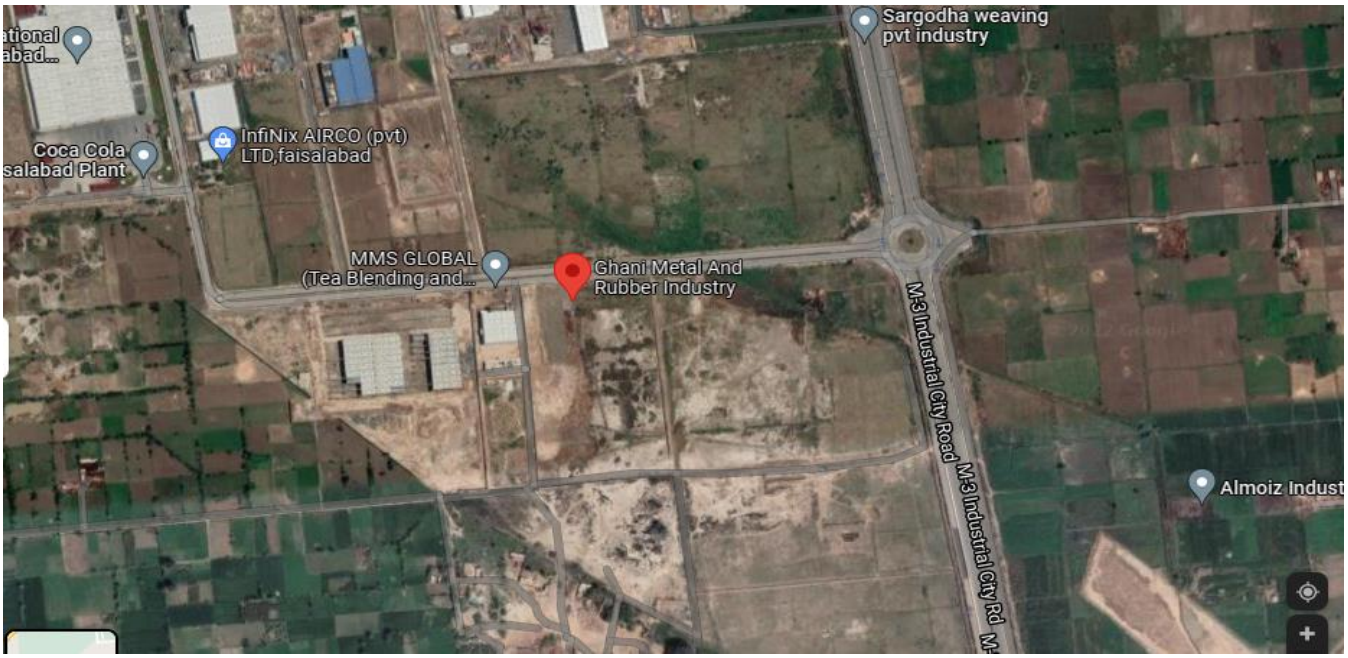


PROPOSED CONSTRUTION OF M/S GHANI METAL AND RUBBER INDUSTRIES Pvt Ltd LOCATED AT PLOT NO.62 IN PHASE – II AT M-3 INSUSTRIAL CITY FAISALABAD.

ENVIRONMENT IMPACT ASSESSMENT (EIA) REPORT

Submitted By:

GHANI METAL & RUBBER INDUSTRIES Pvt Ltd

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EXECUTIVE SUMMARY

INTRODUCTION

This executive summary presents an overview of the main findings of the Environment Impact Assessment report (EIA) for the construction of Ghani Metal & Rubber Industries Pvt Ltd through Ibraheem Ghani wants to construct Metal and Rubber Industries plot no.62 in Phase II at M-3 Industrial city Faisalabad. **The main raw material Synthetic Rubber & stainless steel will be used to make Metal & Rubber. To make rubber & Metal, a special** kind of Synthetic Rubber & Stainless Steel **is used. The Synthetic Rubber is needed to make Rubber.**

The main objective of the project is to make rubber & Metal Industrial unit to enhance the business activities for the proposed project in accordance with the Punjab Environmental Protection (Amendment) Act 2012, and EIA/EIA Regulations 2000. The process for conducting environmental assessment and the results of EIA are described in this document.

A BRIEF OUTLINES OF THE PROPOSED PROJECT

Name of proponent	**M/S Ghani Metal & Rubber Industries Pvt Ltd through Ibraheem Ghani**
Name of Project	**Ghani Metal & Rubber Industries**.
Location of the Project	Plot no.62 in Phase II at M-3 Industrial city Faisalabad .
Nature of area as per FDA Record	Nature of area declared industrial.
Total area of plot	7 Acres
Current status of the Project	Current status of the Project is proposed and construction will be initiated after getting environmental approval
Capital cost of the	100 million PKR (Approximate)

Project	
Description of the Project	Making of rubber & Sand for Industrial purpose.
Objective of the Project	The establishment of this facility shall fulfill the following objectives. • The primary overall objective is to promote the economic development of country • Employment generation in the country • To set up sand processing tiles production plant.
Power Requirement	• Transformer 630 KVA
Labor	• During construction labour 20-25 (Approximate) • No. of people during operational phase 25-30 (Approximate)
Water Requirement	During construction 2000 gallons per day for construction and domestic uses During operation 7000 gallons per day (Approximate) for domestic use
Waste Water generation	60-70% of the used water will be the waste water.
Waste Water Treatment Technique	Provision of Septic tank (Drawing and detail are provided)
Solid Waste	During construction 4000 gallons per day for construction and domestic waste During operation 30-40 Kg/per day domestic waste based on solid waste generation 0.694 tons per person per year.
Camping site	Adjacent to site (open area)

Detail of Project Area Wise

TOTAL AREA OF THE PLOT 7 Acre

PROJECT OBJECTIVE:

The main and sole aim of commencing the Proposed Project is to enhance and provide the industrial facility to the inhabitant.

Agreement with the contractor

The proponent will sign an agreement with the contractor for the proper disposal of the solid waste of the basements. The contractor will be responsible to dispose of the solid waste as per FDA rules

SITE ALTERNATIVES:

After the consideration of alternative sites, the site chosen is best suited for the project because surroundings of project Industrial activities are in progress. There is no protected area or human settlement or important religious, archaeological, historical or recreational site exists near the project, there is no need to consider any alternative site for the project. Moreover, there is no ecologically sensitive or declared protected area such as Territorial Waters, forest, game reserve or biodiversity parks near the project site, requiring the proponent to look for site alternatives.

Name of the Organization Preparing the Report:

An Environment Impact Assessment (EIA) study report has been prepared to identify and predict the significant environmental impacts likely to arise from the commencement of the proposed project along with environmental impact statement followed by delineation of appropriate Environmental Management Plan and Environmental Monitoring Plan to check the implementation of the EMP. Proponent **Ghani Metal & Rubber Industries Pvt Ltd** has decided to

conduct EIA report through Environment Consultant, M/S Echteech Environment Consultant and to get Environmental Approval from Environmental Protection Agency (EPA) Punjab.

THE PUNJAB ENVIRONMENTAL PROTECTION (AMENDMENT) ACT, 2012

As per directions of PEPA Act 2012, the Environment Impact Assessment (EIA) / Environmental Impact Assessment (EIA) Regulations, 2000 the proposed project of Industrial Projects falls in the projects mentioned in Schedule II. Further, the client is required to fulfill the legal requirements of the section-12 of the Punjab Environmental Protection (Amendment) Act 2012 of filing an EIA/EIA with the EPA Punjab to accord Environmental Approval before commencement of the project. The proponent will also conform to the other applicable environmental laws, rules and regulations (local as well as international to which our country is a signatory of); the detail of which is presented in Chapter 2 of this report.

THE MAJOR IMACTS

The environmental and socio-economic features and other project information collected is used to assess the potential impacts of the activities. The issues studied include potential project impacts on:

- Geomorphology
- Meteorology
- Groundwater and surface water quality
- Ambient air quality& noise level
- The ecology of the area, including flora and fauna
- Local communities

Wherever possible and applicable, the discussion covers the following aspects:

- The potential change(s) in environmental parameters likely to be effected by project related activities
- The identification of potential impacts
- The evaluation of the likelihood and significance of potential impacts
- The defining of mitigation measures to reduce impacts to as low as practicable
- The prediction of any residual impacts, including all long-term and short-term,

direct and indirect, and beneficial and adverse impacts

PROJECT DESCRIPTION:

The Proposed project is the Industrial. Its sole aim is to enhance the Industrial value for the better well-being of the people of the city and also for the country.

ENVIRONEMNTAL STATUS OF THE STUDY AREA

Baseline study means the study of the prevailing environmental conditions of the project area. It is conducted in order to assess the physical, biological and socio-economic situation in the study area with the main purpose being to check if there exists any ecologically sensitive area within the project boundary or in its close vicinity; such as the Territorial Waters, endangered plant or animal species, structures of socio-cultural importance (Masjid, a historical site or museum, etc.) or poor people to be displaced, etc. This study also aids in assessing and evaluating the likely impacts on the environment, and suggesting appropriate and cost-effective mitigation measures for the likely impacts.

The base line environmental status was assessed based on primary and secondary data collected through in-situ field observation and data obtained from agencies such as Environment Protection Department, Meteorological Department, Public Health Engineering Punjab, and District Design Committee.

The following environmental components were focused for this study:

- Air Environment (Meteorology, Ambient Air Quality, Noise Levels, Traffic Pattern, etc)
- Water Environment (Quality and Quantity of all potential water sources: Surface and Groundwater)
- Land Environment (Geology, Topography, Geo-hydrology, Land use, Solid Waste generation and characteristics)
- Ecological Environment (Terrestrial and Aquatic Flora & Fauna)
- Socio-Economic Environment (Demographic profile, Occupational structure, Industrial/sand processing status, literacy status, health, sanitation and other facilities, etc.)

PROPOSED MONITORING

Environmental impact of a project is worked out using various factors and parameters, so that an Environmental Management Plan can be evolved to take mitigation measures, wherever these might be considered necessary in order of appropriateness of elimination, reduction and compensation as the goals. The development of the EMP is to make some person responsible for implementing the mitigation measures as identified so that smooth implementation of the mitigation measures can be assured. Monitoring plans have also been included to ensure the compliance of the EMP by contractors and other responsible authorities.

During construction, ambient air quality for dust level in particular, vehicle and equipment exhaust, noise level (tests), solid waste management and community and workers' safety (visual) need to be monitored.

CONCLUSION

The Initial Environmental Examination of proposed project that is Industrial is located at **Plot no.62 in Phase II at M-3 Industrial city Faisalabad** has been prepared in accordance with the applicable statutory requirements and the guidelines for the preparation of EIA/EIA, by the Echteech Environment Consultants on behalf of the proponent **Ghani Metal & Rubber Industries Pvt Ltd**. **The report has addressed all the likely impacts associated with both construction and operation phases of the project, and has identified appropriate (site-specific) mitigation measures for all the potential adverse impacts. It is concluded that the project will not pose any serious threat to physical, biological or socioeconomic environment; provided that the EMP framed for the project is complied with. It is further concluded that there will be no exploitation or consequential depletion of the local natural resources, if activities are carefully monitored and controlled**.

