624215	Dushyant
92	Vijay Kumar S/O Late Sh. Daram Singh S/O Mr. Suresh Kumar Singh	9914922846	Vijay
93	Sarabjit Singh S/O Nirmal Singh ZIRA	84377 47804	Sarabjit
94	Suresh Kumar S/O Sh. Gullab Singh	73554 78583	Suresh
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96	Balraj Singh S/O Pali P S/O Moga	99149 52258	Balraj

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98	Chandesh Tomarjal Ram reera	75083-46192	elawar
99	Yashodhan Singh S/o	88724 51965	J.P.
100	श्रीधर सिंह & श्रीमती श्रीमती राजेश्वरी	75991 00385	श्रीधर सिंह
101	रवि कुमार S/o राजेश रवि कुमार सिंह	99141 75931	रवि कुमार
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129	Ajtar Singh s/o. Sukhdev Singh P/O - Sun Singh wala	9814005320	Ajtar Singh
130	R. D. Appuvali (L. Sh. Dandlog (M)) (Bladern D)	9992600 860	R. D. Appuvali
131	Dinesh Singh s/o Shri Raghnath Singh Gurpan JM Envinner Pvt. Ltd.	9015 209362	Dinesh
132	ਗੁਰਮਿੰਦਰ ਸਿੰਘ ਸ/ਓ ਸ਼ਰਮਿੰਦਰ ਸਿੰਘ	—	ਗੁਰਮਿੰਦਰ ਸਿੰਘ
133	ਗੁਰਮਿੰਦਰ ਸਿੰਘ ਸ/ਓ ਸ਼ਰਮਿੰਦਰ ਸਿੰਘ	96533-56641	ਗੁਰਮਿੰਦਰ ਸਿੰਘ
134	ਗੁਰਮਿੰਦਰ ਸਿੰਘ ਸ/ਓ ਸ਼ਰਮਿੰਦਰ ਸਿੰਘ	99149-48844	ਗੁਰਮਿੰਦਰ ਸਿੰਘ
135	ਗੁਰਮਿੰਦਰ ਸਿੰਘ ਸ/ਓ ਸ਼ਰਮਿੰਦਰ ਸਿੰਘ	94173-41131	ਗੁਰਮਿੰਦਰ ਸਿੰਘ

136	जयदेव शिवाजी नरकर पुणे जिल्हा, व.स.	98788-16038	Handwritten
137	सहायिका स/० नरकर शिवाजी महाराष्ट्र	94683-48165	Handwritten
138	सहायिका स/० नरकर शिवाजी महाराष्ट्र	97796-39078	Handwritten
	P. S. Patil	942443065565	Handwritten
139	सहायिका स/० नरकर शिवाजी महाराष्ट्र	98761-79824	Handwritten
140	सहायिका स/० नरकर शिवाजी महाराष्ट्र	98144-91962	Handwritten
141	सहायिका स/० नरकर शिवाजी महाराष्ट्र	78372-61938	Handwritten
142	सहायिका स/० नरकर शिवाजी महाराष्ट्र	94174-81714	Handwritten
143	सहायिका स/० नरकर शिवाजी महाराष्ट्र	85913 00037	Handwritten
144	सहायिका स/० नरकर शिवाजी महाराष्ट्र	75289 49585	Handwritten
145	e Chandmatt yadav (Zirga)	7696186074	Handwritten

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146	Kapu Kumar S/o Raghunath Singh Zira	76966-95651	Kapu
147	Anoop Kumar Mishra S/o Shri Deenanath Mishra Zira	09415391298	Anoop
148	Sukhdas Singh S/o Brijan Singh Bajamala	84379-90717	Sukhdas
149	Lachumander Zira	99140-69588	Lachum
150	Mansari Singh Zira		Mansari Singh
151	Mansari Singh Zira		Mansari Singh
152	Mansari Singh Zira	88725-99931	Mansari Singh
153	Mansari Singh Zira	28723-56908	Mansari Singh
154	Mansari Singh Zira	94631-00018	Mansari Singh
155	Mansari Singh Zira		Mansari Singh
156	Mansari Singh Zira		Mansari Singh

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157	Sabir Singh Sodhi Zina	98760-39555	Sudh
158	Vikram Singh s/o Sudev Singh Vill. Betale Passarain Zina	97819-71001	Vijay
159	Lehkar Singh S2 Anwar Singh Vill. Mulla	99658-45404	Arjun
160	Gurpreet Singh s/o mehar Vill. Vlo. wala Bhar	98149-05940	Punit
161	Satbanta Singh s/o Mangal Singh Lehra Pahi	99149-19011	Satbanta Singh
162	Gagan Bansal s/o Sudeep Kumar Talwandi	98159-82083	Gagan
163	Parnam Singh s/o Pawan Singh V. Nainigah	94172-54228	Parnam
164	Mohit s/o Sh. Rakesh Kumar Sandwan	95014-14002	Mohit
165	Lokendra tyagi s/o Ravi Ravi tyagi, Bus Sumetap (Nagraj)	9457059521	Lokendra
166	Ratan Singh s/o Rudra Singh		Ratan

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167	Akhilash Sharma S/o Sh. Pawan Sharma Jirah	9914178390	
168	अशोक सिंह S/o अशोक पुत्र अशोक	9592784876	
169	Jagdeep Singh Khatun S/o S. Anoop Singh Khatun ZIRA	94636-10345	
170	अशोक सिंह	—	
171	अशोक सिंह पुत्र	9915955410	
172	अशोक सिंह	01632-254257	

M/s Malbros International Pvt. Ltd., (Unit-II)  
Village Mansoorwal, Tehsil Zira, District Ferozepur

**Proceedings of the Public Hearing conducted on 04.05.2016 in connection with application filed by M/s Malbros International Pvt. Ltd., for obtaining environmental clearance under EIA Notification dated 14/9/2006 for installation of Unit-II grain based ethanol/ENA/RS/ Industrial Alcohol Plant in the existing distillery unit located in the revenue estate of Village Mansoorwal, Tehsil Zira, District Ferozepur, Punjab.**

The following were present to supervise the proceedings:-

1. Sh. Vimal Kumar Setia, PCS  
Additional Deputy Commissioner, Ferozepur.
2. Sh. Rajeev Sharma,  
Environmental Engineer (Mega),  
Punjab Pollution Control Board, Patiala.
3. Sh. Ramji Dass,  
Environmental Engineer,  
Punjab Pollution Control Board,  
Regional Office, Faridkot.

Environmental Engineer (Mega), Punjab Pollution Control Board, Patiala welcomed the Supervising-cum-Presiding officers and people from adjoining towns/villages, who came to attend the public hearing on the application of M/s Malbros International Pvt. Ltd., Village Mansoorwal, Tehsil Zira, District Ferozepur, Punjab. He informed that an application was filed by the industry with the Ministry of Environment, Forests & Climate Change, New Delhi for getting Environmental Clearance under EIA notification no. 1533 (E) dated 14.9.2006 for establishment of Unit-II grain based ethanol/ENA/RS/Industrial Alcohol Plant {(500 KLPD (2x250 KLPD)}, Co-generation power plant (40 MW (2x20 MW), CO<sub>2</sub> plant of capacity 225 TPD (2x112.5 TPD) and DDGS/cattle feed/poultry feed @ 300 TPD (2x150 TPD) in existing distillery unit located in the revenue estate of Village Mansoorwal, Tehsil Zira, District Ferozepur, Punjab. After considering the application of the industry, the Ministry of Environment, Forests & Climate Change had issued 'Terms of Reference' to the industry for preparation of draft EIA study report. Now, the industry has submitted draft EIA report to the Punjab Pollution Control Board for conducting public hearing of the project as per the procedure prescribed in the EIA Notification dated 14.09.2006. Environmental Engineer (Mega) apprised the public present there about the requirement of conducting the public hearing before

## Annexure – 10 - Public Hearing proceedings

M/s Malbros International Pvt. Ltd., (Unit-II)  
Village Mansoorwal, Tehsil Zira, District Ferozepur

deciding the application filed by the industry for getting the said clearance for establishment of the project at the proposed site. He further told that entire proceedings are being video recorded. He also brought into the notice of public that a copy of the draft EIA report alongwith the Executive Summary of the same submitted by the industry to the Punjab Pollution Control Board was placed in the office of Deputy Commissioner, Ferozepur; Zila Parishad, Ferozepur; General Manager District Industrial Centre, Ferozepur; Executive Officer, Municipal Council, Zira; Regional Office of MoEF at Chandigarh; Environmental Engineer, Regional Office, Punjab Pollution Control Board, Faridkot for access to the public and other stakeholders. He further brought out that a notice of public hearing was published in two prominent newspapers namely, The Tribune (English) and "Ajit" (Punjabi) on 03.04.2016 to make the public aware of the date, time & venue of the public hearing and about the places/offices, where the public could access the draft EIA report and its executive summary report before the said hearing. In this hearing 172 persons have come to attend this hearing. They have marked their presence in the attendance register. Thereafter, he requested Sh. Satish Sood, Director of the promoter company to elaborate the main features of the project and the draft EIA study report.

