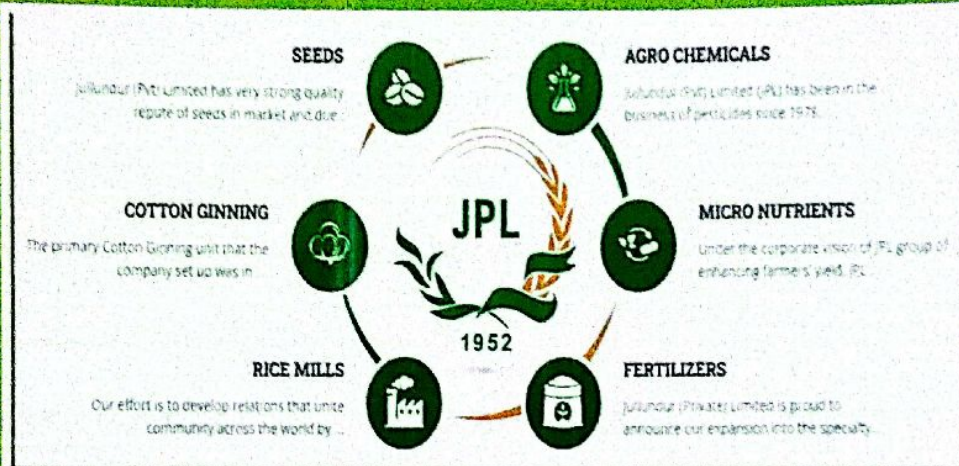


ENVIRONMENTAL IMPACT ASSESMENT (EIA)



M/S JULLUNDUR (PVT) LTD.
SITUATED AT CHOWK BAHADURPUR, KLP ROAD,
RAHIM YAR KHAN.



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ACRONYMS

EMMP	Environment Management and Monitoring Plan
EPA	Environment Protection Agency
EPD	Environmental Protection Department
EIA	Environmental Impact Assessment
IEE	Initial Environment Examination
NEQS	National Environmental Quality Standards
NGO	Non-Government Organizations
NOC	No Objection Certificate
HSE	Health, Safety and Environment
PEPA	Pakistan Environment Protection Act
PEPC	Pakistan Environmental Protection Council
PMD	Pakistan Meteorological Department
RO	Reverse Osmosis
TDS	Total Dissolve Solids
TOR	Terms of Reference
WAPDA	Water and Power Development Authority
WASA	Water and Sanitation Agency
USA	United States of America

Glossary

Environmental Management System (EMS):

A set of management process and procedure that allows an organization to analyse and reduce the environmental impacts of its activities. Environmental Monitoring Systematic, geo-referenced observations of the environment essential to detecting changes in ecosystems over time. Environmental Protection Plan (EPP) a practical tool that describes the actions required to minimize environmental effects before, during and after project implementation. The plan may include details about the implementation of the mitigation measures identified in the environmental assessment, such as who is responsible for implementation, where the measures are intended to be implemented, and within what timeframe.

Habitat:

Land and water used by wildlife. This may include biotic and Abiotic aspects such as vegetation, exposed bedrock, water, and topography.

Impact:

Any aspect of a project that may cause an effect; for example, land clearing during construction is an impact, while a possible effect is loss and fragmentation of wildlife habitat.

Indirect Effect:

An effect in which the cause-effect relationship (e.g., between the project's impacts and the ultimate effect on a Valued Ecosystem Component) has intermediary effects. As an interaction with another effect is required to have a cumulative effect (hence, creating intermediary effects), cumulative effects may be considered as indirect. Industry Relations Corporation (IRC) The Corporation or organization that a First Nation has created to manage the First Nation's relations, including Consultation with Alberta, Canada and Industry.

Mitigation:

The elimination, reduction or control of the adverse environmental effects of the project. Mitigation includes restitution for any damage to the environment caused by such effects through replacement, restoration, compensation or any other means.

Project:

The activity or group of activities proposed by the Proponent. The types of activities that could be subject to Alberta's environmental assessment process are listed in the Schedule of Activities in the Environmental Protection and Enhancement Act and in the Water Act. The Project includes all associated construction, operation, decommissioning and reclamation activities and all phases of development described by the Proponent. Project Area Project Footprint/Study Area The area includes all lands subject to direct disturbance from the project and associated infrastructure. Project Components The different physical entities and activities that together make up the Project.

Residual Effect:

An effect that remains after mitigation has been applied

Scoping:

An activity that focuses the assessment on relevant issues and concerns and establishes the boundaries of the environmental assessment. A consultative process for identifying and possibly reducing the number of items (e.g., issues, VECs) to be examined until only the most important items remain for detailed assessment. Scoping ensures that assessment effort will not be expended in the examination of trivial effects.

Significance:

A measure of the magnitude, duration, frequency, timing, probability of occurrence, ecological and social context, geographic extent, and degree of reversibility of an effect on a Valued Ecosystem Component

Emission:

One or more substances released to the water, air or soil in the natural environment.

Environment:

Surroundings in which an organization operates, including air, water, land, natural resources, flora, fauna, humans, and their interrelations. This definition extends the view from a company focus to the global system.

EXECUTIVE SUMMARY

Title and Location of the Project

The proposed project is the Extension of M/S Jullundur (Pvt) Ltd. Located at Chowk Bahadurpur, KLP Road, Rahim Yar Khan.

Name of the Proponent

Mr. Nasir Bashir S/O Bashir Ahmad
Project Proponent / General Manager
M/S Jullundur Pvt. Ltd.
R/O H # 119, Street # 2. Ravi block, Mohallah moiz town, Salamat Pura, Lahore Cantt, District Lahore

Name of the Organization Preparing the Report

Environmental Greentech Services Pvt. Ltd.
Office #10, 4th floor, Tele Tower, Link Road, Model Town Lahore
Phone: +92 303 4686923 | +92 309 6059865
E-mail: info@envirogtech.com

A Brief Outline of the Proposal

M/S Jullundur Pvt. Ltd. was registered in 1984 under section 23 of Pakistan Companies act, 1913. Its first unit under the name "M/S Jullundur Seed Corporation Limited" was registered in 1987 from Food and Agriculture Division, Government of Pakistan as the purpose of production, multiplication, processing and distribution of quality seeds of cotton, wheat, oil seed, vegetable and pulses. Now Proponent of the project intends to extend its business and install a agrochemicals formulation and refilling unit in its existing land premises.

The proposed project is Extension of M/S Jullundur (Pvt) Ltd. Located at Chowk Bahadurpur, KLP Road, Rahim Yar Khan. The coordinates of the site are LAT. 28.451540 N and LONG. 70.224761 E. The site is well connected to the other parts of the city through a metaled road. The proposed project falls in the category B (8) of the project requiring Environmental Impact Assessment (EIA) of Schedule-II of IEE/EIA Regulation 2022.

Salient Features:

The proponent of the project Ms. M/S Jullundur (Pvt) Ltd. has engaged Environmental Greentech Services Pvt. Ltd. to carry out the Environmental Impact Assessment (EIA) for the establishment of aforesaid project in accordance with Punjab-EPA guidelines. The salient features of the proposed project are given below:

Table I. Salient Features of Project

Sr #	Salient Features	
1.	Project Title	Extension of M/S Jullundur (Pvt) Ltd.
2.	Project Location	Chowk Bahadurpur, KLP Road, Rahim Yar Khan
3.	Co-ordinates	LAT. 28.451540 N and LONG. 70.224761 E
4.	Proponent	Mr. Nasir Bashir S/O Bashir Ahmad Project Proponent / General Manager M/S Jullundur Pvt. Ltd.
5.	Consultant	Environmental Greentech Services Pvt. Ltd.
6.	Cost of Project	150 Million
7.	Tree Plantation	At designated green spaces
8.	Water Source	Groundwater from the depth of 90ft
9.	Total Area	Total area: 447480 SFT (Approx.) Proposed area for extension: 6010 SFT (Approx.)
10.	Nature of Area	Reserved for Extension
11.	Source of Power	WAPDA
12.	Water Requirement	Domestic Water Requirement of proposed project is about 08 gallons per capita per day.
13.	Solid Waste Management	Solid waste will primarily consist of the domestic solid waste from the project. About 90 kg/day of domestic solid waste will be generated from the project. The garbage will be collected at a designated area within the area as an intermediate garbage disposal. From this place, garbage will be collected and

		transported to a suitable location for final disposal. The location for this final disposal will be decided in consultation with the City District Government.
13.	Number of working days	6 Days
WAPDA= Water and Power Development Authority;		

1. Impact and Mitigation Measures

Environmental impacts have been identified and mitigation measures are recommended within the project area of influence. The major impacts on physical, biological and social environments are described as under:

Table II: Impacts Summary

Environmental Parameters	Impact Assessment	
	During Construction	Operation
1. Location	+2p	+1p
2. Design	+1p	+1p
A: Physical		
<i>Land Resources</i>		
1. Solid Waste	-1t	-2p
2. Land Use	-1p	-1p
<i>Air Resources</i>		
1. Air Emission	-1t	-2p
2. Noise	-1t	-1t
<i>Water Resources and Wastewater Management</i>		
1. Water Resource	-1p	-1p
B: Ecological		
<i>Flora</i>		
1. Vegetation	0	+2p

Fauna		
1. Wildlife	NA	NA
C: Socio-Economic		
1. Transportation	0	+2p
2. Employment	+1p	+1p
3. Food Availability	NA	+1t
Legends: 1= Low; 2= Medium; 3= High; 4= Extremely High; NA= Not Applicable; t= Temporary; p= Permanent; app= Applicable; 0= Negligible + All adverse environmental impacts except natural calamities are manageable easily by implementing EMMP		

2. Environmental Management and Monitoring Plan

A comprehensive Environmental Management and Monitoring Plan (EMMP) have been prepared to effectively manage and monitor the environmental and social impacts

for the establishment of project. The salient features of EMMP are as under.

2.1 Environmental Mitigation Plan

To manage the environmental and social impacts of the project, significant negative impacts and their mitigations have been covered in this section. For the ease to understand and identify the impacts and to implement their mitigations, a mitigation plan has been developed as a ready reference for the Proponent and Contractor to minimize the negative impacts or to manage activities in such a manner to avoid any adverse negative impact.

2.2 Environmental and Social Monitoring Plan

Mitigations for physical, biological and socio-economic parameters will be measured to determine compliance with standards established in EMMP. The Monitoring Plan will record the inputs provided by various participants in the environmental and social management process. During the operational phase solid waste management practices and wastewater disposal practices will be monitored by

the concerned authority on the regular basis. Moreover, fire-fighting equipment will be available at the project site and maintained and monitored on the regular basis.

The total estimated cost for the implementation of EMMP in proposed project area is approximately **PKR 0.2 Million** which will be used for tree plantation, monitoring of environmental parameters and the implementation of EMMP as suggested in this EIA Report.

3. Conclusions and Recommendations

In general, potential adverse environmental effects resulting from the proposed project will be temporary, short-term and of low magnitude. Through application of standards, recommended mitigation measures, adherence to applicable permit conditions and regulations, any adverse effects can be effectively minimized for all phases. The project is not likely to have significant adverse environmental impacts. Negligible

negative impacts that are likely occur during project implementation includes; air pollution due to movements of vehicles, removal of trees from the project area, potential impact to the local water resources and social impacts may affect the locals residing in the nearby community can be foreseen. Mitigation measures will be implemented to minimize environmental impacts though they are still negligible. There are certain mitigations suggested to cater for the aforesaid issues. The mitigation measures will require constant information flow and consultation with the stakeholders to ensure the least adverse social-economic impact to outweigh the "no-development" scenario.

- The adverse environmental impacts can be reduced significantly by adopting best management and monitoring practices as well as by implementation EMMP effectively
- Tree plantation plan should be carried out at the designated green spaces and along the boundaries in order to keep the environment healthy
- It is recommended that the Proponent should obtain an Environmental Approval (NOC) from the Punjab-EPA before proceeding further into the construction activities.

INTRODUCTION

The proposed project is Extension of M/S Jullundur (Pvt) Ltd. Located at Chowk Bahadurpur, KLP Road, Rahim Yar Khan. The proposed project falls in the category B (8) of the project requiring Environmental Impact Assessment (EIA) of Schedule-II of IEE/EIA Regulation 2022.

M/S Jullundur (Pvt) Ltd. is currently operating seeds processing unit and cotton ginning unit. Now Proponent of the project intends to extend its business and install a agrochemicals formulation and refilling unit in its existing land premises.

1.1 Screening:

As per review of Initial Environmental Examination (IEE) and Environmental Impact Assessment (EIA) Regulations, 2000 the proposed project falls in **Category B (8)** of the Schedule-II, i.e. ***"Pesticides and Fertilizers Manufacturing Units"***.

1.2 Purpose of Report

This report has been prepared to confirm to the requirements of the Punjab Environmental Protection (Amendment) Act 2012 (PEPA), which states that:

"No proponent of a project shall commence construction or operation unless he has filed with the Provincial Agency an initial environmental examination or where the project is likely to cause an adverse environmental effect, an environmental impact assessment, and has obtained from the Provincial Agency approval in respect thereof."

It is of utter importance to examine the environmental impacts, both beneficial and adverse, of the proposed project, and to recommend and propose mitigating measures to prevent minimize or mitigate such impacts. The EIA study of the proposed project is necessary to assess the environmental consequences of the activities at the proposed sites and to suggest appropriate, practical and site-specific mitigation as well as enhancement measures.

The main objectives of this EIA Study are:

- ✦ To determine and record the state of the environment of the project area to establish a baseline in order to assess the suitability of the project in that proposed area
- ✦ To operation activities and to assess their impacts on environment
- ✦ Provide assistance to the proponent for planning, designing and implementing the project in a way that would eliminate or minimize the negative impact on the biophysical and socio-economic environment and maximizing the benefits to all parties in the cost-effective manner
- ✦ To present mitigation and monitoring plan for smooth implementation of the suggested mitigation measures and supervises their efficiency and effectiveness
- ✦ To provide opportunity to the public for understanding the project and its impacts on the community and their environment in the context of sustainable development
- ✦ Prepare an EIA Report for submission to the EPA, Punjab for Environmental Approval (NOC)

1.3 Project Scope

The proposed project is construction of agrochemicals formulation and repacking unit within existing premises of M/S Jullundur Pvt. Ltd.

1.4 Nature, Size and Location of Project

The proposed project is the extension of M/S Jullundur Pvt. Ltd Located at Chowk Bahadurpur, KLP Road, Rahim Yar Khan. The total area of the Project is 6010 SFT (Approx.) and the total cost of the project is 150 million. The project location is shown in Figure 3.