CHAPTER 1: INTRODUCTION

1.1 GENERAL

PURPOSE OF THE REPORT

The primary aim behind the EIA of any project is to confirm what exactly are the impacts likely to be received by the physical, ecological and socioeconomic receptors of the area where the project is to be set by comparing the predicted future the project is expected to create with the future which would be existing if the project is not initiated. The main purpose of this report is to suggest the proponent the ways how he can maximize the project benefits by controlling or mitigating adverse environmental impacts besides helping the decision-makers; i.e. EPA Punjab before issuing Environmental Approval for the project. A plan for implementation of the mitigation measures and another for monitoring their effectiveness have also been included. The objectives of this EIA are to:

- Assess the existing environmental condition in the project area, including the identification of environmentally sensitive areas.
- Understand the activities to identify their potential environmental impacts, evaluate the impacts and determine their significance.
- Propose appropriate mitigation and monitoring measures that can be incorporated into the design of the activities to minimize any damaging effects or any lasting negative consequences identified in assessment.
- Assessing the activities and determine which environmental regulations applicable in Punjab to comply with.

Prepare EIA report for submission to the Environmental Protection Agency, Punjab for according Environmental Approval.

1.2 IDENTIFICATION OF PROJECT AND PROPONENT

For any development project to be initiated in Punjab, it is mandatory to accord Environmental Approval from EPA Punjab under Section-12 of the Punjab Environmental Protection (Amendment) Act, 2012 by filing an EIA or EIA before EPA Punjab, as may be

defined in Review of EIA/EIA Regulations, 2000 or recommended by EPA Punjab. This Initial Environmental Examination has been prepared in this context to accord Environmental Approval for the Proposed Project that is sand Processing unit located **Plot no.62 in Phase II at M-3 Industrial city Faisalabad**.

This report is prepared by critical examine of the environmental factors which might be affected due to construction and operation of the proposed project. The purpose of this report is to analyze impacts of the project. This EIA provides the basis for a determination of the degree of the environmental impacts of the proposed project.

The report provides relevant information, as required under the officially approved format, to help the decision makers i.e. EPA Punjab before issuing for the Environmental Approval.

Name: **Ghani Metal & Rubber Industries Pvt Ltd through Ibraheem Ghani**

Cell Number (Contact Person): 0322 4671180

1.3 DETAILS of CONSULTANTS

For the preparation of the EIA Report of this Proposed Project that is Industrial located **Plot no.62 in Phase II at M-3 Industrial city Faisalabad**. The proponent engaged the services of the environmental consultants; **M/S Echteech Environment Consultants** Study team which worked on this report comprised environmental engineers and environmentalists.

The company profile of the environment is attached as Annexure.

1.4 THE PROJECT

The Proposed Project under study is titled as Industrial situated **Plot no.62 in Phase II at M-3 Industrial city Faisalabad**. Its salient features have been described later in this Chapter, Chapter 3 and briefly in Executive Summary of the EIA.

Brief Description of Nature, size and Location of Project

1.4.1 LOCATION

The project is located at **Plot no.62 in Phase II at M-3 Industrial city Faisalabad i**

1.4.2 NATURE

It is the proposed project of Industrial.

1.4.3 AREA

Total area of the project is 7 acres of which major area will be open for landscaping, movement of the residents and vehicles, etc.

1.4.4 SIZE

The capacity of the Industrial will be as per FDA rules.

1.4.5 COST

Cost of the project has been estimated at 100 million PKR.

1.6 SCOPE & METHODOLOGY

Scope of this study was limited only to the preparation of an EIA Report for the Proposed Project of Industrial unit located at **Plot no.62 in Phase II at M-3 Industrial city Faisalabad** following four steps:

1.6.1 SCOPING

The key activities of this phase include:

Project Data Compilation: A generic description of the activities relevant to environmental assessment is compiled with the help of the proponent.

Published Literature Review: Secondary data on weather, water resources and vegetation, and other relevant environmental features of the project area and the similar projects is reviewed and compiled.

Legislative Review: Information on relevant legislations, regulations, guidelines, and standards is reviewed and compiled.

Identification of Potential Impacts: The information collected is reviewed and potential environmental issues are identified.

Identification of Mitigation Measures: Mitigation measures are identified for all the likely impacts in order of preference for avoiding the impacts altogether, minimizing their frequency or extent and compensating or rectifying the losses; as may be found practicable in the project.

Selection of Alternatives: Based on the potential impacts and the cost required to mitigate them, most crucial project employing the best available technology at the most feasible site is selected.

Scoping Meeting: A scoping meeting is held to share this basic level of project information with all the project stakeholders before the information is incorporated into the report, so that some improvement can be sought out in the data as may be necessary, better or more friendly alternatives can be selected, and better and more practicable mitigation measures can be suggested.

1.6.2 BASELINE DATA COLLECTION

A considerable amount of baseline information on the project area was available from the environmental studies previously conducted in the region of other projects. A field visit was conducted anyhow, to collect primary data on the water quality, ambient air quality, noise level, ecological species surviving in the area and the ecosystems prevalent and the lifestyle, setup, income and sources of income and the facilities available for the residents in the areas around the proposed unit and for socioeconomic profile, people around the site were interviewed.

1.6.3 IMPACT ASSESSMENT

The environmental and socio-economic features and other project information collected is used to assess the potential impacts of the activities. The issues studied include potential project impacts on:

- Geomorphology
- Meteorology

- Groundwater and surface water quality
- Ambient air quality & noise level
- The ecology of the area, including flora and fauna
- Local communities

Wherever possible and applicable, the discussion covers the following aspects:

- The potential change(s) in environmental parameters likely to be effected by project related activities
- The identification of potential impacts
- The evaluation of the likelihood and significance of potential impacts
- The defining of mitigation measures to reduce impacts to as low as practicable
- The prediction of any residual impacts, including all long-term and short-term, direct and indirect, and beneficial and adverse impacts
- The drafting of monitoring arrangements of residual impacts

1.6.4 DOCUMENTATION

This EIA report is prepared according to the relevant guidelines prescribed by the Punjab Environmental Protection Agency at the end of assessment. It includes findings of all the phases of the assessment process. Before preparation of the final report for submitting to the EPA Punjab, draft report was presented to the proponent for review and comments.

1.7 STRUCTURE OF THE REPORT

EIA report comprises following chapters:

Chapter 1: Introduction (A description of the project, proponent and consultants, the need for the project and the report and method of preparing it).

Chapter 2: statutory and institutional Framework (A description of the pertinent national & provincial legislations, regulations and policies that are relevant and applicable to the project and a demonstration of how the project conforms to these aspects).

Chapter 3: Project Description (Full description of the relevant parts of the project and summary of project inputs and outputs).

Chapter 4: Description of the environment (Description of project area's existing physical, biological and socio-economic condition, including geomorphology and soils, water resources, air quality, flora, fauna and demography).

Chapter 5: Project Impacts and mitigations (Presents an assessment of the project's impacts, suggested mitigation measures on the Physical, Biological and Socioeconomic environment, residual impacts and the monitoring requirements).

Chapter 6: Environmental Management Plan (Provides Environmental Management Plan& Environmental Monitoring Plan for both construction and operation phases of the project).

Chapter 7: Conclusions & Recommendations (Concludes the EIA report with a few recommendations to conduct the project in environment-friendly manner).

CHAPTER 2: STATUTORY REQUIREMENTS

2.1 GENERAL

This chapter describes the current legal responsibilities of the proponent in context of environmental and sustainable development, and the institutions that exist in the country that may influence the environmental management of the project.

This section deals with the current policy as well as legal and administrative framework related to carrying out of Environment Impact Assessment (EIA) of the project. An efficient and effective organizational structure is essential for successful implementation of the mitigation measures identified for the project. Like other projects, the project, before its implementation, is required to go through an Environmental Assessment, in accordance with the provisions of the Punjab Environmental Protection (Amendment) Act 2012.

2.2 EXISTING LEGISLATION AND LEGAL FRAMEWORK

The Federal Ministry of Environment was responsible authority for policy making on environmental protection in Pakistan but after 18th Amendment in the Constitution, the Provincial Governments have taken over the subject of Environment. This EIA study has been carried out in the light of the policy guidelines of the Preparation of EIA/EIA Reports under the procedures and practices formulated by the Pak EPA and adopted by the Punjab Environmental Protection Agency (EPA).

2.3 INSTITUTIONAL SETUP

2.3.1 ENVIRONMENTAL PROTECTION COUNCILS

The Punjab Environmental Protection Council (PEPC) is the apex decision-making body of Punjab. It has been developed under the provision of Punjab Environmental Protection (Amendment) Act 2012. It is headed by Chief Minister of Punjab with other members. The purpose of EIA is basically to obtain Environmental Approval from the Environmental Protection Agency (EPA), Punjab in compliance with Pakistan

Environmental Protection Act (PEPA) - 1997, now having been replaced by Punjab Environment Protection (Amendment) Act 2012.

2.3.2 ENVIRONMENTAL PROTECTION AGENCIES

Pak EPA has been established at the Federal level and EPAs are established at Provincial level also. In Punjab an independent Environmental Protection Agency is constituted headed by the Director General.

2.3.3 ENVIRONMENT PROTECTION DEPARTMENT, PUNJAB

The Punjab Government has established Environment Protection Department (EPD) administratively controlled by the Secretary, Government of Punjab. The EPD has its independent Minister. According to the provisions of the Punjab Environmental Protection (Amendment) Act, 2012, EPD has a significant role in policy making and implementation of the environmental laws in the Punjab Province.

2.4 RELEVANT LEGAL / INSTITUTIONAL FRAMEWORK

The applicable laws for the environmental study of the project are briefly given below. The proponent of the project will abide by the applicable laws and regulations.

A number of laws have been promulgated by the Government of the Pakistan to deal with the environmental and social aspects related to the implementation of various development projects in the country. In 1983, the Government of Pakistan issued an Environmental Protection Ordinance (EPO) that was replaced by the PEPA, 1997, through an Act of Parliament. According to the 18th Amendment in Constitution, the PEPA 1997 has been confined to Federal Area and provinces have been allowed to formulate their own environmental legislation in the subject of environment.

Under the PEP Act, it is mandatory to carry out EIA or EIA for all development projects. The Pak EPA has also framed guidelines for environmental assessment of projects in various developmental sectors, According to PEPA 1997; the National Environmental Quality Standards (NEQS) were established for effluents discharges and gaseous

emissions of various Municipal and Industrial sources. The latest revision of NEQS as carried out in year 2000.