Sh. Satish Sood, Director of the promoter company brought out the details of the project before the public as under:

- Public hearing of the proposed installation of Unit-II, i.e. 500 KLPD Grain based Ethanol/ENA/RS/Industrial Alcohol Plant, 40 MW of Co-generation Power, 225 TPD of CO<sub>2</sub> Plant & 300 TPD of DDGS/Cattle feed/Poultry feed & MIPL is being conducted today.
- Ethanol produced will also be used in blending with petrol & power left over after using in the process will be given to the power grid.
- With the onset of new unit, there will be economic growth of the people residing nearby as it will provide employment to around 800 persons. Raw material for the project will be grains like nakku, kinki, maize, bajra, sorghum etc.
- Biomass like Rice Husk & Rice Straw will be used as fuel in boiler which is an eco-friendly fuel. Also, 1 acre of land yields 50 quintal of Rice Straw which will be bought by them for Rs 5000-7000/- per acre. The project will be

M/s Malbros International Pvt. Ltd., (Unit-II)  
Village Mansoorwal, Tehsil Zira, District Ferozepur

based on 'Zero Effluent Discharge'.

- ESP will be installed with the proposed boilers as air pollution control equipment. Solid waste from the Grain based operations comprises of Fibres and proteins in the form of DDGS, which will be ideally, used as cattle feed/poultry feed/fisheries etc.
- Rs.14.57 Crores will be spent on CSR activities in nearby areas.
- They wish to set up the proposed project successfully which will enhance the economy & prosperity of nearby areas & inhabitants of this place.
- With this background, they seek consent and support of the public to set up this new unit which will be state of art new generation plant with all eco-friendly equipments as integral part of it.

Thereafter, Environmental Engineer, Mega brought into the notice of public present at the venue of public hearing that as per the provisions of EIA notification dated 14.09.2006, the persons present at the venue may seek any information or clarifications on the proposed project from the project promoter. It was also brought into the notice of the persons present there that the information or clarifications sought by them and reply given by the project proponent will be recorded in the proceedings of the hearing, which will be sent to the Ministry of Environment, Forests & Climate Change, New Delhi for further consideration. Accordingly, he requested the persons present in the public hearing to seek information or clarifications on the project one by one. He also informed that no information / clarifications / comments / views / suggestions / objections on the project have been received from the public in writing by the Punjab Pollution Control Board, so far.

Thereupon, the detail of the information/ clarifications sought by the persons present at the venue of public hearing and the reply given by the project proponent is as under:

Sr. No.	Name of the person	Detail of query / statement / information / clarification sought by the person present at the venue of hearing.	Reply of the query / statement / information / clarification given by the project proponent

## Annexure – 10 - Public Hearing proceedings

M/s Malbros International Pvt. Ltd., (Unit-II)  
Village Mansoorwal, Tehsil Zira, District Ferozepur

1.	Sh. Sarabjit Singh S/o Sh. Darshan Singh, r/o Zira, District Ferozepur.	How much paddy straw will be procured by the company from this area?  Whether the company will provide the machines for preparing the paddy straw bales.	These machines are costly. One machine is already available with the company, which is working in district Bathinda. Some of the private agencies in the field are coming up in the market at their own for profit purpose. In future more companies are likely to come up but till such time the promoter company will make own arrangements.
2.	Sh. Harmit Singh S/o Sh. Buta Singh, r/o Zira, District Ferozepur.	Whether the work force to be employed by the promoter company will be local or engaged from outside?  Whether the company will procure 2 <sup>nd</sup> grade quality food grains?  Whether the DDGS will be given to the farmers on subsidized rates?	About 800 workers are proposed to be employed. Preference will be given to local residents based on their skill and qualification.  The company will purchase the food grains which are unfit for human consumption.  The purchase of corn will be as per policy / directions of State Govt.
3.	Sh. Jasbir Singh S/o Sh. Sucha Singh, r/o Zira, District Ferozepur.	Will there be a smoke emissions from the industry? If yes, then what will be its effects on the surrounding areas?	Mr. Gaurav Saini, Senior Manager, J.M. Environet consultant stated that as per the guidelines of Central Pollution Control Board an Electrostatic Precipitator (ESP) will be installed which will arrest even very small unburnt particles. As such, there will be no harmful effect in the areas due to particulate matter.
4.	Sh. Gurmel Singh, Ex. Sarpanch, Village Mansoorwala,	Whether there will be any odour problem due to operations of proposed industrial	Since, it is a grain based processing unit and not molasses based unit, as such there will be no odour

## Annexure – 10 - Public Hearing proceedings

M/s Malbros International Pvt. Ltd., (Unit-II)  
Village Mansoorwal, Tehsil Zira, District Ferozepur

	District Ferozepur.	plant?	problem with the operations of plant.
5.	Sh. Rajwinder Singh S/o Sh. Jang Bahadur Singh, r/o Zira, District Ferozepur.	How much quantity of Ethanol will be mixed with petrol and what will be the quality of fuel?  Who will be offered employment?	Ethanol will be mixed in petroleum products as per specifications of Petroleum Ministry and will be purchased by Govt. of India agencies.  As already stated, preference in employment will be given to locals based on their skill and qualification. Moreover, CSR activities will be undertaken for the development of the area.
6.	Sh. Jaspal Singh Pannu S/o Sh. Jagdev Singh Pannu r/o Mansoorwal, District Ferozepur.	He thanked the project proponent stating that he has always supported the area people and removed their difficulties. Industry is necessary for development of the area and he requested the project proponent to continue their support to the area people.	--
7.	Sh. Simaranpreet Singh S/o Sh. Kanwarjit Singh, r/o Zira, Science Student.	What kind of chemical wastes will be generated from the industry and how will those wastes be handled and disposed off?	It will be a zero liquid discharge plant as entire wastewater will be reused after treatment in R.O. & multiple effect evaporator (M.E). Only slurry of M.E. will be centrifuged and formed into thick sludge which again will be cattle feed bye-product. No other chemical waste will be generated.

Then, the Environmental Engineer (Mega), requested the public that if anyone else want to ask any more question about the proposed project, he may come forward, but no one came forward. After that people were asked

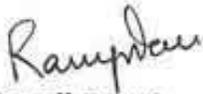
## Annexure – 10 - Public Hearing proceedings

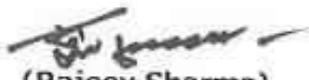
M/s Malbros International Pvt. Ltd., (Unit-II)  
Village Mansoorwal, Tehsil Zira, District Ferozepur

to raise their hands who are in the favour of this project and almost all of the people present raised hands in favor of this project. He then asked the people to raise their hands who are not in favour of the project and no one present in the public hearing raised his hands in disfavor of the project. The public hearing was attended by 172 persons.

The supervisor-cum-presiding officer thanked the public present in the hearing for giving their valuable time and keep patience in the hearing.

The public hearing ended with vote of thanks to the chair.

  
**(Ramji Dass)**  
Environmental Engineer  
PPCB, Regional Office,  
Faridkot

  
**(Rajeev Sharma)**  
Environmental Engineer,  
PPCB, Head Office, Patiala

  
**(Vimal Kumar Setia), PCS**  
Addl. Deputy Commissioner,  
Ferozepur

**Minutes of 29<sup>th</sup> Expert Appraisal Committee (Industry-2) meeting held during 12-13 October, 2017 at Ministry of Environment, Forest and Climate Change, Indira Paryavaran Bhawan, New Delhi - 3**

**Day 1: 12<sup>th</sup> October, 2017**

1. **Opening remarks by the Chairman**
2. **Confirmation of the minutes of the 28<sup>th</sup> meeting held on 18-20 September, 2017 at N Delhi**

The EAC, having taken note that no comments were offered on the minutes of its 28<sup>th</sup> meeting held on 18-20 September, 2017 at New Delhi, confirmed the same.

3. **Consideration of proposals**

**29.3 Environmental Clearance**

**Agenda No.29.3.1**

**Proposed installation of Unit-II Grain Based Ethanol/ENA/RS/Industrial Alcohol Plant [500 KLPD (2x250 KLPD)] & Co-Generation power Plant in existing Distillery Plant at Village Mansoorwal, Tehsil Zira, Faridkot Road, District Ferozepur (Punjab) by M/s Malbros International Pvt Ltd - For reconsideration of EC**

**[IA/PB/IND2/30448/2006, F.No. J-11011/187/2006-IA II (I)]**

**29.3.1.1** The project proponent and the accredited consultant M/s J M EnviroNet Pvt Ltd, gave a detailed presentation on the salient features of the project and informed that:

- (i) The project is for installation of Unit-II Grain Based Ethanol/ENA/RS/ Industrial Alcohol Plant [500 KLPD(2x250 KLPD)] & Co-Generation power Plant [(40 MW (2x20 MW))] in Existing Distillery Plant by M/s Malbros International Pvt Ltd at Village Mansoorwal, Tehsil Zira, Faridkot Road, District Ferozepur (Punjab).
- (ii) All grain based distilleries  $\geq 30$  KLPD are listed at Sl.No. 5(g) (ii) of the Schedule to the EIA Notification, 2006 under Category 'A' and are appraised at Central Level by Expert Appraisal Committee (EAC).
- (iii) ToR was issued by the Ministry vide letter No. J-11011/228/2015-IA II (I) dated 28<sup>th</sup> December, 2015. Public Hearing was conducted by the State Pradesh Pollution Control Board on 4<sup>th</sup> May, 2016.
- (iv) Earlier, the Ministry has issued EC vide letter No. J-11011/187/2006-IA II (I) dated 25<sup>th</sup> September, 2006 for 100 KLPD grain based distillery in favour of M/s Malbros International Pvt Ltd.
- (v) The proposed project will be installed in two phases:
  - Phase 1:- 250 KLPD Ethanol/ ENA/ RS/ Industrial alcohol Plant and 20 MW Co-generation Power Plant
  - Phase 2:- 250 KLPD Ethanol/ ENA/ RS/ Industrial alcohol Plant and 20 MW Co-generation Power Plant

(vi) Total Plant area is 14.8 ha (36.5 Acre), proposed expansion will be done in the existing plant premises. Almost 33% i.e. 4.9 ha (12.10 acre) of the total plant area has already been

developed as greenbelt/plantation. No additional land will be required for the proposed installation of Unit II.

