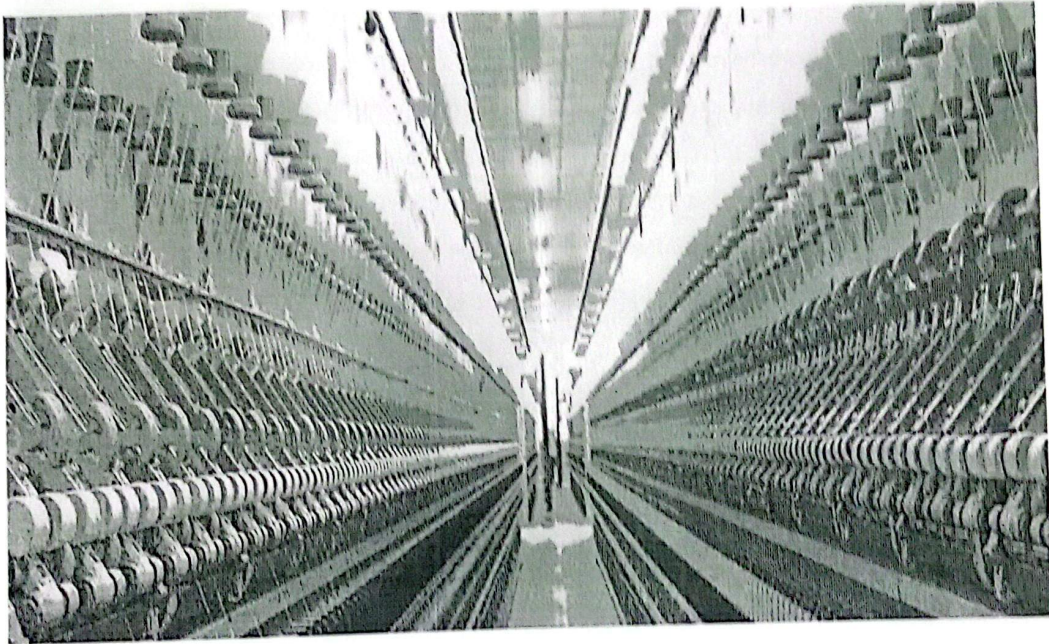


F-74(71A)-23

ENVIRONMENTAL IMPACT ASSESSMENT STUDY
FOR
CONSTRUCTION PHASE ENVIRONMENTAL APPROVAL-
AYESHA SPINNING MILLS LIMITED, 11KM SHEIKHUPURA
FAISALABAD ROAD, BHIKHI, DISTRICT SHEIKHUPURA



APRIL, 2023



Consultants

Eco Syntec Consulting Services
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EXECUTIVE SUMMARY

This executive summary presents an overview of the main findings of the Environmental Impact Assessment (EIA) report for Construction Phase Environmental Approval-Ayesha Spinning Mills Limited located at 11km Sheikhupura Faisalabad Road, Bhikhi, District Sheikhupura. The main goal of the proposed project is the production of socks and garments for export purpose. The project also aims to promote economic growth and sustainable development in Pakistan. The total area for the project is about ~91575.28m². The production capacity of the proposed production unit is estimated to be 225,000 pairs of socks per day and 10,000 pieces of garments per day.

Keeping in view the prevailing legislative framework of the government, the proponent has decided to comply with the statutory requirements. The purpose of this report is to conform the existing legislative frameworks that are specifically notified by the EPA, Punjab for the conservation of environment. A detailed environmental impact assessment of the proposed project has been conducted in accordance with the Section 12 of Punjab Environmental Protection Act, 1997 (amended 2017). The process for conducting an environmental assessment study and its results are described in this document.

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).

TITLE AND LOCATION OF THE PROJECT

The title and location of the proposed project is as follows:

Title: Construction Phase Environmental Approval-Ayesha Spinning Mills Limited

Location: 11km Sheikhupura Faisalabad Road, Bhikhi, District Sheikhupura

NAME OF THE PROPONENT

Proponent Name:	Abdul Rahim Nasir
Designation:	Director
Telephone:	0300 - 8455581
E-mail:	omais@ayehs spinning.com
Address:	Ayesha Spinning Mills Limited, 40-50, Industr Area, Gulberg III, Lahore

Eco Synner Consulting Services

Executive Summary

NAME OF THE ORGANIZATION PREPARING THE REPORT

Name: Eco Syntec Consulting Services
Address: 35 Usman Block, New Garden Town, Lahore.
Contact: 0344-5484675
Website: ecosyntec@gmail.com

A BRIEF OUTLINE OF THE PROPOSED PROJECT

The proposed project will deal with Construction Phase Environmental Approval-Ayesha Spinning Mills Limited. In order to make the entire production successful, sustainable and environmental friendly, the project will create develop resource efficient and waste minimization network of systems thereby increasing the overall energy efficiency of the proposed project. The proposed plant will involve the production of approximately 225,000 socks pairs per day and 10,000 garments pieces per day.

Salient features of the proposed project are as follows:

Cost of the project	~ 2 Billion PKR
Project Area	~91575.28m ²
Capacity	Approximately 225,000 socks pairs per day and 10,000 garments pieces per day.
Nature of Land	Open land
Raw Materials	Socks Division: Cotton – 80%, Polyester/Nylon, Spandex/Lyera – 20% App. Garments Division: Viscose – Nylon.
Category	Schedule II Section B-6 (Manufacturing and Processing-Textile units comprising of dyeing and printing)
Source of Water	Ground water
Water requirement	Socks division ~120 m ³ /hr Garments division ~60 m ³ /hr

Executive Summary

Treatment of wastewater

**Waste water treatment through Effluent
Treatment Plant (ETP)****MAJOR IMPACTS AND MITIGATION MEASURES**

Keeping in view, all the findings of the baseline study, and through general observation and desktop study, and understanding of the activities and processes involved in the project, environmental impacts have been anticipated. Following impact assessment methodology; i.e. defining the criteria for evaluation of the impacts, identification of mitigation measures (all possible options), evaluation of the residual impacts and identification of the monitoring requirements, adequate and effective mitigation measures have been proposed for all construction and operation related likely environmental impacts of the project. These mitigation measures have been proposed in order of attempts to eliminate or minimize the impact, provide some compensation or rehabilitate the environment by some means.

ENVIRONMENTAL IMPACTS DURING CONSTRUCTION PHASE	RECOMMENDED MITIGATION MEASURES
- Air quality deterioration due to project activities during construction particulate matter/dust, gaseous emissions and noise from machinery, and vehicles transporting materials. Acoustic discomfort/ Noise generation - Depletion of water resources due to water requirement during construction phase of the project and Sewage/ wastewater generation due to construction and domestic activities - Generation of construction related and domestic solid waste from workers' activity	- Running the machines and vehicles on good quality (low-sulfur fuels) in good working order ensuring regular maintenance, tuning and servicing, and providing them with emission control devices, such as mufflers and silencers, etc. - Water suppression and covered transportation and storage of the construction materials and slow driving on unpaved roads can control dust emission. Regular testing for leakage detection may also be ensured. - Solid waste of construction activities may be used for leveling and backfilling, while the remaining solid waste will be managed as per regulatory requirements in the area.

Executive Summary

Socio-economic environmental impacts like health, safety, security, acquisition of land for project facilities etc. Health and safety issues of workers during construction phase	Safety of the workers will be ensured by developing SOPs for all jobs, training the workers to follow Standard Operating Procedures (SOPs), discouraging any careless attitude of workers and providing the workers with, and encouraging them to use PPEs.
ENVIRONMENTAL IMPACTS DURING OPERATION PHASE	RECOMMENDED MITIGATION MEASURES
- Air emissions during operational phase activities - The nuisance of noise from the high noise machines. - Wastewater generation from project activities. - Solid waste generation during project activities	- Vehicles and machines should be maintained to avoid emissions. Also, compliance of using good quality fuel and good conditioned vehicles should be done. Fugitive dust emissions should be controlled by water sprinkling around dust areas. - Noise from the high noise machines should be mitigated by sound proofing wherever applicable and practicable, regular servicing and tuning and providing them with silencers and mufflers, and by planting trees. - All waste water from various sources, should continue to be treated through Effluent Treatment Plant before final disposal. - Adequate solid waste management and good housekeeping will ensure healthy environment at the unit. Domestic solid waste will be managed by reduce, reuse, recycle, and in accordance with the regulatory requirements in the area. - The process waste should be managed properly according to standard practices.

Environmental Impact Assessment

4. Environmental Impact Assessment Study Report
- 4.1. Environmental Impact Assessment Study Report
- 4.2. Environmental Impact Assessment Study Report
- 4.3. Environmental Impact Assessment Study Report
- 4.4. Environmental Impact Assessment Study Report
- 4.5. Environmental Impact Assessment Study Report
- 4.6. Environmental Impact Assessment Study Report
- 4.7. Environmental Impact Assessment Study Report
- 4.8. Environmental Impact Assessment Study Report
- 4.9. Environmental Impact Assessment Study Report
- 4.10. Environmental Impact Assessment Study Report

Environmental Impact Assessment Study Report

Environmental Impact Assessment Study Report

5. Environmental Impact Assessment Study Report
- 5.1. Environmental Impact Assessment Study Report

6. Environmental Impact Assessment Study Report
- 6.1. Environmental Impact Assessment Study Report

7. Environmental Impact Assessment Study Report
- 7.1. Environmental Impact Assessment Study Report

8. Environmental Impact Assessment Study Report
- 8.1. Environmental Impact Assessment Study Report

9. Environmental Impact Assessment Study Report
- 9.1. Environmental Impact Assessment Study Report

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• Safety, public health issues • Obstructions caused to the public utilities and transportation system	• Workers must be protected by providing them with Personal Protective Equipment (PPEs). Safety issue will be managed by developing and updating from time to time, the SOPs for all work activities, training the workers to follow them, not tolerating any careless attitude of the employees during work, regular inspection to ensure no unsafe act or condition prevails at work site and lastly, by providing the workers with necessary PPEs (safety helmets, dust masks, safety shoes, ear plugs, special suiting for various jobs and areas, etc.) and encouraging the workers to use them. An Emergency Response Plan including a firefighting plan should also be in place to deal with all sorts of emergencies.
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PROPOSED MONITORING

The proposed project will need to follow Punjab Environmental Quality Standards (PEQS) to keep its essential baseline conditions in check. Environmental impact of a project is worked out using various factors and parameters, so that an Environmental Management and Monitoring Plan (EMMP) 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 EMMP 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 EMMP by employees, contractors and other responsible authorities. These plans have been included in chapter eight of the report.

CONCLUSION

The report contains description of the project, description of the environmental baselines, potential environmental impacts and suggested mitigation measures. An implementation mechanism for mitigation measures in the form of an Environmental Management Plan is

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included in the study. While the objectives of this study have been to describe the project and its environmental impact, it also identifies adverse environmental factors associated with the project. Appropriate mitigation measures as explained in the environmental study should reduce, if not eliminate, these impacts so that these are within acceptable limits. 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 should be issued by the Environmental Protection Agency, Punjab subject to payment of the requisite scrutiny fee by the proponents of the project.

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CHAPTER ONE

INTRODUCTION

1.1 OVERVIEW OF THE PROJECT

Ayesha Spinning Mills Limited is planning to develop a production unit located at 11km Sheikhpura Faisalabad Road, Bhikhi, District Sheikhpura. The primary objective of the facility is the production of socks and garments for export purpose. The project also aims to promote economic growth and sustainable development in Pakistan. The total area of the project is about ~91575.28m². The production capacity of the proposed production unit is estimated to be 225,000 pairs of socks per day and 10,000 pieces of garments per day.

1.2 PURPOSE OF THE REPORT

This EIA report is prepared to describe the project process, its nature and magnitude. This report will also evaluate the resulting adverse environmental impacts due to proposed project. A comprehensive environmental management and monitoring plan will be presented in this report to ensure that the adverse impacts associated with various phases of the project are preferably eliminated or mitigated, whichever is possible.

The report intends to ensure that the proposed project complies to the prevailing environmental legislation in Punjab and fulfils the requirements that are needed to obtain an Environmental Approval from EPA, Punjab under PEPA Act, 1997 (amended 2017).

The main objectives of this study were:

- To determine and document the environmental and social state of the project area and establish a baseline in order to assess the suitability of the proposed project in that area.
- To identify pre-construction, construction and operation activities with their consequential impacts on environment.
- Provide assistance to the proponent for planning, designing and implementing the project in a way that would eliminate or minimize the negative impact on the biophysical and socio-economic environment and maximizing the benefits to all stakeholders in cost effective manner.
- To present mitigation and monitoring plan for smooth implementation of the suggested mitigation measures.
- To provide opportunity to the public for understanding the project and its impacts on the community and their environment through public consultation.

1.3 IDENTIFICATION OF THE PROJECT AND PROPONENT

Project Title:	Construction of M/S Ayesha Spinning Mills Limited
Project Location:	11km Sheikhpura Faisalabad Road, Bhikhi, District Sheikhpura
Proponent Name:	Abdul Rahim Nasir
Designation:	Director
Telephone:	0300 - 8455581
E-mail:	omais@ayehs spinning.com
Address:	Ayesha Spinning Mills Limited, 40-50, Industrial Area, Gulberg III, Lahore

1.4 ENVIRONMENTAL CONSULTANTS

This study has been carried out by Eco Syntec Consulting Services. The consulting team can be approached through the following contact details:

Name of Consultants:	Eco Syntec Consulting Services
Contact No.	0344-5484675
Address:	35 Usman Block, New Garden Town, Lahore.

1.5 BRIEF DESCRIPTION OF PROJECT

Brief description of salient features of proposed project is given below:

Cost of the project	~ 2 Billion PKR
Project Area	~91575.28m ²
Capacity of Project	Approximately 225,000 pairs of socks per day and 10,000 pieces of garments per day
Nature of Land	Open land
Raw Materials	Socks Division: Cotton – 80%, Polyester/Nylon, Spandex/Lyera Garments Division: Viscose – Nylon.

Category	Schedule II Section B-6 (Manufacturing and Processing-Textile units comprising of dyeing and printing)
Source of Water	Ground water
Water requirement	Socks division ~120 m³/hr Garments division ~60 m³/hr
Treatment of wastewater	Waste water treatment through Effluent Treatment Plant (ETP)

1.5.1 NATURE AND SIZE OF PROJECT

The project aims at providing safe and environmentally friendly construction of Ayesha Spinning Mills Limited with a total production capacity to 225,000 pairs of socks per day and 10,000 pieces of garments per day. Total cost of project is approximately ~2 Billion PKR. Total area for proposed project is about ~91575.28m².

Table 1.1: Project Area Distribution

Area details	
Socks division	
Proposed Cover Area (m ²):	15047.40
Proposed Open Land (m ²):	56184.94
Total Area: (m ²):	71232.34
Garments Division:	
Proposed Cover Area (m ²):	11459.11
Proposed Open Land (m ²):	8883.83
Total Area: (m ²):	20342.94
Total Area including socks and garments division	91575.28 m²

Ayesha Spinning Mills Limited as the proponent of the project has planned provision of the basic facilities/utilities for the project. Provision of necessities; including access routes and telecommunication services will be developed to meet the future demand. Adequate open space is planned to be provided for developing green belts and area of plantation.

Table 1.2: List of Products Along with Production Capacity

Product	Production Capacity
Socks	225,000 pairs of socks
Garments	10,000 pieces

1.5.2 LOCATION OF PROJECT

The proposed project is located 11km Sheikhpura Faisalabad Road, Bhikhi, District Sheikhpura, Punjab.