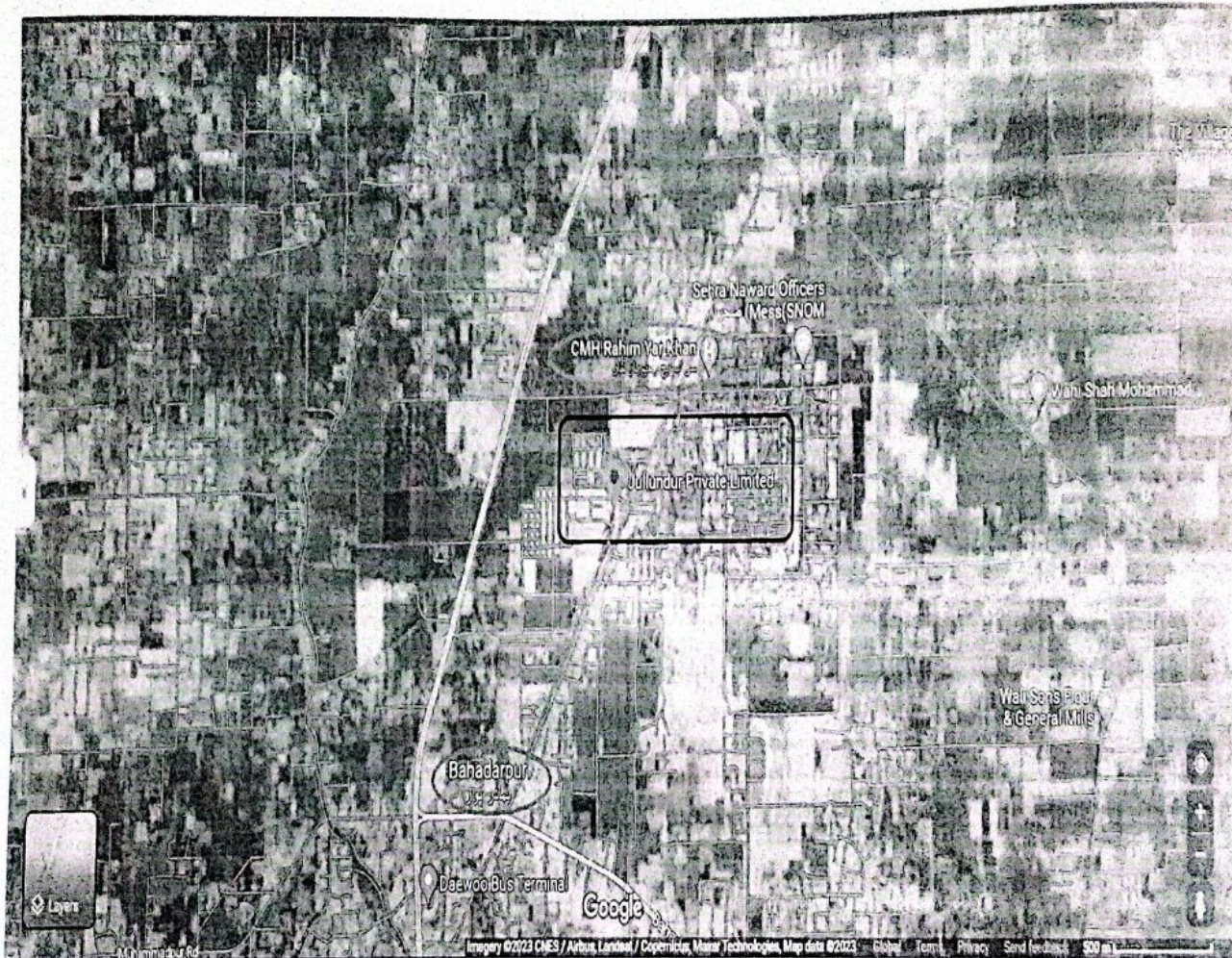


Figure 1: Project Location Map

The capacity of the project is as follows;

Liquid formulation unit	4000 liters/shift
Filling unit plant	4000 units/day
Micronutrients / fertilizers	2000 kg per shift

1.5 Project Proponent

The detail of the proponent is given in Table IV below:

Table IV: Proponent Details

Proponent Details	
Name	Mr. Nasir Bashir S/O Bashir Ahmad
Resident of	H # 119, Street # 2, Ravi block, Mohallah moiz town, Salamat Pura, Lahore Cantt, District Lahore

1.6 Project Consultant

The services of environmental consultant M/s **Environmental Greentech Services Pvt. Ltd.** have been taken by the proponent for the formulation of Environmental Impact Assessment (EIA) Report. Greentech is an environmental and engineering services providing firm that has an unrivalled reputation for providing high quality tailored services. Greentech is a dynamic, responsive and innovative in providing this cost-effective solution and comprising of Environmental Engineers & Consultants and rendering their services to clients in both industrial and the government sectors.

With the visionary leadership of its veteran management and enthusiasm of its team, it is committed to come up with innovative ways of maintaining and enriching the Environmental Profiles / Portfolios of its prestigious clients with activities having a strong and lasting impact to their corporate image. It has attracted and retained staff with an unrivalled depth and breadth of expertise and experience that they have from working, not just in consultancy but also in commercial, industrial and regulatory environments. With its pool of Environmental Consultants, Environmental Scientists and Environmental Engineers, company offers one stop solutions tailored to its client's needs.

Contact Details

Focal Person	Hassan Waqas (CEO)
Address	Office No. 10, 4 th Floor, Tele Tower, Main Link Road Model Town, Lahore
Contact No.	+92 303 4686923

Table IV: List of Experts

Sr. No.	Team Member	Position Held	Qualifications
1.	Hassan Waqas	Team Lead, Principal Environmentalist-I	MS Environmental Sciences University of Gujrat (UOG)
2.	Tasneem Shahid	Manager Operations / Environmentalism-II	Mphil Environmental Sciences The University of Lahore BS (Hons.) Environmental Sciences University of Gujrat
3.	Saddat Mazhar	Ecologist	MS Forestry & Environment University of Viterbo "La Tuscolana" Italy BS Environmental Sciences University Of Gujrat (UOG)
4.	Anam Zaidi	Environmentalism-III	Mphil Environmental Sciences The University of Lahore BS (Hons.) Environmental Sciences The University of Lahore
5.	Bilawal Zafar	Environmental Geologist	Mphil Environmental Sciences The University of Lahore BS (Hons.) Environmental Sciences University of Gujrat
6.	Zain Abbas	Principal Environmentalist-II	MS Environmental Sciences, National University of Science and Technology (NUST), Islamabad BS Environmental Sciences University of Gujrat
7.	Rizwan Saeed	Field Engineer	BS Environmental Sciences University of Gujrat

8	Fiza Imtiaz	Environmentalist	BS Environmental Sciences, University of punjab
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1.7 Structure of Report

This EIA Report reviews information on existing environmental attributes of the project area and study area (which is considered 1km in radius around the project area). Geological, hydrological and ecological features, air quality, noise, water quality, and social and economic aspects and cultural resources are included and discussed in detail. The EIA Report predicts the probable impacts on the environment due to the proposed project establishment. This EIA Report also proposes various environmental management measures to mitigate the associated adverse impacts up to the extent practically possible. Details of all background environmental quality, environmental impact/pollutant generating activities, pollution sources, predicted environmental quality and related aspects have been provided. The structure of the EIA Report will be as follow;

- Description of the Project
- Description of Environmental and Social Conditions
- Assessment of the Anticipated Impacts
- Screening of Environmental Impacts and Mitigation Measures
- Mitigation Measures for Identified Impacts
- Environmental Management and Monitoring Plan (EMMP)
- Recommendations and Conclusions

SCREENING AND SCOPING

2.1 Screening/Type and Category of Project

Section 12 of Punjab Environmental Protection Act, 1997 (amended 2012) states "No proponent of a project shall commence construction or operation unless he has filed with the Government Agency designated by Federal Environmental Protection Agency or Provincial Environmental Protection Agencies, as the case may be, or, where the project is likely to cause an adverse environmental effects an Environmental Impact Assessment (EIA), and has obtained from the Government Agency approval in respect thereof." Punjab Environmental Protection Act provided the guidelines for categorizing the projects. According to Schedule-II of IEE and EIA Regulations, 2000 proposed project falls in category **B (8), "Pesticides and Fertilizers manufacturing Units)"**. i.e., the project requires an EIA Study. Thus, an EIA Report is being prepared and submitted accordingly for approval.

The proposed project is the extension of M/S Jullundur Pvt. Ltd. and installation of agrochemicals formulation and processing plant.

2.2 Scoping:

2.2.1 Spatial and Temporal Boundaries of Environmental Assessment:

A major activity of scoping is to identify key interest groups, governmental and non-governmental, and to establish good lines of communication. People who are affected by the project need to hear about it as soon as possible. Their knowledge and perspectives may have a major bearing on the focus of the EIA. Rapid rural appraisal techniques provide a means of assessing the needs and views of the affected population.

The main EIA techniques used in scoping are baseline studies, checklists, matrices and network diagrams. These techniques collect and present knowledge and information in a

straightforward way so that logical decisions can be made about which impacts are most significant. Risk and uncertainty are discussed further in the section Managing uncertainty.

Temporal and spatial boundaries for the effects assessment are defined by the characteristics of the project and the VECC being assessed. These boundaries encompass time periods and areas during and within which the VECCs are likely to interact with or be influenced by the project.

- Temporal Extent (during construction and operation)
- Spatial Extent (local or widespread)

In the proposed project checklists and matrices techniques have been used to assess impacts and are being discussed in detail in chapter 8

2.2.2 Views, Concerns and Suggestions of Various Stakeholders

Community showed a lot of concerns; a few are being mentioned here.

- ✚ Removal of shrubs and trees should be avoided to the extent possible
- ✚ The project will become the source of income for local to earn their livelihood easily and honorably
- ✚ The area will become further explored
- ✚ For the solid waste management and waste disposal, proper disposal techniques should be adopted
- ✚ Employment opportunities will be generated, and locals should be hired on the priority basis
- ✚ The air pollution is one of the major impacts of the proposed project so ambient air quality should be monitored regularly

- ✦ Good relations with the local communities will be promoted by encouraging Contractor to provide opportunities for skilled and unskilled employment to the locals as well as on-job training
- ✦ The contractor should prefer hiring local labor from adjacent nearby villages
- ✦ Indigenous trees around the facility should be planted to control air pollution and as the compensation
- ✦ Noise reducing barriers should be installed to reduce noise pollution as the nearest community lies within the radius of 0.4 km

Concerns

- ✦ Workers should be hired from local community
- ✦ Proper disposal of solid waste should be practiced
- ✦ Indigenous trees around the facility should be planted to control air pollution
- ✦ Removal of shrubs and bushes should be avoided to the extent possible

2.2.3 Significant impacts and factors to be determined

The proposed project is of extension of Jullundur Pvt. Ltd. The study area is unreserved nonagricultural. In addition, to the noise and fugitive dust emissions during the development phase solid waste management and disposal issues may arise along with wastewater disposal issues. There are few minor impacts associated with the project includes the management of the municipal solid waste generated which will be managed according to local practices of area.

The impacts from the project will occur during operation of the project. These issues included; noise generation, fugitive dust emissions, solidwaste management, wastewater disposal, Health and Safety issues and change in the geographic features of the area. These all problems should be addressed on-site where they are being generated, to avoid the residual or adverse impacts.

2.3 Alternatives

The details of the site alternatives and technology alternatives are discussed below

2.3.1 Site Alternatives:

No other site alternative was available to be considered as feasible option for the project because the land is owned by the proponent. The proposed site was selected because of the following reasons;

- 1) The site is very convenient to main road.
- 2) No surface water body is located within the 10 km.
- 3) Land is reserved for extension of project
- 4) No human settlements displacement or relocation associated with the project development and operation
- 5) Operation of the facility in the respective zone will provide job opportunities to local people and will improve their socio-economic status of the study area as employees will be hired during the operational phase

2.3.2 Project Alternatives:

The focus of the agricultural sector is to increase productivity and food security in the country. However, the country's agricultural productivity has fluctuated over the years compared to neighboring regional economies. Cereal crops require a large number of agrochemicals in the country, particularly wheat, rice, and maize. In the case of vegetable crops, both herbicides and insecticides are used to protect major crops such as tomatoes, onions, chilis, peppers, etc., as they are the primary vegetables produced in the country. The pesticides are effective in combating pests and increasing the yield of fruits. The share of application of such agrochemical products on fruit crops is anticipated to increase in the future. It is anticipated that the agrochemicals market in Pakistan will continue to grow in the coming years, majorly due to the growing

population, increasing focus on food security, increased investment in research and development, increase in need to enhance land productivity, and increase in farming income. Therefore, it is eager need of project to be installed and serve the market.

2.3.3 Environmental Alternatives:

No important religious, archaeological, recreational site or ecologically/declared protected area and human settlement exists within proximity of the selected site i.e., within a safe distance. In view of these facts, it can be concluded that the selected site is best suited for the project and will not pose any adverse impact or threat on any component of the environment.

2.3.4 Economic Alternatives:

According to a rough estimate, 15 to 20 percent of the crop is lost every year to insect pests alone and about 10 percent to diseases. Production loss due to insect pests on cotton was estimated at 0.25 million bales in 1992-1993, which went up to 3.05 million bales in 1998-1999 (Shahid, 2003). Although various methods of crop protection such as biological control, cultural control and resistant varieties are available, chemical pesticides have remained the most dominant means of pest control in Pakistan. In the light of above facts, there is a need to encourage local industry, which is also upright for economic well-being of the country.

3.

DESCRIPTION OF THE PROJECT

3.1 General

This section of the study renders a detailed account of the project and its salient features; such as location and various phases. Inputs, outputs, discharges relevant to different phases of the project, such as electricity & materials, etc. have been examined as a response to possible environmental concerns.

3.2 Type and Category of Project

As per review of Initial Environmental Examination (IEE) and Environmental Impact Assessment (EIA) Regulations, 2022 the proposed project falls in Schedule-II of IEE and EIA Regulations, 2022 proposed project falls in category B (8), "Pesticides and Fertilizers Manufacturing Units)"

3.3 Project Objectives

The main objective of the project is to formulate pesticide to cope with the growing market demand in Pakistan under the prevailing marketing conditions.

3.4 Location and Layout of Plant

The location and layout of the proposed project is given below:

Location of the Project

The proposed project is located at Chowk Bahadurpur, KLP Road, Rahim Yar Khan. The proposed site is in the industrial and commercial area; the land requirement for proposed industry unit is already in possession and it is not prime agricultural and road is adjacent to proposed site. Plant layout is annexed with report.

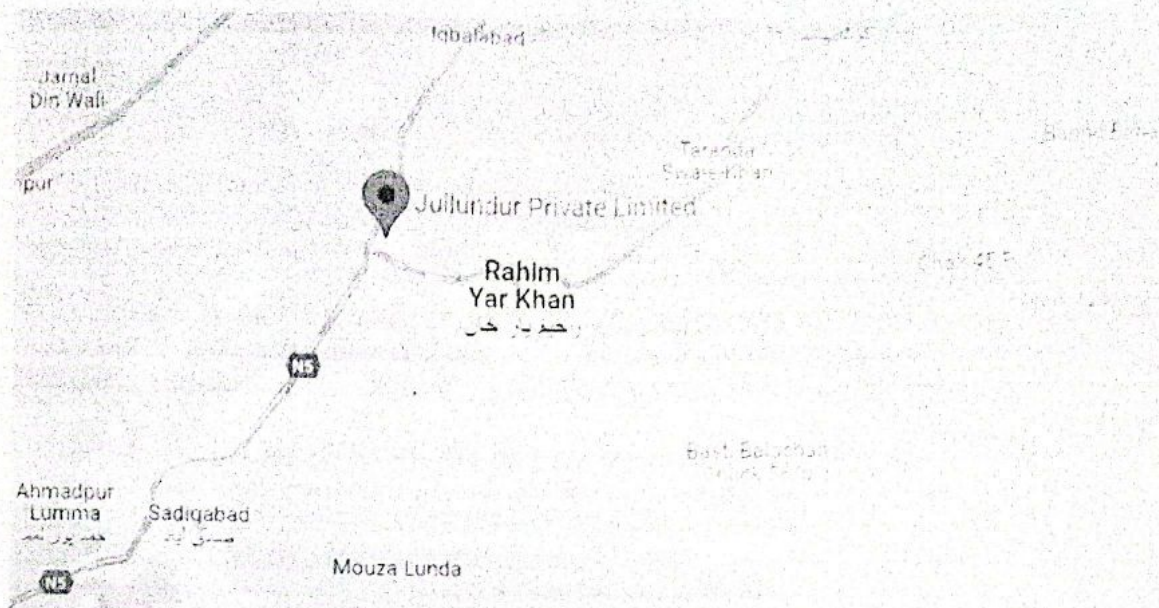


Figure 2: Site Location Plan

3.5 Land Ownership

Land selected for the proposed project is owned by the proponent. Land ownership documents are attached herewith at Annexure of this EIA Report.

3.6 Vegetation Features

The proposed project is extension of Jullundur Pvt. Ltd. Some Trees of native species are present along the boundary of the project area. It is being envisaged that no vegetation will be removed due to the establishment of the proposed project. The proponent has planned a proper tree plantation plan to improve environmental quality of the area.

3.7 Land Use on Site

The area is presently in idle condition.

3.8 Road Access

The said area is approachable through main KLP Road, near Chowk Bahadurpur, Rahim Yar Khan. Multiple sub-roads are also present to reach the proposed site

Road access is shown in the figure below.