(vii) Total cost of the project for the expansion is Rs.583 Crores. Capital cost for Environmental Protection Measures will be Rs.58 Crores and Recurring Cost will be Rs.10 Crores/annum.

(viii) The raw materials for the production will be Grains (damaged grain feed stock, nakku, Kinki, sorghum, maize, bajra, barley) (1200-1300 TPD) which will be obtained from nearby areas by road, chemicals and enzymes will be obtained from nearby market.

(ix) Proposed project will provide employment to 800 persons.

(x) It is reported that no National Parks, Wildlife Sanctuaries, Reserve Forest/ Protected Forests, Biosphere Reserves, Tiger/Elephant Reserves, Wildlife Corridors etc. lies within 10 km distance of the project.

(xi) The number of working days will be 350 days/annum.

(xii) Ambient air quality monitoring was carried out at 8 locations during October to December, 2015 and submitted baseline data indicates that ranges of concentrations of PM<sub>10</sub> (65.0 µg/m<sup>3</sup> to 88.5 µg/m<sup>3</sup>), PM<sub>2.5</sub> (26.5 µg/m<sup>3</sup> to 42.3 µg/m<sup>3</sup>), SO<sub>2</sub> (5.8 µg/m<sup>3</sup> to 10.8 µg/m<sup>3</sup>) and NO<sub>2</sub> (14.7 µg/m<sup>3</sup> to 23.8 µg/m<sup>3</sup>) respectively. AAQ modeling study for point source emissions indicates that the maximum incremental GLCs after the proposed project would be 0.43 µg/m<sup>3</sup>, 2.57 µg/m<sup>3</sup> and 2.43 µg/m<sup>3</sup> with respect to PM<sub>10</sub>, SO<sub>2</sub> and NO<sub>x</sub>. The resultant concentrations are within the National Ambient Air Quality Standards (NAAQS).

(xiii) The fresh water requirement for the proposed expansion of Grain based distillery will be 4110 m<sup>3</sup>/day, which will be met from canal water.

(xiv) Spent Wash will be taken through centrifuge decanters and thin slops from the decanter centrifuge will be partly recycled back to process (30-35 %) and partly taken to the Thin Slops Evaporation plant for concentration of remaining solids to form a syrup. This syrup will also be mixed into the wet cake coming out of centrifuge and forms part of cattle feed. Wet Cake/DWGS from decanter will be passed through steam tube bundle drier for drying into cake with 10-12% moisture (max.) to give higher shelf life. DDGS will be ideally used as cattle feed/ poultry feed/ etc. No effluent will be generated from the plant as the distillery is based on "Zero Effluent Discharge".

(xv) The total power requirement for proposed project will be 9.0 MW which will be sourced from proposed 40 MW (2 x 20 MW) Co-Generation Power Plant & 3 x 1000 kVA of D.G. set (for back up). The remaining power will be exported to the state power grid.

(xvi) Two Biomass/ Rice Husk/ Bagasse/ Paddy & Wheat straw fired boiler of 100 TPH capacity will be installed. A stack of 63 m height will be equipped with Electrostatic Precipitator (ESP) will be installed to encounter the emission from boiler stack. CO<sub>2</sub> generated during the fermentation process will be scrubbed, purified & collected for sale as by-product. DG Sets will have adequate height of stack as per CPCB Guidelines. Adequate measures for control of Fugitive Dust Emissions will be taken.

(xvii) Ash from the boiler will be given to the brick manufacturers.

**29.3.1.2** The proposal was last considered by the EAC in its meeting held on 23-25 January, 2017, wherein the Committee sought for the following:-

- Study report on viability of production of Potable liquor vs Fuel Ethanol.
- Traffic management plan in consultation with NHAI w.r.t. raw material transportation.
- Commitment to produce fuel grade ethanol in place of Potable liquor.

In response to the above observations, parawise clarification/information provided are as below:-

- (a) Total requirement of alcohol in India - 7100 Million Litres  
 Availability of alcohol as on date - 4286 Million Litres  
 Total Shortfall – 2814 Million Litres

As such, it may be concluded that there is shortfall of 2814 Million Litres of alcohol. Further, Alcohol industry is growing at a CAGR of 10-12% per annum and with the economic growth and prosperity of the country, the disposable income per capita is growing which will directly contribute to the growth of the industry. Also, as a by-product, the project will yield DDGS (Distillers Dried Grain Solubles)/animal feed supplement because of its rich protein content and helps in nutrition of livestock.

(b) It is informed that the design crust of the NH 15 has been prepared by considering yearly traffic growth of @ 5% of commercial vehicles in future for a period of 30 years. Accordingly, impact of additional load of 179 nos. commercial vehicles shall not affect the design crust of NH-15. The same has been endorsed by the Central Works Division, PWD of the state Government (Highway Administrator of the stretch from km 163.50 to 248.00 of NH-15.

(c) As per the present Ethanol tender norms, fuel ethanol production from grain is not permissible. However, the proposed unit will produce certain quantity of SDS which shall be committed for supplies as fuel ethanol.

**29.3.1.3** During deliberations, the EAC noted the following:-

The proposal is for environmental clearance to the project 'Expansion of Grain based Distillery from 100 KLPD to 600 KLPD (by adding 2 units of 250 KLPD each in two phases as Unit-II) & Co-Generation power Plant of 40 MW (2x20 MW)' by M/s Malbros International Pvt Ltd in a total area of 14.8 ha at Village Mansoorwal, Tehsil Zira, Faridkot Road, District Ferozepur (Punjab).

The project/activity is covered under category A of item 5(g) 'Distillery' of the Schedule to Environmental Impact Assessment Notification, 2006, and requires appraisal at central level by the sectoral EAC in the Ministry.

The ToR for the project was granted on 28<sup>th</sup> December, 2015, and the Public hearing was conducted by the SPCB on 4<sup>th</sup> May, 2016.

Total fresh water requirement due to the proposed expansion is estimated to be 4110 KL/day, to be met from Canal water.

Consent to Operate for the existing Grain based Distillery of 100 KLPD has been obtained from the State Pollution Control Board.

Earlier, the Ministry had issued environmental clearance for Grain based distillery of 100 KLPD (Unit-I) on 25<sup>th</sup> September, 2006. The monitoring report of the Ministry's Regional Office at on compliance status of EC conditions is found to be satisfactory. In case of some of the conditions partially complied or not-complied, the action plan submitted by the project proponent has been found to be adequately addressing the same.

**29.3.1.4** *The EAC, after deliberations, noted that the proposal involves expansion of grain based distillery of present capacity 100 KLPD (reported to be Unit-I) to 600 KLPD in two phases of 250 KLPD each, which is not reflected in the present proposal. The Committee further observed that the impact of the proposed expansion (for both the phases) has to be assessed for different components of the environment and reported in the EIA/EMP reports. The Committee also noted that the proposal is neither consistent nor compliant with the Terms of Reference issued for the project.*

*The proposal was therefore deferred.*

**Members of the EAC (Industry-2) present during 29<sup>th</sup> meeting held on 12-13 October, 2017 at MoEF&CC, New Delhi**

- |                                   |                  |
|-----------------------------------|------------------|
| 1. Dr. J. P. Gupta                | Chairman         |
| 2. Sh. R. K. Singh                | Member           |
| 3. Dr. Ahmed Kamal                | Member           |
| 4. Prof. J.R. Mudakavi            | Member           |
| 5. Dr. N. Nandini                 | Member           |
| 6. Prof. (Dr.) H.R.V. Reddy       | Member           |
| 7. Dr. Shashank Shekhar           | Member           |
| 8. Shri Suhas Ramchandra Pharande | Member           |
| 9. Sh. Paritosh Kumar             | Member           |
| 10. Shri S.K. Srivastava          | Member Secretary |

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**Minutes of 31<sup>st</sup> Expert Appraisal Committee (Industry-2) meeting held during 23-24 November, 2017 at Ministry of Environment, Forest and Climate Change, Indira Paryavaran Bhawan, New Delhi - 3**

**Day One – 23<sup>rd</sup> November, 2017**

**31.1 Opening remarks by the Chairman**

**31.2 Confirmation of the Minutes of the 30<sup>th</sup> meeting of the EAC (Industry-2) held during 2-3 November, 2017 at Indira Paryavaran Bhawan, New Delhi.**

The EAC, having taken note that no comments were offered on the minutes of its 30<sup>th</sup> meeting held on 2-3 November, 2017 at New Delhi, confirmed the same.