The geographical coordinates of the project site are as under:

Longitude	Latitude
73.922737 °	31.635242 °

The area is surrounded by:

East	Open area
West	Road
North	Industry
South	Industry

Google Earth Map of the project site is attached as annex 8.

CHAPTER TWO

SCREENING AND SCOPING

2.1 SCREENING

Screening is an essential part of an EIA process. Screening often results in a categorization of the project and from this a decision is made on whether or not a full EIA is to be carried out. The EPA Punjab has provided a layout for the screening process. For this project; Review of IEE and EIA Regulations, 2000 were consulted. According to projects categorization for environmental assessment studies, the proposed project falls in the category of projects mentioned in Schedule II, i.e. requiring an EIA under "Schedule II Section B-6 (Manufacturing and Processing-Textile units comprising of dyeing and printing)" for EIA due to the cost, size and nature and overall severity and frequency of impacts.

2.2 SCOPING

2.2.1 INTRODUCTION

Scoping is the EIA stage at which issues, impacts and preliminary alternatives are determined that should be addressed at subsequent stages. It directly follows the screening stage and is a systematic exercise that establishes the boundaries and Terms of Reference (TOR's) for the EIA. A quality scoping study reduces the risk of including inappropriate components or excluding components which should be addressed. While scoping has been defined by many different terms, the definition adopted in recent guidance on project EIA, developed for the European Commission, sets out its meaning in its broadest sense as follows: "Scoping is the process of determining the content and extent of the matters which should be covered in the environmental information to be submitted to a competent authority for projects which are subject to EIA/IEE." (European Commission, 2001).

2.2.2 SPATIAL AND TEMPORAL BOUNDARIES OF ENVIRONMENTAL ASSESSMENT

Project site is currently an open barren land. After the project development the nature of land will be changed from open to project site. No significant population is present in the proposed project area. No population is present in vicinity of 1km of the project site and all the parameters are within PEQS. No environmental sensitive area is present near the project site that could be impacted due to the project activities.

2.2.3 IMPORTANT ISSUES AND CONCERN RAISED DURING CONSULTATION

During consultation majority of people favored the project and following issues and concerns were raised which have also been discussed in Chapter 9 Stakeholder Consultation:

- Job opportunities should be given to locals.
- Air pollution should be reduced and controlled effectively.
- Generated Wastewater should be treated before its final disposal.
- Solid waste management should be done according to the standard practices.
- An effective EMMP should be designed and implemented with true spirit.
- Health and safety of the workers should be ensured.
- Good Housekeeping and Cleanliness of the area should be ensured.
- Indigenous trees should be planted to control air pollution.

2.2.4 SIGNIFICANT IMPACTS AND FACTORS TO BE DETERMINED

Main impacts and factors to be determined are;

- Air emissions
- Water conservation
- Energy conservation
- Noise reduction
- Resource conservation
- Occupational Health and safety
- Site Security
- Traffic Management
- Hygiene management
- Social impacts
- Job opportunities for locals
- Emergency preparedness
- Site restoration after construction
- Tree plantation

CHAPTER THREE

CONSIDERATION OF ALTERNATIVES

This section covers the project alternatives which were examined for the proposed project in 11km Sheikhpura Faisalabad Road, Bhikhi, District Sheikhpura. Before carrying out any project, it is imperative to evaluate different alternatives to arrive at the best possible option. An analysis of the available alternatives is necessary to establish the most suitable management and technology options will be adopted for the project, while minimizing environmental impacts. This evaluation explains the selection of appropriate option that was required to ensure optimal results within defined set of economic, environmental, health and safety constraints. In particular, it outlines the following project options:

- Site alternative
- Technology alternative
- Environmental alternatives
- Economic alternatives

The alternatives consideration regarding site are following:

3.1. SITE ALTERNATIVES, THEIR SELECTION AND REJECTION CRITERIA

Site selection is a major factor in the decision-making process of mega projects. The most important factors for such a site selection include availability of raw material and land, seismic stability of site, existence of basic infrastructure including roads, water, manpower, and proximity to electric transmission system, project economic viability with reference to specific site, land use policies and further expansion possibilities.

No alternative site/location for the proposed project was considered because the proposed project site is owned by Ayesha Spinning Mills Limited.

After considering all these factors, it has been concluded that the selected is best suitable for proposed development.

3.2 DESIGN/TECHNOLOGY ALTERNATIVES, THEIR SELECTION AND REJECTION CRITERIA

The best available process and design/ technology is selected for proposed project with less environmental impacts. Using this process will also ensure that the total water and energy consumption is reduced significantly hence making it a natural resource friendly process.

3.3 ENVIRONMENTAL ALTERNATIVES, THEIR SELECTION AND REJECTION CRITERIA

Looking towards the Environmental pollution control techniques alternatives following techniques/ devices were considered and best out of them is opted.

For waste water treatment, Effluent treatment plant will be used for the treatment of generated waste water before its disposal.

The process wastewater comes from various operations. Keeping in view the characteristics of liquid waste particles from process wastewater and careful consideration of different factors including area requirement, removal efficiency, capital cost, operational and maintenance cost, sustainability and international practices, selected waste water treatment process is recommended as the most efficient and economical solution for the treatment of generated waste water.

Proper ventilation system will be provided for air pollution control.

3.4 ECONOMIC ALTERNATIVES, THEIR SELECTION AND REJECTION CRITERIA

The selected technology and design are economically efficient with the utilization of cost-effective raw material and re-use of by-products. Trees will be planted at the project area to reduce temperature of the area and also act as noise barrier.

CHAPTER FOUR**DESCRIPTION OF PROJECT****4.1 OBJECTIVES OF PROJECT AND ENVIRONMENTAL IMPACT ASSESSMENT**

Ayesha Spinning Mills Limited intends to develop a production unit at proposed location 11km Sheikhupura Faisalabad Road, Bhikhi, District Sheikhupura. Primary objective of this project is the production of socks and garments. The entailing objectives are creating jobs and adding to the overall GDP of the country.

This EIA report was initiated in conjunction to the prevailing legislative framework. The objective behind conducting such an elaborate environmental assessment is to:

- Assess the impacts of proposed project on existing environmental settings of the proposed site
- Assess the impacts of the proposed project on the socio-economic structure of the proposed site
- Develop a baseline of the proposed site
- Compile an EIA report that provides guidance to the proponent in making environment friendly decisions
- Fulfilling the legal requirements set by EPA Punjab
- Obtaining an Environmental Approval from the EPA Punjab

4.2 LOCATION AND SITE LAYOUT OF PROJECT

The study site is situated 11km Sheikhupura Faisalabad Road, Bhikhi, District Sheikhupura, Punjab. The area is surrounded by:

East	Open area
West	Road
North	Industry
South	Industry

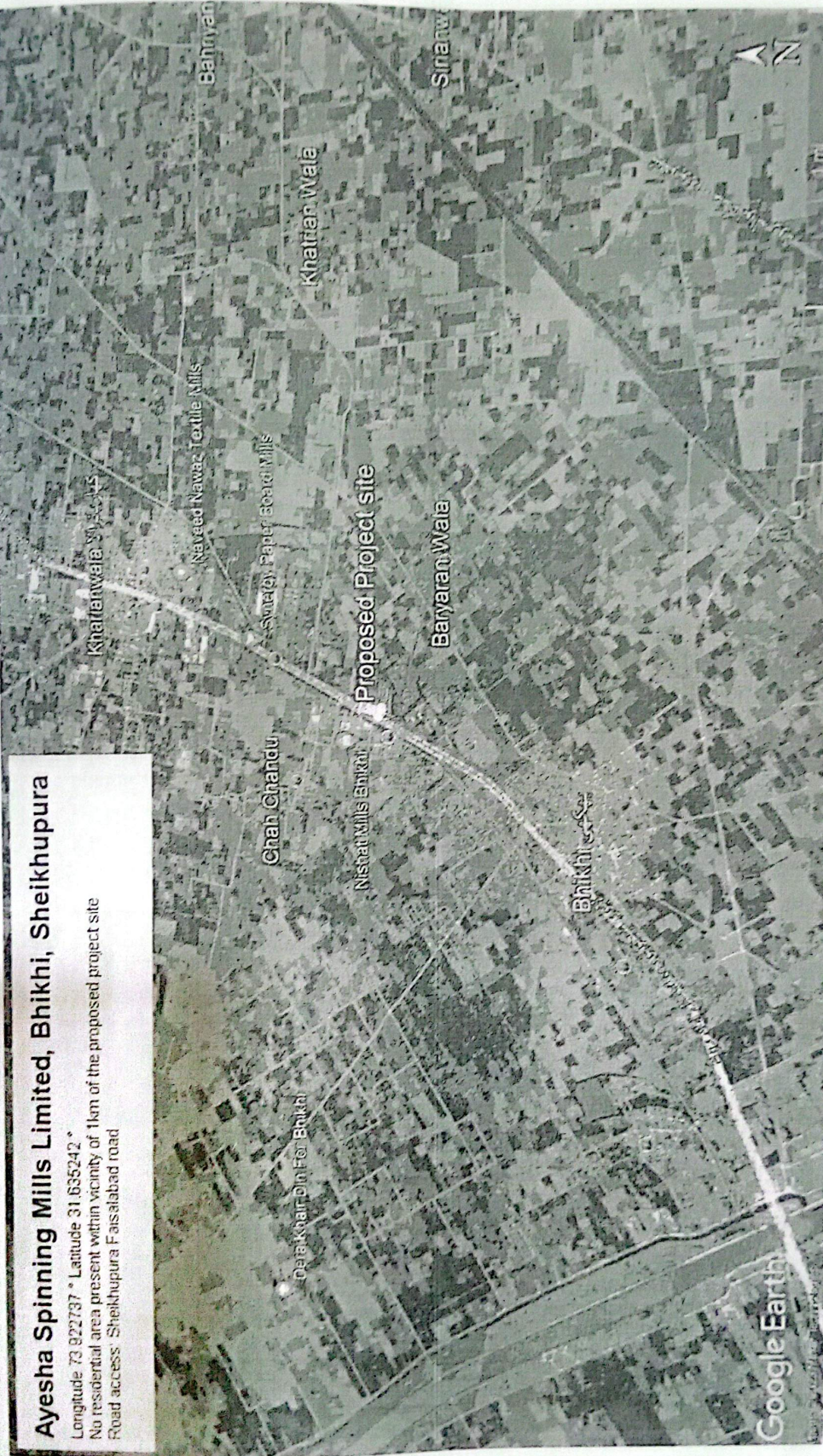


Figure 4.1: Google Earth Map

3 LAND USE ON THE SITE

Land selected for the proposed project is barren only, no species of specific importance are found there.

4 ROAD ACCESS

The proposed site can be accessed through Sheikhupura Faisalabad road.

4.5 VEGETATION FEATURE OF THE SITE

The proposed site is an open land with no vegetation. It is important to note that the proposed site was selected after due consideration. One of the factors involved in site selection was minimal impacts on biodiversity.

4.6 COST AND MAGNITUDE OF OPERATION

Cost of proposed project is ~2 Billion PKR. Total area for the proposed project is about ~91575.28m². The production capacity of the proposed production unit is 225,000 pairs of socks per day and 10,000 pieces of garments per day. Sufficient area for green belts and tree plantation is also integral part of the project.

4.7 SCHEDULE OF IMPLEMENTATION

The project is estimated to take approximately two to two and half year from ground breaking until completion of construction activities. Construction activities will start once Environmental Approval is obtained from the EPA, Punjab.

4.8 PROCESS DESCRIPTION

Ayesha Spinning Mills Limited is proposing to develop a production unit for the production of socks and garments. The proposed plant will produce socks from raw materials; Cotton – 80%, Polyester/Nylon, Spandex/Lyera – 20% App and garments from Viscose – Nylon.

4.8.1 MANUFACTURING PROCESS

RAW MATERIALS

Raw materials requirements for production of 225,000 pairs of socks per day and 10,000 pieces of garments per day tons/day are summarized in the table 4.2.

Table 4.2: List of Major Raw Materials

Sr. No		Raw Material
1	Sock Division	Cotton – 80% , Polyester/Nylon , Spandex Lyera – 20% App.
2	Garments Division	Viscose – Nylon

FINAL PRODUCTS

The final products will be:

Table 4.3: List of Final Products

Sr. No.		Final Product	Quantity
1.	Sock Division	Socks	225,000 pairs per day
2.	Garments Division	T-shirt Hoodies Underwear	10,000 pieces per day

LIST OF MACHINERY

The list of machinery is as following:

Table 4.4 List of Machinery

Sr. No.	Machines	Quantity
Socks division		
1.	Knitting machines	624
2.	Seaming machines	28
3.	Processing machines	16
4.	Compressor	6
5.	Air Dryers	6
6.	Press plants	10
7.	Suction systems	13
8.	Chillers	2
9.	Yarn dyeing	10
10.	Hydro Extractors	8
11.	Metal detectors	8
12.	Boiler	12/ton/hr
13.	Biomass	

Garments division			
1.	Knitting machines	24	
2.	Stitching machines	200	
3.	Dryers	12	
4.	Suction system	13	
5.	Chiller	2	
6.	Yarn dyeing	10	
7.	Hydro extractors	8	
8.	Metal detectors	8	
9.	Boiler	12/ ton/ hr	
10.	Biomass		

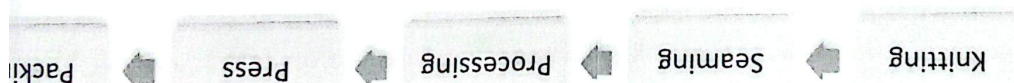


Figure 4.2: Process flow of Socks division



Figure 4.3: Process flow of Garments division

STORAGE DETAILS

- The proper handling and storage practices should be adopted.
- The raw material and final product will be appropriately stored in bags/ tanks.
- The stored material will have appropriate cover to prevent spillage.
- Provision of impervious platform and collection tank for spillage of liquids.

4.9 UTILITIES

4.9.1 POWER/ ELECTRICITY REQUIREMENT

Power source from WAPDA and generators will be utilized to fulfill the power requirement

4.9.2 WATER REQUIREMENT

The primary source of water will Ground water. Water requirement for the proposed project is estimated to be ~120 m³/hr in socks division and ~60m³/hr in garments division.

4.9.3 WASTEWATER MANAGEMENT

Wastewater will be generated during operation of plant. This generated effluent is non-toxic. The project will adopt a philosophy of reduce, reuse and recycle for the waste water generated. All waste water from various sources will continue to be treated through Effluent treatment plant before disposal.

4.9.4 SOLID WASTE GENERATION AND DISPOSAL

Solid Waste Management Plan

The solid waste generation during the construction phase of the project will include Bricks waste, Paper bags, used oil/lubricants, Metal/wooden waste, empty drums or containers and excavated material. The excavated material would be used for leveling and grading and the balance would be stockpiled at designated locations on the site. The domestic waste will be collected at regular intervals and handed over to local vendor for proper disposal. The solid waste during operational phase from project production activities and the measures includes:

- Socks, yarn waste, polybags waste, cartons and paper waste from socks division will be handed over to the contractor for its proper management accordingly.
- Yarn waste and fabric waste from garments division will be handed over to contractor for its proper management accordingly.
- Waste must be stored at site in covered separate containers.
- Training will be provided to personnel for identification, segregation, and management of waste.
- Containers must be emptied before they reaching their carrying capacity.
- Empty drums or containers containing chemicals after proper cleaning will be sold in the market.
- All environmental impacts of such waste will bring to the notice of the concerned buyer. Record of all such sales will be maintained for later use if and when required.
- No hazardous waste will be generated at the project site.
- Good housekeeping must be ensured by prohibiting littering at the site.