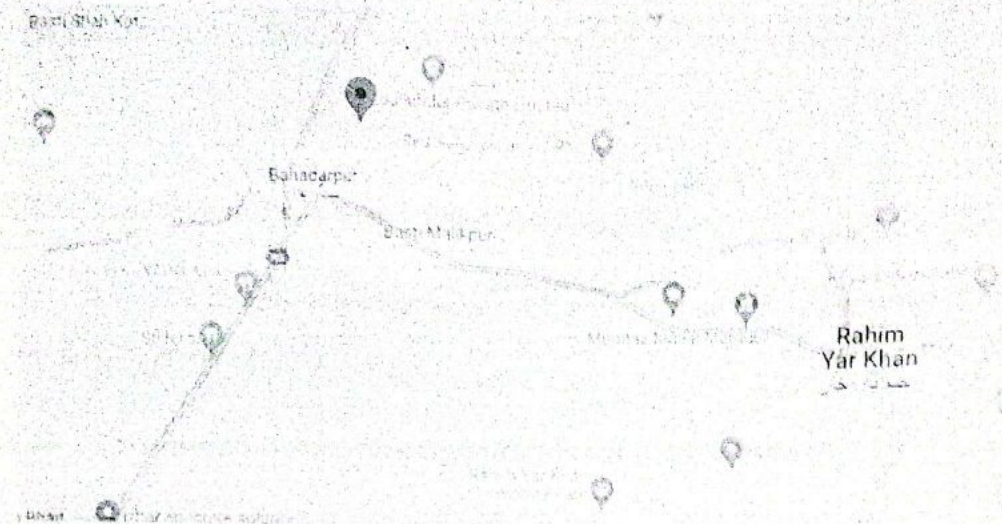


Figure 3: Road Network in the Area

3.9 Government Approval

As the proposed project is extension of existing project, therefore, NOC from EPA Punjab is the major requirement

3.10 Description of Project

3.11 Overview of M/S Jullundur Pvt. Ltd.

Jullundur private limited was registered in 1984 under section 23 of the companies act 1913. It is one of the leading privately owned seed and Agro products company and functioning of quality seeds processing was established in 1987. Over the decades of Quality & trust JPL has proven itself to be a dynamic and progressive company. Over the period of time we have delivered several successful projects in Pakistan & Contributed a lot to the Agriculture sector as well as for economy of Pakistan. All legal documents has been attached with this report for proof.

3.12 Jullundur Seeds Corporation Ltd.

Jullundur Seeds Corporation Ltd was registered in 1987 from food and agriculture division

Government of Pakistan. Main purpose of the project is to Production, Multiplication, Processing and Distribution of Quality Seeds Cotton, wheat, oil seeds, vegetables and pulses

List of Machinery at existing site:

3.13 Cereal seed Processing Plant (10 No):

This plant consisted on elevators, huskers, graders, indented cylinders etc. these plants are installed at different locations.

3.14 Cottonseed Acidic-Gas Delinting Plant (01 No)

Consisted on series of machines including intake, flame delinter, auto batch weighed, reactor pre cleaner, fine cleaner, gravity separator and treator

3.15 Treatment plants (04)

Consisted on brush worms

3.16 Cottonseed fuzzy graders (02 No)

Consisted on evaporators, condensers and compressors etc

3.17 Delinted cottonseed dryers

Consisted on an iron bin, blowers, conveyors and combustion chamber etc

3.18 Ginning

Consisted of;

Ginn Saw Machines	05 No.
Inclined Cleaner	01
Stick Machine	01

Waste Process Machine 01

Small Gin saw Machine 02

General Process

Cotton ginning is the process of separating cotton seed from the lint so that the lint will be baled and goes to textile industries for further processing whereas the cotton seed is milled by oil mills to produce edible oil. Cotton ginning, therefore, requires the unprocessed raw cotton, and then is applied on the cotton ginner in order to produce baled cotton and cottonseed. The cotton-ginning machine is the major equipment required. It would be advisable to install the ginning machine at the vicinity of cotton farm.

3.19 PROCESS FLOW OF THE PROJECT

Raw Material

Cotton fibre seed balls.

Finished Product

Cotton Fabric

General Process

Agriculture plays a pivotal role in the economy of Pakistan. Cotton is the main cash crop of the country and is often referred to as white gold. Pakistan is the fourth largest producer of cotton after China, the USA and India.

The cotton ginning process converts seed cotton, an agricultural product, into cottonseed and bales of lint, by separation of seed from the lint and removal of undesirable elements like stones, dust, trash, grass, leaves, sticks, bark, hulls, seed coat fragments, motes (green immature cotton bolls), neps and short fibre content.

Ginning is the first Mechanical process involved in processing cotton. Ginning machines separates cotton fibers from the seed bolls and dust particles. This works on principle



operation of Mc- Garthy's gin. The seed cotton arrives at the gin in round bales or modules. The first step in the ginning process is where the cotton is vacuumed into tubes that carry it to a dryer. Cotton must be ginned with a moisture level of 5%. The cotton is dried out if it is too wet or water is added if it is too dry to ensure the correct moisture level. Next, the cotton goes through several stages of cleaning equipment to remove leaf trash, sticks, dirt and other foreign matter. After cleaning, the cotton is then ready for separation in the gin stand. The gin stand removes the seed from the lint, mostly cotton is ginned with saw gins where fast moving circular saws grip the fibres and pull them through narrow slots. The raw fibre, now called lint, has any remaining trash removed and makes its way through another series of pipes to a press where it is squashed into bales under very high pressure. Each bale weighs 227kg. Samples are taken from each bale for classing and the bales are wrapped in stretchy white cotton fabric to protect the lint. They are now ready for transport to one of the ports for shipping into overseas markets.

Flow diagram showing a pictorial view of that process are given below:

MANUFACTURING PROCESS SHEET FOR COTTON GINING

RAW COTTON

::

SORTING & CLEANING

::

PEELING, SHREDDING, FOR SEED & LINT SEPERATION

::

SORTING & BUNDLING

::

FINAL PRODUCT - COTTON LINT & COTTON SEEDS

The lint cotton will not be saleable in loose form in the market, so the pressing of it requires the Pressing Unit & the unit will apply the following procedures

:

PROCESS SHEET FOR LINT COTTON PRESSING

LINT COTTON

::

TRANSFER TO PRESS MACHINE

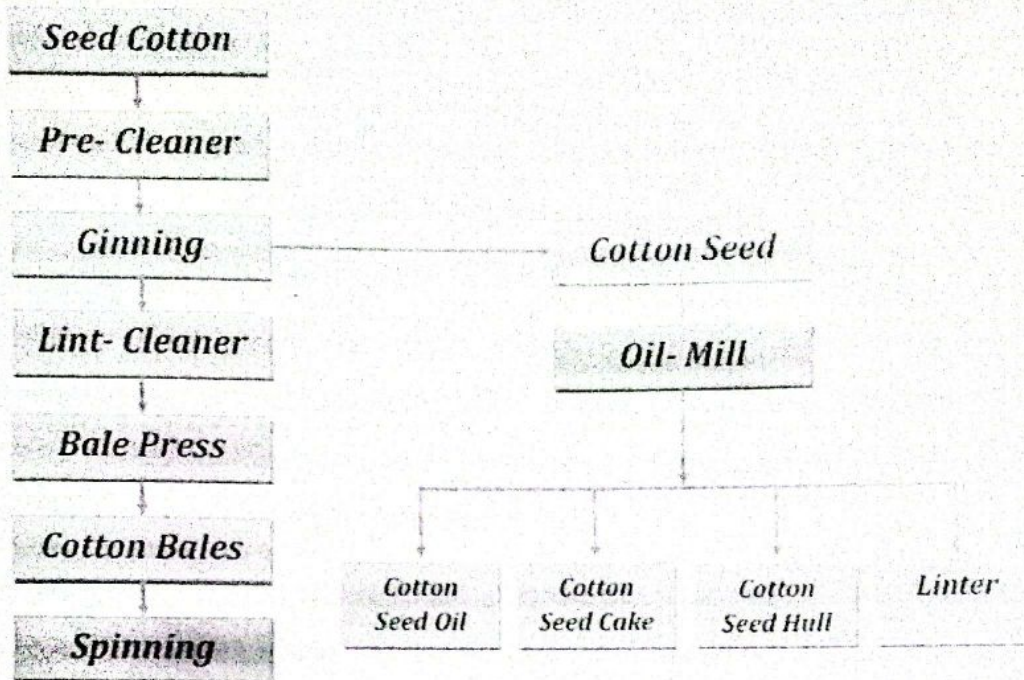
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PRESSING & BUNDLING

::

FINAL PRODUCT - BALES (i.e. PRESSED COTTON LINT)

Raw Cotton Ginning & Pressing Process



Process Description

The major unit operations involved in cotton ginning are: -

a. Separation b. Drying c. Cleaning d. Extraction e. Distributing f. Feeding g. Ginning (gin stands) h. Lint cleaning i. Baling

a. Raw cotton from the storage hall is manually transported to an intake separator where the cotton is screened out and allowed to pass to the next machine. Modern separators have rotating sealed wheels and curved screens which permit the air currents to pass directly to a fan. The separation process involves equipment like the separator, feeding hopper, fan with tubular air ducts.

b. After the seed cotton (raw cotton) is separated from foreign materials (possibly carried over from cotton farms and during transportation), it is then passed to a hot gas

drier. Here the seed cotton that is damp or wet will be dried. If seed cotton is wet some of the lint will be cut by the saws or packed into small dense tufts. The saws may become so clogged that the gin will not run at all. Hot gas dryers can be by passed when ginning during dry weather.

c. Cleaners are types of machines having concave screens or grid bars utilizing beater cylinders and are frequently supplied with a down wash of hot air. Cleaners would, therefore, clean the seed cotton by threshing over screens.

d. Extractors are equipment that employ a toothed "carding" action on the locks of cotton in conjunction with stripper cylinders that beat off the hulls, burs and stems while the lock passes onto a doffing brush. Extractors perform functions of cleaning and extracting of large piece of foreign materials.

e. Cotton gins (ginneries) use mechanical forms of distribution between overhead machinery and the feeders on the gin stands. Each gin stand in a multiple of gin stands is supplied with all the cottons it can handle. Distributors thus supply cotton to all gin stands installed in the ginnery.

f. Feeders are devices, located over each gin stand, that supply the gin saws with a regulated streams of clean, dry seed cotton. Feeder takes the form of regulated rollers with spiked drum and screen.

g. Ginning is the process of separating the seed from the lint. This is accomplished by gin saws. These are steel disks approximately 0.037 inch thick and provided with about seven teeth per inch of periphery. Improved huller gins use saws 12 inches in diameter having from 264 to 282 teeth and running at speeds from 650 to 700 revolutions per minute for maximum capacity. Ribs of tough, highly polished iron are used in cotton gins to form grids through which the saws may pass. Ginning ribs are spaced about 1/8 inch apart, so that the saws carrying the lint may pass while the seeds are excluded. The cotton gins employ rotating brushes to remove the cottons from the saw teeth. After the seed is separated from the lint, it is discharged in to self-cleaning belt and then in to

self-cleaning blowpipe systems. The lint removed from the saws is carried by air blast to the condenser, which consists essentially of a large roller covered with wire screen and smaller wooden roller. From the condenser, the cotton drops in to the press box, over the bottom of which has been spread bale bagging. As the cotton collects in the box it is packed every minute or so by mechanical trampers. After enough has been accumulated to make approximately 750lbs bale, heavy pressure is applied by hydraulic press. When the cotton is under pressure, the bagging is fitted over the sides of the bale and six steel ties are put around it and fastened. Pressure is then released, and the cotton expands somewhat but is held firmly in a compact bale by the bagging and ties. The bale is now complete. The seed produced is bagged in hessian sacks and are dispatched to oil mills. The project is environmentally friendly since it does not emit any toxic chemicals, gasses or Waste water.

3.20 Description of proposed Project i.e Extension of Jullundur Pvt. Ltd.

3.21 Raw Material

List of raw materials is attached at the end of report as Annexure

3.22 Cost and Capacity:

Production capacity of the project is as follows;

Liquid formulation unit	4000 liters/shift
Filing unit plant	4000 units/day
Micronutrients / fertilizers	2000 kg per shift

The total cost of the proposed project is 150 Million.

3.23 Process Description

This process mainly involves processing of agrochemicals for plants protection, plant nutrition and soil conditioning fertilizers.

The processes involve in the proposed project are given below:

Step 1	• Purchase of raw material (Technical grade, material, solvents emulsifier.
--------	---

self-cleaning blowpipe systems. The lint removed from the saws is carried by air blast to the condenser, which consists essentially of a large roller covered with wire screen and smaller wooden roller. From the condenser, the cotton drops in to the press box, over the bottom of which has been spread bale bagging. As the cotton collects in the box it is packed every minute or so by mechanical trampers. After enough has been accumulated to make approximately 750lbs bale, heavy pressure is applied by hydraulic press. When the cotton is under pressure, the bagging is fitted over the sides of the bale and six steel ties are put around it and fastened. Pressure is then released and the cotton expands somewhat but is held firmly in a compact bale by the bagging and ties. The bale is now complete. The seed produced is bagged in hessian sacks and are dispatched to oil mills. The project is environmentally friendly since it does not emit any toxic chemicals, gasses or Waste water.

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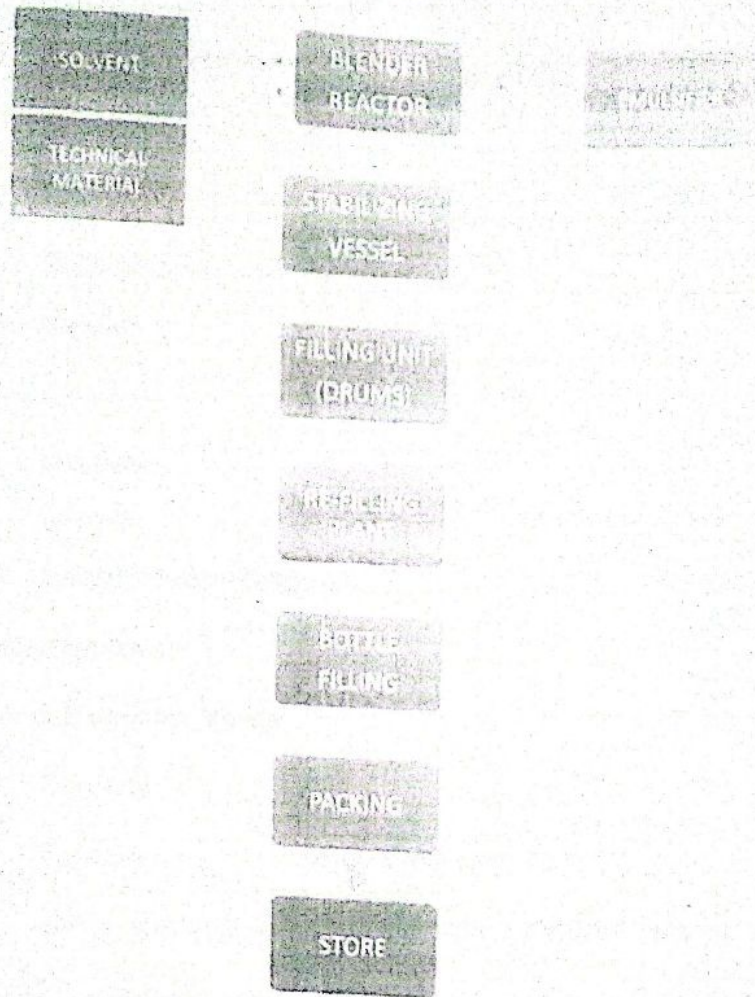
This process mainly involves processing of agrochemicals for plants protection, plant nutrition and soil conditioning fertilizers.