Provincial Environmental Protection Departments are also working on the formulation and enforcement of environmental statutes and by-laws. The Pak EPA has issued several policies guidelines and adopted measures for streamlining the environmental assessment. Though, the need for environmental screening and assessment has received some weight during the recent past, strict implementation of the NEQS is still a dream to be realized. The applicable laws for the environmental study of the Project are briefly described below:

2.4.1 PAKISTAN ENVIRONMENTAL PROTECTION ORDER (PEPO) 1983

In 1983, the Government of Pakistan issued an Environmental Protection Ordinance (EPO) 1983. It was the first legislation promulgated for the protection of environment. According to PEPO, 1983 it was necessary to carry out IEE / EIA for all development projects, but there were no IEE / EIA regulations under that ordinance.

2.4.2 PUNJAB ENVIRONMENTAL PROTECTION (AMMENDMENT) ACT 2012

Section 12 of the Punjab Environmental Protection (Amendment) Act 2012 makes it mandatory for the proponent of a project to file with the Environmental Protection Agency either an Environment Impact Assessment (EIA) or Environmental Impact Assessment (EIA), as the case may be, in respect of the project.

As per definition given in the Punjab Environmental Protection (Amendment) Act 2012, Environment Impact Assessment (EIA) means an environmental study comprising collection of data, prediction of qualitative and quantitative impacts, comparison of alternatives, evaluation of preventive, mitigation and compensatory measures, formulation of environmental management & training plans & monitoring arrangements, and framing of recommendations and such other components as may be

prescribed. The provision of Section 12 has been incorporated “as it is” in the new Punjab Environmental Protection (Amendment) Act, 2012.

CHAPTER 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 and discharges relevant to different phases of the project, such as electricity & materials etc. have also been examined as a response to possible environmental concerns.

3.2 TYPE AND CATEGORY OF PROJECT

As per Review of Environment Impact Assessment (EIA) and Environmental Impact Assessment (EIA) Regulations, 2000 the Proposed Project that is Industrial falls **in Schedule II.**

3.3 OBJECTIVES OF THE PROJECT

The main objective for Industrial is to enhance and provide quality of industrial facility to the resident as per prescribed FDA rules.

3.4 ALTERNATIVES CONSIDERED REALISTICALLY AND REAON FOR THEIR REJECTION

After the consideration of alternative sites, the site chosen is best suited for the project because proposed project will be developed in an open area where there are already open plots and industrial as well as Industrial activities on going. There is no protected area or human settlement or important religious, archaeological, historical or recreational site exists within 2 km of the selected site, and since the site is under the ownership of the proponent, there is no need to consider any alternative site for the project. Moreover, there is no ecologically sensitive or declared protected area such as Territorial Waters, forest, game reserve or biodiversity parks within a 10 km radius of the project site, requiring the proponent to look for site alternatives.

Further, existing land use and road access as stated above, are the ground for selecting the said site for Industrial. There is no population to be displaced within 2 km of the selected site. Moreover, there is no ecologically sensitive or declared protected area such as Territorial Waters, reserved forests, biodiversity parks, structures of socio-cultural significance (Masjid, archaeological or historical site) or poor population to be displaced within a 10 km radius of the project site; requiring the proponent to consider alternative sites.

After the completion of construction after obtaining Environmental Approval from EPA Punjab, the proponent will take into consideration, all the locally available technology options to incorporate the best one into project operation.

In view of all these facts, it is concluded that a feasible project at the most suited location has been proposed and will employ the best locally available technology option considering all the alternatives.

3.4 LOCATION & SITE LAYOUT OF THE PROJECT

The Proposed Project is to be located at **Plot no.62 in Phase II at M-3 Industrial city Faisalabad**, Pakistan. Layout map of the Project site has been annexed with the report.

3.5 LAND OWNERSHIP

The proponent has owned the land on the name of Ghani Metal & Rubber Industries Pvt Ltd through Ibraheem Ghani. The copy of mutation is annexed.

3.7 LAND USE ON THE SITE

The area is open land and declared Industrial by the FDA.

VEGETATION FEATURES OF THE SITE

The project area is an open area. As such there's not any natural vegetation on the project site. So there is no possibility of vegetation loss. But Proponent has planned a Tree Plantation plan within the Project area

The study examines the physical resources, topography, soil, climate, surface and ground water and geology is of not only the project site but also the city as whole to assess whether the project under review can or does impact on any of these parameters.

It is better to explain the flora as a protective layer of earth that simply guards the land from the different major and minor hazards. Flora is not only protects the land but also an indicator of hydrology, Soil efficiency and also the home of different fauna. To notify the diversified flora in the project area an extensive flora survey was conducted and a list of existing flora was developed

3.8 ROAD ACCESS

Main roads and markets are in easy and close access of the proposed project site. The best feature is the road access to the nearby market.

3.11 PROJECT

The proposed project is establishment of Industrial. The area of project will be 85000 Sft with total capacity as depends on the Industrial/sand processing demand.

3.11 DESCRIPTION OF THE PROJECT

The Proposed project is the Industrial and making of sand processing to cater the demand of glass in country. Its sole aim is to enhance the quality of living standard in the form of Industrial/sand processing for the better well-being of the people of the city and also for the country.

Water

The water requirement for the proposed project includes Water, service water, drinking water. For all these requirements, FDA water will be used.

ELECTRICITY

WAPDA will be the main and only source of electricity. In absence of WAPDA, UPS will be used.

STAFF

Around 20--25 workers will be required for the construction of the said Industrial; while 90-95 workers will be employed during operation phase. Staff will comprise unskilled Laborers and one qualified person. The profile of these workers will be as follows:

- Clerical and administrative staff.
- Locally based staff as guard and for catering and cleaning.

EMERGENCY EVACUATION PLAN

The layout is designed in view of security and it would be maintained according to policy of the Industrial/sand processing executing the project. Emergency exit passages will be established and maintained. A proper evacuation plan will be formulated to cope with any emergency situation. Assembly points will be set and proper training will be provided to the workers and staff.

FIREFIGHTING

The firefighting system will include water and gas devices / extinguishers. Industrial will establish a proper firefighting system. Indoor and outdoor fire hydrants will be installed according to the codes and standards.

3.11.5 WASTEWATER

3.11.6 The waste water after treatment is being disposed of in the septic tank. The location of septic tank along with layout plan is being approved by the FDA. The waste water after treatment finally discharged to sewer lines to main drain designed for this purpose/area. The prior approval from the concerned department has already been secured. The copy of FDA department is attached.

3.11.6 AIR EMISSIONS

The air emissions at the proposed project during construction will be temporary from machinery while during operational phase no air emission will be because the said project is Industrial.

3.11.7 NOISE

During construction, only noise will be generated from the machinery which will be temporary while during operation there will be no noise as proposed project is Industrial not any manufacturing or processing unit.

3.11.8 SOLID WASTE

The solid waste during construction phase of the project will be construction material generation will vary from time to time, but will always comprise reusable items like concrete which can be reused for filling the floor etc. During construction and operation, there will be domestic waste also like wrapper, polythene bags etc. which will be collected by sanitary workers and will be disposed off according to FDA guidelines.

3.11.9 AREA & ITS DISTRIBUTION

Total area of the selected site is 7 Acres and major portion of it will be left open for vehicle and for student movement and for landscaping.

3.11.10 COST OF THE PROJECT

Total cost of the project is approximate 100 million PKR.

3.11.11 COST & MAGNITUDE OF OPERATION

Proposed project is a small Industrial will be comprised on cost estimated 100 million only. Establishment of Industrial/sand processing is the dire demand of the people of the locality. It is the industrial/sand processing residence which can help to provide the good residence.

3.11.12 SCHEDULE OF IMPLEMENTATION

The proponent intends to complete construction of the proposed Industrial within 8 to 10 months after obtaining Environmental Approval from EPA Punjab.

Restoration & Rehabilitation Plans

There exists no human settlement within 1 km radius of the selected project site to be displaced owing to the commencement of the Proposed Project. No structure of any significance stands at the site to be relocated or dismantled. Proponent has owned the land on his own name which is open plot, and no fresh land is to be occupied; hence, no relocation and rehabilitation is required.

GOVERNMENT APPROVALS

The copies of relevant Government Department approvals are attached as per the requirement.

DESCRIPTION OF THE ENVIRONMENT CHAPTER: 4

4.1 GENERAL

This section describes the baseline conditions, which cover the existing physical, ecological, and socio-economic environment of the Project Area. Information on these aspects has been derived from the desk study of available data, field visits to the project area as well as information obtained through visits to the Government departments and other relevant agencies.

Information regarding physical environment is collected within project area as well as the study area. While in case of biological and social environment, efforts were made to collect the information in one km around the project area for detailed Land cover classes and even up to 10 km buffer data in-case of any direct or indirect impacts were envisaged.

4.2 PHYSICAL ENVIRONMENT

The study examines the physical resources, topography, soil, climate, surface and ground water and geology is of not only the project site but also the city as whole to assess whether the project under review can or does impact on any of these parameters. The description of physical environment of Faisalabad and the project site is present in the following sub sections.

4.2. Geological Formation

The project area only falls within one geological category of flood plain deposits. Fortunately, no fault line has been noted and the area is not seismically active.

4.2.2. Soils:

In spite of level differences between the various landforms, the land area falling within one landform is nearly level. The soils generally range from agriculture to sandy. The lands are extensively cultivated under irrigation from canal systems off-taking from Indus River. Hand Pumps Groundwater is also extensively exploited for irrigation purposes by installing deep and shallow tube-wells. The major soils in the project area mainly industrial and Industrial.

4.2.4. Topography

Topographically, the project area is quite uniform. The topographic variation ranging is minimum above sea-level. The land adopted for project is part of Industrial land.

4.2.5.2. Ground Water

Ground Water Table (GWT) exists at a depth of about 70 ft below Natural Ground Level (NGL). To meet the agriculture and drinking requirements, FDA water facility may be gained.

4.2.5.3. Water Quality

The potable water samples were collected and analyzed to get an idea of quality of water available at project site. The ground water was collected from the hand pumps, Nala and Bore hole in the community areas.

4.2.6. Climate

Nearest meteorological station to the project area is about 4 Km from the project site. Recently, a weather station Faisalabad is also established but its historical data is not good enough to study a climatic cycle.

4.2.6.1. Temperature

The climate of the district Faisalabad is generally hot and dry in summer and cold and dry in the winter. The summer season is comparatively longer. It starts in April and continues till October. The winter season goes from November to March .However, the month of March and November are pleasant.

In the Project area, January is the coldest month with mean daily minimum temperature 4 ^{o}C which is very cold. Temperature variations are tremendously high in the Project Area.

The variation between maximum and minimum from 10- 20 0C the mean departure from the daily mean is about 0.740C. This is quite range full from October – January.

Sunshine hours generally range from 8-10 hours, good enough to dry.

4.2.7. Wind

The wind direction in winter months is north-east and in summer south-west with average yearly speed varying from 1.13 to 3.75 m/s. The wind pattern is almost typical of many south and central locations of Pakistan The Wind is generally strong blowing from NE to SW where as in Winter relatively weaker winds blow from SW to NE (Figure 28) wind velocity and direction is important to study the dispersion of industrial emission.