CHAPTER FIVE

DESCRIPTION OF THE ENVIRONMENT

5.1 GENERAL

The existing environment around the site of proposed project has been studied with respect physical, ecological and socio-economic resources. The existing information to establish database for the environmental impact assessment of the project was collected from different departments, review of previous studies and through the site visits carried out in the project area.

5.2 METHODOLOGY OF CONDUCTING BASELINE STUDY

Establishing the environmental baseline includes both the present and likely future state of the environment, taking into account changes resulting from natural events and from other human activities. The guiding factors for the present baseline study are the EPA's requirements for the Environmental Impact Assessment notification and local regulations and directives.

The studies were conducted by considering the following:

- The various environmental attributes were divided into primary and secondary studies
- Primary attributes such as air environment, water, soil noise, flora and fauna
- Micro-meteorology was assessed by conducting field studies, on-site monitoring
- Review of the past studies conducted
- Secondary attributes such as land use studies, geology, physiological characteristics
- Socio-economic environment has been assessed by literature review of previous studies conducted by various Government publications etc.

A reconnaissance survey was conducted to identify the sampling locations on the basis of:

- Locations of villages / towns / sensitive areas for noise, air, socio economics
- Accessibility of power connection and security for monitoring equipment, pollution
- Pockets in the area; and
- Areas that best represent the baseline conditions.

The scoping and the extent of data generation were formulated with interdisciplinary team discussions, criteria questions and professional judgment.

The field data generated has been used to

- Identify extent of impacts on natural resources and nearby communities

- Identify mitigation measures and monitoring equipment

These data can be used to prognosticate possible future impacts on environment and lead to suggesting suitable measures to stem or minimize the adverse impact (if any) as far as possible

5.3 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 Sheikhpura city and the project site is present in the following sub sections.

5.3.1 TOPOGRAPHY

The topography of the project area is flat. The General height of the area is approximately 209 meters above the Mean Sea Level (MSL). The city Sheikhpura is an industrial center, and satellite town, located about 38 km northwest of Lahore. It is also connected to District Kasur

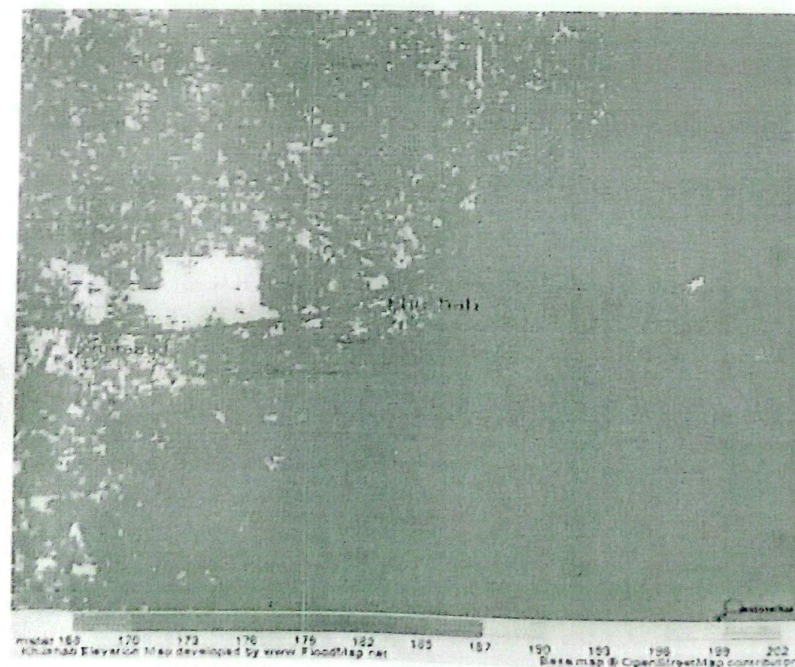


Figure 5.1: Topographic Map of District Sheikhpura

5.3.2 GEOLOGICAL FORMATION AND SOIL

Sheikhupura is situated at a distance of about 36 Km from Lahore, the provincial headquarter. Sheikhupura lies 31°42'51.16"N latitude and 73°59'3.49"E longitude. The city is well connected with its surrounding big urban centers like Faisalabad 94 Km, Sargodha 143 Km and Gujranwala 54 Km. District Sheikhupura is bounded on the North by Gujranwala district, on the North-East by Narowal district, on the West by Nankana Sahib District, on the East by Lahore district. Its Southern boundary is formed by district Kasur.

The upland or the Bar in the North West, in the natural condition, is a level prairie thickly dotted over with a stunted under-growth of bush jungle. The Bar Soil is popularly known as Missia. The low land along the river Ravi has light loam. The central portion which is the Deg Valley has stiff soil. Stiff soil is either Rohi or Kallarathi depending on the salt (kallar) contents.¹

5.3.3 CLIMATE

The climate of the district is subject to extreme variations. From the middle of December to the middle of March the air is very damp or cold and light to moderate rain falls at intervals. The season of the winter rains is followed by a spell of very pleasant weather. In April the temperature rises fast and the two successive months are very hot. Towards the end of June Monsoon conditions appear and during the following two and a half months spells of rain weather alternate with intervals of sultry oppressive weather. The average rainfall in the district is about 635 mm.

5.3.4 TEMPERATURE

June is the warmest month of the year. The temperature in June averages 33.9 °C. January has the lowest average temperature of the year. It is 12.2 °C.

¹ <https://sheikhupura.punjab.gov.pk/climate>

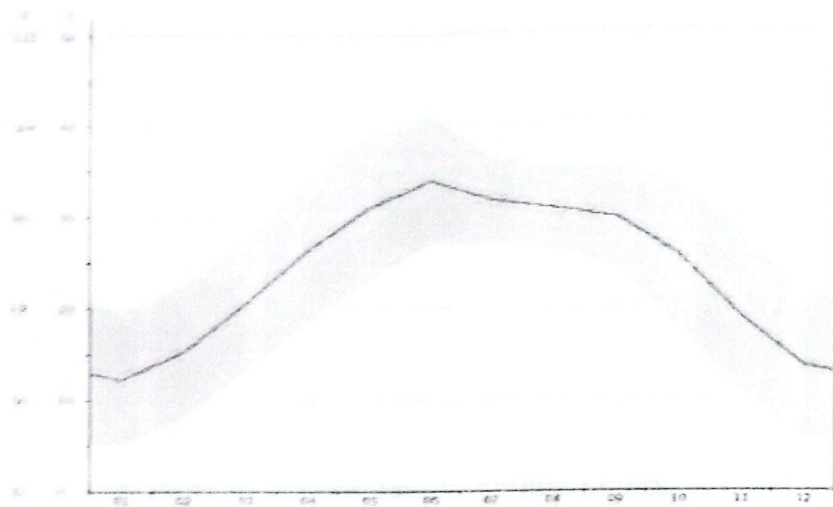


Figure 5.2: Maximum and Minimum Temperature of Sheikhpura

5.3.5 RAINFALL

The driest month is November, with 3 mm of rain. With an average of 133 mm, the maximum precipitation falls in July.

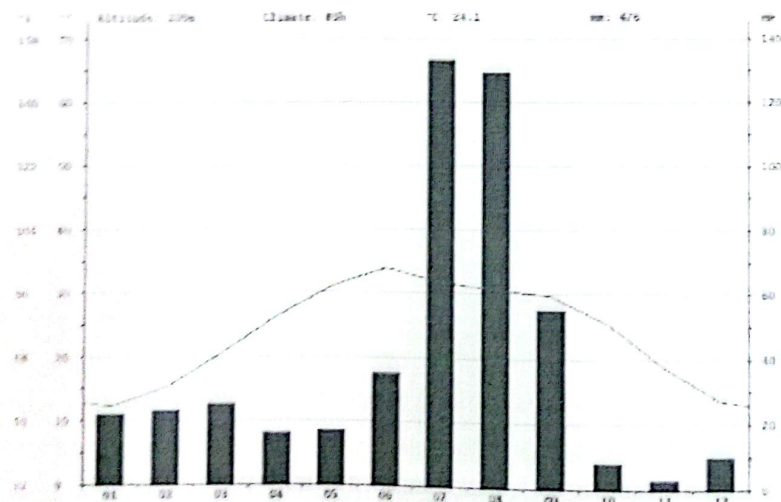


Figure 5.3: Annual Precipitations (mm) in Sheikhpura

5.3.6 WIND DIRECTION

The Sheikhpura region experiences westerly and north westerly winds during the winter and spring seasons, known usually as the dry stable times of year and southerly and southeasterly winds during the monsoon and post-monsoon seasons.

asterly winds during summer and monsoons. Wind speeds are low during winter pickin
p during spring season and peaking during the summer months.

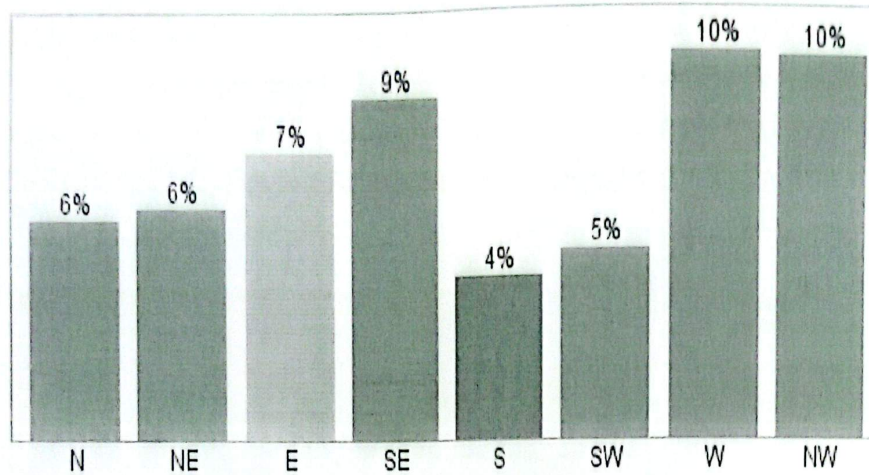


Figure 5.4: Wind Direction of Sheikhpura

AMBIENT AIR QUALITY

ient air quality is the proposed project site is clean due to the fact that currently no activit
dergoing onsite.

WATER RESOURCES

- SURFACE WATER**

urface water body present near the project site.

- GROUND WATER**

main source of drinking water in the area is groundwater, which is pumped through han
os, pressure pumps and tube wells. The groundwater is also used for irrigation purpose:
water supply in Sheikhpura is collected from ground water through a network of 41 tub
, which covers 33% of the town and 40% of the population. The distribution system
ists of 4 overhead reservoirs with a combined capacity of 290000.²

<https://sheikhpura.punjab.gov.pk/climate>

5.3.9 Seismology

Study area is located in the tectonic zone of down wrap and platform slop in the seismic zone of noticeable earthquake from 3.1 to 4.9 on Richter scale (Atlas for Pakistan). According building code of Pakistan prepared by NESPAK recently, it is located in Seismic Zone 2A Pakistan (Lower limit of moderate damage). Zone 2A represents peak ground acceleration (PGA) from 0.08 to 0.16g. Figure 3.8 shows the seismic zoning map of Punjab with the Project Area falling under Seismic Zone-2A.

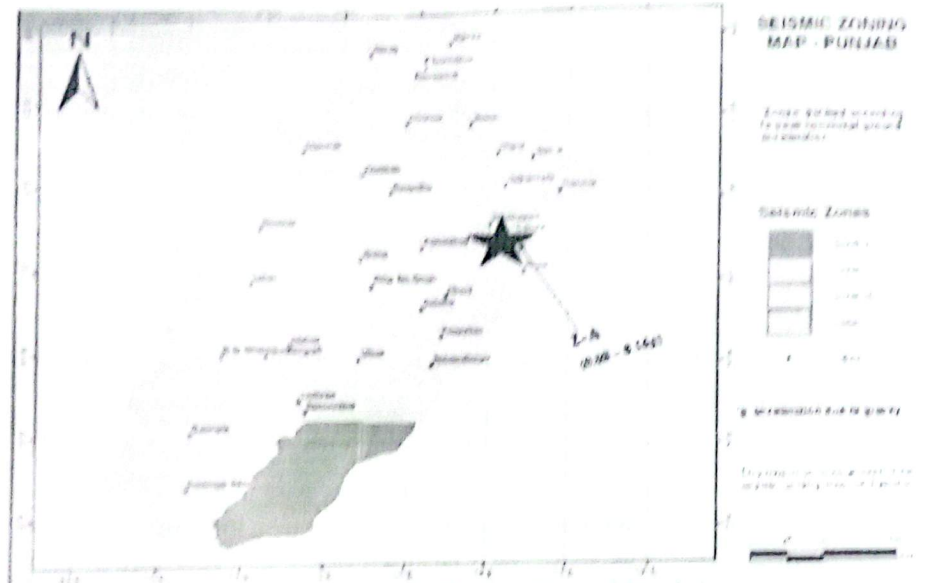


Figure 5.5: Seismic Zoning Map of Punjab

5.4 ECOLOGICAL ENVIRONMENT

Biological environment is the environment where life forms (such as wild animals and plants or bacteria) can exist, that affects human life (as in a particular place or period). The sum of environments where life forms exist is called the biosphere, these include a portion of land, water, and air. In Pakistan there are several areas of land devoted to the preservation of biodiversity through the dedication of national parks and wildlife sanctuaries. There are no protected areas near project site.

5.4.1 FLORA

No significant flora was present at the project site. However, several species of the trees are present in Sheikhupura.

Table 5.1: Flora inventory of Sheikhpura

S.no	Common Name	Scientific Name
1	Indian Lilac	<i>Azadirachta indica</i> (Linn.) A. Juss.
2	Chinese date	<i>Ziziphus mauritiana</i> Lamk.
3	Yellow	<i>Terminalia chebula</i> Retz.
4	Temple plant	<i>Crataeva adansonii</i> DC.
5	Bombax	<i>Bombax ceiba</i> Linn.
6	Bistula	<i>Cassia fistula</i> Linn.
7	India laburnum	<i>Acacia nilotica</i> (Linn.) Delile.
8	Indian banyan	<i>Ficus benghalensis</i> Linn.
9	Buddha tree	<i>Ficus religiosa</i> Linn.
10	Benzoil tree	<i>Moringa oleifera</i> Lam.
11	Devil tree	<i>Alstonia scholaris</i> (L.) R.Br.
12	Rosewood	<i>Dalbergia sissoo</i> Roxb.
13	Mango	<i>Mangifera indica</i> L.
14	Spanish cherry	<i>Mimusops elengi</i> L.
15	Jujube	<i>Ziziphus zizyphus</i> Mill.
16	Starfruit	<i>Averrhoa carambola</i> Linn.
17	Saunderberry	<i>Cordia allamanda</i> (Forssk.) Ehren. Ex Asch.
18	Lasura	<i>Cordia myxa</i> Linn.
19	Chamror	<i>Ehretia laevis</i> Roxb.
20	Midnight horror	<i>Oroxylum indicum</i> (Linn.) Vent.
21	Bidi leaf tree	<i>Bauhinia racemosa</i> Lamk.
22	Temple plant	<i>Crataeva adansonii</i> DC.
23	Tropical almond	<i>Terminalia arjuna</i> (Roxb. ex DC.) Wt. & Arn.
24	Beleric	<i>Terminalia bellirica</i> (Gaertn.) Roxb.
25	Chebulicmyrobalan	<i>Terminalia chebula</i> Retz.
26	Castor oil plant	<i>Ricinus communis</i> Linn.
27	Pongam oil tree	<i>Pongamia pinnata</i> (Linn.) Merrill
28	Asoka tree	<i>Tecomella undulata</i> (Roxb.) Seeman.
29	Toon Tree	<i>Cedrela toona</i> Roxb. ex Willd.
30	Indian mahogany	<i>Chukrasia tabularis</i> A. Dr. Juss.
31	White cedar	<i>Melia azedarach</i> Linn.
32	Mahogany	<i>Swietenia macrophylla</i> King
33	Phulai	<i>Acacia modesta</i> Wall.
34	Siris Tree	<i>Albizia lebbek</i> (Linn.) Benth.
35	Forest siris	<i>Albizia procera</i> (Roxb.) Benth.
36	Monkeypod	<i>Pithecellobium dulce</i> (Roxb.) Benth.
37	Loong Tree	<i>Prosopis cineraria</i> (Linn.) Druce
38	Honey mesquite	<i>Prosopis glandulosa</i> Torr.