**31.3 Environmental Clearance**

**Agenda No.31.3.1**

**Addition of Carbon black manufacturing facility in the existing plant by M/s Balkrishna Industries Limited at Village Paddhar, Taluka Bhuj, District Kutch (Gujarat) - For Environment Clearance**

**[IA/GJ/IND2/63420/2017, IA-J-11011/162/2017-IA-II(I)]**

**31.3.1.1** The project proponent and their accredited Consultant M/s Kadam Environmental Consultants made a detailed presentation on the salient features of the project and informed that:

(i) The proposal is for environment clearance to the project 'Addition of Carbon black manufacturing facility' by M/s Balkrishna Industries Limited in the existing plant at Village Paddhar, Taluka Bhuj, District Kutch (Gujarat).

(ii) The project proposal was considered by the Expert Appraisal Committee (Industry-2) in its 24<sup>th</sup> EAC meeting held during 15<sup>th</sup> June 2017 and recommended Terms of Reference (ToR) for the project. The ToR has been granted by Ministry vide letter No. J-11011/162/2017 IA II(I) dated 25<sup>th</sup> July 2017.

(iii) All Petrochemical Based processing are listed at S.N. 5(e) Schedule of environmental Impact Assessment (EIA) Notification under category 'A' and are appraised at Central Level by Expert Appraisal Committee (EAC).

(iv) SEIAA, Gujarat had earlier issued EC vide letter No. SEIAA/GUJ/EC/1(d)/71/2012 dated 20<sup>th</sup> March 2012 for 20 MW of Captive Power Plant to M/s Balkrishna Industries Limited.

(v) Total land area is 12,12,560 m<sup>2</sup>. Industry has already developed greenbelt in an area of 33% i.e. 4,00,144m<sup>2</sup> out of 12,12,560m<sup>2</sup> of area of the project.

(vi) The estimated project cost is Rs.120 crores. Total capital cost earmarked for pollution control measures is Rs.58.57 crore (Rs.43.57 crore for existing Tire & CPP + Rs.15 Crore for Carbon Black Plant) and the recurring cost (operation and maintenance) will be ~ Rs.144 lakhs/annum for CPP & Tire + Rs. 08 lakhs/annum for Carbon Black Plant.

- Fluorine shall be recovered and utilized effectively for manufacturing  $\text{AlF}_3$ , and thus lowering the Fluorine emissions load from 1.338 gm/sec to 0.9 gm/sec.
- No requirement of rock grinding as the plant would be able to process the rock size up to 5 mm, and thus minimizing the particulate matter emissions in terms of  $\text{PM}_{10}/\text{PM}_{2.5}$ .
- Process effluents shall be routed to a sump for reuse, and thereby adhering to the Zero Liquid Discharge.
- Dry gypsum shall be generated as by product in place of wet gypsum slurry, which is better to manage eco-friendly and also revenue generating.

**31.6.1.3** *The EAC, after deliberations, opined that the project does involve change in scope of work due to increase in production of one of the raw material/intermediate product (Phosphoric Acid), which standalone, is not covered under the ambit of the EIA Notification, 2006. Further, there would be no change in capacity of the final product and no increase in pollution load, especially in terms of particulate emissions, waste water and solid/hazardous waste generation. In such a scenario and the provisions of the Notification dated 23<sup>rd</sup> November, 2016, the EAC desired that the Ministry may take a view on applicability of the EIA Notification, 2006 to arrive at admissibility of the proposal for its consideration on merits.*

*The EAC further desired that there being no environmental clearance in the name of M/s Greenstar Fertilizers Ltd (engaged in manufacturing DAP, Sulphuric Acid, Phosphoric Acid,  $\text{AlF}_3$ , SSP and the allied facilities), the Ministry may take action, as appropriate, under the extant norms/regulations.*

#### **Agenda No.31.6.2**

**Expansion of Grain based Distillery from 100 KLPD to 600 KLPD (by adding 2 units of 250 KLPD each in two phases as Unit-II) & Co-Generation Power Plant of 40 MW (2x20 MW) by M/s Malbros International Pvt Ltd at Village Mansoorwal, Tehsil Zira, District Ferozepur (Punjab) - For reconsideration of Environmental Clearance**

**[IA/PB/IND2/30448/2006, F.No. J-11011/187/2006-IA II (I)]**

**31.6.2.1** The project proponent and their consultant M/s J M EnviroNet Pvt Ltd gave a detailed presentation on the salient features of the project and informed that:

(i) The project is for installation of Unit-II Grain Based Ethanol/ENA/RS/ Industrial Alcohol Plant [500 KLPD (2x250 KLPD)] & Co-Generation Power Plant [(40 MW (2x20 MW))] by M/s Malbros International Pvt Ltd in existing Distillery Plant at Village Mansoorwal, Tehsil Zira, Faridkot Road, District Ferozepur (Punjab).

(ii) All grain based distilleries  $\geq 30$  KLPD are listed at S.No. 5(g) (ii) of the Schedule to the EIA Notification, 2006 under Category 'A' and are appraised at Central Level by Expert Appraisal Committee (EAC).

(iii) ToR was granted by the Ministry vide letter No. J-11011/228/2015-IA II (I) dated 28<sup>th</sup> December, 2015. Public Hearing was conducted by the State Pradesh Pollution Control Board on 4<sup>th</sup> May, 2016.

(iv) Earlier, the Ministry has issued EC vide letter No. J-11011/187/2006-IA II (I) dated 25<sup>th</sup> September, 2006 for 100 KLPD grain based distillery in favour of M/s Malbros International Pvt Ltd.

- (v) The proposed project will be installed in two phases:
- Phase 1:- 250 KLPD Ethanol/ ENA/ RS/ Industrial alcohol Plant and 20 MW Co-generation Power Plant
  - Phase 2:- 250 KLPD Ethanol/ ENA/ RS/ Industrial alcohol Plant and 20 MW Co-generation Power Plant
- (vi) Total plant area is 14.8 ha (36.5 Acre), proposed expansion will be done in the existing plant premises. Almost 33% i.e. 4.9 ha (12.10 acre) of the total plant area has already been developed as greenbelt/plantation. No additional land will be required for the proposed installation of Unit II.
- (vii) Total cost of the project for the expansion is Rs.583 crores. Capital cost for pollution control measures will be Rs.58 crores and recurring Cost will be Rs.10 crores/annum.
- (viii) The raw materials for the production will be Grains (damaged grain feed stock, nakku, Kinki, sorghum, maize, bajra, barley) (1200-1300 TPD) which will be obtained from nearby areas by road, chemicals and enzymes will be obtained from nearby market. Proposed project will provide employment to 800 persons. The number of working days will be 350 days/annum.
- (ix) There are no National Parks, Wildlife Sanctuaries, Reserve Forest/ Protected Forests, Biosphere Reserves, Tiger/Elephant Reserves, Wildlife Corridors etc. within 10 km distance of the project.
- (x) Ambient air quality monitoring was carried out at 8 locations during October to December, 2015 and the baseline data indicates the ranges of concentrations as: PM<sub>10</sub> (65.0 µg/m<sup>3</sup> to 88.5 µg/m<sup>3</sup>), PM<sub>2.5</sub> (26.5 µg/m<sup>3</sup> to 42.3 µg/m<sup>3</sup>), SO<sub>2</sub> (5.8 µg/m<sup>3</sup> to 10.8 µg/m<sup>3</sup>) and NO<sub>2</sub> (14.7 µg/m<sup>3</sup> to 23.8 µg/m<sup>3</sup>). AAQ modeling study for point source emissions indicates that the maximum incremental GLCs after the proposed project would be 0.43 µg/m<sup>3</sup>, 2.57 µg/m<sup>3</sup> and 2.43 µg/m<sup>3</sup> with respect to PM<sub>10</sub>, SO<sub>2</sub> and NO<sub>x</sub>. The resultant concentrations are within the National Ambient Air Quality Standards (NAAQS).
- (xi) The fresh water requirement for the proposed expansion of Grain based distillery will be 4110 m<sup>3</sup>/day, which will be met from canal water.
- (xii) Spent Wash will be taken through centrifuge decanters and thin slops from the decanter centrifuge will be partly recycled back to process (30-35 %) and partly taken to the Thin Slops Evaporation plant for concentration of remaining solids to form a syrup. This syrup will also be mixed into the wet cake coming out of centrifuge and forms part of cattle feed. Wet Cake/DWGS from decanter will be passed through steam tube bundle drier for drying into cake with 10-12% moisture (max.) to give higher shelf life. DDGS will be ideally used as cattle feed/ poultry feed/ etc. No effluent will be generated from the plant as the distillery is based on "Zero Effluent Discharge".
- (xiii) The total power requirement for proposed project will be 9.0 MW which will be sourced from proposed 40 MW (2 x 20 MW) Co-Generation Power Plant & 3 x 1000 kVA of DG set (for back up). The remaining power will be exported to the state power grid.
- (xiv) Two Biomass/ Rice Husk/ Bagasse/ Paddy & Wheat straw fired boiler of 100 TPH capacities will be installed. A stack of 63 m height will be equipped with Electrostatic Precipitator (ESP) will be installed to encounter the emission from boiler stack. CO<sub>2</sub> generated during the fermentation process will be scrubbed, purified & collected for sale as by-product. DG Sets will have adequate height of stack as per CPCB Guidelines. Adequate measures for control of Fugitive Dust Emissions will be taken.