The processes involve in the proposed project are given below:

Step 1	• Purchase of raw material (Technical grade material, solvents, emulsifier).
--------	--

	• Import mainly from China, UAE, Taiwan, Europe, South Africa, Australia and USA • Local Market
Step 2	Warehousing of imported as well as local purchased raw materials according to norms
Step 3	Processing of raw material as per recipe
Step 4	To check the quality as per prescribed standards
Step 5	Packing processed material in consumer packing
Step 6	Warehouse of finished products
Step 7	Distribution of finished products

FLOW CHART OF THE PROCESS ACTIVITY



3.1 Detail of Machinery to be installed

Formulation EC/SL Plant (XYLENE)

• Xylene Tank

Quantity	02
Capacity	200,000 Liters

- **Explosion Proof Receiving Pump along with 5 HP Motor**

Quantity 02
Diameter 2 ½ x 2 inches

- **Explosion Proof Receiving Pump along with 2 HP Motor**

Quantity 01
Diameter 2 ½ x 2 inches
Shower tanks 02

- **Header**

Quantity 02
Diameter 08 inches
Length 5 feet

- **Electric Control Pannel**

Reactor Room

- **S.S Reactor Vessel**

Quantity 02
Capacity 6,000 Liters each

Along with gear box of 15 HP explosion proof motors

- 1) Jackted
- 2) Without Jacket

- **S.S Storage Vessel**

Quantity 02
Capacity 6,000 Liters each

Along with gear box of 10 HP explosion proof motors

- **Explosion Proof Vacuum Pump along with 10 HP Motor**

- **Vacuum Tank**

Diameter 14 inches

Height 04 Feet

- **Explosion Proof** Cargo Lift along with 15 HP motor & 2 Ton Hoist
- **Ducting System** along with air filter water unit equipped with 15 HP explosion motor

Semi Filling Unit

- **Automatic filling unit** along with power conveyer, 5.5 HP Explosion proof motors and solenoid valve
- **Digital Weighing Scale**
 - Quantity 02
 - Capacity 500 kg each
- **Electric Control Panel** 02
- **Main distribution panel** 01

Automatic Filling Machines

- **08 Nozzle Machine** 02 No. with automatic stopper
- **04 Nozzle Machine** 02 No.
- **Complete with belts, shrink sleeve heaters (04 Nos), table**
- **Inkjet Printers**
- **Four Stage Vessels**
- **Eight Pump 2 HP**

Semi-Automatic Herbicide Filling Machines

- **Complete filling machine with four nozzles, storage vessels, tables, shrink sleeve heater** 03 Nos
- **Ducting System**
 - One blower 15 HP
 - Two Blower 5 HP
 - 300 feet complete ducting GI Sheet 20 gauges to all filling machines
 - Showering chamber / air wash 6 x 5 x 5 feet with motors spray nozzle, chimney 16 gauge GI Sheet

Micro Nutrient Liquid Formulation Plant

- **SS Reactor Vessel**
 - Quantity 01
 - Capacity 6000 Liters
 - Along with gear box of 15 HP explosion proof motor without jacket
- **SS Storage Vessel**
 - Quantity 01
 - Capacity 6000 Liters
 - Along with gear box of 10 HP explosion proof motor without jacket
- **Explosion proof cargo lift** along with 15 HP motor and 2 ton Hoist

MacroNutrient NPK Formulation Plant

- **SS Ribbon Mixer** 01
- **Control Panel** 02
- **Grinder 40 HP** 01

Zinc Liquid Formulation Plant

- **Ceminted Well 15 Tons/ L Capacity** 02
- **Control Panel** 01
- **Gear Motor 7 HP** 01
- **Left Pump 2.5 HP** 01
- **SS Storage Vessel** 01
- **MS Acid Storage tank 25 Ton** 02

Organic Mater Formulation Plant

- **M.S Ribbon Mixer with gear motor 40HP** 02
- **Granulator Drum 20FT L 4Ft Dia with motor** 01
- **Grador with 5 HP motor** 01

Humic Acid Crystal Formulation Plant

- **M.S Ribbon Mixer with gear motor 40HP** 01
- **Grindor for raw material with motor 30HP** 02

- **Electric Panel**

02

Zinc Crystal Formulation Plant

- **Reaction well Ceminted 30 HP Motor** 01
- **Water pump 2 HP** 01
- **SS Granulator drum with 15HP Motor** 01
- **Electric Panel** 01
- **Grador with 5 HP Motor** 01
- **Hammer with 30 HP motor** 01

Miscellaneous

- **Blowers** 22 No. with 3 HP Motor
- **Standby Generator** 450 KVA Siemens
- **Main Switch Room** main control panel
- **Transformer** 250 KVA

Firefighting Equipment

- **Firefighting water tank**
 - **Quantity** 01
 - **Capacity** 5000 Liters
- **Water Pump**
 - **Diameter** 3 x 2 ½ inch, 15 HP explosion proof motor
 - **Quantity** 01

3.24 Power Requirement

Transformer of 250 KVA is already installed in existing plant; power will be used from this transformer. Further, generators requirement is given hereunder;

1. 400 KVA (320 KW)
2. 200 KVA (160KW)
3. 100 KVA (80 KW)
4. 50 KVA (40 KW)

2.12 Emergency Response Plan

Emergency response preparedness committee will be formulated consisted of heads of all departments and nominated members. Project Manager will be the head of the team who will chair the Committee. In the case of emergency, he will immediately inform the concerned authorities. HSE Manager will be responsible for on-site HSE management.

First aid facilities will be available at facility which will include; blankets, hot water bottles, sterilized dressing, snake bite kit, cotton and iodine (2% alcohol).

2.12.1 Safety Trainings

Skilled, semi-skilled and un-skilled staff will be provided with proper training about the work and safety practices that need to adopt during the process activities.

2.12.2 Use of Drugs and Narcotics

Drugs and narcotics are strictly prohibited during working hours in working area. Smoking will be only allowed during rest timings at properly isolated places.

2.12.3 Personal Protective Equipment's

Following Personal Protective Equipment (PPEs) will be provided to the workers:

- ✦ Safety Helmet
- ✦ Safety Shoes/Dry Shoes
- ✦ Dust Mask
- ✦ Safety Gloves
- ✦ Safety Jackets
- ✦ Earmuffs
- ✦ Insulating Gloves and Suits

2.13.4 Fire-Fighting

The firefighting system will include CO₂ and dry chemical powder fire extinguishers.

Sand buckets, foam sprays etc. will always remain in ready state.

2.13 Supplies

Following supplies will be available at the project site:

2.13.1 Water Supply

Total water requirement of the proposed project will be construction activities domestic; required domestic uses (drinking). Groundwater will be the source of water for all these requirements. The ground water will be pumped from 110ft. The total water requirement will be 200-500 litres/day which is only domestic water no involvement of water would take place in process activities. For sprinkling and watering.

2.13.2 Electricity

The main source of the energy will be electricity which will be supplied through WAPDA.

2.13.3 Manpower

Around 15-20 workers will be hired on the permanent basis for operational phase. Locals will be given preference while hiring the permanent and temporary staff.

2.14 Management Plans

Following management plans will be implemented to protect the surroundings from damage.

2.14.1 Wastewater Management

Major wastewater in project processing will be produced by the personnel daily uses and for sprinkling purpose to control the dust emissions produces by the process. The wastewater generation rate from domestic activities will be 200-500 litres/day. This municipal wastewater will be treated through settling tanks. So, no hazardous wastewater will be generated or discharged to environment and septic are sufficient for greywater produced by the project. This treated water will be re-used for

sprinkling purpose and to watering trees which will be planted by the proponent to enhance environment around the area and then it will conserve water as well.

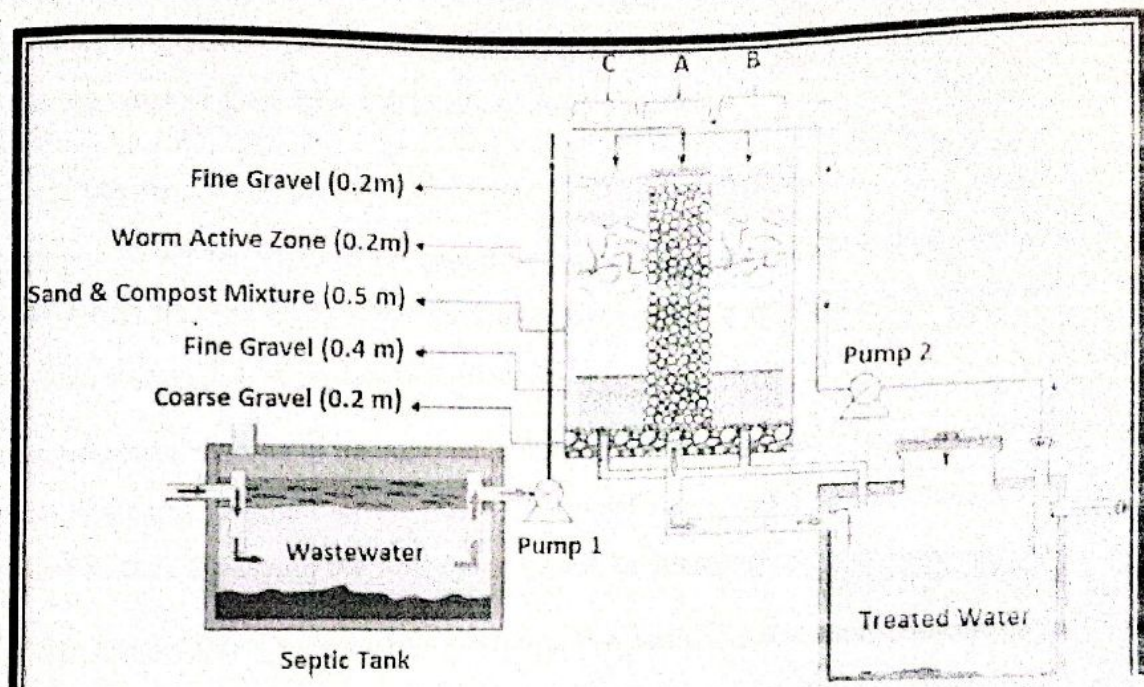


Figure 4: Wastewater Treatment Process

2.14.2 Noise Emission

It is envisaged that during the constructional and operational phase noise may be produced from following activities:

a. Construction

During construction phase noise will be produced from:

- Movement of vehicles
- Operation of equipment and machinery
- Installation of Machinery

b. Operational Phase

During operational phase noise will be produced from:

- Operations of machinery

- Movement of vehicles

During operation phase, machinery may serve as significant noise source. Proper maintenance and acoustic enclosure of noise producing device will help in reduction of noise pollution. Moreover, tree plantation along the boundary of proposed project will further reduce noise as trees have the ability of absorbing noise.

2.14.3 Solid Waste

Most of the solid wastes that will be generated during the daily work will be ordinary household wastes that the workers and the staff generate all-day around, e.g. kitchen and food residues, papers, je soot, personal unneeded articles, etc.

The municipal waste is going to be dumped in the containers (number, capacity and type will be identified and sufficient for the needs) which will be emptied by the municipal trash collection cars. Collecting the trash/garbage will be followed on daily basis.

It is envisaged that 15-20 workers will be hired. The waste generation is considered to be 0.45kg/person/day. The composition of the solid waste will be mainly organic. The generated domestic solid waste will be disposed off as per practices of the area.

2.15.3 Air Emissions

Air pollution from the project is mainly due to emissions of particulate matter and small amount gases including methane (CH_4), sulphur dioxide (SO_2), and nitrogen oxides (NO_x), as well as carbon monoxide (CO).

To keep dust to a minimum, the whole material transport chain is considered by the proponent. Even stationary piles and areas for blending can be sources of wind-borne or agitated dust. Wetting and suppression techniques will be applied to keep dust down. Covering stockpiles and handling areas will be done to reduce dust blow-off as well as to recapture this released dust. And proper ventilation system will be provided to workers to keep labour safe from the methane emissions issues. However, considering the small operation and thereby production, the gaseous emissions will be insignificant.

and will be diluted and dispersed in the immediate vicinity. The built up of gaseous pollutant in the atmosphere is not envisaged.

Water sprinkling will be carried out on the regular basis to suppress the dust emission. The proponent is trying to conserve water by re-circulating the washing water.

2.15 Relocation and Rehabilitation Plan

No human population resides within project area. No structure of any significance (cultural, religious, archaeological, recreational or any other) stands on the land selected for the project requiring dismantling or relocation. No flora or fauna, especially belonging to endangered species is found within a safe distance from the site which will be removed or moved to some other part. Hence, no relocation and resettlement are required. Moreover, there is no dispute and rehabilitation associated with the Client.

2.16 Magnitude of Operation

Total Cost of the proposed project is 15 Million. The main activities involved in establishment of the proposed project are:

- Construction of main hall along with offices
- Purchasing and installation of machinery
- Plantation of plants and grasses

Major machinery is already given in description of project heading.

The costly activities involved in the operation phase of the project include purchasing of raw material, fuel, Operation and maintenance and other complex management. Safety will be assured if these operations are carefully managed. No separate fund allocation is required. However, budget will be allocated for waste management and environmental enhancement. Despite these costs, this project was found to be financially feasible in the feasibility report.

2.17 Schedule of Implementation

The proponent has planned to complete construction of the aforesaid project in a period of 3 months. The schedule of implementation is given below.

Table V: Timeline for Project Development

Sr. #	Activities	3 Months			3 Months			3 Months			3 Months		
		1M	1M	1M	1M	1M	1M	1M	1M	1M	1M	1M	1M
1	Detailed Designing												
2	Basic Governmental Approvals												

1M = Month

ENVIRONMENTAL AND SOCIAL BASELINE CONDITIONS

3.1 GENERAL

This Section of the report covers a comprehensive description of the baseline conditions of the project and its related influential area with respect to the physical, biological and social aspects. In addition to the secondary data, the field survey was carried out and the environmental baseline conditions were established based on socioeconomic interviews, impact location profiles; environmental profile questionnaires and public consultations. A social survey was carried out through consultation with various communities. Interviews were conducted from the locals near the project area. The main intention of these interviews was to acquire feedback associated with the project as well as its impacts on their daily life on short term as well as long term basis.

3.2 PHYSICAL ENVIRONMENT

This section provides a clear description of the physical resources such as topography, soil, climatic conditions, surface and groundwater resources and quality, ambient air quality and geology of the project site but also city as a whole. The description of physical environment of project site is presented in following subsections.

3.2.1 Topography

The district lies between 27°40'-29°16' north latitudes and 60°45'-70°01' east longitudes. The riverain area of the district lies close to eastern bank of the river Indus and Panjnad. The Rahim Yar Khan District is bounded on the north by Muzaffargarh District, on the east by Bahawalpur District, on the south by Jaisalmer district (India) and Ghotki District of Sindh province, and on the west by Rajanpur District.

This district is divided into three main physical features: (a) Riverside area, b) canal-irrigated area, and (c) desert area which is called Cholistan. The Riverside area of the district lies close on the southern side of the Indus river mainly falling in the river bed. The canal-irrigated area lies on the south and is separated by main Minchan Bund. The

approximate height of the irrigated area is 150 to 200 meters (490 to 655 ft) above sea level. The third part of the area, called Cholistan, lies in the south of the irrigated tract up to the Indo-Pak border. The surface of the desert consists of a succession of sand dunes rising at places to a height of 150 meters (492 ft) and covered with the vegetation peculiar to sandy tracts.

3.2.2 Soil

The project site comprises mainly silty eroded loess and shallow residual soils with some gullied land. Deposits of Lacustrine clay are found near the project site. The soil in Rahim Yar Khan District was overall clay loam except at Bahadar Chowk where it was sandy clay. The features of soil were almost similar in clay loam soil collected from two sites. The soils of the project area consist of loess, old alluvial deposits, and recent stream valley deposits. The soils consist of mainly medium textured with considerable percentage of clayey material. Most of the soils are deep, except those formed in situ from underlying rocks. The soils, like in the entire country are sodic in nature.

3.2.3 Seismicity

Seismic Zoning Map of Pakistan showing Proposed Project site area is presented as **Figure - 7**, indicating zones according to the Building Code of Pakistan - 2007. The city, the project site falls in Seismic Zone 2A according to the Seismic Zoning Map of Pakistan.

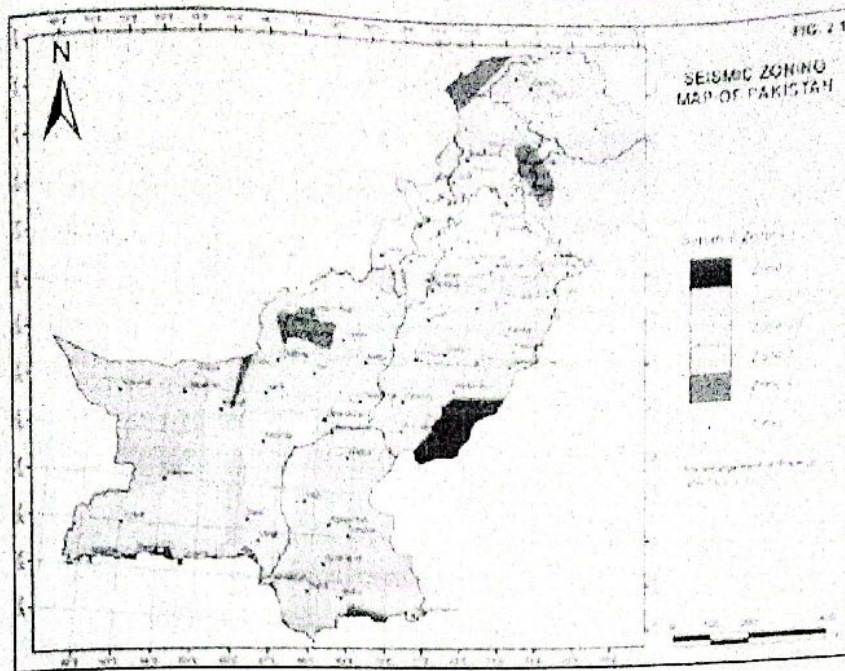


Figure 5: Seismic Zoning Map of Pakistan

3.2.4 Geography

The Rahim Yar Khan District is bounded on the north by Muzaffargarh District, on the east by Bahawalpur District, on the south by Jaisalmer (India) and Ghotki District of Sindh province and on the west by Rajanpur District. This district is divided into three main physical features i.e., riverside area, canal-irrigated area, and desert area which is called Cholistan. The Riverside area of the district lies close on the southern side of the Indus river mainly falling in the river bed. The canal irrigated area lies on the south and is separated by main Minchan Bund. The approximate height of the irrigated area is 150 to 200 meters (490 to 655 ft.) above sea level. The third part of the area is called Cholistan, lies in the south of the irrigated tract up to the Indo-Pak border. The surface of the desert consists of a succession of sand dunes rising at places to a height of 150 meters (492 ft.) and covered with the vegetation peculiar to sandy tracts.