39	Mesquite	<i>Prosopis juliflora</i> (Swartz) DC.
40	Country fig.	<i>Ficus racemosa</i> Linn.
41	White mulberry	<i>Morus alba</i> Linn.
42	Black mulberry	<i>Morus nigra</i> Linn.
43	Lemon-Scented Gum	<i>Eucalyptus citriodora</i> (Hook) K.D. Hill & L.A.S.
44	Jasmine	<i>Nyctanthes arbor-tristis</i> Linn.
45	Date palm	<i>Phoenix dactylifera</i> Linn.
46	Flame-of-the-forest	<i>Butea monosperma</i> (Lam.) Taubert
47	Desert poplar	<i>Populus euphratica</i> Olivier, Voy.
48	Indian willow	<i>Salix tetrasperma</i> Roxb.
49	Vann	<i>Salvadora oleoides</i> Decne.
50	Toothbrush tree	<i>Salvadora persica</i> Linn.
51	West Indian elm	<i>Guazuma ulmifolia</i> Lam.
52	Athel tree	<i>Tamarix aphylla</i> (Linn.) Karst.
53	Salt cedar	<i>Tamarix dioica</i> Roxb. Ex Roth.
54	Bihul	<i>Grewia optiva</i> Drummand ex Burret

5.4.2 FAUNA

Common species of birds found in the project area are sparrows, crows, pigeon, dove, tilia (starling), parrot, quail, pintail and humming bird etc. Reptiles, cats and dogs were also seen.

Table 5.2: Fauna inventory of Shiekhupura

S.no	Common Name	Scientific Name
1	Intermediate Egret	<i>Egretta intermedia</i>
2	Indian-Pond Heron	<i>Ardeola grayii</i>
3	Red-Wattled Lapwing	<i>Hoplopterus indicus</i>
4	Common Sandpiper	<i>Actitis hypoleucos</i>
5	White Wagtail	<i>Motacilla alba</i>
6	Yellow Wagtail	<i>Motacilla flava</i>
7	Red-vented Bulbul	<i>Pycnonotus cafer</i>
8	House Sparrow	<i>Passer domesticus</i>
9	Common Myna	<i>Acridotheres tristis</i>
10	Bank Myna	<i>Acridotheres ginginianus</i>
11	Pied Myna	<i>Sturnus contra</i>
12	House Crow	<i>Corvus splendens</i>
13	Nectarinia asiatica	Purple sunbird

after Five

Description of the Environment

14	Black Drongo	<i>Dicrurusmauriceusvieilloti</i>
15	Black kite	<i>Milvusmigransmigrans</i>
16	Blue rocky pigeon	<i>Columba livia</i>
17	Little brown dove	<i>Streptopelia senegalensis</i>
18	White-breasted Kingfisher	<i>Halcyon smyrnensis</i>
19	Little Green Bee eater	<i>Merops orientalis</i>
20	Golden-backed woodpecker	<i>Dinophumbenghalense</i>
21	Hoopoe	<i>Upopaeopae</i>
22	Pheasant-tailed jacana	<i>Hydrophasianus chirurgus</i>

Wildlife Sanctuaries and Game Reserves

No wildlife sanctuary or Game Reserve is located in the vicinity of the study area.

Critical Habitats

No wild life sanctuary or game reserve (Critical Habitats) exists near the project area or the study area and therefore it can be stated that this project does not affect any critical habitat as no critical habitat is located close to the project area.

5.5 SOCIO ECONOMIC ASSESSMENT

Social change is the consequence of almost any intrusion into the community life of any society. The intrusion can be in the form of any developmental projects or nonspecific, less tangible forms such as increased exposure to other cultures, technological changes and so on. The social change that results from intrusion into community life can also be beneficial, but can have undesirable or negative outcomes. Even that change in the long run may have positive effect on the social wellbeing of a community.

Social Impact Assessment is a methodology used for examining social change due to external sources, especially specific developmental projects, but also government policies, technological changes and social processes or anything that has a social impact.

The objectives of the given study are outlined as follow:

- To carry out the assessment of social impact.
- Acquire socioeconomic data to evaluate and identify the project interventions.
- Assess needs of community related environmental concerns.

- To assess adverse and beneficial socioeconomic and health impacts of the activity.
- To suggest remedial measures and solutions to improve socio economic conditions.
- To analyze socio economic conditions of community, with special reference to environment and conservation of natural resources.

5.1 DEMOGRAPHIC PROFILE OF SHEIKHUPURA³

Sheikhupura District is a district of Punjab, province, Pakistan. Sheikhupura is a headquarter of Sheikhupura District. According to the 1998 census of Pakistan, the district had a population of 3,321,029 of which 25.45% were urban. According to Census-2017 Punjab, Demographic profile of district is as follows:

Table 5.3: Census-2017 Punjab for District Sheikhupura

Population 2017			Population 1998			Average Annual growth rate		
Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Average
714,742	1,561,422	2,276,164	1,201,790	2,258,636	3,460,426	2.77	1.96	2.2

5.5.2 HEALTH FACILITIES

The city of Sheikhupura in Punjab Province of Pakistan is served by a number of private and government hospitals offering world class medical facilities. The table shows the numbers of health facilities, the district headquarter hospital (DHQH), tehsil/taluka headquarters hospital (THQHs), and rural health centers (RHCs) and the basic health units (BHUs), Maternal and Child Health (MCH) within the district.

Table 5.4: Number of health institution in Sheikhupura⁴

Type of Health care facilities	Number of Facilities
DHQH	1
THQH	4
RHC	7
BHU	81
MCH	4
GRDs	5

³ <https://www.pbs.gov.pk/census-2017-district-wise/results/044>

⁴ https://sheikhupura.punjab.gov.pk/district_profile

Zila Council Dispensaries

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5.5.3 EDUCATIONAL FACILITIES

The literacy rate of Sheikhupura is about 79% and due to recent research projects in the area, the literacy rate is increasing. Various educational institutes are present in the district.

Table 5.5 Number of educational Institutions in Sheikhupura⁵

Name of Institute	Total Number of Institutes
Higher Secondary	18
High	168
Middle	220
Primary	752

5.5.4 TRANSPORTATION AND COMMUNICATION

- ROAD LINKS**

The district has a total metalled road-length of 1287.69 Kilometres. The District is linked with Lahore, Hafizabad, Faisalabad, Gujranwala and Nankana districts through metalled road. Project site can be accessed through Lahore Road. Also, online cab services like uber, careem etc. is also available at project area.

- RAIL LINKS**

Shahdara Bagh, Sheikhupura and Sangla Hill are the major Rail heads in the district. The district is linked with Lahore and Faisalabad Districts through railway net-work.

5.5.5 INDUSTRIAL ACTIVITIES

A variety of important industrial units are operating in district Sheikhupura including fertilizer, chemicals, polyester fibre/yarn and rayon yarn, tractor and motor cycle assembling, electric domestic appliances, tyres and tubes (trucks, buses, cars and light vehicles), jute products, ceramics, electrical goods, pharmaceutical, cotton/woolen textile, etc. Paper and paper board industry is also concentrated in district Sheikhupura.⁶

⁵ https://sheikhupura.punjab.gov.pk/district_profile

⁶ https://www.punjab.gov.pk/sheikhupura_industry

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The project area is present in an industrial area. Number of industries are operating near the project site including Anthela sorting depot, Qaiser pink salt, Ghani food industries and faizan salt industry and many more.

5.5.6 WATER SUPPLY

The ground water is sweet in taste and is being recharged from canal passing near city. The water supply is based on ground water and tube wells which are 41 in number. The water supply network covers 33% of the town and serves 40% of the total population. The distribution system consists of 4 overhead reservoirs of 290000-gallon capacity. The distribution is made of a looped network which is made of different type of materials including A.C., P.V.C., C.I. and GI pipes.

5.5.7 ELECTRIC SUPPLY

There are 12 grid stations in the district ranging in capacity from 66/11 KV to 132/11 KV.

5.5.8 TELEPHONE FACILITIES

Landline and Cellular telephone facilities are present in the area. Cellular phone services are available in the district.

5.6 QUALITY OF LIFE VALUES

Quality of life values is represented by the human and economic development and quality of life values. For the study of socio-economic environment of the project area, field surveys were conducted and interviews were held with the general public and neighbors.

5.6.1 LANGUAGE

Widely spoken languages in the region are:

- Punjabi
- Urdu

5.6.2 LITERACY RATE

Literacy Ratio (10 +) 47.8 %

Male 47.28 %

Female 33.33 %

Chapter Five

5.6.3 RELIGION

People have strong commitment to Islam. Christians are second in majority and Hindus are third in number.

5.6.4 TRADITIONAL CRAFTS

Study area is well known for a wide variety of arts and crafts namely embroidery work, silver and gold, jewelry, brass and ivory inlay, hand knitted carpets, block / screen printing, etc.

5.6.5 AGRICULTURE OF SHEIKHUPURA

Major crops and fruit of district Sheikhupura are sugarcane, wheat, rice and guava. A variety of vegetables are also grown in the district. There are 23 flour mills, 93 rice mills, 4 fruit juices, 4 solvent extraction units and 15 vegetable ghee/cooking oil units already operating in the district. In view of the availability of various raw-materials and existing industries, there exist little additional scope for flour mills and rice husking units. However, there exist good prospects for fructose from rice bran, rice husk briquettes, corn oil, furfural from maize cobs, fruit juice/pickles/squashes and vegetables dehydration units.

5.6.7 CULTURE

People enjoy and cherish events such as Mela, Cattle Show, Basant, and theater. Traditional attire, Kurta-Shalwar, Dhoti, Chadar/Dupatta, & Turban, is mostly preferred. Nankeen Lassi is their favorite drink. Shag with Roti is a much-loved food.

5.6.8 SITES OF HISTORICAL SIGNIFICANCE IN SHEIKHUPURA

There are no official heritage sites or historic, religious or archeologically important sites located in the subproject works areas.

5.7 LAB REPORTS OF ENVIRONMENTAL ANALYSIS

The baseline environmental monitoring of ambient air, noise and groundwater at the project site is done by EPA certified laboratory showing all the physio-chemical parameters in compliance with PEQS. Environmental lab reports are provided.



CHAPTER SIX

IMPACT ASSESSMENT

6.1 METHODOLOGY FOR IMPACT ASSESSMENT

These potential impacts due to the proposed project can be both positive (beneficial) and negative (adverse) depending on the resources and receptors involved along with other parameters such as geographical scope (magnitude and extent), temporal scope (duration) and reversibility. The potential impacts during design, construction and operation phase of project were assessed using Environmental Impact Severity Matrix as presented in Table 6.1, 6.2 and 6.3 for the respective phases.

6.2 CHARACTERISTICS OF IMPACTS

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
- Reversible and Irreversible impact

Table 6.1: Impact Assessment Checklist for Pre-Construction Phase

Environmental Sensitivities	Intensity of impact			Extent of Impact			Impact Nature		Impact Significance				
	Low intensity	Moderate Intensity	High Intensity	Local	National	Regional	Beneficial	Adverse	Insignificant	No Impact	Short Term	Moderate	Long term
Physical Parameters													
Topography													
Land Acquisition													
Seismicity													
Biological Parameters													
Land Environment													
Flora													
Fauna													
Socio-economic Parameters													
Local Economy													
Social impacts													

Table 6.2: Impact Assessment Checklist for Construction Phase

Environmental Sensitivities	Intensity of impact			Extent of Impact			Impact Nature		Impact Significance				
	Low intensity	Moderate Intensity	High Intensity	Local	National	Regional	Beneficial	Adverse	Insignificant	No Impact	Short Term	Moderate	Long term
Physical Parameters													
Air quality													
Noise													
Water quality													
Biological Parameters													
Land Environment													
Flora													
Fauna													
Social Parameters													
Local Economy													
Social impacts													
Health and safety													

Table 6.3: Impact assessment checklist for operation phase

Environmental Sensitivities	Intensity of impact			Extent of Impact			Impact Nature		Impact Significance			
	Low intensity	Moderate Intensity	High Intensity	Local	National	Regional	Beneficial	Adverse	Insignificant	No Impact	Short Term	Moderate Long term
Physical Parameters												
Air quality												
Noise												
Water quality												
Biological Parameters												
Land Environment												
Flora												
Fauna												
Social Parameters												
Local Economy												
Social impacts												
Health and safety												

CHAPTER SEVEN

SCREENING OF POTENTIAL ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

7.1 SCREENING OF POTENTIAL ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

In this section, the potential impacts of the project activities, which could cause significant environmental concerns, are identified and discussed. This discussion will form the basis for environmental management planning and will lead to designing of an EMP for proposed project.

Based on site visit, observation, brain storming, provided information and social interview, significant impacts were anticipated and evaluated. Then qualitative and quantitative (where possible) assessment of these anticipated impacts is to be carried out.

7.2 ENVIRONMENTAL PROBLEMS DUE TO PROJECT LOCATION

The potential impacts assessed due to project location are change in land use pattern, pressure on the existing natural resources, natural hazards like floods, earth quake, changes in the socio cultural patterns of the local community, local community displacement issues, and obstruction of accessibility to the community already residing in the locality. A detailed explanation of each potential impact is given hereunder in tabulated form. All the measures since are adopted and never compromise with measures either they are health related or environment related.

7.2.1 CHANGE IN LAND USE PATTERN

Any new intervention has its first and foremost impact of changing the land use pattern of the area. The impact of this nature is irreversible therefore site selection needs to have careful consideration of the impacts that may arise due to the changes in land use patterns.

MITIGATION MEASURES

- The proposed project site is present in an industrial area. Thus, no land use change will occur. Prior to selection of site, the project proponent has had careful consideration of site alternatives and hence due to current land use nature, price, and comparatively less environmental impacts the site was selected out of the other alternatives.
- As part of mitigation measure, the proponent will develop an aesthetical yet a native environment friendly landscape plan which will enhance the vegetation cover and add to the aesthetic value of the area.

7.2.2 PRESSURE ON RESOURCES

Yet another impact to be considered prior to site identification is the availability of already existing resources e.g. water, gas, electricity, etc. any new intervention can exert pressure and marginalize the existing community. This could eventually create a sense of deprivation among the already existing community and may eventually result in social unrest.

MITIGATION MEASURE

- As part of the mitigation plan, the proposed project will develop an effective and efficient network of infrastructure which will not only benefit the proposed project. Rather it will also help the local community.
- Water will be reused throughout the project lifecycle. This will exert less pressure on the existing resources.
- This situation will further be discussed in the mitigation measures proposed for project operations.

7.2.3 NATURAL HAZARDS

It is very important to assess the extent of damage any natural hazard e.g. earthquake, floods, landslides may cause.

MITIGATION MEASURE

The proposed site is identified within environmentally /geologically safe and does not fall in any of the earthquake zones. The proposed site falls within zone 2B according to Pakistan seismic activities & zoning map. As part of disaster preparedness plan the management of Ayesha Spinning Mills Limited should ready its disaster preparedness plans, emergency exercises/training and warning systems.