(xv) Ash from the boiler will be given to the brick manufacturers.

**31.6.2.2** The proposal was last considered by the EAC in its meeting held on 12-13 October, 2017. During the meeting, the Committee noted that the proposal involves expansion of grain based distillery of present capacity 100 KLPD (reported to be Unit-I) to 600 KLPD in two phases of 250 KLPD each, which was not reflected in the proposal. The Committee further observed that the impact of the proposed expansion (for both the phases) has to be assessed for different components of the environment and reported in the EIA/EMP reports. The Committee also noted that the proposal is neither consistent nor compliant with the Terms of Reference issued for the project.

**31.6.2.3** In response to the above observations, parawise clarification/information provided are as below: -

(a) The company is having an Existing Grain Based Distillery Plant (Unit -1) of 100 KLPD capacity at Village Mansoorwal, District Ferozepur (Punjab), established in an area of 14.8 ha (36.5 acre). EC for the same was issued by MoEFCC letter dated 25<sup>th</sup> September, 2006.

(b) Thereafter, the company proposed 'Installation of Unit - II Grain Based Ethanol/ENA/RS/Industrial Alcohol Plant {500 KLPD (2 x 250 KLPD)} & Co-generation Power Plant {40MW (2x20 MW)} in Existing Distillery Plant; for which, application has been uploaded on MoEFCC web portal under "Expansion" category along with uploading of existing EC letter of 100 KLPD capacity.

(c) Since, the proposed Unit - II will be totally a separate plant from the Unit – I but the same will be installed within the existing complex; therefore, the subject matter of the proposal would be decided as "Proposed Installation of Unit –II Grain Based Ethanol / ENA / RS / Industrial Alcohol Plant {500 KLPD (2 x 250 KLPD)} & Co-generation Power Plant {40MW (2x20 MW)} in Existing Distillery Plant.

(d) Our proposal was considered by EAC (Industry-2) in its meeting held on 30<sup>th</sup> November, 2015 for ToR and same was granted on 28<sup>th</sup> December, 2015.

(e) In compliance of the ToR points and our clear intentions of not hiding anything from MoEF&CC, we have mentioned about our existing 100 KLPD grain based distillery plant (Unit -I) in EIA/EMP Report along with submission of EC Compliance Report of Unit -I, duly certified by RO, MoEF&CC, Chandigarh.

**31.6.2.4** During deliberations, the EAC noted the following:-

The proposal is for environmental clearance to the project for expansion of Grain based Distillery from 100 KLPD to 600 KLPD (by adding 2 units of 250 KLPD each in two phases as Unit-II) and the expansion of Co-Generation Power Plant by adding 40 MW (2x20 MW) by M/s Malbros International Pvt Ltd in a total area of 14.8 ha at Village Mansoorwal, Tehsil Zira, Faridkot Road, District Ferozepur (Punjab).

The project/activity is covered under category A of item 5(g) 'Distillery' of the Schedule to Environmental Impact Assessment Notification, 2006, and requires appraisal at central level by the sectoral EAC in the Ministry.

The ToR for the project was granted on 28<sup>th</sup> December, 2015, and the Public hearing was conducted by the SPCB on 4<sup>th</sup> May, 2016.

The present fresh water requirement of 900 KLPD is being met through ground water. The required clearance in this regard has been obtained from CGWA vide their letter dated 14<sup>th</sup> March, 2016 (for 2013 KLPD). Total water requirement due to the proposed expansion (additional capacity of 500 KLPD) is estimated to be 10958 cum/day. The treated effluent of 6848 cum/day is proposed to be recycled/reused for different industrial operations, leaving the water requirement limited to 4110 cum/day. The same is proposed to be met through Canal water under Sirhind Canal Circle.

Consent to Operate for the existing Grain based Distillery of 100 KLPD has been obtained from the State Pollution Control Board vide letter dated 1<sup>st</sup> May, 2015, which is presently valid up to 31<sup>st</sup> March, 2019.

Earlier, the Ministry had issued environmental clearance for Grain based distillery of 100 KLPD (Unit-I) on 25<sup>th</sup> September, 2006. The monitoring report on compliance status of EC conditions (site visit carried on 6<sup>th</sup> February, 2016) has been forwarded by the Ministry's Regional Office at Chandigarh, vide letter dated 15<sup>th</sup> February, 2016. Since many of these conditions were observed to be '*Being complied*', the EAC insisted for another site visit to be carried out for the present compliance status. At the same time and especially in view of the concluding remarks in the monitoring report, '*the project proponent has been trying its best to comply most of the environmental safeguards in the existing project*', the Committee desired to take the proposal forward for the present, and to review the compliance status of EC conditions after six months.

**31.6.2.5** *The EAC, after deliberations, recommended the project for grant of environmental clearance, subject to compliance of terms and conditions as under: -*

- *The project proponent shall take corrective measures vis-a-vis the observations of the Regional Office in their monitoring report forwarded to the Ministry vide letter dated 15<sup>th</sup> February, 2016. The action taken report shall be submitted to the Regional Office within six months for evaluation of the efficacy/adequacy of the measures undertaken by the project proponent, for onward submission of the same to the Ministry.*
- *Grain unfit for human consumption (also not attacked by pests and/or pesticides), shall only be used as raw material for the distillery.*
- *Consent to Establish/Operate for the project shall be obtained from the State Pollution Control Board as required under the Air (Prevention and Control of Pollution) Act, 1981 and the Water (Prevention and Control of Pollution) Act, 1974.*
- *As already committed by the project proponent, Zero Liquid Discharge shall be ensured and no waste/treated water shall be discharged outside the premises.*
- *Necessary authorization required under the Hazardous and Other Wastes (Management and Trans-Boundary Movement) Rules, 2016, Solid Waste Management Rules, 2016 shall be obtained and the provisions contained in the Rules shall be strictly adhered to.*
- *To control source and the fugitive emissions, suitable pollution control devices shall be installed to meet the prescribed norms and/or the NAAQS. The gaseous emissions shall be dispersed through stack of adequate height as per CPCB/SPCB guidelines.*
- *Total fresh water requirement shall not exceed 4800 KL/day (8 KL/KL of Alcohol) for the distillery, to be met from Canal and the ground water. Prior permission in this regard shall be obtained from the concerned regulatory authority.*
- *Industrial/trade effluent shall be segregated into High COD/TDS and Low COD/TDS effluent streams, as applicable. High TDS/COD shall be passed through stripper followed by MEE and ATFD (agitated thin film drier). Low TDS effluent stream shall be treated in ETP and then passed through RO system.*
- *Process effluent/any wastewater shall not be allowed to mix with storm water. Storm water drain shall be passed through guard pond.*

- Hazardous chemicals shall be stored in tanks, tank farms, drums, carboys etc. Flame arresters shall be provided on tank farm and the solvent transfer through pumps.
- Process organic residue and spent carbon, if any, shall be sent to cement industries. ETP sludge, process inorganic & evaporation salt shall be disposed off to the TSDF.
- The Company shall strictly comply with the rules and guidelines under Manufacture, Storage and Import of Hazardous Chemicals (MSIHC) Rules, 1989 as amended time to time. All transportation of Hazardous Chemicals shall be as per the Motor Vehicle Act (MVA), 1989.
- The company shall undertake waste minimization measures as below:-
  - (a) Metering and control of quantities of active ingredients to minimize waste.
  - (b) Reuse of by-products from the process as raw materials or as raw material substitutes in other processes.
  - (c) Use of automated filling to minimize spillage.
  - (d) Use of Close Feed system into batch reactors.
  - (e) Venting equipment through vapour recovery system.
  - (f) Use of high pressure hoses for equipment clearing to reduce wastewater generation.
- The green belt of 5-10 m width shall be developed in more than 33% of the total project area, mainly along the plant periphery, in downward wind direction, and along road sides etc. Selection of plant species shall be as per the CPCB guidelines in consultation with the State Forest Department.
- All the commitments made regarding issues raised during the public hearing/consultation meeting held 4<sup>th</sup> May, 2016 shall be satisfactorily implemented.
- At least 2.5% of the total project cost shall be allocated for Enterprise Social Commitment based on public hearing issues and item-wise details along with time bound action plan shall be prepared and submitted to the Ministry's Regional Office.
- The company shall make all arrangements for control of noise from the drilling activity. Acoustic enclosure shall be provided for the DG sets along with the adequate stack height as per CPCB guidelines.
- The unit shall make the arrangement for protection of possible fire hazards during manufacturing process in material handling. Fire fighting system shall be as per the norms.
- Occupational health surveillance of the workers shall be done on a regular basis and records maintained as per the Factories Act.
- Continuous online (24X7) monitoring system for stack emissions shall be installed for measurement of flue gas discharge and the pollutants concentration, and the data to be transmitted to the CPCB and SPCB server. For online continuous monitoring of effluent, the unit shall install web camera with night vision capability and flow meters in the channel/drain carrying effluent within the premises.
- There shall be adequate space inside the plant premises earmarked for parking of vehicles for raw materials and finished products, and no parking to be allowed outside on public places.
- Storage of raw materials, coal etc shall be either stored in silos or in covered areas to prevent dust pollution and other fugitive emissions.
- The energy sources for lighting purposes shall preferably be LED based. A minimum of 10-20% of the total power requirement for the industrial operations shall be met from non-conventional energy resources/solar supply.
- The project proponent shall use either agricultural waste or bio fuel as energy source for boilers.