3.2.3 Climate

The climate here is "desert." During the year, there is virtually no rainfall in Rahimyar Khan. This climate is considered to be BWh according to the Köppen-Geiger climate

classification. In Rahimyar Khan, the average annual temperature is 26.2 °C. Precipitation here averages 101 mm.

Average temperatures and precipitation

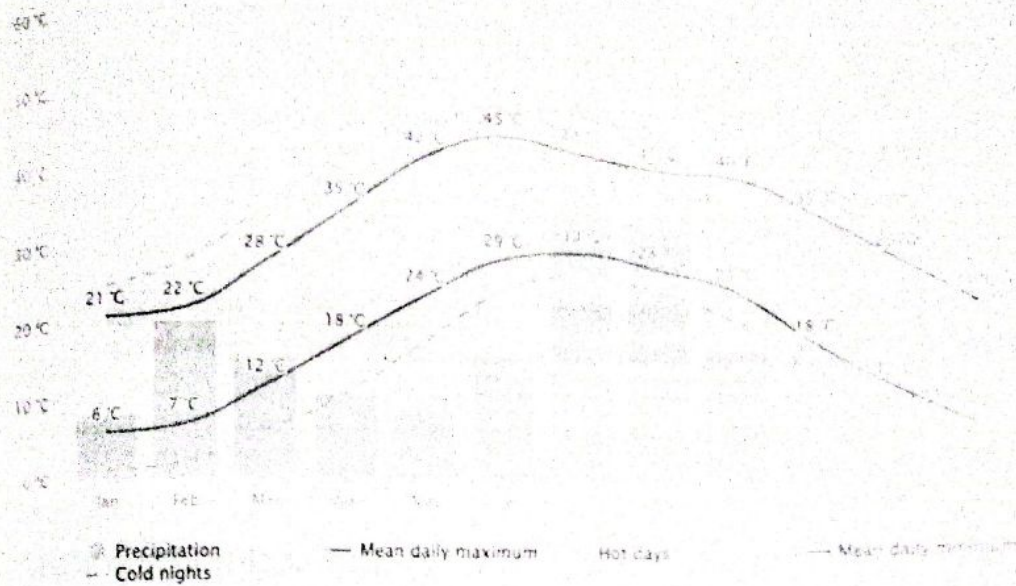


Figure 6: Average Temperature and Precipitation Map

The "mean daily maximum" (solid red line) shows the maximum temperature of an average day for every month for RYK. Likewise, "mean daily minimum" (solid blue line) shows the average minimum temperature. Hot days and cold nights (dashed red and blue lines) show the average of the hottest day and coldest night of each month of the last 30 years.

Cloudy, sunny, and precipitation days

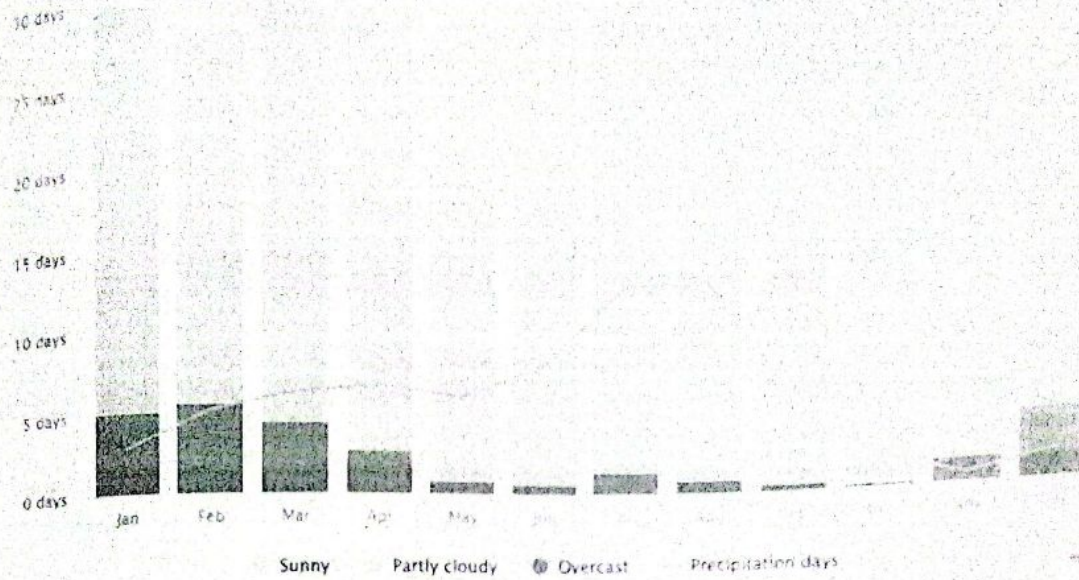


Figure 7: Cloudy Sunny and Precipitation Days Map

Maximum temperatures

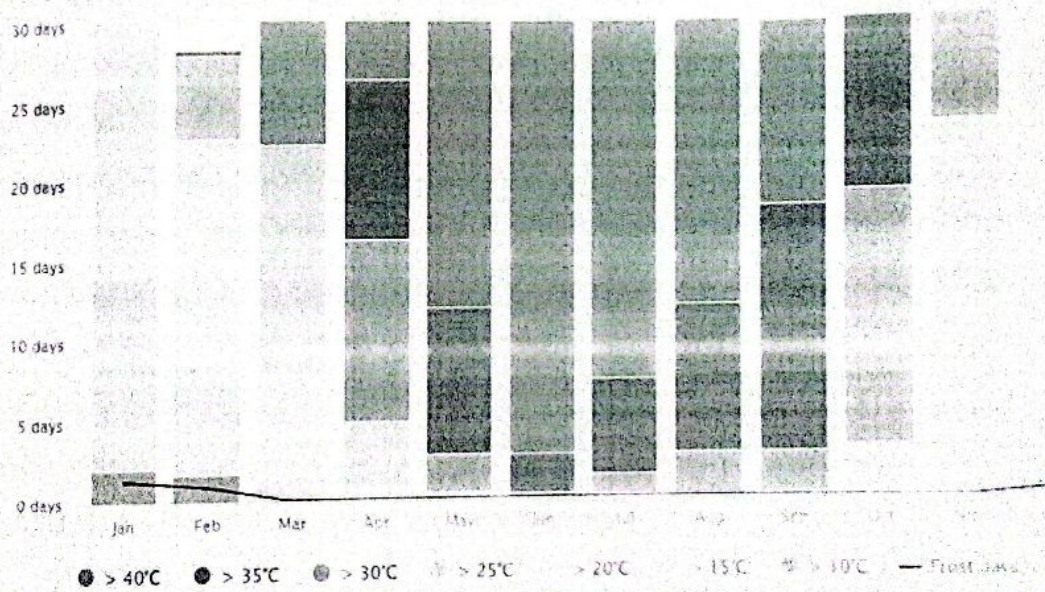
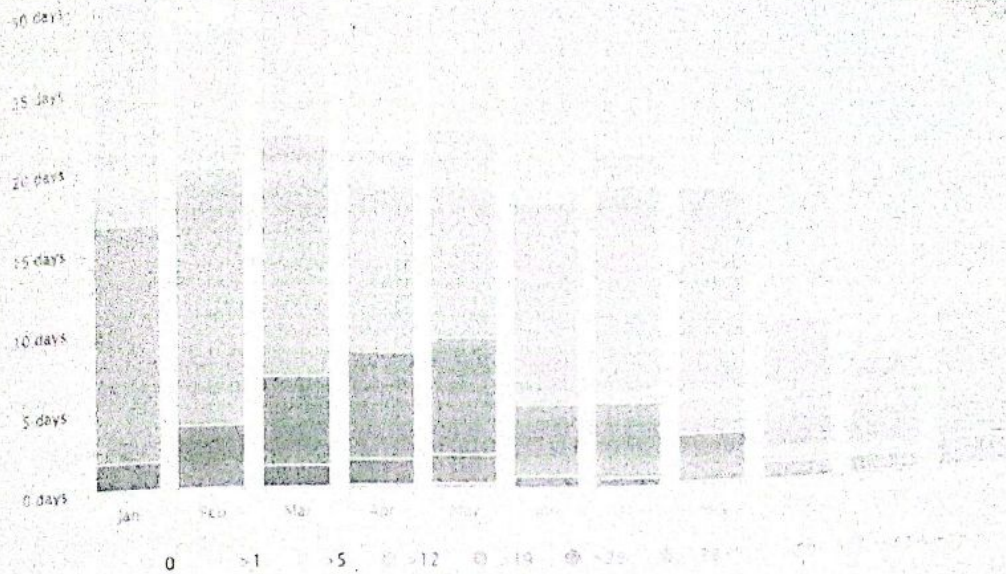


Figure 8: Maximum Temperature Map

Wind speed



3.2.4 Noise Level

Noise is described as an unwanted sound emitted from un-avoidable sources of anthropogenic activities. Daily based natural induced sources of noise are rare to none but human induced noise sources are plenty and un-avoidable. Physically, there is no distinction between sound and noise. Sound is a sensory perception and the complex pattern of sound waves is labelled noise, music, speech, low altitude aero plane flying etc. Environmental noise is a common cause of hearing loss of people indulged in industrial activities. Noise pollution in the city is on the rise with most residents complaining that the noise is becoming a public nuisance.

Project Site:

Noise level was monitored at the time of field survey.

3.2.5 Ambient Air Quality

The degradation of air quality in all the large cities is a major environmental concern these days. Air pollution levels in urban centres have either crossed safe limits given in the PEQS or have reached the threshold values.

About 60 to 70 % of the deterioration in the air quality is due to the vehicular emissions.

The parameters which have proved to be the major threat are particulate matter and concentration of oxides of nitrogen that are relatively higher in all the large cities of Punjab. The main exhaust gases include SO₂, NO₂, CO, etc. It was however observed during the visit that environment of the project area is clean.

To record the baseline ambient air quality of the RYK, three samples were collected at different location to observe the level of CO, SO₂, NO₂ and Particulate Matter (PM₁₀)

Project Site:

Ambient air quality was monitored during field survey of site. The results of the samples are within the PEQS limits.

3.2.5 Surface water

The surface water is of good quality. All the parameters are within the PEQS.

3.2.6 Ground water

Underground water is available in large quantity and its quality is very good. The underground water is supplied by pumping system (motor pump, tube well, hand pump) to the residents of the area. The underground water is of good quality and all its parameters being tested are within the WHO guide lines and the water is fit for drinking purposes.

3.3 BIOLOGICAL ENVIRONMENT

Natural capital of a country mainly includes all of the country's wilderness areas and scenic landscapes, including also with their associated flora and fauna. Pakistan has a total of nine major ecological zones. The contribution of the "Natural Capital" is recognized at three distinct levels: species, genera, and communities (habitat and ecosystem) both collectively and within each level, the range or variety of the resources are referred to as the "Biological Diversity". The term has relevance for each of Pakistan's administrative units district, province, and particularly country. The more the number of species, genera, and habitats and ecosystems present within these units, the greater is said to be the

Biodiversity. The biodiversity of the area, with this background, is discussed as under.

3.3.1 Flora

The flora of the district characterizes two major ecological divisions, northern and southern. The botanical life found in the northern half is like that of the rest of the irrigated tracts at central Punjab. The arid land, referred to as the Cholistan desert, has a lot of wild life including Wild cats, the Chinkara deer, a variety of pigs, jackals, foxes, badgers, porcupines, squirrels, gerbils, wild rats, poisonous snakes, hog deer, blue bulls and many more.

Project Site:

No threatened or endangered species and medicinal plants are present in the project area. No vegetation or plants will be removed due to commencement of project as the site was clear and no flora existed there.

3.3.2 Fauna

The fauna of the District is mostly indigenous restricted, like the vegetation, but similarly varied and interesting. The rugged and rough terrain, low rainfall, the scanty cover of vegetation and the burning passions of the increasing number of hunters, all have their share in limiting the animal kingdom in the District. The riverine offers a better environment than elsewhere though the hills support a more interesting wildlife. Urial and Chinckara are spot aids while wild bores are found in the Salt Range. Wolves, Foxes and Wild Cats are also found. Hare is fairly common. Chikor grey and black Partridge are also found in the parts of the district. Migratory ducks like Teal Pintail and Mallard and some geese visit during winter.

3.4 SOCIAL & CULTURAL STUDY

3.4.1 Demographic Profile

The Demographic Studies are the major source of any city's Socio-Economic profile. Demographic Studies relate to population. Population studies are extremely important from Town Planning point of view. Until and unless we know about population in detail we cannot do successful planning. All aspects of population, such as sex-age composition, trend of migration, social, cultural, political, economic and administrative works, values and facilities have to be related to planning considerations and decisions. Individuals are the raw material of society, therefore, society is directly affected by size, growth, composition and distribution of its individuals. The term population refers to the number of individuals living within a geographical area at a given time.

3.4.2 Health Facilities

The medical facilities are available within city as few very good hospitals are situated in Rahim yar khan city like Al-shifa clinic, sheikh zayd medical college, Abdullah Neuro surgen clinic. In Rahim-yar khan city whole area near hospitals are full of clinics and medical store thus providing very good medical facilities to the people of area.

3.4.3 Tribes & People

The principal tribes of the district are the Gujjars, Janjua's Awans, Gakhars, Kashmiri, Khokhars, Pathans, Lilla Qureshis, Phaphra Mughals, Maliar, Syed and Punjabi Shaikh. The major clans of the Jats are the Bhukar, Cheema, Dhamial, Ghuman, Gondal, Hal, Khingar, Khoti, Khatarmal, Mikan, Nagyal, Sipra, Thathaal, and Toor. The major clans of the Rajput are the Akra, Bharat, Bhakral, Bhatti, Chauhan, Chib, Janjua Rajput, khokhar Rajputs, Jalap, and Sohlan.

3.4.4 Customs and traditions

Rahim yar khan has very rich history and colorful culture. it is situated



between the cities of Bahawalpur and Ghotki. People are of good and harmless nature. They respect their tradition and do according with traditional norms. They take active part in the happiness and grief of each other and are very hospitable. People tell stories of traditional tales like Hir Ranjha, Hir Waris Shah and music is also full of colors.

3.4.5 Recreational Resources

RYK consists of agricultural lowland plains, lakes, and hills. Parts of the Thal desert touch the district, which has a breadth of over 70 miles (110 km) and is situated between the Bahawalpur and Ghotki.