2.4 DISPLACEMENT OF LOCAL COMMUNITY

Displacement of local community can tend to create social issues and aggravate negative feelings from the existing population towards the project.

MITIGATION MEASURE

- The proposed project does not require local community displacement.
- There is no residential area present within 1km radius of proposed project site.

2.5 ACCESSIBILITY ISSUES TO THE LOCAL COMMUNITY

Another important impact considered was obstruction or changes in the patterns of transportation and increase travel time/distance for the local community.

MITIGATION MEASURE

- The proposed project site is at safe distance from the local community. This way, it will not exert pressure on the roads.
- As part of the mitigation measures, the proposed project will develop an effective traffic management plan. The arrival and departures of trucks will be timed according to the traffic rush hours on the access road. Movement of trucks during peak hours e.g. school on and off timings, will be discouraged.
- The drivers will be given proper trainings on social behavior. Good behavior of drivers towards the local community will be made mandatory.
- The local community members will be encouraged to register complaints regarding any incident to the site supervisor.

2.6 AVAILABILITY OF EXISTING INFRASTRUCTURE AND SERVICES

Unavailability of infrastructure can render the entire project void and impractical due to absence of important community infrastructure.

MITIGATION MEASURE

- The proposed project will have provision of adequate utilities facility including electricity, telephone, gas, water etc.

7.3 ENVIRONMENTAL PROBLEMS DUE TO PROJECT DESIGN

Environmental issues may also arise during project design phase which may cause potential threats to the overall project life if not considered timely. The potential problems associated with project design phase are identified hereunder:

7.3.1 INCREASED ENERGY CONSUMPTION

The design of building plays a vital role in determining the energy demand. Unplanned design may lead to overall rise in energy demand.

MITIGATION MEASURE

The mitigation measures will include:

- The Proponent intends to construct the unit on modern lines with incorporation of latest technology which will generate less emission. The design of the buildings will follow the green building designs such as maximum utilization of the sunlight, insulation of building to avoid heat exchange and to reduce electricity consumption. Moreover, the buildings will be designed by keeping in consideration all the technical standards to avoid adverse impacts on the environment and society.

7.3.2 TRAFFIC CONGESTION

Unplanned traffic management and traffic infrastructure development may lead to traffic related issues such as accidents and traffic congestion.

MITIGATION MEASURE

- A significant part of the open land will be used to develop internal road network and parking areas.
- Traffic related issues within the boundary walls of the factory the site supervisor ensure that the vehicles arrivals and departures are timed in a way that they do not create traffic congestion issues.

7.3.3 EMERGENCY/ ACCIDENTS

Emergency evacuation plan is necessary to curb fire issues due to electric short circuit etc.

MITIGATION MEASURE

- The project will propose Emergency Evacuation Plans in events of fire hazards.

- Quality of wiring work and gas lines will be ensured through installation of good quality wiring during and proper monitoring during operational phase.
- The site will be equipped with proper firefighting equipment to ensure increased safety. Fire water network will be provided at the site (hydrants, buckets, extinguishers and smoke detectors).

7.3.4 ACCESSIBILITY TO PUBLIC UTILITY / SERVICES

Inaccessibility to public utilities will render the project uninhabitable.

MITIGATION MEASURES

- This is not going to create any issues since the proposed site is planning to develop an extensive network of utilities. There will be very low pressure on the public utilities.

7.3.5 CHANGED LAND USE

Land clearing would create aesthetic nuisance.

MITIGATION MEASURE

- The proposed project will be done on barren land which means no land clearing will be done. However, the proponent will ensure plantation over the site to increase the natural beauty.

7.3.6 GROUND WATER CONTAMINATION

Wires and pipelines lay open and above surface may consequently give rise to leakages, contamination and short circuits in the lines.

MITIGATION MEASURE

- There will be no any such issue at the said project site because the proposed project site is devoid of any such infrastructure. However, during the installation of underground pipe lines, the project engineer will make sure that the contractors and team of workers are well aware of precautionary measures needed to curtail any such issue.

7.4 ENVIRONMENTAL IMPACTS FROM PROJECT CONSTRUCTION

During all construction activities, the followings will be the major pollutants/wastes or project related pollution aspects:

7.4.1 AIR QUALITY DETORIORATION

Dust emissions likely to occur during the excavation of the top soil and loading and transportation of the construction waste.

MITIGATION MEASURE

Dusts shall be suppressed using water bowzers to spray exposed land surfaces and particular areas likely to be disturbed by trucks and other vehicles during the construction of the premise. Also, the following measures will be adopted for the dust suppression.

- Cover all trucks hauling soil, sand and other loose materials or require all trucks to maintain at least two feet of freeboard. Pave, apply water when necessary, or apply (non-toxic) soil stabilizers on all unpaved access roads, parking areas and staging areas at construction sites.
- Vehicular speed limits of 20 km/h shall be observed in order to minimize dust generation.
- Sweep daily (with water sweepers) all paved access roads, parking areas and staging areas at construction sites.
- Fast growing trees should be planted around the project area to act as a wind break to reduce the particulate matter.
- Provision of PPEs to workers

7.4.2 NOISE POLLUTION

Noise pollution due to the moving machines (mixers, tippers, communicating workers) and incoming vehicles.

MITIGATION MEASURE

Following measures will be adopted for noise control.

- Install portable barriers to shield compressors and other small stationary equipment where necessary.
- Take appropriate measures to control excessive noise.
- Limit pickup trucks and encourage workers to shut off vehicle engines whenever possible.

7.4.3 WATER RESOURCE DEPLETION

Hydrology and water quality degradation due to storm water runoff from the site and excavation.

MITIGATION MEASURE

- Ensure the reuse of water and inspect any leakage of water pipes or tanks for prompt repairing.
- Storm water should be directed in a drain for its proper collection and reuse.

7.4.4 GROUND/ SURFACE WATER CONTAMINATION DUE TO WASTEWATER DISPOSAL

Wastewater generated due to construction activities can result in the spread of vector borne diseases and groundwater quality deterioration.

MITIGATION MEASURE

- The generated wastewater during construction activities should be reused for construction activities and for sprinkling purposes.
- However, the domestic wastewater should be properly collected and disposed off after treatment.

7.4.5 LAND CONTAMINATION BY IMPROPER SOLID WASTE DISPOSAL

Improper and unplanned solid waste dumping can cause environment, land, health and safety issues. It also can potentially deteriorate the living quality of the residents besides reducing the aesthetic quality of site.

MITIGATION MEASURES

- Use of excavated material for backfilling and leveling at construction site.
- Use of an integrated solid waste management system i.e. Source reduction, Reuse, Recycling.
- Separation of recyclable/ reusable or residual materials and its transfer to local vendor for further use/ management.
- Waste storage must be in covered containers at project site.
- Containers must be cleared before reaching their carrying capacity.
- Good housekeeping must be ensured prohibiting the littering at the project site.
- Awareness and training to the staff and workers about handling of solid waste at site.

7.4.6 SOIL CONTAMINATION DUE TO OIL SPILLS

Oil spills may be occurred due to use of improper maintenance of vehicles and machinery.

MITIGATION MEASURE

- The contractor should control the dangers of oil spills during construction by maintaining the machinery in specific areas designed for this purpose hence will not be a serious impact as a result of the construction.

7.4.7 ACCIDENTS / HAZARDS

Workers accidents and hazards during construction

MITIGATION MEASURE

Following measure will be adopted for workers safety and a workers' Health and Safety'.

- Provision of appropriate and adequate Personal Protective Equipment (PPE) to employees.
- Enforcement and proper use of PPE by all construction workers.
- Provision of appropriate tools, equipment and machinery in sound working conditions to employees.
- Proper arrangement of lighting to reduce accidents.
- Development of clear policies on treatment of injured personnel.
- Trainings and awareness sessions of all personnel will be carried out as per the HSE training plan.

7.4.8 HEALTH AND SAFETY ISSUE

Unskilled personnel will not be able to tackle environmental, health and safety related situations which may further aggravate any such issues and cause loss of human life and property.

MITIGATION MEASURE

- Proper monitoring and reporting mechanism should be developed where the team will be responsible to communicate/report any illegal or hazardous situation to the team leader. Regular training of the staff will be conducted.

7.5 ENVIRONMENTAL PROBLEMS ASSOCIATED WITH PROJECT OPERATIONS

This section provides a detailed overview of the environmental aspects and subsequent environmental impacts that may arise during project operational phase. Appropriate mitigation measures are also proposed for the remedy of any such potential impacts. This section will discuss the issues related to general activities which will be conducted on site.

7.5.1 AIR QUALITY DETORIRATION

Majorly the gaseous and fugitive dust emissions will be from the production process including operation of boilers, dyeing machines.

MITIGATION MEASURES

- Vehicles and machines will be maintained to avoid emissions. Also, compliance of using good quality fuel and good conditioned vehicles should be done.
- Fugitive dust emissions should be controlled by water sprinkling around dust areas.
- All machines should be properly operated to avoid air quality deterioration.

7.5.2 NOISE POLLUTION

Noise emissions due to traffic, high noise generating machineries and any activities may create issues to the residents.

MITIGATION MEASURE

- Any activity that leads to noise emission is restricted to day time only.
- Selection of up-to-date equipment and machinery with reduced noise levels ensured by suitable in-building damping techniques. Confining of excessively noisy areas and limiting the work to normal working hour in the day time. Prohibiting the use of horns.
- Encasement of noise generating sources should be done to control the noise level within limits. In case of maintenance, the persons working should be provided with ear muffs. Plantation should be also done which will act as a noise barrier.
- PPEs shall be provided to the workers
- Noise Limits as per PEQS requirement should be followed at plant boundary.

7.5.3 GROUND/ SURFACE WATER CONTAMINATION DUE TO WASTEWATER DISPOSAL

Wastewater generated due to domestic/commercial activities can result in the spread of vector borne diseases like dengue, malaria, as well as spread the nuisance of foul smell.

MITIGATION MEASURE

The wastewater from various activities should be properly collected through network of pipeline and routed towards effluent treatment plant for its proper treatment before disposal.

7.5.4 DEPLETION OF WATER RESOURCES

Prolonged water consumption may in the long run lower/deplete the underground water table. This will be a permanent and moderate negative impact.

MITIGATION MEASURES

An effective 'Water Conservation Plan' will be developed. Following operational measures will be adopted for water conservation:

- Ground water should be used for project activities.
- It will be made sure that all faucets, circulating pumps etc. do not leak and are in good repair;
- Any leaking or dripping faucet, pump or toilet should be reported immediately;
- All the utility bills should be kept in a safe place to track the consumption of water, and
- Practicing rain water harvesting

7.5.5 SOIL CONTAMINATION

During operation phase, the impact on soil can be envisaged due to the airborne particles and the contamination and spillage of any solid waste or liquid effluent. The impact will be localized only. There will be no impact on soil of the study area located beyond the working area of the project.

MITIGATION MEASURES

- Storage areas for fuels and liquid chemicals should be designed with secondary containment to prevent spills and contamination of soil and groundwater
- Secondary containment should be provided and used at refueling locations
- Emergency plan for spill management should be prepared and inducted to the staff for any incident of spill
- Lubricants should be stored in drums and kept in room, having pucca surface and roof

7.5.6 LAND CONTAMINATION DUE TO IMPROPER SOLID WASTE DISPOSAL

Improper and unplanned solid waste dumping can cause environment, health and safety issues. It also can potentially deteriorate the living quality of the residents besides reducing the aesthetic quality of site.

MITIGATION MEASURES

Solid Waste Management Plan

Solid wastes to be generated from project production activities and the measures includes:

- Socks, yarn waste, polybags waste, cartons and paper waste from socks division should be handed over to the contractor for its proper management accordingly.
- Yarn waste and fabric waste from garments division should be handed over to contractor for its proper management accordingly.
- Waste must be stored at site in covered separate containers.
- Training should be provided to personnel for identification, segregation, and management of waste.
- Containers must be emptied before they reaching their carrying capacity.
- Empty drums or containers containing chemicals after proper cleaning should be sold in the market.
- All environmental impacts of such waste should bring to the notice of the concerned buyer. Record of all such sales will be maintained for later use if and when required.
- No hazardous waste should be generated at the project site.
- Good housekeeping must be ensured by prohibiting littering at the site.

7.5.7 ENERGY DEPLETION

Excessive use of energy will exert more pressure on the already dwindling energy resources of the city/country.

MITIGATION MEASURE

- The workers employees should be encouraged to follow energy conservation strategies developed during operational phase. Over the timing of working, it should be discouraged to use extra electricity.

7.5.8 EMERGENCY/FIRE HAZARDS

Emergencies e.g. fire incidents may lead to environmental, health and safety issues to the local residents.

MITIGATION MEASURE

- Firefighting equipment should be provided and adequate trainings should be provided to tackle any situation of fire hazards.

- Firefighting equipment and other safety appliances should be kept ready for use during disaster/emergency situation including natural calamities like earthquake/flood.

7.5.9 HEALTH AND SAFETY ISSUE

Unskilled personnel may not be able to tackle environmental, health and safety related situations which may further aggravate any such issues and cause loss of human life and property.

MITIGATION MEASURE

- Proper monitoring and reporting mechanism should be developed where the team will be responsible to communicate/report any illegal or hazardous situation to the team leader. Regular training of the staff should be conducted.

7.6 POTENTIAL ENVIRONMENTAL ENHANCEMENT MEASURES

7.6.1 TREE PLANTATION

Grassy Plots: Land should be converted into several grassy plots within the factory boundaries and a large number of flowering shrubs should also be planted in these plots.

Road Side Plantation: A large number of plants should be planted along roadsides within the factory area to keep neat and clean environment. It also helps to dampen the sound level.

7.6.2 IMPROVED MONITORING AND MANAGEMENT PRACTICES

Project proponent of subject project should take appropriate measures to provide pollution free and safe environment during the project activity by implementing improved management practices and monitoring techniques suggested in EMP. Management should further take necessary actions to mitigate any residual impacts.

Project proponent of subject project should adopt such plan that will assure the minimum impact on the environment and health by implementing proper mitigation measures. Design of the building should assure the structure stability in a long run.

Plantation should be done within the unit and for this area is reserved, it can also be seen on project map attached with report. Project proponent will further develop Restoration/reclamation or tree plantation plan to restore the project area. Plantation should be enhanced with native species within the unit, along the boundary wall and along the road side as per direction by EPA Punjab.

CHAPTER EIGHT

ENVIRONMENTAL MANAGEMENT AND MONITORING PLANS

GENERAL

The purpose of developing this Environmental Management and Monitoring Plan (EMMP) is to provide a dynamic guideline to the concerned stakeholders to define details of who, what, where and when environmental management and mitigation measures are to be implemented besides providing the contractors and proponents better on-site environmental management control over the life of the project. The scope of this Environmental Management and Monitoring Plan includes the activities during operational. However, to ensure the compatibility of the Environmental Management and Monitoring plan in accordance with the changing socio-cultural, economic and environmental factors, it would be used as a dynamic tool which means that the EMMP would undergo necessary modifications to keep catering to the changing environmental needs of the project.

Users of this EMMP would include but not be restricted to the following:

Table 8.1: End users of EMMP

Sr. #	EMMP Elements	End Users
	Background	All stakeholders – internal and external Community groups Approval or consent authority e.g. EPA
	Environmental Management	The management and supervisory staff of Ayesha Spinning Mills Limited EPA
	Implementation	The management and supervisory staff of Ayesha Spinning Mills Limited Community groups, EPA
	Monitor and review	The management and supervisory staff of Ayesha Spinning Mills Limited

2 OBJECTIVES OF ENVIRONMENTAL MANAGEMENT PLAN

The objectives underlying the EMMP of Ayesha Spinning Mills Limited are:

- To provide guideline to the management and supervisory staff for conducting their activities in an environmentally responsible manner
- To mitigate potential risks during operational phase of the project
- To coordinate with the responsible approval authorities regarding the environmental efforts
- To identify roles and responsibilities for the implementation of EMMP
- To meet the regulatory obligation put forth by Punjab Environmental Protection Act 1997 (amended 2017).