4.2.8. Rainfall

Generally there is sufficient rainfall in Faisalabad. Average monthly rain fall recorded at city observatory is given as under. The area is quite dry and arid and mostly receives monsoon rain from July- September.

4.2.9. Ambient Air Quality and Noise Level

Information on ambient air quality has been provided and copy of detail ambient attached as Annexure. This is mainly because air pollution is primarily a hazard for urban areas where the increasing number of industries and vehicles is increasingly concentrating the pollutants in air and also prevents them from being dispersed. As far as rural areas are concerned the air quality has not been a problem, except near sources of noxious and large emissions, such as industries. Therefore, no attention has been given in that direction.

A short environmental monitoring was conducted in the Project area.

4.3 ECOLOGICAL RESOURCES

4.3.1. General

This has changed the pattern of flora wherever irrigation was possible. The total geographic area of Faisalabad is either industrial or Industrial. No wild life sanctuaries, forest areas etc. are located in or near this site.

4.3.2. Flora and Fauna

It is better to explain the flora as a protective layer of earth that simply guards the land from the different major and minor hazards. Flora is not only protects the land but also an indicator of hydrology, Soil efficiency and also the home of different fauna. To notify the diversified flora in the project area an extensive flora survey was conducted and a list of existing flora was developed.

The flora of the district characterizes two major ecological divisions, norther and southern. The botanical life found in the northern half is like that of the rest of the irrigated tracts at central Punjab. The human interference, in the form of an irrigation network, has greatly damaged the natural environment. Increases in cultivation, waterlogged areas, and salinity have badly hurt plant life. Because of the increase of salinity at the surface, only salt-resistant plants can survive in most of the area.

Different crops like cotton, sugarcane are present at 5-6 KM Radius from the project site. The source of irrigation system is stream.

4.4 SOCIO-ECONOMIC ENVIRONMENT

4.4.1. Administrative Setting

Faisalabad (Punjabi and Urdu: فیصل آباد, Urdu pronunciation: (listen); English: /fɑːɪsɑːl bɑːd/), formerly known as **Lyallpur** named after the founder of the city is the third-most-populous city in Pakistan after Karachi and Lahore respectively, and the second-largest in the eastern province of Punjab. Historically one of the first planned cities within British India, it has long since developed into a cosmopolitan metropolis. Faisalabad was restructured into city district status; a devolution promulgated by the 2001 local government ordinance (LGO). The total area of Faisalabad District is 5,856 km^2 (2,261 sq mi)[6] while the area controlled by the Faisalabad Development Authority (FDA) is 1,280 km^2 (490 sq mi).[7][8]:8 Faisalabad has grown to become a major industrial and distribution centre because of its central location in the region and connecting roads, rails, and air transportation.[9] It has been referred to as the "Manchester of Pakistan".[10][11] As of 2013, GDP (PPP) of Faisalabad was estimated as

$43 billion[5] and projected to rise to $87 billion in 2025 at a growth rate of 5.7%.[12] Faisalabad contributes over 10 percent to the Punjab's GDP and has an average annual GDP (nominal) of $20.5 billion.[5] Agriculture and industry remain its hallmark

4.4.2. Settlement Pattern

The urban population was population of the district which grew at an average of 4.3 per cent during 1981-98 and had decrease from 4.7 per cent observed during 1972-81.

4.5 DEMOGRAPHIC CHARACTERISTICS OF THE POPULATION IN THE STUDY AREA

An effort was made to collect the socio-economic information through structured questionnaires relating to the demographic features of the population resided in the study area. The demographic features include the information on ethnicity/tribes, size of households, gender composition, and literacy status of the population in the project area.

4.5 CULTURAL, RELIGIOUS AND OTHER STRUCTURES

No cultural structures are located inside the proposed site.

4.5.1 HISTORICAL AND ARCHEOLOGICAL SITES

No site of historical and archeological importance was observed within the Project as well as study area.

HEALTH FACILITIES

There are frequent hospitals and small health care dispensaries within 500m of the proposed site.

INDUSTRIAL/SAND PROCESSING FACILITIES

Faisalabad is the city on the dash for development in social as well as Industrial/sand processing impact. The city already have a number of institutions offering higher education in various fields

and many other are planned and under construction and many of them are government owned.

There are different Industrial/sand processing and housing societies facilities present in the proposed project area are

- Model Industrial/sand processing

4.8 Water Supply

The project has an independent water supply system comprising storage tank of sufficient capacity. Water is supplied to Industrial through FDA sewerage system office and works through motor pump.

4.9 Electric Supply

LESCO is the main source of electricity at the proposed site.

4.10 QUALITY OF LIFE VALUES

No industrial area is present near the project site; therefore, individuals and workers from neighboring areas were interviewed. The individuals assessed from the neighboring communities of the project area were involved in different nature of businesses and private jobs in nearby localities. Most of the people have sound earning sources and practice leisure lifestyles in fresh environments provided by the private housing societies in the nearby areas. Most of the people hesitated telling their incomes; however, incomes average in the range of 40000 to as much as 55000 PKR; enough to meet their basic needs. They avail all the basic facilities of healthy living and enjoy human rights and civic liberties.

The diseases prevalent in the community were stomach disorders, fatigue, joint pain, diabetes and arthritis. But it was also observed that all these disease are commonly due to improper diet and water contamination.

Almost all of the interviewed members were in favor of the project; rather they commented even more similar projects should be initiated in such areas as to yield

lowering of goods prices and controlling inflation when not comprising on quality of the products and the environment.

4.11 LAB REPORTS OF ENVIRONMENTAL ANALYSES

Copy of Lab reports application of ambient air, wastewater, and ground water of project site is annexed.

4.12 Conclusion

Comparison of potential adverse and beneficial impacts of the project shows that project will prove to be beneficial for the inhabitants of the area. The project will provide job opportunities for the local inhabitants. Hence improve their socio-economic status. Employment opportunities generated by the project include workers, helpers and guards. The overall socio-economic impact of the project is interpreted in relation to the existing environmental conditions.

The project, overall, does not have major adverse impacts on the existing environment and people with due implantation of the mitigation measures, there will be very insignificant adverse impacts on the socio-economic environment. The project has more beneficial impacts on the socio-economic environment than adverse impacts. In conclusion, it can be said that overall the project would have positive impacts on the socio-economic status of the workers the neighboring scanty community inhabitants.

SCREENING Of POTENTIAL ENVIRONMENTAL IMPACTS & MITIGATION MEASURES. Chapter No.5

POTENTIAL ENVIRONMENTAL ENHANCEMENT MRASURES:

5.1 GENERAL

This chapter discourses the potential environmental and social impacts of the project activities, predicts the magnitude of the impact, assesses significance, identifies the mitigation measures to minimize the adverse environmental impacts and evaluates the residual impact of the project, if any. Environmental impacts of a project are driven out using numerous factors and parameters, due to which it is necessary to evolve Environmental Management Plan (EMP) to develop the mitigation measures. The assessment via these parameters is necessary in the study area for comparative analysis in comparison with that area where there is no activity has been introduced.

5.2 IMPACT ASSESSMENT METHODOLGY

- **Screening of Impacts**

  Based on general observation and through the use of sectoral guidelines for industrial estates issued by Pak-EPA, and setting some criteria scale, significant impacts were screened out from the insignificant impacts. Impact checklists filled

for this purpose (for impacts associated with construction and operation phases of the project), have been annexed with this report.

This step refers to the description; quantitatively (where possible) or qualitatively, of the anticipated impacts of the project

- **Identification of mitigation measures**

It is determined that the predicted impact is significant when compared with the criteria for determining the significance, suitable mitigations measures are then accordingly identified. These measures can be classified into following categories:

- Minimizing impacts by limiting the degree or magnitude of the activities. For example, minimizing dust emission by reducing the vehicular traffic.
- Rectifying the impacts by repairing, rehabilitating, or restoring the affected environment.
- Compensating for the impacts by replacing or providing the substitute resources or environment.

- **Evaluation of the residual impacts**

Incorporation of suggested mitigation measures reduce the environmental impacts of the project and bring it within the acceptable limits. This step refers to the identification of the anticipated remaining impacts after mitigation measures have been applied.

- **Identification of monitoring requirements**

The last step in the assessment process is the identification of minimum monitoring requirements. The scope and frequency of monitoring depends on the residual impacts. The purpose of the monitoring is to confirm that the impact is within the prescribed limits and to provide timely information if unacceptable impact is taking place.

5.3 IMPACTS ASSOCIATED WITH SITE SELECTION

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

- The site lies in plan area where there are open plots and industrial area.
- There is no fauna flora (particularly belonging to an endangered species) within a 10 km radius of the site
- Main road network runs in front of the Industrial/sand processing.
- There is no ecologically sensitive or declared protected area (PA) like forest, fish hatcheries, Territorial Waters, wildlife or game reserves, any structure of socio-cultural significance (historical or archaeological site or religious structures; Masjid, temples, etc.) within 10 km of the selected site

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.

5.4 IMPACT DURING DESIGN PHASE

At the design phase, no considerable impact will occur on land, soil, topography, ground water, and on people of the area. However in pre-construction phase a management system should be provided at design level so impacts can be reduced. Design of the proposed area will adhere to all standard technical requirements in order to avoid adverse impacts on environment and human health.

Mitigation Measures at Design Phase

At design phase special attention should be given to the design of the project in the sense that it has been designed in such a way as to cause minimum disruption and deterioration of environment and surroundings.

5.5 ANTICIPATED POTENTIAL ENVIRONMENTAL IMPACTS (Construction Phase)

Characterization is done on the basis of significance, probability and prevalence of the potential impacts in the surrounding environment. Primarily, anticipated impacts have

been categorized as direct, indirect and induced. These groups of impacts can be further broken down according to their nature into:

- Positive and negative impact;
- Minor, major and moderate impact;
- Local and widespread impact;
- Temporary and permanent impact;
- Short and long term impact; and
- Reversible and Irreversible impact

Notion of Significance

Evaluation of impacts will be based on determining the significance of impacts as well as characteristics of impacts. Indicators considered for determining the significance include: predicted increase in the acceptable level (established standard e.g., NEQS and duration) in relation to key species life cycle and requirement for population maintenance, geographical extent of an effect, assimilative capacity of environmental attributes. To determine the significance of impacts on bio-physical and socio-economic environment of the proposed project, impact characterization is discussed and is given as Table 5.1 and 5.2 for construction and operation phase respectively. The criteria used to define the significance of impacts in terms of low, moderate and severe impact are as follows:

Negligible/No Impact:

The impact, which has unapparent and negligible influence on natural and socio-economic environment.

Low Adverse Impact:

The impact, which has a slight influence on the natural and socio-economic environment.

Moderate Adverse Impact:

The impact, which can be eliminated/ mitigated after applying the appropriate mitigation measures.

Severe Adverse Impact:

The impact, which can be partially/ but not fully mitigated by applying the mitigation measure.

Positive/Beneficial Impact:

The impact, which improve/enhance the natural and socio-economic environment.