3.5 Occupation of Respondents

Majority of the respondents (26%) belongs to the business, 33% have their own business, 10% daily wagers, 13% attached with Govt. employee, 15% shopkeepers and remaining 18% are private employees. During survey, efforts were made to interact with people representing all walks of life. The detailed graphic representation of occupational status is given below:

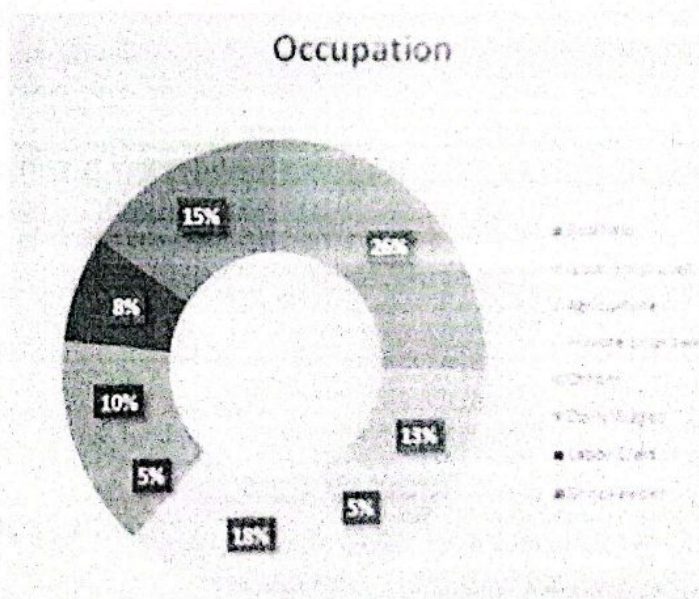


Figure 3.5: Major Occupation of Respondents

3.5.1 Personal Income

Based on the sample survey results, as the figure shows that nobody was earning less than 20,000 rupees, 69% of respondents fall within the income range of 20,000 - 25,000, 23% respondents earn 30,001 - 40,000 while only 8% of the respondents earn within the range of 40,001 - 45,000.

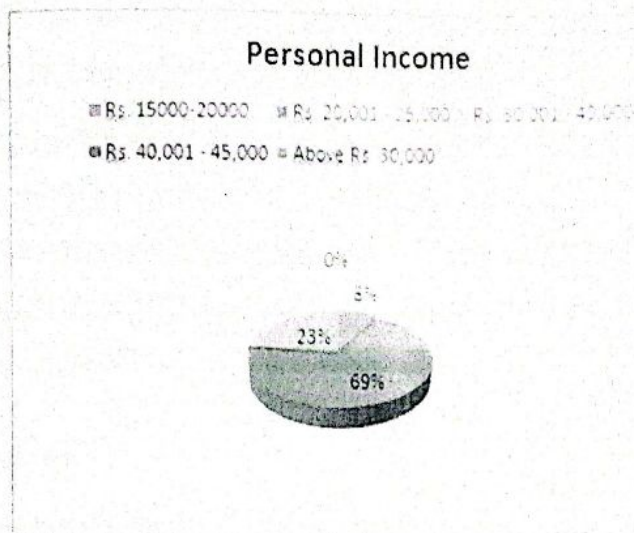


Figure 3.3: Personal Income

3.6 Lab Reports of Environmental Analysis

Testing of different parameters was done from a certified laboratory named SEAL to check the quality of different environmental parameters. The copy of the lab reports of these parameters (ambient air analysis, water quality analysis and noise) is attached at Annexure of this EIA Report.

3.7 Suitability of Site:

Comprising all assessment of above baseline data there will be no significant ecological/ environmental impact expected in and around the present selected project site, hence it is suitable for the proposed project.

IMPACT ASSESSMENT METHODOLOGY

In the sections below the impacts assessment methodology for the project has been defined. It includes the magnitude, the extent of the impact and the nature of the anticipated impact.

4.1 Methodology

This Section discusses the project's potential environmental impact on the area's geomorphology, soil, water resources, air, biological resources and socio-economic condition and, where applicable, identifies mitigation measures that will reduce, if not eliminate, its adverse impact. The assessment carried out in the sub-sections below is based on potential impacts on overall environmental receptors within the project area. Impacts are evaluated on the basis of magnitude, immediacy and sustainability. Evaluation criteria are as follows:

4.1.1 Magnitude

The magnitude of the impact includes the type of impact project will cause such as; direct, indirect and cumulative.

4.1.2 Immediacy

Immediacy focus on the following parameters:

- Temporal Extent (during construction and after construction)
- Spatial Extent (local, widespread)

4.1.3 Sustainability and Reversibility

It focused on the following parameters:

- Mitigability (Fully/Partially)
- Monitoring (Fully/Partially)

4.2 Objectives

Following are the objectives of screening out all significant environmental and social impacts as well as mitigation measures need to reduce the severity of the impact up to the extent possible:

- To find different alternatives and ways of carrying out the project activities
- To enhance the environmental and social benefits of proposed project
- To avoid, minimize and remediate the associated adverse impacts
- To ensure that residual adverse impacts are kept in acceptable limits

4.3 Purpose of Mitigation Measure

The basic purpose of mitigation measures is to reduce the impacts of the proposed project establishment on the socio-environment up to the maximum possible extent. The mitigation measures are suggested based on the following parameters:

4.3.1 What is the problem?

The proposed project is the Extension of M/S Jullundur Pvt. Ltd. The nature of the land is defined as the open land. So, the no major impacts associated with the development of project during the operational phase expect air emissions, solid waste management and wastewater disposal issues may arise.

4.3.2 When problem will occur and when it should be addressed?

The impacts from the project will occur during operation phase it will include; noise generation, solid waste management, wastewater management and disposal, etc. These all problems should be addressed on-site where they are being generated, to avoid the residual or adverse impacts.

4.3.3 Where problem should be addressed?

The problem will be generated from the project. So, it should be addressed on source i.e. at site within the same timeframe.

4.3.4 How the problem should be addressed?

Proper mitigations measures will be provided according to the nature of the impacts/problems. Like for dust emissions sprinkling of water will be done. For solid waste proper solid waste management and disposal practices will be adopted. To manage liquid waste proper treatment will be done before discharging into the receiving body.

4.4 Ways of Achieving Mitigation Measures?

Following ways will be adopted to reduce the impacts of the project.

4.4.1 Changing in Planning Design

In the project area or its vicinity no ecologically important area is present. However, no human settlement or infra-structure will be dislocated due to the project. So, no adverse impact is being envisaged. Hence, there is no need to change the design of project is required.

4.4.2 Improved Management and Monitoring Practices

The anticipated impacts had been reduced significantly by adopting better management activities, as it will be carried out for betterment of the environment while monitoring will be conducted to keep the sources of the pollution and nuisances in check.

Following practices that need to be adopted to reduce the impact significantly

a. Compensation in Money Terms

There is no damage envisaged to fauna, flora or any other biological source due to the project. So, no compensation in monetary terms will be needed as the land is under undisputed lease by the Client and the land ownership documents are attached at Annex of this EIA Report.

b. Replacement/Relocation/Rehabilitation

The proposed project is located in open land where there is no sensitive area population or natural resource is present which could be impacted due to the project. No replacement, relocation and rehabilitation are requiring for the proposed project establishment.

4.5 Impacts Associated with Project Location

The proponent has selected the site owing to the following reasons:

- The site is undisputed and under the lease of the proponent
- There is no community or human settlement present on-site
- There is no fauna or flora (particularly belonging to an endangered species) present on-site except crops
- The site has accessible road network.
- There is no ecologically sensitive or declared protected area (PA) like; Reserved Forest, Fish Hatcheries, Territorial Waters, Wildlife or Game Reserves. Moreover, there is no socio-cultural significant structure (historical or archaeological site or religious structures; Masjid, temples, etc.) located within 10km of the selected site that could be impacted

It can be concluded in view of these reasons that the selected site is best suited for the project and will not pose any adverse impact or threat on any component of the environment.

5. SCREENING OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

In this Chapter anticipated impacts and mitigation measures for the project have been discussed below in details. The purpose of conducting an EIA Study is to provide information about the general environmental setting of the project area, various impacts has been identified based on project activities on the bio-physical, socio-economic and cultural environment, if any, recommendation measures are suggested accordingly. As well as site specific environmental mitigation measures and an Environmental Management Plan (EMMP) for the project has been developed to ensure factual assessment of hazards and risks and to suggest the mitigation measures accordingly. moreover, to address the requirements of EPA Punjab. The assessment of impacts of proposed project has been carried out for both positive and negative aspects. It is expected that the project activities will not have any significant adverse impact on the environment.

5.1 Adverse Environmental and Social Impacts

Construction and everyday operations would involve the use of mechanized equipment with the potential to release the hazardous materials, such as particulate matter, oil, grease and gasoline in surroundings. The severity of the adverse impacts associated with proposed project founding will be reduced up to significant level by adopting best management and monitoring practices. Management and monitoring practices are given below in details below under each specific impact.

5.2 Impacts during Designing phase

Following impacts are foreseen to be occurring during the designing phase of the proposed project:

Impacts of Project Location

a. As discussed in Chapter 2 (Project Description) of this EIA Report the proposed project is located in RYK. There will be no long-term, high and adverse impact anticipated due to project at this location. The selected site is owned by the Client and there is no dispute associated with the land. Moreover, the area is not inhabited by any ecologically important or protected flora and fauna specie as well as within 10 km vicinity of the project area no archaeology and historical important site is located.

It can be concluded in view of these reasons that the selected site is best suited for the project and will not pose any adverse impact or threat on any component of the environment.

Impacts of Project Design

b. The proponent has planned to install a plant for processing and formulation of agrochemicals with incorporation of imported technology. The design, if maintained and operated in an environment-friendly manner, is expected to cast positive impact on the environment and will not pose any adverse impact or threat on any component of the environment.

The design of the proposed project will be sustainable and will follow the principles of safe and sound process. The design of the project will follow the safe supportive and environmental friendly designs such as; maximum availability of ventilation system keeps the labour safe from gaseous emissions and get proper breathing conditions etc. Moreover, the all designing is done keeping in consideration of all the technical standards to avoid adverse impacts on the environment and society.

Ecology

c. Currently, the proposed project is in the industrial zone. Due to the establishment of the proposed project no tree will be removed as the trees are present at the boundary of the project area. So, no impact is being envisaged. In the case of the removal of the trees, the removed trees will be planted in the designated green areas.

d. Geology

The geology of the proposed project area is plain. The proposed project might have some impact envisaged on the topography of the area but the site is reserved for the project and natural resources are needed of the time to cope with growing demand hence all the activities will be done under the environment friendly conditions.

5.3 Impacts during Construction Phase

No constructional activities being involved in the project, since it is extension project and no such huge infrastructure is needed, except hall and offices rest shelter etc, hence there will be no impact regarding constructional phase.

5.4 Impacts during Operational Phase

The environmental and socio-economic impacts associated with the operation phase have been studied in detail. Following is the detailed description:

a. Water Consumption and Wastewater Production

In aforesaid project, wastewater will be produced from washing process. Approximately 1000 liters to 1500 liters wastewater will be produced from the process. Further, water will be used for sanitation purpose and sprinkling on site to avoid dust emissions and the daily consumption of water is estimated as 300-600 litres/day, major wastewater in project processing will be produced by the personnel daily uses and for sprinkling purpose to control the dust emissions produced by the process. The wastewater generation rate from domestic activities will be 200-500 litres/day. The wastewater will be treated through wastewater treatment plant.

Nature of Impact

The nature of the proposed impact will be direct, low, short-term and hence is not significant.

Mitigations

Following mitigation measures will be adopted:

- Freshwater conservation techniques will be adopted to ensure sustainable development
- Monitoring of effluents will be carried out as per requirement of Self-Monitoring and Reporting Tools (SMART) to ensure compliance with the NEQS
- It will be ensured that no solid waste will be entered in the wastewater
- There is no surface water body present in the project proximity that could be impacted
- Septic will be constructed to treat municipal wastewater

b. Noise

This is proposed project having proposed production will be only 74.5dba. However, there will be increase in the activities, which may result in the increase in ambient noise levels. Exposure to noise levels, above threshold limit value may have detrimental effect on the workers' health. The adverse effects of high noise levels on exposed workers may result in:

- Annoyance;
- Fatigue;
- Temporary shift of threshold limit of hearing;
- Permanent loss of hearing; and
- Hypertension and high blood cholesterol, etc

the following source of noise are being identified

- machinery
- Transport machinery etc.
- Transportation of goods, etc.

Nature of Impact

This impact is considered to be low, long term, temporary and significant.

Mitigation Measures

Noise management and mitigation plan should follow the underlying strategy

- Standard specified equipment will be used. The equipment will be in good working conditions, properly lubricated and maintained to keep noise within permissible limits.
- Operation will be carried out efficiently to help in reducing noise.
- Tall trees with heavy foliage shall be planted along the boundary of project area which will act as a natural barrier to propagating noise.
- Regular noise monitoring will be carried at project site to check compliance with prevailing rules.
- Personal Protective Equipment's (PPEs) like ear plugs/ear muffs will be provided

c. Waste Management

Improper disposal of the solid waste generated during the operational phase of proposed project can pose a health hazard, pollute soil, surface and ground water. Domestic solid waste will be disposed-off by using standard practices, the process will waste consists of materials that must be removed to gain access to the resource.

Proper implementation of the mitigation measures will ensure that the residual impact from improper management and disposal of the waste is minimal. Monitoring and inspection will be undertaken to ensure compliance and minimize any residual impact.

Nature of Impact

This impact is considered to be low, long-term, temporary and significant.

Mitigation Measures

Following mitigation measures will be adopted.

- Waste generation will be minimized by adopting waste management strategy of reduce, reuses and recycle
- A waste management plan will be prepared, implemented and monitored for the safe collection, storage and treatment/disposal of the building waste
- Quantities of waste disposed, recycled, or reused will be logged on a Waste Tracking Register
- Records of all waste generated will be maintained
- Training will be provided to personnel for identification, segregation and management of waste
- Various waste containers for waste collection will be placed at appropriate locations.
- Waste management inspections will be undertaken on a regular basis of onsite waste management and of waste disposal contractors to ensure that the waste management procedures are being followed
- Monitoring measures will include:
 - ✓ Record of all waste generated
 - ✓ Quantities of waste disposed, reused at site or sold should be logged on the waste tracking register
 - ✓ Audit of waste management on annual basis



- ✓ The areas around the project boundary and access road, should be periodically inspected to verify that no project related waste is scattered in these areas

d. **Air Emissions**

The air emissions from the processing will release dust and particulate matter and some gaseous emission in the environment. If these emissions are not handled may damage the health of workers, may be the cause of public nuisances and the wear & tear of the shelling machinery is fast.

Nature of Impact

This impact is considered to be low, long-term, temporary and significant.

Mitigation

Following mitigation measures will be adopted:

- Development of thick green belt in 7.5 m safety barrier
- Removal of vegetation from virgin area, only when immediately required for project.
- Adoption of wet process with dust arrestors to control dust generation during transportation.
- Water sprinkling.
- Periodic maintenance of machinery.
- Periodic maintenance of haul roads
- Regular water sprinkling on haul roads.
- Provision of fixed water sprinkling arrangement at site

- Provision of dust masks to all the workers exposed to dusty operations
- Periodic monitoring of ambient air quality in the mine lease area and in nearby villages to assess the efficacy of air pollution control measures

Emergency Response

Incidents and accidents may take place unexpectedly during project operations. No matter how effective, strong and efficient the mitigation measures for all adverse impacts, especially the safety issues may be adopted. These may include fire hazard which may poses a serious threat.

Nature of Impact

This impact is considered to be low, long-term, temporary and significant.

Mitigation

Following mitigation measures will be adopted.

- Adequate fire hydrant system will be available on site.
- Flammable materials will be prohibited in the premises.
- Adequate training of workers on use of fire-fighting system to deal with the situation.
- Emergency call service will made available

1. Occupational Hazards

It includes occupational hazards like physical injuries arising from accidents such as being hit by falling weak structures, being overrun by heavy equipment. The major safety issues in operational phase are:

- Electrical Hazards
- Machine Guarding

- Eye, Head and Foot Protection
- Fire and Explosion Hazards
- House-Keeping Issues

Nature of Impact

This impact is considered to be low, long-term, temporary and significant.

Mitigation Measures

- Care will be taken to properly ground and insulate all equipment
- Proper machine guarding, which is critical for the prevention of injuries to workers by isolating them from moving machinery, will be provided
- Fire-fighting equipment will be available, and their locations will be clearly marked
- Workers will be told and encouraged to use PPEs as may be standard and
- Workers' awareness and safety wall chart showing safety symbols will be displayed.
- First Aid Box will be kept in easy approach of all in case of any injury or mishap
- Basic medical and health facilities will be provided to all employees
- Safety and warning devices such as reflectors, lights, etc. shall be installed at designated spots
- Visual monitoring of hazards and accidents will be done in order to control the potential hazard
- Identification and assessment of the risks from health hazards in the workplace;
- Surveillance of the factors in the working environment and working practices which may affect workers health, including sanitary installations
- Planning and organization of work, including the design of workplaces, choice, maintenance and condition of machinery and other equipment and substances used in work.