3 DESCRIPTION OF PROPOSED MITIGATION ACTIONS ENVIRONMENTAL MANAGEMENT PLAN

lists all the mitigation measures identified and the associated environmental or social aspect line during operational phase with the administrative framework involving all the responsible implementing authorities who are required to take the planned actions/measures. It enhances project benefits by reducing its impacts and making it environmentally friendly.

Ayesha Spinning Mills Limited believes in sustainable resource management which is why it has developed a comprehensive Environmental Management and Monitoring Plan for its construction phase and operational phase.

Management Plan			Monitoring Plan		Estimated Cost
Sr. No.	Potential Impacts	Management & Monitoring Measures	Timeframe	Responsible Authority	(PKR)
1	Air Quality Deterioration	CONSTRUCTION PHASE			
		Avoid construction activities in extremely dry weathers.	Throughout construction phase	Proponent & HSE Manager	0/-
		Cover all trucks hauling soil, sand and other loose materials or require all trucks to maintain at least two feet of freeboard. Pave, apply water when necessary, or apply (non-toxic) soil stabilizers on all unpaved access roads, parking areas and staging areas at construction sites.	Throughout construction phase	Proponent & HSE Manager	10,000/-
		Monitoring the speed limits of vehicles at project site.	Throughout construction phase	Proponent & HSE Manager	0/-
		Sprinkling of water at construction sites to avoid the dust emissions	Throughout construction phase	Proponent & HSE Manager	5000/-
		Vehicular speed limits of 20 km/h shall be observed in order to minimize dust generation.	Throughout construction phase	Proponent & HSE Manager	0/-
		All equipment shall be properly tuned and maintained.	Throughout construction phase	Proponent & HSE Manager	0/-

Management Plan			Monitoring Plan		Estimated Cost
Sr. No.	Potential Impacts	Management & Monitoring Measures	Timeframe	Responsible Authority	(PKR)
2	Noise and Vibrations	Sweep daily (with water sweepers) all paved access roads, parking areas and staging areas at construction sites.	Throughout construction phase	Proponent & HSE Manager	0/-
		Fast growing trees will be planted around the project area to act as a wind breaker to reduce the particulate matter.	Throughout construction phase	Proponent & HSE Manager	0/-
		Provision of PPEs to workers	Throughout construction phase	Proponent & HSE Manager	0/-
		Limit pickup trucks and encourage workers to shut off vehicle engines whenever possible.	Throughout construction phase	Proponent & HSE Manager	0/-
		Low speed limit will be maintained on the section of the access road that is adjacent to the community and site.	Throughout construction phase	Proponent & HSE Manager	0/-
		Proper maintenance and inspection of equipment and machinery.	Throughout construction phase	Proponent & HSE Manager	0/-
		Night time construction activities and driving of project vehicles will be limited where possible	Throughout construction phase	Proponent & HSE Manager	0/-
		Install portable barriers to shield compressors and other small stationary equipment where necessary.	Throughout construction phase	Proponent & HSE Manager	0/-

Management Plan			Monitoring Plan		Estimated Cost
Sr. No.	Potential Impacts	Management & Monitoring Measures	Timeframe	Responsible Authority	(PKR)
3	Depletion of water resources	Ensure the reuse of water and inspect any leakage of water pipes or tanks for prompt repairing Storm water should be directed in a drain for its proper collection and reuse.	Throughout construction phase	Proponent & HSE Manager	0/-
4	Ground/ surface water contamination due to wastewater disposal	The generated wastewater during construction activities should be reused in construction activities and for sprinkling purposes. However, the domestic wastewater should be properly collected and disposed off after treatment.	Throughout construction phase	Proponent & HSE Manager	0/-
5	Land contamination due to improper solid waste disposal	Proper waste management plan must be developed. Use of excavated material for backfilling and leveling at construction site. Use of an integrated solid waste management system i.e. Source reduction, Reuse, Recycling.	Throughout construction phase	Proponent & HSE Manager	0/-

Management Plan			Monitoring Plan		Estimated Cost
Sr. No.	Potential Impacts	Management & Monitoring Measures	Timeframe	Responsible Authority	(PKR)
		Separation of recyclable/ reusable or residual materials and its transfer to local vendor for further use/ management.	Throughout construction phase	Proponent & HSE Manager	0/-
		Waste storage must be in covered containers at project site.	Throughout construction phase	Proponent & HSE Manager	10,000/-
		Containers must be cleared before reaching their carrying capacity.	Throughout construction phase	Proponent & HSE Manager	0/-
		Good housekeeping must be ensured prohibiting the littering at the project site.	Throughout construction phase	Proponent & HSE Manager	0/-
		Awareness and training to the staff and workers about handling of solid waste at site.	Throughout construction phase	Proponent & HSE Manager	0/-
6	Spillage	The contractor should control the dangers of spills during construction by maintaining the machinery in specific areas designed for this purpose hence will not be a serious impact as a result of the construction.	Throughout construction phase	Proponent & HSE Manager	0/-
7	Accidents/ Hazards	Provision of appropriate and adequate Personal Protective Equipment (PPE) to employees.	Throughout construction phase	Proponent & HSE Manager	0/-

Management Plan				Monitoring Plan		Estimated Cost
Sr. No.	Potential Impacts	Management & Monitoring Measures	Timeframe	Responsible Authority		(PKR)
		Inspection of all working machinery and equipment, provision of firefighting equipment	Throughout construction phase	Proponent & HSE Manager		20,000/-
		Proper arrangement of lighting to reduce accidents.	Throughout construction phase	Proponent & HSE Manager		0/-
		Development of clear policies on treatment of injured personnel.	Throughout construction phase	Proponent & HSE Manager		0/-
		Trainings and awareness sessions of all personnel should be carried out as per the HSE training plan.	Throughout construction phase	Proponent & HSE Manager		0/-
		Implementation of all necessary health and safety measures to ensure health and safety of workers and the general public during construction phase of the project.	Throughout construction phase	Proponent & HSE Manager		0/-
8	Health and Safety Impacts	Provision of PPE's i.e. safety footwear, dust masks, gas masks, respirators, gloves, ear protection equipment etc. and their training of using those PPE's.	Throughout construction phase	Proponent & HSE Manager		100,000/-
		Ensure the general safety and security at the project site all times by providing adequate lighting and security guards.	Throughout construction phase	Proponent & HSE Manager		0/-

Management Plan			Monitoring Plan		Cost
Sr. No.	Potential Impacts	Management & Monitoring Measures	Timeframe	Responsible Authority	(PKR)
		Provision of first aid box at the project site and trained person must be available for giving first aid.	Throughout construction phase	Proponent & HSE Manager	2,000/-
		Ensure all electrical equipment are switched off when not in use	Throughout construction phase	Proponent & HSE Manager	0/-
9	Energy depletion	Use of energy saving light tubes and bulbs.	Throughout construction phase	Proponent & HSE Manager	0/-
OPERATION PHASE					
1.	Air Quality Deterioration	Vehicles and machines should be maintained to avoid emissions. Also, compliance of using good quality fuel and good conditioned vehicles will be done. Fugitive dust emissions will be controlled by water sprinkling around dust areas.	Throughout operational phase	Proponent & HSE Manager	0/-
		All machinery should be properly operated to avoid air quality deterioration.	Throughout operational phase	Proponent & HSE Manager	5000/-
2.		Noise control plans No machinery should be left unattended, particularly in running condition	Throughout operational phase	Proponent & HSE Manager	0/-

Management Plan			Monitoring Plan		Estimated Cost
Sr. No.	Potential Impacts	Management & Monitoring Measures	Timeframe	Responsible Authority	(PKR)
	Noise and Vibrations	Reducing equipment noise at source by proper design and maintenance machinery and equipment	Throughout operational phase	Proponent & HSE Manager	0/-
		All vehicles, generators and other equipment used during the operation should be tuned and maintained in good working condition in order to minimize noise	Throughout operational phase	Proponent & HSE Manager	0/-
		Use of proper silencers and mufflers or noise-abating devices wherever needed and practicable.	Throughout operational phase	Proponent & HSE Manager	0/-
		Awareness to vehicle and machinery operators to switch off engines of vehicles or machinery not being used to avoid excessive noise and vibrations.	Throughout operational phase	Proponent & HSE Manager	0/-
		The noisy production work should entirely be planned during day time when most of the neighbors will be at work.	Throughout operational phase	Proponent & HSE Manager	0/-
3.	Land contamination due to construction	Proper waste management plan must be developed.	Throughout operational phase	Proponent & HSE Manager	0/-
		Use of an integrated solid waste management system i.e. Source reduction, Reuse, Recycling	Throughout operational phase	Proponent & HSE Manager	0/-

Management Plan		Monitoring Plan		Estimated Cost
Sr. No.	Potential Impacts	Management & Monitoring Measures	Timeframe	Responsible Authority
	waste disposal	Solid wastes to be generated from project production activities and the measures includes: Socks, yarn waste, polybags waste, cartons and paper waste from socks division should be handed over to the contractor for its proper management accordingly. Yarn waste and fabric waste from garments division should be handed over to contractor for its proper management accordingly. Empty drums or containers containing chemicals after proper cleaning should be sold in the market. All environmental impacts of such waste should bring to the notice of the concerned buyer. Record of all such sales should be maintained for later use if and when required.	Throughout operational phase	Proponent & HSE Manager
	No hazardous waste should be generated at the project site.		Throughout operational phase	Proponent & HSE Manager
	Waste must be stored at site in covered separate containers.		Throughout operational phase	Proponent & HSE Manager
	Training should be provided to personnel for identification, segregation, and management of waste.		Throughout operational phase	Proponent & HSE Manager
				0/-
				0/-
				50,000/-
				0/-

Management Plan		Monitoring Plan		Estimated Cost
Sr. No.	Potential Impacts	Management & Monitoring Measures	Timeframe	Responsible Authority
4.	Ground/ surface water contamination due to Waste water Disposal	Containers must be emptied before they reaching their carrying capacity.	Throughout operational phase	PropONENT & HSE Manager
		Good housekeeping must be ensured by prohibiting littering at the site.	Throughout operational phase	PropONENT & HSE Manager
		The wastewater from various activities should be properly collected through network of pipeline and routed towards effluent treatment plant for its proper treatment before disposal.	Throughout operational phase	PropONENT & HSE Manager
5.	Depletion of Water resources	Detect and repair pipe and tank leaks	Throughout operational phase	PropONENT & HSE Manager
		It will be made sure that all faucets, circulating pumps etc. do not leak and are in good repair;	Throughout operational phase	PropONENT & HSE Manager
		Any leaking or dripping faucet, pump or toilet will be reported immediately	Throughout operational phase	PropONENT & HSE Manager

Management Plan			Monitoring Plan		Estimated Cost
Sr. No.	Potential Impacts	Management & Monitoring Measures	Timeframe	Responsible Authority	(PKR)
		All the utility bills will be kept in a safe place to track the consumption of water; and	Throughout operational phase	Proponent & HSE Manager	0/-
		Practicing water conservation measures by rain water harvesting.	Throughout operational phase	Proponent & HSE Manager	0/-
		Storage areas for fuels and liquid chemicals should be designed with secondary containment to prevent spills and contamination of soil and groundwater	Throughout operational phase	Proponent & HSE Manager	50,000/-
6.	Soil Contamination	Secondary containment should be provided and used at refueling locations	Throughout operational phase	Proponent & HSE Manager	0/-
		Emergency plan for spill management should be prepared and inducted to the staff for any incident of spill	Throughout operational phase	Proponent & HSE Manager	0/-
		Lubricants should be stored in drums and kept in room, having pucca surface and roof.	Throughout operational phase	Proponent & HSE Manager	0/-
7.		Implementation of Health and Safety plan including all necessary measures to ensure health and safety of workers and the general public.	Throughout operational phase	Proponent & HSE Manager	0/-

Management Plan			Monitoring Plan		Estimated Cost
Sr. No.	Potential Impacts	Management & Monitoring Measures	Timeframe	Responsible Authority	(PKR)
	Health and Safety Impacts	Provision of PPE's including safety footwear, dust masks, gas masks, respirators, gloves, ear protection equipment etc. should be made available and ensure its use by personnel	Throughout operational phase	Proponent & HSE manager	100,000/-
		Ensure the general safety and security by providing adequate lighting and security guards at the project site.	Throughout operational phase	Proponent & HSE Manager	0/-
		Provision of first aid box and trained personnel	Throughout operational phase	Proponent & HSE Manager	10,000
		Firefighting equipment should be provided and adequate trainings will be provided to tackle any situation of fire hazards.	Throughout operational phase	Proponent & HSE Manager	100,000/-
8.	Accidents/ Hazards	Firefighting equipment and other safety appliances should be kept ready for use during disaster/emergency situation including natural calamities like earthquake/flood.	Throughout operational phase	Proponent & HSE Manager	0/-
		The workers/employees are encouraged to follow energy conservation strategies developed during operational phase. Over the timing of working, it will be discouraged to use extra electricity	Throughout operational phase	Proponent & HSE Manager	0/-
9.	Depletion of Water resources	Detect and repair pipe and tank leaks	Throughout operational phase	Proponent & HSE Manager	0/-

Management Plan		Monitoring Plan		Estimated Cost
Sr. No.	Potential Impacts	Management & Monitoring Measures	Timeframe	Responsible Authority
		Practicing water conservation measures by rain water harvesting.	Throughout operational phase	Proponent & HSE Manager
		Turn off taps when not in use	Throughout operational phase	Proponent & HSE Manager
Total				452,000

8.4 SCHEDULE FOR IMPLEMENTATION AND ENVIRONMENTAL BUDGET

Table 8.3: Schedule for Implementation of Environmental Management Plan

Sr. #	Type of Impact	Mitigation Measures	Objective of Mitigation Measures	Responsible person for Implementation	Location of measure	When to Implement
1.	Change in land use pattern	The project site is surrounded by industries. The proponent should develop an aesthetical yet a native environment friendly landscape plan which will enhance the vegetation cover and add to the aesthetic value of the area.	To avoid irreversible damage to land use patterns	Proponent & HSE Manager	Project site	Pre-Construction phase

2.	Pressure on natural resources e.g. water, gas, electricity, etc.	The identification of water requirements, energy requirement, social services was done and based on the availability of resources to meet the present and future demand, the mentioned site was identified. Drinking water will only require for domestic activities. Installation of generator is planned for backup supply. Rain water harvesting should be done.	Reduce pressure on natural resources	Proponent & HSE Manager	Project site	Construction & Operational phase
3.	Traffic Congestion	The personnel on the ground should guide traffic movements. Damaged vehicle should be repaired and maintained after construction. Manage vehicle movement to avoid traffic jam and long queues. Parking of vehicles alongside the road should be prohibited at all time. The parking area will be provided to avoid traffic congestion.	Mitigate traffic issues due to project activities	Proponent & General Manager	Project site	Construction & Operational phase