Table 5.1: Environmental Impacts Evaluation Matrix during the Construction Phase

Sr. No.	Environmental Component / Project Activities	Physical Environment									Biological Environment	Socioeconomic Environment						
		Topography	Drainage	Soil Quality	Landscape	Groundwater Quality	Land use	Solid Waste	Air Quality	Noise & Vibration	Flora	Fauna	Worker Health & Safety	Disruption of Public Utilities	Employment	Relocation	Loss of Agricultural activities	Cultural/Religious Values	Breeding grounds for disease vector
1	Removal of Vegetation	LA	O	LA	LA	O	MA	LA	LA	LA	HA	MA	LA	LA	LB	MA	O	O	O
2	Construction camps, workshops etc.	LA	MA	LA	O	LA	MA	LA	LA	LA	LA	LA	LA	O	LB	O	O	O	LA
3	Transportation of materials	O	O	O	O	O	O	LA	LA	LA	LA	LA	LA	O	LB	O	O	O	O
4	Dumping of excavated material	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	O	LB	O	O	O	O
5	Open storage of materials, fuel etc.	LA	LA	LA	LA	LA	O	LA	LA	O	LA	LA	LA	O	LB	O	O	O	O
6	Earthwork operations	LA	LA	LA	LA	LA	LB	LA	LA	LA	LA	LA	LA	O	LB	O	O	O	O
7	Installation of Coal Fired Thermal	O	O	L	L	O	O	L	L	M	LA	LA	LA	O	LB	O	O	O	O

	Oil Heater			A	A			A	A	A									

Legend

O - Insignificant / no impact **LA = Low Adverse** **MA = Medium Adverse** **HA = High Adverse**

NA - Not Applicable **LB = Low Beneficial** **MB = Medium Beneficial** **HB = High Beneficial**

5.6 IMPACTS ASSOCIATED WITH THE CONSTRUCTION PHASE

As project area is far from the community and biological life, so, there are rare impacts on the environmental and socio-economic conditions. Moreover, possible impacts associated with the construction activities of the project are discussed in this section. The impacts that are discussed are following:

- **Environmental Impact**
  - Construction Noise
  - Dust Emission during Construction
  - Vegetation Loss
  - Water Bodies
  - Soil Contamination

- **Socio-economic Impact**
  - Community Safety
  - Employment Conflicts
  - Health and Safety of Workers

5.6.1 CONSTRUCTION NOISE

Depending upon the equipment used and its distance from the receptor, the community will not be exposed to intermittent and variable noise level. Noise level is measured as ambient noise which is defined as background noise that is always present.

Potential Issues

The potential noise related issues during the construction may cause disturbance to the surrounding areas of the project due to construction machinery operation on the project site and the noise related issues during the construction cause disturbance but as such there is no community residing around the project area so, the impacts regarding noise will be on minimal / negligible level.

Impact Analysis

The potential sources of significant noise during the construction period include the construction machinery and construction related traffic and it also includes installation of machinery. Precise prediction of noise due to construction activities and installation of machinery activities at given location at given time requires the list of all equipment that is operational at the time and the following information regarding each piece of equipment:

- The maximum and minimum noise level, measured at reference distance from the equipment, during a work cycle
- Fraction of time it operates at maximum level during a work cycle
- The usage factor, i.e. the number of hours during the day when the equipment is operational
- Distance of equipment from the receptor
- Potential noise barrier and other topographical features that attenuate the sound
- Atmospheric condition, the wind speed and direction, humidity and barometric pressure, also affect the propagation of sound. However for short distances the effect of these is insufficient compared to other variables.

Mitigation

The strategy to minimize the noise in the community within acceptable limits should be based on the followings:

- Reduce equipment noise at source
- Minimize construction related vehicular noise
- Make sure the movement of transportation vehicles should be confined only in the day. The movement of vehicle should be restricted during night time.
- It will conform that construction equipment and vehicles should be equipped with mufflers to effectively decrease generation of noise
- Providing construction workers with suitable hearing protection like ear cap, or ear muffs and training them in their use.

The proposed strategy should be implemented through the following specific measure:

- **Reduce Equipment Noise at source**

  Based on the above survey, equipment emitting excessive noise in comparison to other similar equipment should not be allowed to operate. Equipment underuse should be regularly maintained, tuned and provided with mufflers to minimize noise level. Equipment in poor state of maintenance, particularly without noise control should be checked to determine if it can be improved, replaced with less noisy equipment as soon as practicable.

- **Traffic noise**
  - The construction related traffic would enter into the site through construction gate.
  - Blowing of horns will be prohibited on the access road to the plant site and inside the site.
  - It will be ensured that all such vehicles are properly tuned and maintained in good working conditions and have quality mufflers installed in order to reduce vehicular noise.

Residual Impacts

No irreversible noise impact is expected from the construction activities at the site of project. It is possible that occasionally there will be accidences of the significance criteria during the construction. This may happen if for example the numbers of construction machineries are deployed close to community. This will cause a nuisance to the community, but in case of this project there is no industrial activity within 2 km around the project area although this project is likely to last for short period.

Monitoring Requirements

Although the Proposed Project is away from the industrial area but the issue related to the noise will not be taken for granted, to mitigate the impacts that can arise due to noise a complete monitoring plan will be developed. Monitoring will be carried out regularly.

5.6.2 DUST EMISSION DURING CONSTRUCTION

Potential Issues

Particulate matter emitted during construction activities can result in deterioration of ambient air quality in the vicinity, and be the nuisance for the community and workers.

Impact Analysis

Potential sources of particulate matter emission during construction activities include truck dumping, halting vehicle movement on unpaved road, combination of liquid fuel in equipment and vehicles. Earthwork and concrete mixing and batching will also yield minute quantities.

The quantity of dust that will be generated on a particular day will depend on the magnitude and nature of activity and the atmospheric conditions prevailing on the day. A wide variety of options exist to control emission from the construction site. The most effective means of reducing the dust emission is wet suppression. Water exposed surface and the soil to keep soil moist at all times can reduce the total dust emission from the project by as much as 75 %.

Mitigation

The following mitigation measures will be implemented at the proposed site construction site during construction to control the emission of particulate matter:

- Water will be sprinkled daily or when there is obvious dust problem on all exposed surfaces to suppress emission of dust. Frequency of sprinkling will be kept such that the dust remains under control, particularly when wind is blowing towards the community.
- Dust emission from soil piles and aggregate storage stockpiles will be reduced by covering the piles, for example with tarpaulin or thick plastic sheet, to prevent emission.
- Construction material that is susceptible to dust generation will be transported only in securely covered trucks to prevent dust emission.

Residual Impacts

Dust during construction is likely to be nuisance to the nearby areas. In this project there is no residence within 2 km around the project area. No lasting of dust impact expected after the completion of construction.

Monitoring Requirement

In the view of the likelihood of residual impacts, the following monitoring measures will be undertaken:

- Dust emission from the construction activities will be visually monitored.
- The community in the industrial area and the nearby areas will be actively consulted. Their feedback will form a key mean for monitoring the impacts of dust emissions.

5.5.3 VEGETATION LOSS

The project area is an open area. As such there's not any natural vegetation on the project site. So there is no possibility of vegetation loss. But Proponent has planned a Tree Plantation plan within the Project area.

5.5.4 WATER BODIES

Potential Issues

Water will be required for the civil work of the Proposed Project. Sources of water pollution on building sites include diesel and oil, paint, solvents, cleaners and other harmful chemicals; and construction debris and dirt. Pollutants on construction sites can also soak into the groundwater. The extraction of water for the construction activities can affect the groundwater availability for the project area communities.

Impact Analysis

Sources of water pollution on building sites include diesel and oil, paint, solvents, cleaners and other harmful chemicals; and construction debris and dirt. Pollutants on construction sites can also soak into the groundwater.

Mitigation

Based on discussion above, the following mitigation measures are proposed:

- Special care should be taken when handling oil, solid waste and hazardous waste to entirely avoid any accidental spills and leakages.
- Efforts will be made to ensure that water is conserved and that environment friendly Techniques will be adopted too.

5.5.5 SOIL CONTAMINATION

During construction phase, the soil quality may be affected due to spills during refueling and discharges from vehicle and equipment. Contamination of soil may occur due to clearance of construction waste in the surrounding area. There will be minor work on the construction of the site which will cause insignificant amount of excavation soil, construction debris and other waste. But if mitigation measures will be applied the overall impact on soil during construction phase will be minimum.

Impact Analysis

During the construction of the project spills of fuels, lubricants and chemicals can take place:

- During transfer from one container to another
- During maintenance of equipment and vehicles
- Due to leakage from the containers and equipment

Depending on nature of material, location of spill and quantity of spill, soil can get contaminated.

Mitigation

The following control measures are proposed to mitigate the impact on the soil resources:

- Spills prevention trays should be provided and used at refueling locations
- Regular inspection should be carried out to detect the leakage in construction vehicles and equipment
- Appropriate arrangement, including shovels, plastic bags and absorbent material, should be available near the fuel or oil storage area

Residual Impacts

Implementation of proposed mitigation measure is not likely to leave any long term residual impacts on the soil.

Monitoring Requirement

To ensure compliance:

- Regular inspection of soil of the project area should be undertaken
- Incident record of all moderate and major spills should be maintained

5.5.6 COMMUNITY SAFETY

Potential Impacts

The construction activity can potentially be a safety hazard for the community; in particular, owing to the increase in the construction related traffic on the project access road.

Impact Analysis

Project related traffic; particularly on the section of the access road that is adjacent to the existing plant will be major source of concern for the community.

Mitigation

The following are the mitigation measures:

- A public safety plan should be developed
- Community complaint register and other mean should be adopted for the community to complaint.
- All entry points into the construction area should be staffed 24 hour a day. People who are not related to the project should not be allowed inside.
- No machinery should be left unattended, particularly in the running condition.
- Road signage relevant to the project should be posted, where necessary.

Residual Impacts

With the implementation of mitigation measures proposed above, the residual impact on the community safety due to construction will be insignificant.

Monitoring Requirement

The project is away from the community interruption but still to avoid any kind problem from community a Specific monitoring requirement should be part of community safety plan and may include inspection for road signage, safety marks, fencing and observation of other measures.

5.5.7 EMPLOYMENT CONFLICTS

Potential Issues

Potential employment related issues include dissatisfaction among the local communities over the number of jobs offered to them.

Impact Analysis

The project is likely to create the significant job opportunity. Even unskilled and semi-skilled employment opportunities are likely to be created for a significant period.

The key issue is related to provision of job. This issue particularly becomes problematic if it is perceived by the local community that a significant number of construction and installation related job opportunity is not given to people from the local community. This could result in friction between local residents and construction workers.

Mitigation

The following mitigation measures will be implemented:

- Maximum number of unskilled and semiskilled jobs should be provided to the local communities
- A local labor selection criterion should be developed in consultation with the community.

Residual Impacts

Due to its economic implementation, it is possible that employment may remain a contentious issue throughout the project.

Monitoring Requirements

The following data should be recorded and maintained on the employment:

- Total number of Unskilled, semi- skilled, and skilled job offered during construction.
- Name and place of residence of the employed staff.