- Protective tools like dust masks, ear plugs, helmets, safety boots, radium aprons/jackets, goggles, hand gloves etc. will be provided to mine workers.

Table 6: Impact

1	2	Pre-construction		Construction Phase					Operation and maintenance			
		3	4	5	6	7	8	9	10	11	12	13
Environment components	Project activity	Land acquisition	Site clearing	Site preparation	Excavation/ Temporary structure	Transportation of material	Civil/construction work	Influx of construction	Transportation of material	Movement of energy	Operation of cooling system	Pollution control
Resources utilization	Fuel	0	0	0	0	0	0	0	-1	-1	0	0
	Electricity	0	0	0	0	0	-1	-1	0	0	0	0
	Water	0	0	0	0	0	-1	-1	0	-1	-1	0
	Construction material ex. Stone	0	0	0	0	0	-1	0	0	0	0	0
	Land	0	0	0	0	0	0	-1	0	0	0	0
Air	Air Quality	0	0	-1	-1	-1	-1	-1	1	-1	1	1
	Climate	0	0	0	0	0	0	0	0	0	0	0
Water	Alteration of surface/ ground water bodies	0	0	0	0	0	0	0	0	0	0	0
	Alteration of surface run-off and inter flow	0	0	0	0	0	0	0	0	0	0	0
	Alteration of Hydraulic Regime	0	0	0	0	0	0	0	0	0	0	0
	Contamination	0	0	0	0	0	0	-1	0	0	1	0
Soil/Land	Soil erosion	0	0	0	-1	0	0	0	0	0	0	0
	Contamination	0	0	0	0	0	-1	-1	0	1	1	1

Noise Occupational Health & Hazards	Alteration of Soil properties/Soil Quality	0	0	-1	-1	0	-1	-1	0	1	1	1
	Land topography	0	-1	-1	-1	0	0	0	0	0	0	0
	Noise pollution	0	0	-1	-1	-1	-1	-1	-1	-1	1	1
	Health	0	0	-1	-1	-1	-1	0	1	0	0	0
	Sanitation	0	0	0	0	0	0	-1	0	0	0	0

5.5 Potential Environmental Enhancement Measures

5.5.1 Tree Plantation

Tree plantation within and outside the premises is a potential environmental enhancement measure. Native flora will be planted in the specified green zone which will have the maximum capacity to reduce noise pollution and tolerance index of these species are more than 10. Some floral species like roses and other ornamental evergreen plants will also be introduced which will enhance aesthetic beauty. The proponent will also make arrangements for protection and maintenance of trees.

5.5.2 Social Enhancement Measures

Following measures will be adopted to improve the socio-economic condition of the area:

a. Employment/Poverty Alleviation

The employment opportunities in the project area will be increased due to the founding of project at the proposed location. In totality, the overall economic conditions of the area will be improved due to the establishment of the proposed project.

b. Local Economy

The employment opportunities and/or income sources generated by the project operation will be long term in nature. These will be enhanced once the operations phase

The local economy will experience a slight boom during development and construction period.

GreenTech Services Pvt. Ltd.

The local economy will experience a slight boom during development and
operation period.

ENVIRONMENTAL MANAGEMENT AND MONITORING PLANS

This chapter presents the implementation mechanism in the form of an Environmental Management and Monitoring Plan (EMMP) for the environmental and social mitigation measures identified during socio-economic survey as given in Chapter 5 of this EIA Report. The existing environmental regulations in Pakistan for the establishment of the mills comply with the potential adverse environmental impacts resulting from the project. Efforts are minimized as practicably as possible. Implementation of on-going environmental monitoring programs will enable the assessment and modification of the Environmental Management Plan (EMP). This EMMP provides the delivery mechanism to address the adverse environmental as well as social impacts of the proposed project during its execution, to enhance project benefits and to introduce standards of good practice to be adopted for all project works.

Environmental management is carried out in all stages of the project development namely, designing, construction and operational phases. The key stakeholders in the environmental management activities are: Proponent, Contractor, Local Government Authorities, customers and to some extent general public. The EMMP for the management of the identified environmental impacts associated with this project consists of three main components:

1. Implementing the Impact Mitigation Plan
2. Monitoring the implementation of the EMMP
3. Institutional Framework for Monitoring, Reporting and Supervision of EMMP

4.1 Objectives

This EMMP aims at ensuring the application of the mitigation and monitoring measures, needed to reduce and control the various adverse environmental and social impacts associated with the implementation of the aforesaid project. The key objectives of the EMMP are summarized below.

- Minimizing any adverse environmental, social and health impacts resulting from the project related activities
- Implementation of on-going environmental monitoring programs
- Periodic review of the EMMP to allow for improvement
- Ensure that all stakeholder concerns are addressed, if any
- Overall, this EMMP aims at ensuring the application of the mitigation and monitoring measures needed to reduce and control the various environmental and social impacts associated with the implementation of the proposed project
- Provide the mechanism for taking timely action in the face of unanticipated environmental or social situations
- Identify environmental as well as social training requirements at various level

6.2 Components of EMMP

The EMMP consists of the following components

- Institutional arrangements
- Mitigation plan to reduce the severity of associated impacts
- Monitoring plan to monitor the impacts and their severity
- Environmental and social trainings to raise awareness

6.3 Environmental Management Team along with their Roles and responsibilities

This section describes the organizational structure required for managing the environmental and social aspects of the proposed project as well as it describes the roles and responsibilities of various authorities. The Table 08 emphasize the institutions which are responsible for proper implementation and effective supervision.

Table VII: Environmental Training Program

Audience	Trainers	Contents	Schedule
Selected Management Staff	Subject Expert	Key finding and implementation of suggested mitigation measure	Biannually Basis
Personnel	HSE Officer	Mitigation measures especially related to fire fighting, health, safety and environment (emissions & discharges), etc.	Monthly Basis
Technical Staff	HSE Officer	Waste disposal, vehicle movement restriction and other mitigation measures	Quarterly Basis
Other Staff	HSE Officer	Waste disposal, resource conservation and other mitigation workers	Monthly Basis

6.4 Proposed EMP reporting and reviewing procedures

The primary responsibility for monitoring the potential impacts during the construction and operation of the proposed project will be with responsibility of the project proponent. However, the proponent contracts a third party (e.g. Environmental Greentech Services) to undertake independent monitoring required. The construction contractor will be responsible for the implementation of the construction EMP.

6.4.1 Auditing

The EMMP, its inherent procedures and controls should be audited in the early and middle stages of development and on completion of the project. A suitably qualified auditor will carry out auditing of the EMMP. Appropriate action shall be taken to ameliorate any deficiency in implementation of the EMMP and any elements that prove to be unworkable.

Management Responsibilities

A number of parties have responsibilities in relation to the implementation of the EMP. All project staff has a responsibility and must adhere to the procedures outlined in the EMMP at all times. The institutional capacity and the responsibilities of the management are given below:

Table VIII Institutional Capacities

Role	Responsibilities
Proponent	Following will be responsibilities of the Proponent: » Implementation and monitoring of the EMMP with respect » Provide all supervisory and management staff with an awareness and understanding of their responsibilities under this EMMP » Provide appropriate and adequate resources to allow for the effective implementation and maintenance of the EMMP » Conduct periodic reviews of environmental performance » Report any major environmental incidents that may have a significant impact on the surrounding environment » Provide employees and contractors with the relevant environmental instruction in relation to the EMP. It will include awareness, understanding of their obligations and duties
Superintendent's Representative, All Employees and Sub-contractors	» Be aware and understand the contents of, and the reason for implementing the elements of the EMP » Exercise environmental due diligence and achieve compliance with the EMP » Report all environmental incidents to the principal as soon as practicable possible

Table IX: Environmental Management Plan

Table IX: Environmental Management Plan						
Project Activities	Type of Impact	Potential Impacts on Environment	Extent/ Magnitude	Mitigation Measure	Institutional Responsibility	
					Implementing Body	Supervision
CONSTRUCTION PHASE						
Solid Waste Generation	Physical, Biological, Social	Soil Contamination, effecting ground water quality, Emission of GHG, Biological, Particulate Soil	Severe/ local and global	• Separation of recyclable material • Training will be provided to personnel for identification, segregation, and management of waste • Provision of separate waste bins	HSE Officer/ Shift In-charge	Production Manager
Wastewater	Physical, Biological,	Contamination, effecting GW Quality,	Severe/ local	The domestic wastewater will be treated through settling tank and will be used for watering plants purposes in the	HSE Officer/ Shift In-charge	Production

Air Emissions	Physical, Biological, Social	Emission of GHG, Particulate Matter, Health, Welfare	Severe/ local	No air emission is likely to be released during operation of the Project, except the dust some gaseous emissions or PM to be produced during process and other such operations, which also will not be posing any environmental threat (will not breach the safe standards). - Wet suppression will be done to control dust emissions - Contingency planning has been done to meet any emergency situation arising due to fire, explosion, sudden leakage of gas etc - Fire fighting equipment and other safety appliances will be kept ready for use during disaster/emergency		Proponent
Emergency Contingency Plan	Physical and social	Reduction of biodiversity, community grievance, economy, welfare and	moderate / local		HSE Officer/ Shift In Charge	Production Manager

OPERATIONAL PHASE						
Solid Waste Generation	Physical, Biological, Social	Soil Contamination, effecting ground water quality, Emission of GHG, Biological, Particulate	Severe/ local and global	• Separation of recyclable material • Training will be provided to personnel for identification, segregation, and management of waste • Provision of separate waste bins	HSE Officer/ Shift In-charge	Production Manager

		Matter, Health, Economy and Welfare		Quantities of waste disposed, recycled, or reused will be logged on a waste tracking register.		
Wastewater	Physical, Biological, Social	Soil Contamination, effecting GW Quality, Biological, Health, Welfare	Severe/ local	The domestic wastewater will be treated through settling tank and will be used for watering plants purposes in the proponent leased land.	HSE Officer/ Shift In-charge	Production Manager
Air Emissions	Physical, Biological, Social	Emission of GHG, Particulate Matter, Health, Welfare	Severe/ local	No air emission is likely to be released during operation of the Project; except the dust some gaseous emissions or PM to be produced during operations, which also will not be posing any environmental threat (will not breach the safe standards). Wet suppression will be done to control dust emissions		Proponent

				• Air monitoring to determine the air quality will be carried out as and when required		
Emergency Contingency Plan	Physical and social	Reduction of biodiversity, community grievance, economy, welfare and the risk of any contingency	moderate / local	• Contingency planning has been done to meet any emergency situation arising due to fire, explosion, sudden leakage of gas etc. • Fire-fighting equipment and other safety appliances will be kept ready for use during disaster/emergency situation • Drills will be carried out on the regular basis to prepare the staff for the emergency situation	HSE Officer/ Shift In-Charge	Production Manager

Environmental Monitoring Plan

An environmental monitoring plan provides a delivery mechanism to address the adverse environmental impacts of a project during its execution, to enhance project benefits and to introduce standards of good practice to be adopted for all project works. An environmental monitoring program is important as it provides useful information and helps to:

- Assist in detecting the development of any unwanted environmental situation
- provides opportunities for adopting appropriate control measures
- Define the responsibilities of the project proponents, contractors and environmental monitors and provides means of effectively communicating environmental issues among them
- Define monitoring mechanism and identify monitoring parameters
- Evaluate the performance and effectiveness of mitigation measures proposed in the Environment Management Plan (EMP) and suggest improvements in management plan, if required
- Identify training requirement at various levels

An environmental monitoring plan is suggested to monitor environmental parameters during survey, construction and post construction phase of the project.

Following environmental record should be maintained:

- Periodic inspection reports of the site
- Environmental audit reports
- Incident record of all moderate and major spills and other incidents and accidents.

The record will include:

- ✓ Location of spill or battery limit of the accident
- ✓ Estimated quantity or the amount of injury (as may be reported in LFI or

LWI)

- ✓ Spilled material or nature of injury or loss (temporary or permanent)
- ✓ Restoration measures
- ✓ Photographs

- Description of any damage to vegetation, water resource, or community asset
- Corrective measures taken, if any
- Waste tracking register that will hold records of waste generated during the construction period. This will include quantities of waste disposed, recycled, or reused.
- Records of water consumption with use wise breakdown

Survey reports, in particular, the following:

- Vehicle and machinery noise
- Ambient noise survey reports
- Ambient level of dust and particulate matter
- Vendor data—all vendors disturbed by the project and compensation paid public
- Infrastructure: Record of all damages and repair work undertaken
- Total number of unskilled, semi-skilled, and skilled jobs offered during construction
- Name and domicile of the employed staff
- Project and community interface
- Record of community complains, and the measures taken to address them
- Number of meetings held in various communities and data of persons who attended
- Environmental and social training records

Table X: Roles and Responsibilities for Environmental Management

Aspects	Proponent Responsibilities	Contractors Responsibility	Relevant Documentation
Contracting	Ensure that the monitoring and rehabilitation and rebuilding requirements are included in the contract between the proponent and the construction contractor	Understand the requirements and correctly estimate and report the required resources	Contract between the proponent and the contractor
Monitoring Plan	Finalize the monitoring plan.	---	Revised Monitoring Plan
Resources	Ensure the availability of resources for environmental monitoring, rehabilitation and rebuilding	Ensure the availability of resources for environmental monitoring, rehabilitation and rebuilding and their efficient use without Wastage	Project Budget
Environmental Staff	Designate an environmental manager for the project	Appoint officer dedicated to environment	Job Description
Monitoring	Undertake the periodic	Systematically	Inspection and

Survey	(pre-planned and unplanned) inspection and carry out the field measurement or assign this duty to a concerned person or organization	observe and collect the data on the environmental performance	survey reports
Environmental Audit	Conduct periodic audits of the Construction site and commence third party audit	Conduct Audits	Audit reports
Reporting	Ensure that periodic environmental monitoring reports are Received.		Periodic reports
Corrective Action	Verify that activities are carried out complying with EIA/EMP.	Carry out the corrective actions where required.	Corrective action record
Maintenance of Record	Maintain monitoring data and record of all incidents of environmental Significance.	Maintain monitoring data and record of all incidents of environmental significance.	Environmental data base

8 Communications and Documentation

An effective mechanism to store and communicate environmental information during the project is an essential requirement of an EMMP.

8.1 Meetings

Two kinds of environmental meetings will take place during the project.

- Kick-off meetings
- Weekly meetings

The purpose of the kick-off meetings will be to present the EMMP to project staff and discuss its implementation.

A monthly meeting will be held during operation. The purpose of this meeting will be to discuss the conduct of the operation and environmental issues and their management. The proceedings of the meeting will be recorded in the form of a weekly environmental report.

8.2 Changes-Record Register

A change-record register will be maintained at the site, in order to document any change in project design; especially those which have direct impact on the industry's emissions, effluents, wastes and resource management. These changes will be handled through the change management mechanism.

Table XI: Environmental Monitoring Plan for Construction & Operational Phase

Components	Objective of Monitoring	Parameter to be Monitored	Measurement	Frequency	Location	Responsibility
Wastewater generation	To determine the effectiveness of mitigation measures	Effluent discharge quality	Wastewater quality	Once a month	Effluent location	Environmental officer
Waste disposal, procedure for waste collection, storage, and disposal	To check the availability of waste management system and implementation	Inspection of waste generation, collection, storage, and disposal will be undertaken at each site of the project activity	Visual inspection	Daily	Entire Area	Administration Officer
Emission of Exhaust Gases and Particulates	To determine the effectiveness of the air pollutants' abatement devices on the	Source Emission parameters	PM, CH ₄ , CO, NO _x and SO _x	Monthly	Site Area	Environment Officer/Manager

which may pollute the Environment	concentration of the likely pollutants					
Safety	To check and evaluate the effectiveness of the workers' safety plan and availability and access of first aid facilities	Injuries	Injuries will be recorded	Daily	Entire Project	Administrator

8.9 Impact and their Mitigation Measures

The impact and their mitigation measures is a key component of the EIA. It identifies the potential effects of each activity of the project and their associated mitigation measures identified during impact assessment. For each project related activity, the following information is presented in the plan:

- A listing of the potential impact associated with that project activity
- A comprehensive listing of mitigation measures (actions)
- The person(s) responsible for ensuring the full implementation of the action
- The person(s) responsible for monitoring the action
- Timely implementation of the environment plan to ensure that the objectives of mitigation are fully met

It should be emphasized that the mitigation measures will have to be translated into environmental as well as social requirements and specifications to be made part of the contracts for the construction activities, with legal binding.