4.	Loss of vegetation cover	The proposed project is on barren land that will cause no loss of vegetation. However, the Project Management will ensure green belt development at site.	To mitigate removal of excess vegetation cover and endangered plant species.	Proponent & HSE Manager	Project site	Construction phase
5.	Release of gaseous emissions including SO _x , NO _x , CO ₂ , lead and CO due to combustion processes in vehicle engines and generators	Best quality fuel should be used in the vehicles, machinery and generators to avoid emission of lead. Vehicles with good conditions which fall on the quality standards shall be used to control the exhaust emission. Generator will be kept in the canopy to reduce the noise pollution factor.	To mitigate air pollution issues due to project activities	Proponent & HSE Manager	Vehicles & generators	Construction & Operational phase
6.	Generation of dust and particulate matters due to vehicular movement	Sprinkling of water in a quantity that reduces the chances of dust generation would be done. The workers would be provided safety gloves, masks and ear buds and wherever necessary goggles to avoid health complications.	To mitigate dust issues	Proponent & HSE Manager	Vehicular Movement	Construction & Operational phase

7.	Noise emissions due to transportation, movement of heavy materials may create health nuisance for the workers and local community	Vehicle maintenance would be ensured so that emissions of any sort whether it gaseous emissions or noise generation, would be controlled. The workers should be provided with ear plugs and other personal safety equipment to avoid invoking of any health issues	To mitigate noise issues	Proponent & HSE Manager	Vehicular Movement	Construction & Operational phase
8.	Unplanned dumping of solid waste generation can lead to blockage of waterways and also create unaesthetic sight of the proposed location.	Management of construction activities will ensure minimum degradation to the soil around the project area and dumping of excavated waste will be used for earth-filling and in the depressions within the project area. The administrator will be bound to take care of the waste generated from the construction activities. Proper solid waste management plan must be followed during the operational phase.	To mitigate issues of solid waste nuisance	Proponent & HSE Manager	Domestic and construction activities	Construction & Operational phase

9.	Unplanned wastewater disposal may contaminate the surface water channels, surface soil and depending upon the quantity of wastewater generated, it has a potential to contaminate the ground water aquifers.	The wastewater from workers activities will be generated during construction should be disposed off properly. The waste water from operational phase should be treated in effluent treatment plant before disposal.	To mitigate wastewater issues during project activities	Proponent & HSE Manager	Domestic activities	Construction & Operational phase
10.	Problems regarding privacy of local community may arise due to invasion of local workers.	Improper social behaviors e.g. staring and teasing shall be discouraged and any such incident will be reported to the site in-charge, proponents directly.	To avoid social issues due to project activities	Proponent & General Manager	Project site	Construction & Operational phase
11.	Emergencies e.g. fire incidents may lead to environmental, health	The site will be equipped with proper firefighting equipment to ensure increased safety. Fire water network will be provided at the site (hydrants & monitors at process site, fire water pumps, tank). Also, Heat & fire detectors and actuation system	To avoid death or injury or any health and safety issues of workers	Proponent & HSE Manager	Project site	Operational phase

and safety issues to the local residents.	will be provided. Also, the rescue teams and ambulances will be available in case of such emergencies						
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8.4.1 ENVIRONMENTAL BUDGET

Approx. 0.7 M PKR per annum is reserved as Environment Budget. The estimations are as following:

Sr. EMP Parameters		Total (Million PKR)	
#		0.452	
1.	EMP Implementation cost	As per EPA NOC	
2.	Environmental Monitoring	condition	
		0.1	
3.	HSE Training	0.1	
4.	CSR activities	As per EPA NOC	
5.	Tree Plantation Plan	condition	
		0.652	
Total		0.0652	
Contingencies			
Grand total		0.7172	

8.5 ENVIRONMENTAL MANAGEMENT TEAM ALONG WITH THEIR ROLES AND RESPONSIBILITIES

Table 8.4:

Roles and Responsibilities

Sl. #	Positions	Significance	Stage	Environmental Responsibilities
1	Proponent / Owner	Critical	Operations	Oversee Environmental Policy and ENMP. Serve as primary contact to the regulatory authorities. Commit resources to achieve environmental objectives.
2	All Employees	Critical	Operation	Attend training and understand their roles in the implementation of ENMP. Understand the Environmental Policy / Objectives and act accordingly. Participate in the review of ENMP Coordinate with the responsible authorities within the project to report any noncompliance to their Environmental Policy.
3	Operational Supervisor	Critical	Operational	Understand the environmental policy of the project. Operate in accordance with the environmental policy. Ensure reducing solid waste generation. Reduce water and energy wastage Ensure all machineries /equipment are in good conditions. Ensure health and safety of the workers during construction phase Ensure safe transportation of good/materials to and from the project site.
4	HSE Manager	Critical	Operation	Understand the environmental policy of the project. Operate in accordance with the environmental policy. Ensure reducing the chances of increased solid waste. Reduce water and energy wastage Ensure all machineries /equipment are in good conditions. Ensure health and safety of the workers during operational phase. Provides health, safety and environmental awareness trainings to the staff.

S	Administrative Person Deal with Environment Issues	Critical	Operational	Understand & operate in accordance with the environmental policy. Ensure reducing the chances of increased solid waste. Reduce water and energy wastage. Ensure all machineries /equipment are in good conditions. Ensure health and safety of workers during operational phase. Receive health, safety and environmental awareness trainings. Prepare and maintain accidents/environmental risk records. Timely coordination with the responsible authority.
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8.6 PROPOSED MONITORING PROGRAM TO ASSESS PERFORMANCE OR OUTPUT OF EMP

Environmental monitoring is being followed and will be strictly undertaken in accordance with the requirements of the environmental authority (EPA, Punjab) to ensure compliance to the Punjab Environmental Quality Standards (PEQS) as and when required. Proponent has decided to spend Approx. 0.7 M PKR per annum for sake of Environmental Budget.

Environmental monitoring is including parameters that are mentioned in the Environmental Approval accorded by the Environmental Protection Agency, Punjab for getting approval under section 12.

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 are:

- To provide a mechanism to determine whether the project operational 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 and major spills and other incidents and accidents.

The record will include:

- Location of spill or battery limit of the accident
- Estimated quantity or the amount of injury (as may be reported in LTI or LWI)
- Spilled material or nature of injury or loss (temporary or permanent)
- Restoration measures
- Photographs

- Description of any damage to vegetation, water resource, or community asset.
- Corrective measures taken, if any
- Waste Tracking Register that will hold records of waste generated during the construction period. This will include quantities of waste disposed, recycled, or reused.
- Records of water consumption
- Survey reports, in particular, the following:
 - Ambient noise survey reports.
 - Ambient level of PM
 - Vendor data: All vendors disturbed by the project and compensation paid.
 - Public infrastructure: Record of all damages and repair work undertaken.
 - Employment
 - Total number of unskilled, semi-skilled, and skilled jobs offered.
 - 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.

Question Answering Table

Question	Answer	Explanation	Conclusion	Responsibility
What is the main purpose of the project?	The main purpose of the project is to develop a new software application that will improve the efficiency of the company's operations.	The project is aimed at improving operational efficiency through the development of a new software application.	The project is a software development project.	The project is a software development project.
What are the key features of the software?	The key features of the software include a user-friendly interface, robust security measures, and the ability to integrate with existing systems.	The software features a user-friendly interface, robust security measures, and integration capabilities with existing systems.	The software is a new application.	The software is a new application.
What is the timeline for the project?	The project is scheduled to start in January and is expected to be completed by the end of the year.	The project timeline starts in January and is expected to be completed by the end of the year.	The project is a software development project.	The project is a software development project.
What is the budget for the project?	The budget for the project is estimated to be around \$50,000.	The project budget is estimated to be around \$50,000.	The project is a software development project.	The project is a software development project.
What are the risks associated with the project?	The risks associated with the project include potential delays in development, budget overruns, and the possibility of the software not meeting the required specifications.	The project risks include potential delays in development, budget overruns, and the possibility of the software not meeting the required specifications.	The project is a software development project.	The project is a software development project.

Monitoring of the proposed project and its environmental impacts will be done in accordance with the legal bindings. The management system of the project proper has a certified EMS in place at the company. Adequate budget will be reserved for Monitoring and measures.

8.7 PROPOSED EMP REPORTING AND REVIEWING PROCEDURE

HSE manager will be responsible for implementation and daily monitoring of EMP activities. Corrective action will be taken and documented in internal audits if non-compliance of EMP will occur during construction and operational phase. Monitoring of environmental parameters (ambient air, drinking water, and noise) will be done and monitoring reports will be submitted in environment protection department office.

8.8 TRAINING SCHEDULES

Ayesha Spinning Mills Limited will provide periodic Environmental and HSE trainings to workers working in their existing plants. The management of Ayesha Spinning Mills Limited feels HSE is important for moral, legal, and financial reasons. The management of Ayesha Spinning Mills Limited has developed strict SOPs for Health and Safety of workers. These SOPs includes SOP for Personal protective equipment, Risk Assessment, permit to work, SOP for work at height, Fire Safety and Prevention, Confined Space entry etc.

Monitoring of the proposed project and its environmental management plan will be based on the legal bindings. The management system of the project proponents will be the same as the certified EMS in place at the company. Adequate budget will be reserved for the Environmental Monitoring and measures.

8.7 PROPOSED EMP REPORTING AND REVIEWING PROCEDURES

HSE manager will be responsible for implementation and daily monitoring of EMP activities. Corrective action will be taken and documented in internal audits if non-compliance of EMP will occur during construction and operational phase. Monitoring of environmental parameters (ambient air, drinking water, and noise) will be done and monitoring reports will be submitted in environment protection department office.

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CHAPTER NINE

STAKEHOLDER CONSULTATION

9.1 STAKEHOLDERS CONSULTATION

It is a mean of involving the both primary and secondary stakeholders in the project decision making process in order to address their concern, improve project design and give the project legitimacy. If stakeholder consultation will be conducted in a participatory and objective manner, then it will be enhancing the project stability.

Meeting with stakeholders involve community consultation meeting, focus group discussion and interviews. Community input (both of knowledge and values) on socioeconomic and environmental issues can greatly enhance the quality of decision making. Stakeholder consultation was therefore conducted in the project area, not only to satisfy legal requirement of EIA /IEE in Punjab but also to improve and enhance the social and environment. Punjab Environmental Protection Act, 2012 requires stakeholder's participation and consultation during the environmental assessment process.

Stakeholder's consultation leads to better and more acceptable decision-making. It is an on-going process, which is required at various stages of developmental projects such as during: initial project planning; pre-construction; and, construction. Consultation with relevant stakeholders may be required even during the post developmental stages of a project. This helps to communicate and share significant information to general public and other stakeholders at all stages and lays the basis for on-going positive relationships between various stakeholders and project developers.

Consultation with the stakeholders is two-way communication between the project sponsor and the affected public. Its goal is to improve decision-making and build understanding by actively involving individuals, groups and organizations, which have a stake in the project. This involvement increases project's long-term viability and enhances its benefits to locally affected people and other stakeholders.

Field surveys are extremely essential to evaluate the socioeconomic and environmental impacts. In addition to the surveys at the preliminary stage, consultation with the community and their active participation plays a vital role in successful implementation of the project. Stakeholder has different perception, to identify the different types of stakeholders and ascertain their perceptions about the project were measured. A social impact assessment survey was conducted. Informal group discussions were also held as an additional tool for obtaining feedback from the stakeholders that are being discussed in the following pages.

Objectives of the consultation process are:

- Information dissemination, education, and liaison
- Identification of problems and needs
- Collaborative problem solving
- Reaction, comment and feedback on the Project
- Documenting mitigation measures proposed by the stakeholders

For this EIA, the stakeholder's consultation activities were executed based on the following principles.

- Transparency
- Openness
- Accessibility
- Inclusion

9.2 METHODS OF PUBLIC CONSULTATION

Public Consultation was carried out. The following methods were used for public consultation with project stakeholders in order to ascertain their concerns regarding project implementation.

- Informed Visit/Interview
- One on One discussion

Eco Syntec team conducted public consultations at various locations within and around the project site. The stakeholder's consultation during this phase of the work targeted the project area near the project area:

- Selection of the stakeholders for consultation, survey of the project site and initial discussions with the neighboring villagers and workers
- Appraising the targeted stakeholders initially for the purpose of consultation and working out a schedule for holding regular consultation meetings
- Distribution of questionnaires to obtain opinions and concerns
- Meetings with the stakeholders through the participation of environmental consultants and social.

9.2.1 BEFORE FILLING QUESTIONNAIRE

Questionnaires were filled through focused group discussion. Respondents were pre informed and also before filling the questionnaires they were given a brief description of the project. They were told about the purpose of study. They were also told if they have any problem to understand the questions in questionnaire can ask.

9.2.2 STUDY AREA

The proposed plant site and its surrounding areas were visited for socio-economic aspects. The people of following surrounding areas of the proposed plant site were consulted:

- Bhiki, Sheikhpura
- Sheikhpura

Data was analyzed for the selected parameters for the socioeconomic assessment of community members. Microsoft excel (2019) was used to graphically represent the main finding of the social survey.

9.2.3 TARGET POPULATION

The target population was comprised of the people living nearby the site area.

9.2.4 STUDY SIZE

About thirty (30) individuals from general community with different socio-economic conditions were surveyed. The information of these respondents is summarized in table 9.1 below.

Table 9.1: Response of Affected and Wider Community

Sr. No	Name	Contact No.	CNIC	Address	Comments
1.	Juveria Akram	0342-1840282		Mohallah sheikhpura street no 3	Project will prove helpful for people
2.	M.Sufiyan	0302-8800637	35404-4286220-5	Nadeem kot, Sheikhpura	Good for Environment
3.	Tehmina Munir	0321-9690265	35404-6779228-0	Street no 3, Muhallah rest house, Sheikhpura	Create job opportunities for people
4.	Arooj Qasim	0310-4763410	35404-6762126-6	Housing colony, Z-Block, House# 79, Sheikhpura	Good for economy
5.	Nouman Asghar	0308-4034881	35404-1696519-1	P/o khas, Jumake, Sheikhpura	Project will prove helpful for people. They need to create Job opportunities for local people
6.	Amir Shehzad	0340-1391686	33202-1918860-1	Sheikhpura	Project will reduce unemployment

7.	Atta Rehman	0303-0101997	35202-8669549-7	Jahangir Town, Lahore Road, Sheikhpura	Project will prove beneficial for local people
8.	Fozia Yousaf	0348-6121477		Faislabad Road, Sheikhpura	Good for the Environment
9.	Mariam Iqbal	0307-1440928		Farogabad, Sheikhpura	Project provide solutions to problems
10.	Zia Jalani	0300-7288496	33104-2243083-5	Housing Colony, Sheikhpura	It will create economic benefits
11.	Nimra Hameed	0305-4184304		Qadir park, Street# 2, Batti Chowk, Sheikhpura	Create Job opportunities for people
12.	Shehzad Bashir	0345-9560075	34403-4322002-3	Bhiki, Sheikhpura	No complain
13.	Mohsin Raza	0300-3492033	35404-67828773	Sheikhpura	Precautionary measures should be taken to avoid traffic issues
14.	Waheed Akhtar	0305-4787634	37401-1935282-1	Sheikhpura	Project will provide solutions to problems.
15.	M. Tanveer	0300-7244849	35404-16890293	Juhawala road, Labour Colony, Sheikhpura	Project will create new opportunities
16.	Asma Nawaz	0303-4844238		Bhiki Road, Sheikhpura	Project will provide a platform for jobs
17.	Misbah Noreen	0300-0183245	38201-1732350-4	Mohallah Kherabad, Sheikhpura	Good for economy
18.	Nisha Iqbal	0307-7157903		Faislabad Road, Sheikhpura	Project will reduce the problem of local people.
19.	Kashif Jahangir	0333-6342922	31203-8803358-3	Housing Colony, Sheikhpura	Create job opportunities for people
20.	Zara Arshad	0309-2390269	35404-5853497-6	Mohallah Farooq Town, Sheikhpura	No complain
21.	Shafaqat Masih	35404-7432353-7	0342 0587856	Maki chak # 460 G.B P/O Tehsil and District Sheikhpura	By mitigating the any likely impact, the project is good for economic development.
22.	Shoukat Ali	35404-5688347-5	0307 1777916	Dera Gujjaran Ghhasiawalap/Otehsil Sheikhpura	Creation for job opportunities for locals
23.	Gulam Mustafa	35401-5532007-9	03456284126	P/O Moza Bhangwana District Sheikhpura	Good for economy
24.	Zafar Msih	35404-5251382-7	0302 6640791	Bariyawala P/O Khariyan tehsil and Distret Sheikhpura	Creation for job opportunities for locals

25.	Zohaib Ali	35404-1379870-3	03221645862	Dera makla singh P/O faroq abad tehsil and district Sheikhpura	Good for economy
26.	KASHIF ZAFAR	35404-9617010-5	03201409450	Bariyanwala P/O Kharian Tehsil and district Sheikhpura	No complain
27.	DITTA MASHI	35404-7338692-1	0324 4658413	P/O Kharian Tehsil and district Sheikhpura	Creation for job opportunities for locals
28.	MUHAMMA D RAMZAN	35404-7721425-1	0305 4726590	Dhari gujjra P/O Tehsil and district Sheikhpura	Good for economy
29.	AMMANAT ALI			Dhup Sari Sheikhpura P/O Bhaki District Sheikhpura	Good for economy
30.	MUHAMMA D AFZAL	35404-4859012-1	0307 4755189	Dai Gujran Kharian Tehsil and District Sheikhpura	No complain

9.2.5. STUDY INSTRUMENT

Data collection tool used was questionnaire; it was 30 items based semi structured questionnaire attached with this report as annex 4. The questionnaire was designed to address education, employment and population issues. Their responses were duly recorded. Some of the questions were asked not only to get the information but also to get the impression of an interviewee.