5.5.8 HEALTH AND SAFETY OF WORKERS

Health and safety impacts of the project on workers and communities in the area of influence of the project will be reasonably managed. During construction phase, minor and severe injuries to workers due to machine operation and earthwork may occur but if managed properly, this impact can be mitigated.

Mitigation

- All reasonable precautions will be taken for the safety of employees and equipment will be operated by competent persons.
- Construction activities would be carried out under the supervision of a suitably experienced person.
- Necessary safety gear will be provided to all employees and proper supervision will ensure that the gears are worn at all times.
- First aid kits and other necessary equipment are kept available at Project Site along with a list of emergency phone numbers to be contacted in case of any emergency or accidents.
- Adequate sanitary facilities, potable water, and garbage bins will be provided. Safety rules and regulations will be implemented during construction.
- All workers will be required to wear protective gear and equipment that conforms to safety standards. Security of the project site will be imposed at all times.

5.6 ENVIERONMRENTAL IMPACTS AS ASSOCIATED WITH OPERATIONAL ACTIVITIES

The environmental and socio-economic impacts related with the operation phase of the Proposed Project are discussed in this section. The impacts that are discussed are the following:

- Noise
- Wastewater
- Air pollution

- Waste Management
- Socio economic impacts
- Emergency response

5.6.1 NOISE

During operation, there is no noise as at project site, there will no any processing or machines running mechanism apply. So project is free from noise factor. There will be stored pesticides only.

5.6.2 WASTEWATER

Potential Issues

The discharge of domestic wastewater will be issue.

Impact Analysis

There is negligible impact of treated wastewater on the environment.

Mitigation

- Septic Tanks will be installed in the bathrooms from where domestic wastewater will be discharged to nearby designed drain for this area.
- Efforts should be made to ensure that water is conserved.

5.6.3 AIR POLLUTION

Potential Impacts

There will be no issue regarding the air pollution during operation phase of this project.

Impact Analysis

There is negligible impact of air pollution on the environment.

Mitigation:

- No waste should be burnt at the premises.

5.6.4 SOLID WASTE MANAGEMENT

Potential issues

Waste minimization is very important part; focusing on the waste avoidance and reduction through the use of cleaner production processes and practices. During operational phase there will be domestic solid waste only like polythene bags etc.

Mitigation

A useful approach to waste minimization involves the preparation of proper waste minimization plan. The starting point for the waste minimization will be waste audit. This includes:

- No waste should be dumped at any location outside the boundary.
- Audit of waste management should be undertaken on regular basis.
- Domestic solid waste like polythene bags and wrappers will be collected by sanitary workers who will dispose off according to the guidelines of FDA.

5.6.5 SAFETY HAZARDS, PUBLIC HEALTH AND NUISANCES

Operation of the project may cause some concerns for safety, public health and nuisances within the project area.

Mitigation:

- Workers' awareness and safety wall chart showing safety symbols and other necessary information will be displayed at various places.
- First Aid Box will be kept in every department which will be will within the approach in case of any injury or mishap.
- To avoid any chance of fire, a comprehensive firefighting system will be developed that includes all types of fire Extinguishers, fire hydrants, sand Buckets and firefighting Vehicles.
- Emergency Eye wash equipment should be placed in chemical room.
- Basic medical and safety training will be held from time to time to minimize the risk of health and safety issues.

5.6.6 SOCIO-ECONOMIC IMPACTS

The project is creating skilled and unskilled labor opportunities during operational stage. 80-55% unskilled labor is to be employed from the local communities, which will reduce unemployment in the area and improve living conditions of the local population. This is a moderate positive impact.

5.6.7 EMERGENCY RESPONSE

Incidents and accidents may take place unexpectedly during project operations. These may include;

- Fire hazard

5.6.7.1 FIRE HAZARD

Working operation will be manageable but negligence in operations may cause risk of safety and health problems. Mishandling or mismanagement may lead to fire hazard, which poses a serious threat. Short circuiting in electrical switches and frayed electrical wires can cause fire.

Mitigation

- The fire fighting system will include water and gas devices / extinguishers.
- Indoor and outdoor fire hydrants will be installed according to the codes and standards.
- Oil storage tank area will be provided with foam devices / extinguishers.
- Fire extinguishers should be properly maintained and checked periodically.
- Flammable materials in the premises should be prohibited.
- Fire alarm systems should be maintained for detection and warning of fire.
- Adequate training of workers on use of fire fighting system to deal with emergency situation.
- Administration of the Industrial/sand processing will develop the proper evacuation plans in Industrial/sand processing.

6.1 GENERAL

This EIA provides the Environmental Management Plan (EMP) of the project for its construction and operational phases to keep it environment begin as well as the monitoring plan to ensure the compliance of the established EMP.

Outline and key features of the EMP for operations phase is presented. As per the environmental legislation in Pakistan, the EMP for the operations phase, along with other documents, is to be submitted to the environmental protection agency to obtain confirmation for compliance and Environmental Approval for project operation.

Even after implementation of the suggested mitigation measures, the impact may remain significant, and require monitoring. This section also underlies the monitoring framework for both construction and operation phases to check compliance of the EMP and to take timely actions for correction in case any exceedance of significant criteria, requirements or goals are found.

6.2 PURPOSE AND OBJECTIVES OF THE EMP

The primary objectives of the EMP are to:

- Facilitate the implementation of the mitigation measures identified in the EIA.
- Define the responsibilities of the project proponent and staff.
- Establish means of effective communication of environmental issues between them.
- Identify monitoring parameters in order to ensure the effectiveness of the mitigation measures.
- Provide a mechanism for taking timely action in the face of unanticipated environmental situations.
- Identify training requirements at various levels.

The following are the primary goals of EMP:

- Ensure implementation of mitigation measures.
- Ensure that the activities of the project meet all environmental related legal

obligations.

- Provide a mechanism for taking timely actions for unanticipated environmental.

6.3 MANAGEMENT APPROACH

The organizational roles and responsibilities of the key players are summarized below:

Proponent*:* The project proponent will undertake overall responsibility for compliance with the EMP. Proponent will carry out verification checks to ensure that the contractors are effectively implementing their environmental and social requirements.

Contractors*:* The contractors will implement the majority of environmental and social mitigation measures. The contractors will carry out field activities as part of the project. The contractors are subject to certain liabilities under the environmental laws of the country, and under its contract with proponent.

6.4 ENVIRONMENT MANAGEMENT PLAN FOR CONSTRUCTION PHASE

It lists all the mitigation measures identified in the EIA and the associated environmental or social aspect in line with the administrative framework involving all the responsible implementing authorities who are required to take the planned actions/measures.

Table 6.2: Environment Management Plan (EMP)

Environmental and social aspects	Measures	Responsibility
Construction noise control plan	Periodic surveys will be conducted for the control of noise level from the sites. Workers on high noise machines will be provided with PPEs (ear plugs, ear muffs). Machines will be equipped with mufflers.	Administration/ Construction Contractor

Dust control	During construction, water will be sprinkled at regular basis.	Administration/ Construction Contractor
Vehicle and equipment exhaust control	All vehicles and other equipment used during the construction & installation will be tuned and maintained in good working condition in order to minimize the emission of pollutants.	Administration/ Construction Contractor
Water conservation plan	Groundwater being extracted for construction activities of Proposed Establishment project would be recorded, where possible, water would be recycled.	Administration
Community safety plan	Fence surrounding the site will be put in on during the construction to prevent assesses. All entry points into the site will be staffed 24 hours a day with guards. No machinery will be left unattended, particularly in the running condition.	Administration
Workers' safety plan	SOPs will be established for all activities on the site, workers will be trained and guided to follow SOPs and will be provided with necessary PPEs wherever required. Careful monitoring will also be carried out.	Construction Contractor
Soil contamination	During construction soil will be contaminated by the excavation of soil at some extent.	Construction Contractor

6.4.1 ENVIRONMENTAL MONITORING PLAN FOR CONSTRUTION PHASE

Environmental monitoring is a vital component of the Environmental Management Plan. It is the mechanism through which the effectiveness of the environmental management Plan in protecting the environment is measured. The feedback provided by the environmental monitoring is instrumental in identifying any problem or lapse in the system under implementation and planning corrective actions. The main objectives of the environmental monitoring during the construction phase will be:

- To provide a mechanism to determine whether the project construction contractors are carrying out the project in conformity with the EMP.
- To identify areas where the impacts of the project are exceeding the criteria of significance and, therefore, require corrective actions.
- To document the actual project impacts on physical, biological, and socio-economic receptors, quantitatively where possible, in order to design better and more effective mitigation measures.

Following environmental record should be maintained:

- Periodic inspection reports of the site
- Audit reports
- Incident record of all moderate incidents and accidents. The record will include:
  - ✓ 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 operation 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 equipment noise.

- ✓ Employment
- ✓ 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 6.3: Roles and Responsibilities for Environmental Monitoring

Aspects	Proponent Responsibilities	Contractors Responsibility	Relevant Documentation
Contracting	Ensure that the monitoring 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 prior to the commencement of the construction.		Revised monitoring plan
Resources	Ensure the availability of resources for environmental monitoring.	Ensure the availability of resources for environmental monitoring 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 survey	Undertake the periodic (pre-planned and unplanned) inspection and carry out the field measurement.	Systematically observe and collect the data on the environmental performance.	Inspection and 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.	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

Table 6.4: Environment Monitoring Plan

Potential activity and potential impact	Objective of monitoring	Parameter to be monitored	Measurements	Location	Frequency	Responsibility

Disturbance due to noise from operational activity	To determine the effectiveness of the noise abatement measure on the sound level	Noise level near the receptor	Reading will be taken.	At least three locations on the site boundary and three locations at the receptor end	On three typical working days and one weekend	Environment Officer / Manager
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	Construction and operational site	Once daily	Manager
Workers' safety	To check and evaluate the effectiveness of the workers' safety plan	Injuries	Injuries will be recorded	On site	Daily	Construction Contractor
Vehicle and equipment exhaust	To confirm the availability of exhaust control devices with the construction vehicles and equipment and their maintenance levels	Air quality at different points around the vehicles and equipment	Readings will be taken	At least three points around the vehicles and equipment and three points at some distance downwind	On three typical working days	

6.5 ENVIRONMENT MANAGEMENT PLAN FOR OPERATION PHASE

This section outlines the aspects that will be covered in the EMP for the operational phase of the project, but also to enhance project benefits, and to introduce standards of good practice to be adopted for all project activities.