**Members of the EAC (Industry-2) present during 31<sup>st</sup> meeting held on 23-24 November, 2017 at MoEF&CC, New Delhi**

1	Dr. J. P. Gupta	Chairman
2	Prof. J.R. Mudakavi	Member
3	Dr. N. Nandini	Member
4	Prof. (Dr.) H.R.V. Reddy	Member
5	Shri Suhas Ramchandra Pharande	Member
6	Sh. Paritosh Kumar	Member
7	Prof. (Dr.) Y.V. Rami Reddy	Member
8	Shri S.K. Srivastava	Member Secretary

\*\*\*\*\*

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# Malbros

International Pvt. Ltd.

Village Mansoorwal, Tehsil Zira,  
District Ferozepur-142050 (Punjab)

Mob. : +91-9914932846

Email : malbros@oasisgrp.in

Date: -09.02.2023

To,  
The Advisor,  
Government Of India  
Ministry of Environment, Forest & Climate Change,  
Northern Region Office,  
Bays Number:24-25, Sector:31-A  
Dakshin Marg, Chandigarh-160030

Sub: -280 KLPD Grain based Distillery unit by M/s Malbros International Pvt. Ltd, at Village: -  
Mansoorwal, Tehsil: Zira in Distt: Ferozepur in Punjab. Submission of 06 Monthly report (April'2022 to  
Sep'2022), regarding

Ref: - MOEF Environmental Clearance letter no. J-11011/228/2015-IA II (I) Dated 15.01.2018

This has reference to the above subject and MOEF Environmental letter no. J-11011/228/2015-IA II (I)  
Dated 15.01.2018. PI find attached herewith six-monthly reports with SoftCopy from April '2022 to  
Sep'2022 with all the documents for your kind perusal as follows.

1. Compliance Status Report from April'2022 to Sep'2022
2. Copy of MOEFCC
3. Copy of Grant Consent for Air and Water CTO
4. All Analysis report
  - I. Soil Test Report
  - II. Ambient Air Monitoring Report
  - III. Stack Emission Report Analyzed by PPCB
5. Piezometer test Report Analyzed by NABL approved Lab .
6. Month wise Production, DDGS Production, Spent Wash generation.
7. Process description to achieve Zero Liquid discharge (ZLD).
8. Fire Mock Drill Records
9. Health / Medical check-up reports along with photographs
10. Details of Green belt , its progress as per table



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# Malbros

International Pvt. Ltd.

Village Mansoorwal, Tehsil Zira,  
District Ferozepur-142050 (Punjab)

Mob. : +91-9914932846

Email : malbros@oasisgrp.in

11. PWRDA Approval
12. Environment Management Cell
13. Public liability insurance policy valid up to 16.08.2023
14. Fire NOC .

It is informed that the unit is lying closed since July,2022 due to protest and dharna staged by the villagers. Now, we are, hereby, submitting six monthly compliance report for your kind perusal as follow.

We hope that you will find our reply in order.

With Regards,

Yours Faithfully,

Satish Kumar

General Manager



C.C :-

1. MOEF – Delhi
2. CPCB - Delhi
3. PPCB – Patiala

## Compliance Status Report

To,  
**The Adviser,**  
**Government of India**  
**Ministry Of Environment, Forest & Climate Changes,**  
**Northern Region Office,**  
**Bays Number: 24-25, Sector: 31-A**  
**Dakshin Marg, Chandigarh-160030**

Sub: 280 KLPD Grain Based Distillery units by M/s Malbros International Pvt. Ltd. at Village- Mansoorwal, Tehsil- Zira in District- Ferozepur in Punjab. Submission of 06 monthly report (April -2022 to Sep-2022), regarding

**Ref: - MOEF Environmental Clearance letter no. J-11011/228/2015-IA II (I) Dated 15.01.2018.**

It is informed that the unit is lying closed since July,2022 due to protest and dharna staged by the villagers.Now, we are,hereby, submitting six monthly compliance report for your kind perusal as follow.

### Current status of implementation of different environmental safeguards is as follows:-

#### (A) Specific condition

Sr. no	Particulars	Current status	Remarks
(a)	The project proponent shall take corrective measures vis-à-vis the observation of the Regional office in their monitoring report forwarded to the ministry vide letter dated 15 <sup>th</sup> February, 2016.	Being Complied	The industry has been already replied to MOEFCC, Chandigarh through letter No. MIL31/19-20 dated 22-07-2019.
(b)	Grain unfit for human consumption (also not attacked by pests and/or pesticides). Shall only be used as raw material for the distillery.	Being Complied	Grain unfit for human consumption is only being used as raw material in the Distillery unit.
(c)	Consent to establish/operate for the project shall be obtained from the state pollution control board as required under the Air (Prevention and control of pollution) Act, 1981 and the water (Prevention and Control of pollution) Act, 1974.	Being Complied	The unit has obtained Consent to Operate under the provisions of Air Act and Water Act from PPCB which were valid up to 31.12.2022.
(d)	As already committed by the project proponent, Zero liquid Discharge shall be ensured and no waste/treated water shall be discharged outside the premises.	Being complied	The distillery is running zero liquid discharge concepts. (copy attached)
(e)	Necessary authorization required under the hazardous and other wastes (Management and trans-boundary Movement) Rules, 2016, Solid waste management rules, 2016 shall be obtained and the provision contained in the Rules shall be strictly adhered to.	Being complied	The unit has obtained authorization under the Hazardous & Other Wastes Management Rules,2016 from PPCB, which is valid up to 17.09.2023.

(f)	To control sources and the fugitive emission, suitable pollution control devices shall be installed to meet the prescribed norms and/or the NAAQS. The gaseous emissions shall be dispersed through stack of adequate height as per CPCB/SPCB guidelines.	Being complied	The unit has established a electrostatic precipitator(ESP) with the boiler and adequate stack height has been provided. The unit has also installed online emission monitoring system. The efficiency of the ESP is being checked by PPCB by collecting the samples of stack emission. Monitoring report of PPCB is attached herewith.
(g)	Total fresh water requirement shall not exceed 4800 KL/day (8 KL/KL of alcohol) for the distillery, to be met from canal and the ground water. Prior permission in this regard shall be obtained from the concerned regulatory authority.	Being complied	The water requirement is much below than 8KL/KL of alcohol and fresh water is met by taking the water from canal and the ground water. The treated water is being recycled/reuse in process. PWRDA has granted ground permission for abstraction of groundwater, which is valid up to 09.06.2024. (Copy attached). The ground water quality has been monitored from different points in the factory premises by NABL approved lab twice in a year. ( copy attached)
(h)	Industrial/trade effluent shall be segregated into High COD/TDS and Low COD/TDS effluent streams, as applicable. High TDS/COD shall be passed through striper followed by MEE and ATFD (agitated thin film Dreier). Low TDS effluent stream shall be treated in ETP and then passed through RO system.	Being complied	There was generation of 650KLD and 1170 KLD of spent wash from unit-I and II, respectively, which was passed through decanters to separate out wet mix and thin slop. The thin slop so produced was fed to MEE to get it concentrated. The concentrated stream was mixed with wet cake for further feeding to the drier to get DDGS, which is a cattle feed supplement. The ETP is equipped with tertiary treatment facility with final stage R.O. After treatment the treated wastewater is recycled/reused in process.
(i)	Process effluent/any waste water shall not be allowed to mix with storm water. Storm water drain shall be passed through guard pond.	Being complied	Separate Storm Water Drain has been provided in the unit premises.
(j)	Hazardous chemical shall be stored in tanks, tank farms, drums, carboys etc. Flame arresters shall be provided on tank farm and the solvent transfer through pumps.	Being complied	The unit has obtained necessary approvals from concerned department.
(k)	Process organic residue and spent carbon, if any, shall be sent to cement industries. ETP sludge, process inorganic & evaporation salt shall be disposed off to the TSDF.	Being complied	Agreed & followed as per norms.
(l)	The Company shall strictly comply with the rules and guidelines under Manufacture, Storage and Import of Hazardous Chemicals (MS HC) Rules, 1989 as amended time to time. All transportation of hazardous chemicals shall be as per the Motor Vehicle Act (MVA), 1989.	Being complied	Agreed for Compliance by the unit.