8.9.1 Description of proposed mitigation actions

The summary of the impacts along with proposed mitigation measures and the risk associated with each parameter is given below in details:

Table XII. Summary of Impacts and their Mitigation Measures

Environmental Parameters	Risk Assessment		Mitigation Measures
	During	After	
Location	+1p	+2p	• There is no dispute associated with the ownership of the land • The proposed area is not inhabited by any ecologically important or protected flora and fauna specie vicinity of the project area.

Design	+1p	+2p	• Land is in industrial zone. • The design of the proposed project will be sustainable as it follows the principles of energy conservation and management • Proper ventilation system will be provided for the labours who works in production hall • Timber support will be given to the construction site to avoid any incident regarding collapsing.
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Land Resources

Solid Waste	-1t	-1p	• Solid waste will be store in the covered bins in order to avoid the growth of vectors and rodents as well as to control the odour and to reduce public nuisance • Solid waste will be collected and transported to the waste disposal site on the daily basis • Good management practices will be adopted to avoid the spread of diseases among the locals • Appropriate in-housekeeping, sanitary and solid waste management practices will be adopted • Waste generation will be minimized by adopting waste management strategy of reduce, reuses and recycle • A waste management plan will be implemented and monitored for the safe collection, storage and treatment/disposal of the waste. • Quantities of waste disposed, recycled, or reused will be logged on a waste tracking register • Records of all waste generated will be maintained
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			• Training will be provided to personnel for identification, segregation, and management of waste • Waste management inspections will be undertaken on a regular basis of onsite waste management and of waste disposal contractors to ensure that the waste management procedures are being followed • Monitoring measures will include: ✓ Record of all waste generated ✓ Quantities of waste disposed, reused at site or sold should be logged on the waste tracking register ✓ Audit of waste management on annual basis ✓ The areas around the project boundary and access roads should be periodically inspected to verify that no project related waste is scattered in these areas
Use	-1p	-1p	• The land at the proposed location is reserved for the current project. This project will enhance the land values in this region. • The prices of the land will be enhanced due to availability of basic facilities

Air Resources

mission	-1p	-1p	• Proper tuning of vehicles will be done on the regular basis in order to control the air pollution • Avoid unnecessary movement of the trucks carrying materials • Avoid excavation and filling activity on the windy days
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			• Impact can be minimized through a management programs which ensure dust will be controlled by regular watering the dusty areas • Regular water sprinkling will be done to control the dust generation • PPEs such as; dust mask will be provided to the worker
noise	-1t	-1t	• The noise being generated is within the PEQs limit but it can be further mitigated by proper tuning of machinery and automobiles • The noise related activities will be done during the day time to ensure minimum disturbance to the local community • Proper tuning of the vehicles will be done on the regular basis, so that the noise level will be reduce up to the acceptable limits • For people working in, ear-protection aids like ear-plugs, ear-muffs, noise helmets, headphones etc. will be provided to reduce occupational exposure • This is possible if working methods are improved by ✓ Proper designing and fabrication ✓ Proper lubrication and better maintenance of machines ✓ Reducing the noise produced from a vibrating machine by vibration damping i.e. making a layer of damping material (rubber, neoprene, cork or plastic) beneath the machine

✓ Using silencers to control noise from automobiles, ducts, etc. and convey systems with ends opening into the atmosphere

- Tree plantation helps to block the propagation of sound
Proponent has planned tree plantation in and around the unit premises
- During the project operation, it will be ensured that the noise level does not exceed prescribed limits as set by WHO or Pak-EPA; for which regular monitoring must be carried out.

Water Resources and Wastewater Management

Water resource	-1p	-2p	• Best management practice will be adopted to conserve freshwater resources • Special care will be required to protect the petroleum products from spillage • Water conservation program will be initiated to prevent wastage of water • The management will ensure maximum recycling of water, so that overall consumption could be reduced • Reusing the water for sprinkling purpose after treatment of grey water. • The water will passed through water drain, where the settling of the residue material will occur • The grey water will be treated through settling tank which will be recycled to be re-used in watering plants purposes etc.
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			• Waste segregation measures would be employed to minimize entry of solid waste into the wastewater stream • Periodic sampling and monitoring of key parameters for wastewater effluent into the receiving body (drain or sewerage system) and for this purpose samples will be collected at the discharge point to ensure effective treatment
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Biological

Flora

Vegetation	0	+2p	• Trees will be also planted along the boundary of the project area. • Trees should be planted as soon as possible.
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Fauna

Life	NA	NA	No impact on the fauna and its habits are foreseen as the project area is located in industrial zone
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Economic

Vegetation	0	+2p	• Strict speed limit for the movement of vehicles should be regulated • Avoid unnecessary movement of the vehicles • Enforce traffic rules with true spirit • Implementation of traffic management plan • Penalties should be enforced on the people not following traffic rules
Employment	+1p	+1p	• During this phase, skilled and unskilled labour will be required. • Employment opportunities for the un-skilled workers will therefore increase which will enhance the positive

benefits for the local people who are in dire need of income for sustenance

- Legends: 1= Low; 2= Medium; 3= High; 4= Extremely High; NA= Not Applicable;
- t= Temporary; p= Permanent; app= Applicable; 0= Negligible
- All adverse environmental impacts except natural calamities are manageable easily by implementing EMMP

6.10 Equipment Maintenance Details

New equipment of latest technology with high efficiency will be purchased by the proponent. Maintenance of equipment will be done twice year for the smooth operation or as and when required.

All the machines involved in project will be maintained on the regular basis except that no equipment will be kept on-site that will need maintenance except fire- fighting equipment that would be available at approachable locations on the site. Such as; portable fire extinguishers will be installed which will need regular maintenance. Following is the maintenance details for the portable fire extinguisher:

Table VIII: Maintenance

Task	Weekly	Monthly	Quarterly	Yearly
Visual Inspection	✓			
Testing and Inspection			✓	
Check for Leakage		✓		
Recharging				✓
Containers/Cylinders			✓	
Control and Section Valves			✓	

6.10.1 Environmental Budget

Approximately, **PKR 0.2 million** environmental budget will be reserved for the tree plantation, environmental monitoring and measures.

Table XIV: Environmental Budget

Category/Item	Amount (PKR)
Ambient air monitoring	50,000/-
Noise monitoring	1000/-
Water quality monitoring	50,000/-
Health & safety	50,000/-
Workers training	50,000/-
Solid waste management	70,000
Wastewater management	100,000
Air Emission Control	100,000
Plantation/green belt development	30,000

STAKEHOLDERS CONSULTATION

public consultation refers to the process by which the concerns of local affected persons and others who have a plausible stake in the environmental impacts of the project or activity are ascertained with a view to taking into account all the material concerns in the project or activity design as appropriate. According to the IEE and EIA Review Regulations, public consultation is mandatory for any socio-environmental study.

7.1 General

Impact assessment survey and public consultation sessions held with different stakeholder groups that may be impacted by the proposed project commencement.

7.2 Proponent's Environment Management Team

Environment Management Team for construction and operational phase details are given below.

7.2.1 Operation Stage

During this phase of the project, implementation of recommendations of EMP and its supervision will be the responsibility of project coordinator which will be appointed in operational phase and Punjab-EPA as defined in Institutional Capacity of Chapter 6

7.3 The Responsible Authority

The consultation process was carried out in accordance with the guidelines laid by Punjab EPA which is the responsible authority. The objectives of this process were to

- ⇒ Share information with stakeholders on proposed project installation and operation
- ⇒ Assess the impacts on the physical, biological, and socioeconomic environment

- ⇒ Understand stakeholder concerns regarding various aspects of the project commencement
- ⇒ Find out valuable suggestions by the stakeholders to improve the proposed project design
- ⇒ Understand the perceptions, assessment of social impacts and concerns of the affected people/communities of the project area
- ⇒ Find out the awareness level and situation of acceptability to identify any issues for the implementation of the proposed project
- ⇒ Invite people to express their views about the positive/negative impacts on their lifestyles and environment
- ⇒ Disclose information about contact offices/officers for any complaints/queries

It is envisaged, there will be no social negative impact being foreseen due to implementation of the project at the proposed location. This EIA Report includes all the comments, which were taken into account during the social survey and preparing the definitive development concept for the installation of project in Public Consultation.

7.4 Objectives of Consultation

Public consultation plays a vital role in studying the impacts of the proposed project on stakeholders in successful implementation and execution of the project. It provides an opportunity to exchange knowledge with the beneficiaries and affected parties. Referring particularly to a project related to environmental assessment, involvement of the public is all the more essential, as it leads to better and more acceptable decision-making. The overall objective of the consultation with the stakeholders is to help verify the environmental and social issues, besides technical ones, that have been presumed to arise and to identify those which are not known or are specific to the project. In fact, discourse

with many who have thoroughly observed the site conditions in the pre-development phase, goes a long way in updating the knowledge and understanding.

7.5 Identification of Stakeholders

All the people who are directly or indirectly affected or concerned with the project are the stakeholder. Besides the living population of the surrounding areas, some other stakeholders were identified and contacted which enlisted below. They are the key players including; shops, public and government offices, schools, university, hospitals, hotels, international agencies and the NGOs. Not only published material, brief or other literature were obtained on request, but also noted their views and the concerns, in an official capacity as well as on the personal basis. Following stakeholders are identified for this project:

Project Affected Persons (PAPs) include the settled families, either property owners or the tenants, businessmen (big, shopkeepers, vendors, etc.), employees of the commercial entities. PAPs are of two types, for instance

7.5.1 Affected and Wider Community

As, no disturbance in the local community is being foreseen due to the project there is no populated or sensitive area is present near the site and the site is reserved for purpose by Government of Pakistan. No property loss is being envisaged due to project.

7.5.2 Other Departments and Agencies

Indirect impact will occur on those who are living or doing business within a Project Area of Influence (AOI). In the case of the proposed project, the citizens of nearby small towns will get opportunities of being employed. So, in the early development stages and during the operational phase the people will be benefited due to the project.

Indirect respondents which were consulted include,

- ⇒ Members of Forest Departments, and officers of Agricultural Departments, etc.
- ⇒ Officers of TMA and Planning & Development Department

Their names along with written feedback is attached as an annexure.

7.6 Public Disclosure

Public disclosure is the outcome of all such activities where the public is involved at least in the information sharing process. This is an integral part of the process. So, before the proponent applies for NOC to the Punjab-EPA, this disclosure will be distributed properly among all stakeholders. It is the responsibility of the proponent and the consultants to display a public disclosure document in prominent places where community has easy access.

7.7 Consultation Process

Information disclosure, public consultation and discussion regarding the various aspects of the project with the people of the area are necessary. This process is intensified during the EIA Studies, and separate rounds of public consultations were held. Surveys were carried out in order to investigate physical, biological and socioeconomic resources falling within the immediate AOI of the project. Primary data collection included:

- ⇒ Data collection regarding the socioeconomic condition of the study area
- ⇒ Pre-testing of socioeconomic survey tools in the field
- ⇒ To consult the locals for collection of information on biological environment
- ⇒ Various meetings with the stakeholders were held the following objectives:
 - ⇒ Share information with stakeholders on the proposed project and expected impacts on community in the vicinity of the project
 - ⇒ Understand stakeholders' concerns regarding various aspects of the project, including the existing condition of the upgrading requirements, and the likely impact of construction and operation activities

- ⇒ Provide an opportunity to the public to influence the project design in a positive manner
- ⇒ Obtain local and traditional knowledge, before decision making
- ⇒ Increase public confidence about the proponent, reviewers and decision makers
- ⇒ Reduce conflict through the early identification of controversial issues, and work through them to find acceptable solutions
- ⇒ Dissemination of information through discussions, education and liaison.
- ⇒ Documentation of information narrated by the stakeholders and mitigation measures proposed by the stakeholders
- ⇒ Incorporation of public concerns and their address in the EIA; and eliciting their comments and feedback
- ⇒ Create a sense of ownership of the proposal in the mind of the stakeholders

7.8 Consultation with Beneficiaries

In addition, to the use of direct methods to evince the response of the various stakeholders in the population of the study area was ascertained by conducting a sample survey, through specially formatted questionnaires. Questions posed to the public were related to creation of possible impacts, adverse impacts and beneficial impacts, including employment opportunities, income generation activities, change in living standards and provision of the amenity.

Disclose the proponent plan of the construction of the proposed facility

- ⇒ To share information on the design and specifications of proposed project works
- ⇒ To analyze the expected impact on the socioeconomic environment
- ⇒ To understand their concerns regarding various aspects of construction and

7.8.1 Views, Concerns and Suggestions of Various Stakeholders

Community showed a lot of concerns, a few are being mentioned here:

- ☐ Removal of shrubs and trees should be avoided to the extent possible
- ☐ The project will become the source of income for local to earn their livelihood easily and honorably
- ☐ The area will become further industrialized
- ☐ For the solid waste management and waste disposal, proper disposal techniques should be adopted
- ☐ Employment opportunities will be generated, and locals should be hired on the priority basis
- ☐ The air pollution is one of the major impacts of the proposed project so ambient air quality should be monitored regularly
- ☐ Water spraying/sprinkling should be done on the regular basis during construction phase to avoid dust emissions
- ☐ Removal of shrubs and trees should be avoided to the extent possible
- ☐ Good relations with the local communities will be promoted by encouraging Contractor to provide opportunities for skilled and unskilled employment to the locals as well as on-job training
- ☐ The contractor should prefer hiring local labor from adjacent nearby villages
- ☐ Indigenous trees around the facility should be planted to control air pollution and as the compensation
- ☐ Noise reducing barriers should be installed to reduce noise pollution as the nearest community lies within the radius of 0.8 km

Concerns

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- ✦ Workers should be hired from local community
- ✦ Proper disposal of solid waste should be practiced
- ✦ The provision of paint should be at economical rates for poor farmers
- ✦ Indigenous trees around the facility should be planted to control air pollution
- ✦ Removal of shrubs and bushes should be avoided to the extent possible

7.8.2 Addressing Public Concerns

The best mechanism of effective communication between the community and the proponent is the by the nomination of the representative of the community and all the issues/concerns must be recorded for future reference. This representative may be the member of the Grievances Redressed Committee (GRC).

a. Grievances Redressed Committee

Grievances Redressed Committee (GRC) will be formulated by the proponent to address the concerns of the locals during the construction phase. The main role of the GRC will be to resolve the issues of the community associated with the proposed project.

CONCLUSION AND RECOMMENDATIONS

8.1 Conclusion

The report presents Environmental Impact Assessment (EIA) of the proposed project "**Extension of M/S Jullundur Pvt. Ltd.**". EIA of proposed project is performed according to guidelines of EPA. It includes description of the project, description of the environmental baselines, potential environmental impacts and suggested mitigation measures. An implementation mechanism for mitigation measures in the form of an Environmental Management Plan is included in the study.

The performed EIA showed all anticipated impacts (both positive and negative) associated with the project. Appropriate mitigation measures as explained in the environmental study shall reduce, if not eliminate, these impacts so that these are within acceptable limits. Moreover, no deterioration, depletion or exploitation of resources is expected to be caused by this project.

Based on overall assessment of the environmental impact of the project, it is concluded that the project is not likely to cause any significant adverse impact on the social, physical and biological environment of the area, provided that suitable mitigation measures as identified in this study are implemented.

It is accordingly recommended that Environmental Approval for the project may be issued by the Punjab Environmental Protection Agency, subject to payment of the requisite scrutiny fee by the proponent of the project.

8.2 Recommendations

The Initial Environmental Examination study and survey results are finally evaluated to recommend the following:

- Implementation of EMMP with true spirit
- Proper PPEs including; ear plugs, ear muffs, mufflers, goggles, gloves and shoes.

etc. should be provided to workers and the train workers to use them

- Installation of fire extinguishers in the premises and their monitoring must be ensured
- Waste minimization practices should be employed and workers should be encouraged to adopt such methods
- The adverse environmental impacts can be reduced significantly by adopting best management and monitoring practices as well as by implementation EMMP effectively
- Tree plantation plan should be carried out at the designated green spaces and along the boundaries in order to keep the environment healthy
- It is recommended that the Proponent should obtain an Environmental Approval (NOC) from the Punjab EPA before proceeding further into the construction activities
- The security guards shall also be trained to act in case of all possible emergency situations. The fire alarms can be activated to signal evacuation. At the same time, communication shall be made with hospitals, emergency services and police for urgent support.