Table 6.5: Environmental Management Plan for Operational Phase

Sr. #	Project Component or Impact	Target	Action	Responsibility
1	Overall environmental impacts	To reduce overall negative impact of the project on the environment and conserve natural resources.	Should take all possible measures to ensure that operation of the project does not harm any component of the environment	Proponent/ Management
2	Water Conservation	To conserve water	Workers should be regularly advised on importance of water conservation so as to preserve water	Proponent/ Management Committee
			Water balance should be tracked and recorded	
			Water of a supply will be used for the designated like the fire water only for fire control	
			Water leakages should be repaired on immediate actions	
			Workers should be advised to keep their vehicles and machines in good working order to minimize emissions.	
			Plans should be made to bring renewable energy resources into use	
			Energy audits should be conducted	

3	Solid Waste Management	To manage waste in an environment friendly manner.	The solid waste from the project should not be allowed to pile up at the temporary storage site. Domestic solid waste will be collected by sanitary workers who will dispose off according to FDA guidelines.	Management
4	Safety & Security	To secure the lives of employees and nearby area.	All possible measures should be taken to maintain security at all times.	Proponent/ Management
			All the risks and hazards will be identified and assessed beforehand and control measures revised time to time	
			SOPs should be updated time to time and displayed	
			Safety trainings should be made a part of company schedules	
5	Emergency Response	To deal with any emergency efficiently.	Industrial/sand processing should have an emergency escape plan in place.	Management
6	Environmental Monitoring	To ensure that periodic reports on environment at the project site are furnished to EPA in pursuance of conditions of the environmental approval.	A mechanism should be employed for Environmental Monitoring at the project when it comes into operation	Management

6.6 INSTITUTIONAL CAPACITY OF THE UNIT

The organizational structure for the Environment Management Plan is outlined below:

6.6.1 PRIMARY RESPONSIBILITIES

The primary responsibility for implementing EMP within the company lies with the Industrial.

6.6.2 OPERATION MANAGEMENT & CONTROL

Conducting the operational activities in environmentally sound manner will be the responsibility of the concerned Manager; for which he will be trained.

6.6.3 SUPERVISION & MONITORING

Supervisor will be responsible for all environmental issues and for the implementation of EMP.

6.6.4 COMMUNICATIONS AND DOCUMENTATION

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

MEETINGS

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

- Kick-off meetings
- Weekly meetings

The purpose of the kick-off meeting will be to present the EMP to project staff and discuss its implementation and to discuss any event of environmental significance that has happened in the under-discussion industry or a similar industrial unit to investigate its route causes and develop its solutions.

The purpose of the weekly meetings 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.

CHANGES-RECORD REGISTER

A change-record register will be maintained at the site, in order to document any changes in project design. These changes will be handled through the change management mechanism.

ENVIRONMENTAL TRAINING

Environmental training will help to ensure that the requirements of the EIA and EMP are

clearly understood and followed by all project personnel in the course of the project.

Equipment maintenance details

The management of the proposed project is agreed to sign MOU with the third party for the maintenance of equipment used for the project. After getting approval from the environment and other Govt concerned department the agreement will be signed for the wider interest of the project and environment.

Environmental Budget

The environmental budget for the proposed project approved by the unit management is one million rupees per anum

CHAPER: 7

MITIGATION AND IMPACT ASSESSMENT

GENERAL

This chapter discourses the potential environmental and social impacts of the project activities, predicts the magnitude of the impact, assesses significance,

Identifies the mitigation measures to minimize the adverse environmental impacts and evaluates the residual impact of the project, if any. Environmental impacts of a project are driven out using numerous factors and parameters, due to which it is necessary to evolve Environmental Management Plan (EMP) to develop the mitigation measures. The assessment via these parameters is necessary in the study area for comparative analysis in comparison with that area where there is no activity has been introduced.

IMPACT ASSESSMENT METHODOLGY

- **Screening of Impacts**

  Based on general observation and through the use of sectoral guidelines for industrial estates issued by Pak-EPA, and setting some criteria scale, significant impacts were screened out from the insignificant impacts. Impact checklists filled for this purpose (for impacts associated with construction and operation phases of the project), have been annexed with this report.

  This step refers to the description; quantitatively (where possible) or qualitatively, of the anticipated impacts of the project

- **Identification of mitigation measures**

  It is determined that the predicted impact is significant when compared with the criteria for determining the significance, suitable mitigations measures are then accordingly identified. These measures can be classified into following categories:

- Avoiding the impacts altogether by not taking certain project activity or part of an activity. For example, using CFC free equipment to avoid the impacts on the ozone layer.
- Minimizing impacts by limiting the degree or magnitude of the activities. For example, minimizing dust emission by reducing the vehicular traffic.
- Rectifying the impacts by repairing, rehabilitating, or restoring the affected environment.
- Compensating for the impacts by replacing or providing the substitute resources or environment.

➢ **Evaluation of the residual impacts**

Incorporation of suggested mitigation measures reduce the environmental impacts of the project and bring it within the acceptable limits. This step refers to the identification of the anticipated remaining impacts after mitigation measures have been applied.

➢ **Identification of monitoring requirements**

The last step in the assessment process is the identification of minimum monitoring requirements. The scope and frequency of monitoring depends on the residual impacts. The purpose of the monitoring is to confirm that the impact is within the prescribed limits and to provide timely information if unacceptable impact is taking place.

IMPACTS ASSOCIATED WITH SITE SELECTION

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

- The site lies in plan area where there are open plots and agricultural area.
- There is no community or human settlement within 2 km of the site
- There is no fauna flora (particularly belonging to an endangered species) within a 2 km radius of the site
- Main road network runs in front of the Project.

- There is no ecologically sensitive or declared protected area (PA) like forest, fish hatcheries, Territorial Waters, wildlife or game reserves, any structure of socio-cultural significance (historical or archaeological site or religious structures; Masjid, temples, etc.) within 10 km of the selected site

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.

IMPACT DURING DESIGN PHASE

At the design phase, no considerable impact will occur on land, soil, topography, ground water, and on people of the area. However in pre-construction phase a management system should be provided at design level so impacts can be reduced. Design of the proposed area will adhere to all standard technical requirements in order to avoid adverse impacts on environment and human health.

Mitigation Measures at Design Phase

At design phase special attention should be given to the design of the project in the sense that it has been designed in such a way as to cause minimum disruption and deterioration of environment and surroundings.

ANTICIPATED POTENTIAL ENVIRONMENTAL IMPACTS (Construction Phase)

Characterization is done on the basis of significance, probability and prevalence of the potential impacts in the surrounding environment. Primarily, anticipated impacts have been categorized as direct, indirect and induced. These groups of impacts can be further broken down according to their nature into:

- Positive and negative impact;
- Minor, major and moderate impact;
- Local and widespread impact;
- Temporary and permanent impact;
- Short and long term impact; and

- Reversible and Irreversible impact

IMPACTS ASSOCIATED WITH THE CONSTRUCTION PHASE

As project area is far from the community and biological life, so, there are rare impacts on the environmental and socio-economic conditions. Moreover, possible impacts associated with the construction activities of the project are discussed in this section. The impacts that are discussed are following:

- **Environmental Impact**
  - Construction Noise
  - Dust Emission during Construction
  - Vegetation Loss
  - Water Bodies
  - Excavated Soil
  - Soil Contamination

- **Socio-economic Impact**
  - Community Safety
  - Employment Conflicts
  - Health and Safety of Workers

CONSTRUCTION NOISE

Depending upon the equipment used and its distance from the receptor, the community will not be exposed to intermittent and variable noise level. Noise level is measured as ambient noise which is defined as background noise that is always present.

Potential Issues

The potential noise related issues during the construction may cause disturbance to the surrounding areas of the project due to construction machinery operation on the project site and the noise related issues during the construction cause disturbance but as such there is no community residing around the project area so, the impacts regarding noise will be on minimal / negligible level.

Impact Analysis

The potential sources of significant noise during the construction period include the construction machinery and construction related traffic and it also includes installation of machinery. Precise prediction of noise due to construction activities and installation of machinery activities at given location at given time requires the list of all equipment that is operational at the time and the following information regarding each piece of equipment:

- The maximum and minimum noise level, measured at reference distance from the equipment, during a work cycle
- Fraction of time it operates at maximum level during a work cycle
- The usage factor, i.e. the number of hours during the day when the equipment is operational
- Distance of equipment from the receptor
- Potential noise barrier and other topographical features that attenuate the sound
- Atmospheric condition, the wind speed and direction, humidity and barometric pressure, also affect the propagation of sound. However for short distances the effect of these is insufficient compared to other variables.

Mitigation

The strategy to minimize the noise in the community within acceptable limits should be based on the followings:

- Reduce equipment noise at source
- Minimize construction related vehicular noise
- Make sure the movement of transportation vehicles should be confined only in the day. The movement of vehicle should be restricted during night time.
- It will conform that construction equipment and vehicles should be equipped with mufflers to effectively decrease generation of noise
- Providing construction workers with suitable hearing protection like ear cap, or ear muffs and training them in their use.

The proposed strategy should be implemented through the following specific measure:

- **Reduce Equipment Noise at source**

  Based on the above survey, equipment emitting excessive noise in comparison to other similar equipment should not be allowed to operate. Equipment underuse should be regularly maintained, tuned and provided with mufflers to minimize noise level. Equipment in poor state of maintenance, particularly without noise control should be checked to determine if it can be improved, replaced with less noisy equipment as soon as practicable.

- **Traffic noise**
  - The construction related traffic would enter into the site through construction gate.
  - Blowing of horns will be prohibited on the access road to the plant site and inside the site.
  - It will be ensured that all such vehicles are properly tuned and maintained in good working conditions and have quality mufflers installed in order to reduce vehicular noise.

Residual Impacts

No irreversible noise impact is expected from the construction activities at the site of project. It is possible that occasionally there will be accidences of the significance criteria during the construction. This may happen if for example the numbers of construction machineries are deployed close to community. This will cause a nuisance to the community, but in case of this project there is no industrial activity within 2 km around the project area although this project is likely to last for short period.

Monitoring Requirements

Although the Proposed Project is away from the industrial area but the issue related to the noise will not be taken for granted, to mitigate the impacts that can arise due to noise a complete monitoring plan will be developed. Monitoring will be carried out regularly.

DUST EMISSION DURING CONSTRUCTION

Potential Issues

Particulate matter emitted during construction activities can result in deterioration of ambient air quality in the vicinity, and be the nuisance for the community and workers.

Impact Analysis

Potential sources of particulate matter emission during construction activities include truck dumping, halting vehicle movement on unpaved road, combination of liquid fuel in equipment and vehicles. Earthwork and concrete mixing and batching will also yield minute quantities.

The quantity of dust that will be generated on a particular day will depend on the magnitude and nature of activity and the atmospheric conditions prevailing on the day. A wide variety of options exist to control emission from the construction site. The most effective means of reducing the dust emission is wet suppression. Water exposed surface and the soil to keep soil moist at all times can reduce the total dust emission from the project by as much as 75 %.

Mitigation

The following mitigation measures will be implemented at the proposed site construction site during construction to control the emission of particulate matter:

- Water will be sprinkled daily or when there is obvious dust problem on all exposed surfaces to suppress emission of dust. Frequency of sprinkling will be kept such that the dust remains under control, particularly when wind is blowing towards the community.
- Dust emission from soil piles and aggregate Industrial stockpiles will be reduced by covering the piles, for example with tarpaulin or thick plastic sheet, to prevent emission.
- Construction material that is susceptible to dust generation will be transported only in securely covered trucks to prevent dust emission.