(m)	<p>The company shall undertake waste minimization measures as below:-</p> <ul style="list-style-type: none"> <li>(i) Metering and control of quantities of active ingredients to minimize waste.</li> <li>(ii) Reuse of by-products from the process as raw materials or as raw material substitutes in other processes.</li> <li>(iii) Use of automated filling to minimize spillage.</li> <li>(iv) Use of close feed system into batch reactors.</li> <li>(v) Venting equipment through vapor recovery system.</li> <li>(vi) Use of high pressure hoses for equipment clearing to reduce wastewater generation.</li> </ul>	Being complied	<ul style="list-style-type: none"> <li>(i). The meters have been installed at all effluent lines, which is going to ETP to minimize/controlling the volume of the wastewater.</li> <li>(ii). CO<sub>2</sub> generated from the fermentation process is recovered and sold separately. Similarly DDGS is also generated as by products which being sold as cattle feed.</li> <li>(iii). Automated filling has installed, where it is required.</li> <li>(iv). High pressure hoses for equipment cleaning are used.</li> <li>(v). The MEE is integrated with Distillation for vapor recovery.</li> <li>(vi) High pressure hoses for equipment clearing have been installed to reduce the waste water generation.</li> </ul>
(n)	<p>The green belt of 5-10 m width shall be developed in more than 33% of the total project area, mainly along the plant periphery, in downward wind direction, and along road sides etc. selection of plant species shall be as per the CPCB guidelines in consultation with the state Forest Department.</p>	Being complied	<p>The industry has been developed approx 13 acres under greenbelt development with 100 KLPD Plant. UNIT-2 with capacity 180 KLPD installed and commissioned in 2022 so the green belt area will be extended upto 16.5 acrs. Different types of plants have been planted till date with different types of plant as per guideline of CPCB. The new proposed and extended green belt area in attached in the annexure.</p>
(o)	<p>All the commitments made regarding issues raised during the public hearing/consolation meeting held 4<sup>th</sup> may, 2016 shall be satisfactory implemented.</p>	Being complied	<p>All the commitments made during the public hearing are being implemented.</p>

(p)	At least 2.5% of the total project cost shall be allocated for enterprises social commitment based on public hearing issues and item wise details along with time bound action plan shall be prepared and submitted to the Ministry's Regional Office.	Being complied	<p>The unit has further assured that funds kept for environment been management plans, will not be spent for any other purpose. Funds to the tune of Rs. 340.64 lacs had been spent on the implementation of environment management plans till Sept'2022. Expenditure on EMP till Sept' 2022</p> <table border="1"> <thead> <tr> <th>S. no.</th> <th>Item of EMP</th> <th>Exp Rs(in lacs)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Air pollution control</td> <td>2.75</td> </tr> <tr> <td>2</td> <td>Water pollution control</td> <td>9.66</td> </tr> <tr> <td>3</td> <td>Health&amp; safety</td> <td>3.31</td> </tr> <tr> <td>4</td> <td>Greenbelt development</td> <td>5.5</td> </tr> <tr> <td>5</td> <td>Rainwater harvesting</td> <td>2.1</td> </tr> <tr> <td>6</td> <td>Lungar</td> <td>12.72</td> </tr> <tr> <td>7</td> <td>CSR</td> <td>304.6</td> </tr> <tr> <td colspan="2" style="text-align: right;"><b>Total</b></td> <td><b>340.64</b></td> </tr> </tbody> </table>	S. no.	Item of EMP	Exp Rs(in lacs)	1	Air pollution control	2.75	2	Water pollution control	9.66	3	Health& safety	3.31	4	Greenbelt development	5.5	5	Rainwater harvesting	2.1	6	Lungar	12.72	7	CSR	304.6	<b>Total</b>		<b>340.64</b>
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(q)	The company shall make all arrangement for control of noise from the drilling activity. Acoustic enclosure shall be provided for the DG sets along with the adequate stack height as per CPCB guidelines.	Being complied	The industry has been installed 3 no. DG sets of 1010 kVA capacity and 1 DG 500 KVA which are having acoustic enclosures and adequate stack height. The noise levels are got monitored twice in a year by NABL approved lab.																											
(r)	The unit shall make the arrangement for protection of possible fire hazards during manufacturing process in material handling. Fire fighting system shall be as per the norms	Being complied	The unit has obtained fire NOC from concerned department which was valid up to Oct'2022.The fire fighting system has been installed in the unit as per the norms.																											
(s)	Occupational health surveillance of the workers shall be done on a regular basis and record maintained as per the factories Act.	Being complied	There are about 200 no. of workers in the factory. A part time doctor from Zira town has been appointed to carry out regular medical checkup of the workers on monthly basis and their record has been maintained by the unit as per the factories Act. (Copy attached)																											
(t)	Continuous online (24X7) monitoring system for stack emission shall be installed for measurement of flue gas discharge and the pollutants concentration, and the data to be transmitted to the CPCB and SPCB server. For online continuous monitoring of effluent, the unit shall install web camera with night vision capability and flow meters in the channel/ drain carrying effluent within the premises.	Being complied	<p>The online monitoring system for stack emission has been installed. The unit has also installed 8.nos. of CCTV cameras with night vision at different location in consultation of PPCB. Location of cameras are as under:-</p> <ol style="list-style-type: none"> <li>1. Near Boiler Chimney</li> <li>2. Near Aeration tank no -1</li> <li>3. Near Aeration tank no -2</li> <li>4. Near Lamella Clarifier</li> <li>5. Near Clarifier no-2</li> <li>6. Near New Aeration tank-1</li> <li>7. Near New Clarifier-2</li> <li>8. Near New DM plant</li> </ol>																											

(u)	There shall be adequate space inside the plant premises earmarked for parking of vehicle for raw materials and finished products, and no parking to be allowed outside of public places.	Being complied	The industry has adequate space inside the plant for parking of vehicle of raw material and finished products. There is no parking to outside on public places.
(v)	Storage of raw materials, coal etc shall be either stored in silos or in covered areas to prevent dust pollution and other fugitive emissions.	Being complied	The raw material (Broken rice) has been stored in Grain Silo and rice husk has been stored under the shed to prevent dust pollution and other fugitive emission.
(w)	The energy sources for lighting purposes shall preferably be LED based. A minimum of 10-20% of the total power requirement for the industrial operations shall be met from non-conventional energy resources/solar supply.	Being complied	The industry has replaced their existing lights by the LED lights and their power requirement has meet by self producing 9MW co-generation power plant.
(x)	The project proponent shall use either agricultural wastes or bio fuel as energy sources the boilers.	Being complied	The industry uses agricultural wastes (rice husk) as a fuel in boiler.

**(B) General Condition:**

(i)	The project authorities must strictly adhere to the stipulations made by the state Pollution Control Board (SPCB), State Government and/or any other statutory authority.	Being complied	Consent to operate under Air & Water act were valid up 31.12.2022. The industry is utilizing rice husk as a fuel for the boiler due to which fly ash is generated. The rice husk is consumed approx. 340 ton per day and the fly ash generated 61 ton per day. The fly ash is being filled up in low lying areas. The ash is being giver to the farmers also on demand. The fly ash is used by the farmers in their lands as manure. The industry is maintaining the following recorprds:- <ol style="list-style-type: none"> <li>1. Log books for running of the air pollution control devices or pumps/motor used for running of the same.</li> <li>2. Register showing the results of various tests conducted by the industry for monitoring of stack emission and ambient air.</li> </ol> The industry has started a policy under the public Liability insurance Act,1991 which is valid up to 16.08.2023.
(ii)	No further expansion or modification in the plant shall be carried out without prior approval of the ministry of Environment, Forest and Climate Change. In case of deviations or alteration in the project proposal from those submitted to this ministry for clearance, a fresh reference shall be made to the ministry to assess the	Proposal is for further expansion	The industry is producing Ethanol /ENA/RS/SDS @ 280 KLPD as allowed in the EC.

	adequacy of condition imposed and to add additional environmental protection measures required, if any.		
(iii)	The locations of ambient air quality monitoring station shall be decided in consultation with the State Pollution Control Board (SPCB) and it shall be ensured that at least one station each is installed in the upwind and downwind direction as well as where maximum ground level concentration are anticipated.	Being complied	The industry has installed four numbers of ambient air qualities monitoring station which are under operations. Their locations are as below -: 1. Near E.T.P laboratory 2. Near Power House 3. Near Bottling Plant 4. Near Evaporation
(iv)	The National Ambient Air Quality Emission Standard issued by the ministry vide G.S.R. No. 826(E) dated 16 <sup>th</sup> November, 2009 shall be complied with.	Being complied	Followed
(v)	The overall noise levels and around the plant area shall be kept well within the standards by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation. The ambient noise levels shall conform to the standard prescribed under environment (Protection) Act, 1986 Rules, 1989 viz. 75 dBA(day time) and 70 dBA (night time).	Being complied	The overall noise level in and around the plant area always remain under control as the unit has provided acoustic hoods, Silencers, enclosures etc on all source of noise generation..
(vi)	The company shall harvest rainwater from the roof tops of the buildings and storm water drains to recharge the ground water and utilize the same for different industrial operations within the plant.	Being complied	The rain water harvesting system has been provided to reuse the so collected water for plant activities.
(vii)	Training shall be imparted to all employees on safety and health aspects of chemicals handling, Pre-employment and routine periodical medical examinations for all employees shall be undertaken on regular basis. Training to all employees on handling of chemicals shall be imparted.	Being complied	The training of the all employees on safety and health aspects of chemicals handling is being conducted from time to time. The mock drill is being organized on quarterly basis. (copy attached)
(viii)	The company shall comply with all the environmental protection measures and safeguards proposed in the documents submitted to the Ministry. All the recommendation made in the EIA/EMP in respect of environment management, risk mitigation measures and public hearing shall be implemented.	Being complied	Most of the environmental safeguards laid down in environment clearance letter are being complied by the industry.

(ix)	The company shall undertake all measures for improving socio-economic condition of the surrounding areas. CSR activities shall be undertaken by involving local villagers, administration and other stake holders. Also eco-developmental measures shall be undertaken for overall improvement of the environment.	Being complied	The industry has done CSR activity in year 2021-2022 are given below 1. Plantation and protection of soil erosion 2. Women development and education promotion. 3. Plantation and protection of environment with green belt. 4. Sports promotion 5. Health checkup and Awareness for better health program.																														
(x)	A separate Environmental Management Cell equipped with full-fledged laboratory facilities shall be setup to carry out the Environmental Management and Monitoring functions.	Being complied	The environment management cell has been constituted as per following detail Member of environment management cell 1. <b>Shri Pawan Bansal</b> -(CAO) –Chairman 2. <b>Shri Rajinder Singh</b> (AVP)- Dy. Chairmen 3. <b>Shri Satish Sisodiya</b> -(AGM) – Vice chairman 4. <b>Shri Kailash Verma</b> -Dy Manager HR- Head 5. <b>Shri Nikhil Kumar</b> - Member 6. <b>Shri Jitender Singh</b> - Member 7. <b>Shri Jasbir Singh</b> – Member 8. <b>Shri Ramandeep Singh</b> - Member 9. <b>Shri Balwant Kumar</b> - Member																														
(xi)	The company shall earmark sufficient funds towards capital cost and recurring cost per annum to implement the conditions stipulated by the ministry of environment. Forest and climate change as well as the State Government along with the implementation schedule for all the conditions stipulated herein. The funds so earmarked for environment management/pollution control measures shall not be diverted for any other purpose.	Being complied	The industry has assured that funds kept for Environment Management Plans, will not be for any other purpose. Funds to the tune of Rs. 340.64 lacs had been spent on the implementation of environment management plans till Expenditure on EMP till Sept’ 2022 <table border="1"> <thead> <tr> <th>S. no.</th> <th>Item of EMP</th> <th>Exp Rs(in lacs)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Air pollution control</td> <td>2.75</td> </tr> <tr> <td>2</td> <td>Water pollution control</td> <td>9.66</td> </tr> <tr> <td>3</td> <td>Health&amp; safety</td> <td>3.31</td> </tr> <tr> <td>4</td> <td>Greenbelt development</td> <td>5.5</td> </tr> <tr> <td>5</td> <td>Rainwater harvesting</td> <td>2.1</td> </tr> <tr> <td>6</td> <td>Lungar</td> <td>12.72</td> </tr> <tr> <td>7</td> <td>CSR</td> <td>304.6</td> </tr> <tr> <td></td> <td><b>Total</b></td> <td><b>340.64</b></td> </tr> <tr> <td></td> <td></td> <td></td> </tr> </tbody> </table>	S. no.	Item of EMP	Exp Rs(in lacs)	1	Air pollution control	2.75	2	Water pollution control	9.66	3	Health& safety	3.31	4	Greenbelt development	5.5	5	Rainwater harvesting	2.1	6	Lungar	12.72	7	CSR	304.6		<b>Total</b>	<b>340.64</b>			
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(xii)	A copy of the clearance letter shall be sent by the project proponent to concerned Panchayat, Zila Parisad/ Municipal	Being complied																															

	Corporation, Urban local body and the local NGO, if any, from whom suggestion/representation, if any, were received while processing the proposal.		Done
(xiii)	The project proponent shall also submit six monthly reports on the status of compliance of the stipulated environmental clearance condition including results of monitored data (both in hard copies as well as by e-mail) to the respective Regional Office of MoEF&CC, the respective Zonal office of CPCB and SPCB. A copy of Environmental clearance and six monthly compliance status reports shall be posted on the website of the company.	Being complied	The industry is regularly submitting six monthly compliance reports to MOEFCC Regional Office at Chandigarh, the respective Zonal office of CPCB and SPCB.
(xiv)	The environmental statement for each financial year ending 31-03 in Form-V as is mandated shall be submitted to the concerned State Pollution Control Board as prescribed under the environment (Protection) Rules, 1986, as amended subsequently, shall also be out on the website of the company along with the status of compliance of environment clearance conditions and shall be send to the respective Regional offices of MoEF&cc by e-mail.	Being complied	Noted for compliance
(xv)	The project proponent shall inform the public that the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with the SPCB/committee and may also be seen at Website of the Ministry at <a href="http://moef.nic.in">Http://moef.nic.in</a> . this shall be advertised within seven days from the date of issue of the clearance letter, at least in two local newspaper that are widely circulated in the region of which one shall be in the vernacular language of the locality concerned and a copy of the same shall be forwarded to the concerned regional office of Ministry.	Being complied	Already complied with.

## ENA and Ethanol Production in a Distillery

Both Extra Neutral Alcohol (ENA) and fuel-grade Ethanol are chemically the same compound ( $C_2H_5OH$ ), but they are distinguished by their **purity, end-use, and the technical requirements of their final distillation.**

### 1. The Common Technical Process (Start to Finish)

The initial steps in a distillery are largely the same for both ENA and fuel-grade ethanol:

- **Feedstock Preparation:** Raw materials like molasses (a sugar industry byproduct), sugarcane juice, or starchy **grains** (corn, rice) are prepared. If starch-based, they must first be converted into fermentable sugars via **hydrolysis** (or saccharification) using enzymes.
- **Fermentation:** The prepared sugary liquid (called **wash** or **mash**) is mixed with a specialized yeast strain (*Saccharomyces cerevisiae*). The yeast consumes the sugars and converts them into ethanol and carbon dioxide ( $CO_2$ ) in an anaerobic environment.
  - **Reaction:** Sugar {e.g., Glucose}  $\longrightarrow$  2 x Ethanol +  $2CO_2$
  - The resulting fermented wash typically contains only 8-12% ethanol.
- **Distillation (Rectified Spirit):** The fermented wash is fed into continuous **column stills** (like the **Analyzer** and **Rectifier** columns). This process separates the ethanol from water and other volatile impurities, yielding a product known as **Rectified Spirit (RS)**, which is typically around 95% Alcohol By Volume (ABV).

### 2. The Divergence: ENA vs. Fuel Ethanol

The path diverges after the initial distillation, based primarily on the required purity and final concentration.

Feature	Extra Neutral Alcohol (ENA) Production	Fuel-Grade Ethanol Production
<b>Purity &amp; Quality</b>	<b>Very High Purity.</b> Requires multiple, highly efficient distillation and <b>rectification</b> stages. Strict limits on impurities (congeners) like aldehydes, esters, and fusel oils.	<b>Lower Purity Tolerance.</b> Focus is on maximizing ABV for fuel use. Purity regarding taste/odor is less critical.
<b>Final Concentration</b>	<b>approx 96.0 - 96.5%ABV</b> (The azeotropic point with water). This is the highest purity achievable by simple distillation.	<b>Anhydrous Ethanol approx 99.5 - 99.9% ABV.</b> Must be nearly 100% pure for blending with petrol.
<b>Final Technical Step</b>	The final product is the 96.5% ENA.	<b>Dehydration:</b> Requires advanced techniques (e.g.,

<b>Feature</b>	<b>Extra Neutral Alcohol (ENA) Production</b>	<b>Fuel-Grade Ethanol Production</b>
		<b>Molecular Sieves or Azeotropic Distillation</b> ) to break the ethanol-water azeotrope and remove the last 4-5% of water.
<b>End Use</b>	Base for <b>Potable Spirits</b> (Vodka, Whisky, Gin, etc.), pharmaceuticals, and cosmetics.	<b>Biofuel</b> (blending with petrol, gasoline, Industrial Solvent.
<b>Denaturing</b>	<b>Not Denatured.</b> It is an excisable product fit for human consumption.	<b>Denatured.</b> Small amounts of bitterants like crotonaldehyde and Denatonium saccharide.



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**Service in Pubic Action Committee Vs. State of Punjab & Ors. [OA No. 606 of 2022/PB]**

1 message

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**ELDF** <eldflegal@gmail.com>

Fri, Nov 7, 2025 at 5:55 PM

To: kawalpreet303@yahoo.in, Naginder Benipal &lt;naginder.benipal@gmail.com&gt;, mattewarasutlejpac@gmail.com

Cc: Eisha Krishn &lt;eisha@eldfindia.com&gt;, Gitanjali Sanyal &lt;gitanjali@eldfindia.com&gt;

Dear Sir/Ma'am

Please find attached copy of the **Reply Affidavit** on behalf of the Respondent No. 7, M/s Malbros International Pvt. Ltd. in the above-mentioned case

*Thanks & Regards*

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**Sameer Manher**

Clerk

Enviro Legal Defence Firm

29, Presidential Estate LGF,

Nizamuddin East New Delhi – 110013

Ph. No. 011-40573181

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 **Reply R7.pdf**  
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