Residual Impacts

Dust during construction is likely to be nuisance to the nearby areas. In this project the measures suggested to overcome dust.

Monitoring Requirement

In the view of the likelihood of residual impacts, the following monitoring measures will be undertaken:

- Dust emission from the construction activities will be visually monitored.
- The community in the industrial area and the nearby areas will be actively consulted. Their feedback will form a key mean for monitoring the impacts of dust emissions.

VEGETATION LOSS

The project area is an open area. As such there's not any natural vegetation on the project site. So there is no possibility of vegetation loss. But Proponent has planned a Tree Plantation plan within the Project area.

WATER BODIES

Potential Issues

Water will be required for the civil work of the Proposed Project. Sources of water pollution on building sites include diesel and oil, paint, solvents, cleaners and other harmful chemicals; and construction debris and dirt. Pollutants on construction sites can also soak into the groundwater. The extraction of water for the construction activities can affect the groundwater availability for the project area communities.

Impact Analysis

Sources of water pollution on building sites include diesel and oil, paint, solvents, cleaners and other harmful chemicals; and construction debris and dirt. Pollutants on construction sites can also soak into the groundwater.

Mitigation

Based on discussion above, the following mitigation measures are proposed:

- Special care should be taken when handling oil, solid waste and hazardous waste to entirely avoid any accidental spills and leakages.
- Efforts will be made to ensure that water is conserved and that environment friendly Techniques will be adopted too.

SOIL CONTAMINATION

During construction phase, the soil quality may be affected due to spills during refueling and discharges from vehicle and equipment. Contamination of soil may occur due to clearance of construction waste in the surrounding area. There will be minor work on the construction of the site which will cause insignificant amount of excavation soil, construction debris and other waste. But if mitigation measures will be applied the overall impact on soil during construction phase will be minimum.

Impact Analysis

During the construction of the project spills of fuels, lubricants and chemicals can take place:

- During transfer from one container to another
- During maintenance of equipment and vehicles
- Due to leakage from the containers and equipment

Depending on nature of material, location of spill and quantity of spill, soil can get contaminated.

Mitigation

The following control measures are proposed to mitigate the impact on the soil resources:

- Spills prevention trays should be provided and used at refueling locations
- Regular inspection should be carried out to detect the leakage in construction vehicles and equipment
- Appropriate arrangement, including shovels, plastic bags and absorbent material, should be available near the fuel or oil Industrial area

Residual Impacts

Implementation of proposed mitigation measure is not likely to leave any long term residual impacts on the soil.

Monitoring Requirement

To ensure compliance:

- Regular inspection of soil of the project area should be undertaken
- Incident record of all moderate and major spills should be maintained

COMMUNITY SAFETY

Potential Impacts

The construction activity can potentially be a hazard for the community; in particular, owing to the increase in the construction related traffic on the project access road.

Impact Analysis

Project related traffic; particularly on the section of the access road that is adjacent to the existing plant will be major source of concern for the community. But in case of this project, there is industrial activity within 2 km around the project area.

Mitigation

The following are the mitigation measures:

- A public safety plan should be developed
- Community complaint register and other mean should be adopted for the community to complaint.
- All entry points into the construction area should be staffed 24 hour a day. People who are not related to the project should not be allowed inside.
- No machinery should be left unattended, particularly in the running condition.
- Road signage relevant to the project should be posted, where necessary.

Residual Impacts

With the implementation of mitigation measures proposed above, the residual impact on the community safety due to construction will be insignificant.

Monitoring Requirement

The project is away from the community interruption but still to avoid any kind problem from community a Specific monitoring requirement should be part of community safety plan and may include inspection for road signage, safety marks, fencing and observation of other measures.

EMPLOYMENT CONFLICTS

Potential Issues

Potential employment related issues include dissatisfaction among the local communities over the number of jobs offered to them.

Impact Analysis

The project is likely to create the significant job opportunity. Even unskilled and semi-skilled employment opportunities are likely to be created for a significant period.

The key issue is related to provision of job. This issue particularly becomes problematic if it is perceived by the local community that a significant number of construction and installation related job opportunity is not given to people from the local community. This could result in friction between local residents and construction workers.

Mitigation

The following mitigation measures will be implemented:

- Maximum number of unskilled and semiskilled jobs should be provided to the local communities
- A local labor selection criterion should be developed in consultation with the community.

Residual Impacts

Due to its economic implementation, it is possible that employment may remain a contentious issue throughout the project.

Monitoring Requirements

The following data should be recorded and maintained on the employment:

- Total number of Unskilled, semi- skilled, and skilled job offered during construction.
- Name and place of residence of the employed staff.

HEALTH AND SAFETY OF WORKERS

Health and safety impacts of the project on workers and communities in the area of influence of the project will be reasonably managed. During construction phase, minor and severe injuries to workers due to machine operation and earthwork may occur but if managed properly, this impact can be mitigated.

Mitigation

- All reasonable precautions will be taken for the safety of employees and equipment will be operated by competent persons.
- Construction activities would be carried out under the supervision of a suitably experienced person.
- Necessary safety gear will be provided to all employees and proper supervision will ensure that the gears are worn at all times.
- First aid kits and other necessary equipment are kept available at Project Site along with a list of emergency phone numbers to be contacted in case of any emergency or accidents.
- Adequate sanitary facilities, potable water, and garbage bins will be provided. Safety rules and regulations will be implemented during construction.
- All workers will be required to wear protective gear and equipment that conforms to safety standards. Security of the project site will be imposed at all times.

ENVIERONMRENTAL IMPACTS AS ASSOCIATED WITH OPERATIONAL ACTIVITIES

The environmental and socio-economic impacts related with the operation phase of the Proposed Project are discussed in this section. The impacts that are discussed are the following:

- Noise
- Wastewater

- Air pollution

NOISE

During operation, there is no noise as at project site, there will no any processing or machines running mechanism apply. So project is free from noise factor. There will be Industrial building only.

WASTEWATER

Potential Issues

The discharge of domestic wastewater will be issue.

Impact Analysis

There is negligible impact of treated wastewater on the environment.

Mitigation

- Septic Tanks will be installed from where domestic wastewater will be discharged to nearby designed drain for this area.
- Efforts should be made to ensure that water is conserved.

AIR POLLUTION

Potential Impacts

There will be no issue regarding the air pollution during operation phase of this project.

Impact Analysis

Industrial building, which will be used for Industrial purpose and have no adverse impact.

Mitigation:

- No waste should be burnt at the premises.

SOLID WASTE MANAGEMENT

Potential issues

Waste minimization is very important part; focusing on the waste avoidance and reduction through the use of cleaner production processes and practices. During operational phase there will be domestic solid waste only like polythene bags etc.

Mitigation

A useful approach to waste minimization involves the preparation of proper waste minimization plan. The starting point for the waste minimization will be waste audit. This includes:

- No waste should be dumped at any location outside the boundary.
- Audit of waste management should be undertaken on regular basis.
- Domestic solid waste like polythene bags and wrappers will be collected by sanitary workers who will dispose off according to the guidelines of FDA.

SAFETY, HAZARDS, PUBLIC HEALTH AND NUISANCES

Operation of the project may cause some concerns for safety, public health and nuisances within the project area.

Mitigation:

- Workers' awareness and safety wall chart showing safety symbols and other necessary information will be displayed at various places.
- First Aid Box will be kept in every department which will be will within the approach in case of any injury or mishap.
- To avoid any chance of fire, a comprehensive firefighting system will be developed that includes all types of fire Extinguishers, fire hydrants, sand Buckets and firefighting Vehicles.
- Emergency Eye wash equipment should be placed in chemical room.
- Basic medical and safety training will be held from time to time to minimize the risk of health and safety issues.

SOCIO-ECONOMIC IMPACTS

The project is creating skilled and unskilled labor opportunities during operational stage, which will reduce unemployment in the area and improve living conditions of the local population. This is a encouraging impact.

EMERGENCY RESPONSE

Incidents and accidents may take place unexpectedly during project operations. These may include;

- Fire hazard

FIRE HAZARD

Working operation will be manageable but negligence in operations may cause risk of safety and health problems. Mishandling or mismanagement may lead to fire hazard, which poses a serious threat. Short circuiting in electrical switches and frayed electrical wires can cause fire.

Mitigation

- The firefighting system will include water and gas devices / extinguishers.
- Indoor and outdoor fire hydrants will be installed according to the codes and standards.
- Oil Industrial tank area will be provided with foam devices / extinguishers.
- Fire extinguishers should be properly maintained and checked periodically.
- Flammable materials in the premises should be prohibited.
- Fire alarm systems should be maintained for detection and warning of fire.
- Adequate training of workers on use of firefighting system to deal with emergency situation.

CONCLUSION AND RECOMMENDATIONS **CHAPTER: 8**

7.1 CONCLUSION

The report presents Environment Impact Assessment (EIA) of the proposed project that is Industrial/sand processing's purpose located at **Plot no.62 in Phase II at M-3 Industrial city Faisalabad**. The main objective of the project is to enhance quality education. Number of employment opportunities shall also be provided to the skilled and un-skilled.

The performed EIA showed all identified possible 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. The study also shows that there will be no exploitation and consequential depletion of the local natural resources. 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 further concluded that all potential environmental concerns associated with the project have been adequately addressed, and no further study is required in this context. 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.

7.2 RECOMMENDATIONS

Following are some recommendations to improve the environmental status of the project:

- No activity should be undertaken at the site which could pose any sort of a threat to public health.
- Separate parking spaces should be demarcated at the site for parking of vehicles.

- Waste minimization practices should be employed and workers should be encouraged to adopt such methods.
- Wages should be distributed on time.
- Wages should not be below minimum wages as prescribed.
- Proper ventilation can limit the amount of indoor air pollutants.
- Proper tree plantation plan should also be developed in order to make the Industrial/sand processing environment friendly.
- Basic medical training should be provided to the specified work staff and basic medical service and supplies to workers.
- 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 emergency services and police for urgent support.
- The proposed Environmental Management & Monitoring Plan should be implemented.

Further following detail/document

- **The administration of the proposed project has decided to set up the solar system to get the uninterrupted electricity for the proposed project.**
- **The main benefit of the solar system is to control the noise pollution and get cheaper incessant electricity.**

POSITION OF SEPTIC TANK

- **The architect of the proposed project has provided the septic tank in the layout plan to stop the unwanted solid or liquid waste or particles. The treated water after passing through the septic tank will be thrown in the main sewage line.**

COMPANY PROFILE

The company is designed to provide Legal, Environmental and TEPA, LDA, FDA related services.

NAME	DESIGNATION
HAFEEZ ULLAH	CHAIRMAN
KALEEM ULLAH	MARKETING MANAGER
DR FOQIA KHALID	PHD ENVIRONMENTAL SCIENCE
MUHAMMAD YASIR	ENVIRONMENTAL ENGINEER
SABA NAZIR	MPhil ENVIRONMENTAL SCIENCE
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