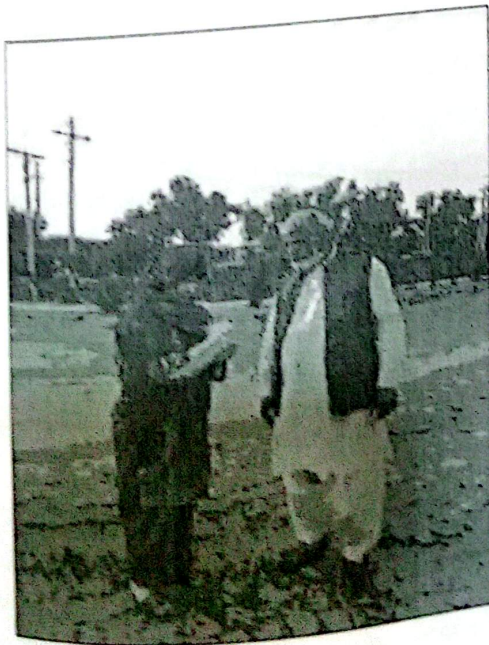




Figure 9.1: Photolog of Socio-Economic Survey

9.3 RESULTS OF SOCIO-ECONOMIC DATA COLLECTION

The questions were designed in order to know that what inhabitants think about the proposed project and it was amazing to note that majority of the population think in the positive manner about the development of new industries in their area. The people foresee strong impacts regarding employment, business and structural development due to this project. The management of M S Ayesha Spinning Mills Limited ensures its commitment towards maintaining the aesthetics and environmental quality of the area, land reclamation and providing job opportunities subject to relevant skills assessment of the local community during construction and operation of the project.

Table 9.2: Analysis Community Problem and Solution

Main Theme	Concerns	Solutions
Employment	To engage local people during construction and operation phases on priority basis	M S Ayesha Spinning Mills Limited will engage local people on priority basis Ayesha Spinning Mills Limited will develop job opportunities for the locals based on skills assessment of individuals

Environmental Impact	Water scarcity, air pollution and noise impacts need to be properly mitigated	M/S Ayesha Spinning Mills Limited will ensure good air quality of area by implementing proper mitigation measures. Tree plantation will act as natural noise barrier Process and instrument efficiency will ensure mitigating problems related to noise and air pollution.
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Awareness About Project

Community inhabitants were asked about do they know about this project. Majority of respondents, 70% responded as 'No' because they are not well-aware of this project. And 30% response was 'Don't know as they didn't know about the project yet. But mostly respondents favored the proposed project with demand of job opportunities for the local.

Knowledge about Project

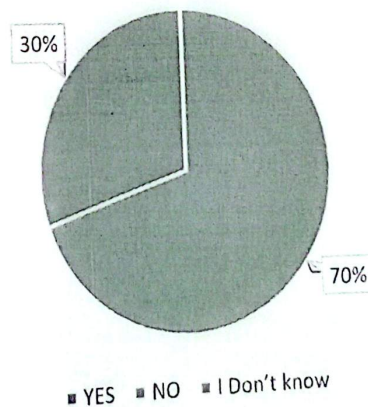


Figure 9.1: Awareness About Project

9.4 RESULTS

9.4.1 DEMOGRAPHIC PROFILE

The participants of the survey were interviewed to get information about their personal details such as age, education, marital status, religion, number of children and family size. The findings of the personal information are given below:

A. Age of Respondents

Respondents were asked about their age in which age of 70% of them were ranged between 20-30 years, 15% respondents ages were 30 to 40 years, 10% respondents age were 40 to 50 years, 5% respondents ages were more than 50 years.

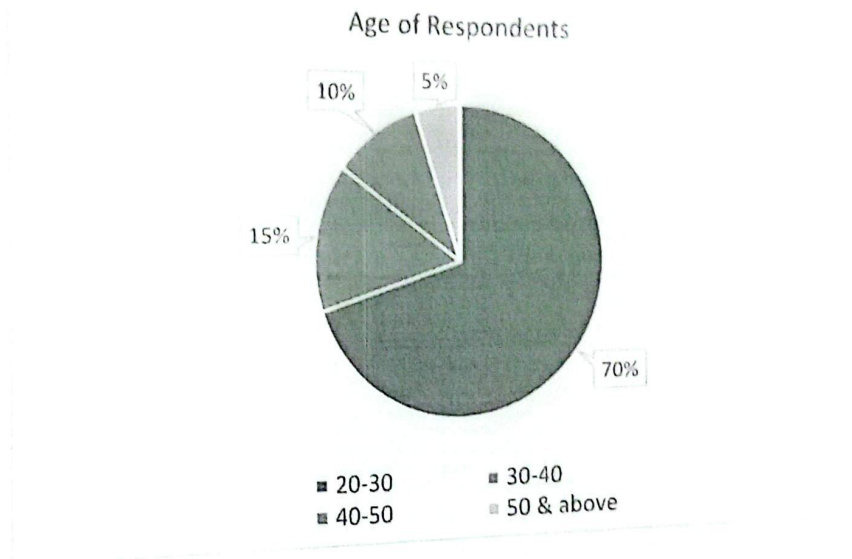


Figure 9.2: Graph Showing Age of Respondents

B. Education Level

During Survey respondents were asked about their educational level, none of them were uneducated. 5% were Primary level, 45% were studied till middle level and 50 % respondents were graduated.

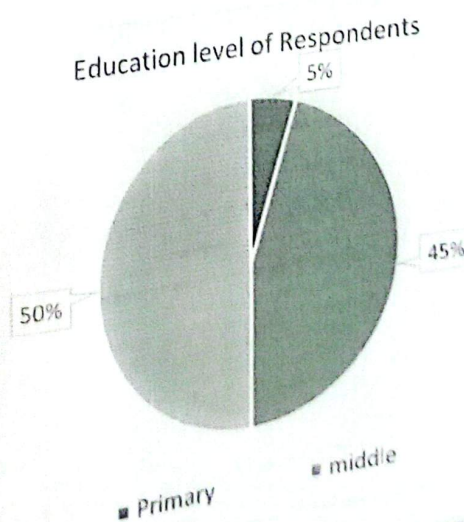


Figure 9.3: Graph Showing Educational Level of Respondents

C. Marital Status

Respondent were asked about their marital status in which 25% respondents reported that they were married, 70% were unmarried and 5% were divorced.

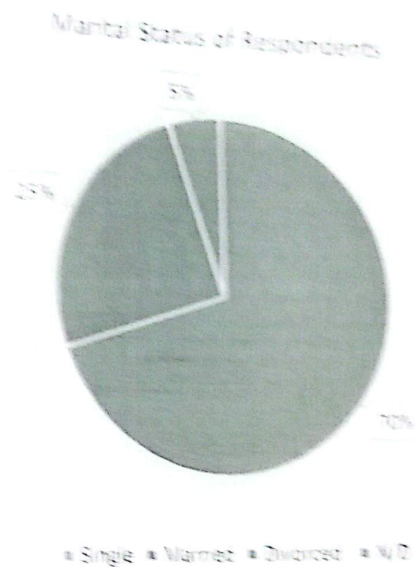


Figure 9.4: Graph Showing Marital Status Of Respondents

D. Religion of Respondents

Respondents were asked about their religion in which 95% of them reported as Muslims and 5% reported as Non-Muslim shown in figure 5.5.

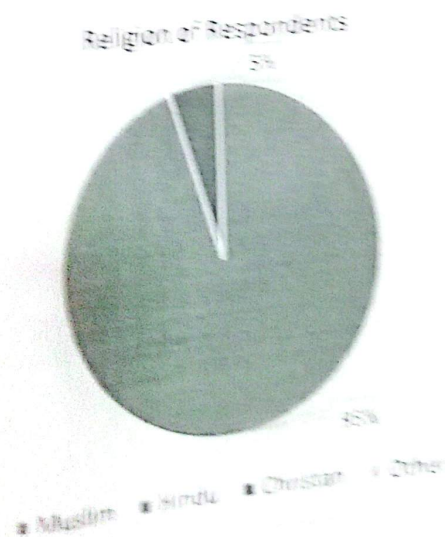


Figure 9.5: Graph Showing Religion of Respondents

E. Family Size of Respondents

During survey respondents were asked about their family size in which 20% reported that their family consists of two to four members, 55% and 25% respondents reported that their family size is five to seven and eight to twelve respectively. While 0% have more than 12 family members.

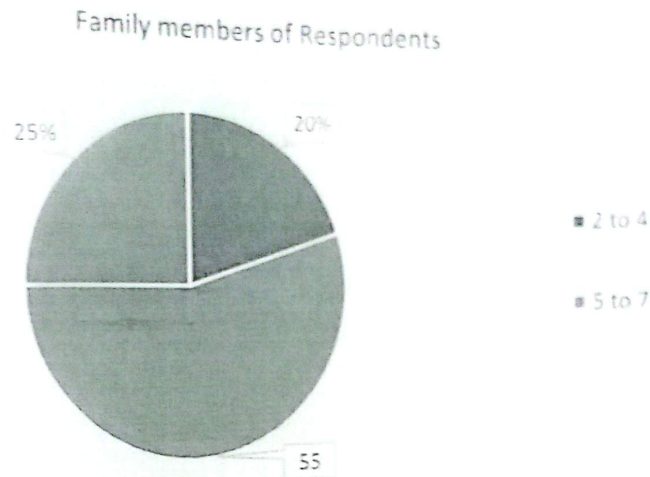


Figure 9.6: Graph Showing Family Size of Respondents

F. Number of Children

During survey respondents were asked about number of children they had and 70% respondents informed that they had no child, 25% had 1 to 3 children, 5% respondents had 4 to 7, and 0% had more than 7 children.

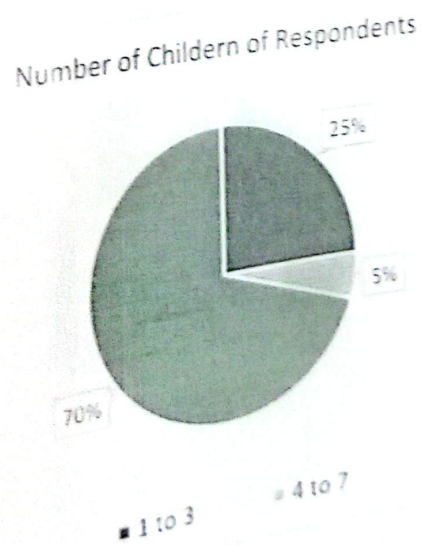


Figure 9.7: Graph Showing Number of Children of Respondents

9.4.2

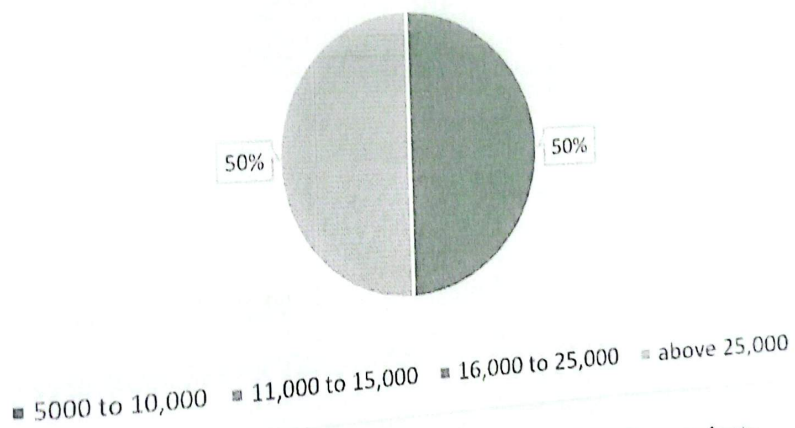
SOCIOECONOMIC AND HEALTH STATUS

The socioeconomic status of the respondents was evaluated by getting information about their income level, sources of income and number of earning hands in the family.

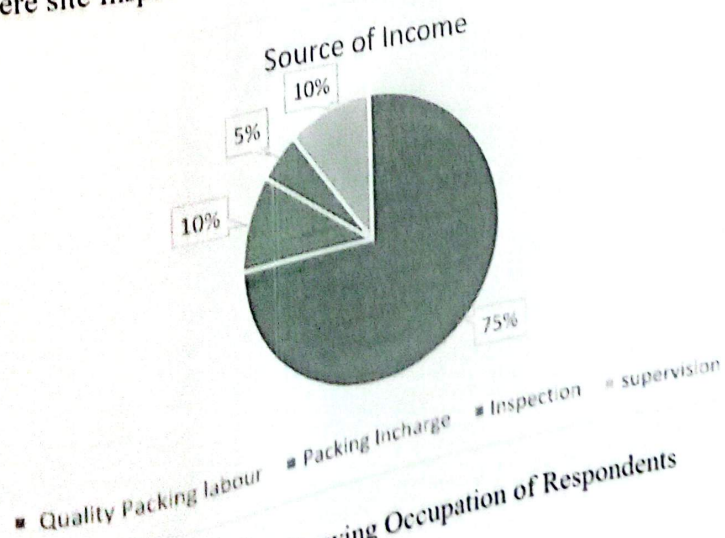
A. Income Level

During survey respondents were asked about their income level (in PKR) 0% respondents reported that their income level was 5000 to 10,000. 50% respondents reported that their income level was 16,000 to 25,000. 50% respondents reported that their income level was more than 25,000 and 0% respondents reported that their income level was 11,000 to 15,000.

Total income of Respondents

**Figure 9.8: Graph Showing Income Level (Pkr) Of Respondents****B. Occupation and Source of Income**

Respondents were asked about their occupation 75% were Quality Labor, 10% were Packing Incharge, 5% were site Inspector and 10% were job as a supervisor

**Figure 9.9: Graph Showing Occupation of Respondents**

C. Earning Member in Family

About 45% respondents reported that there was only one earning member in their family, 25% respondents were having 2 earning members, 25% were having 3 and 5% were having more than 3 earning members in their family.

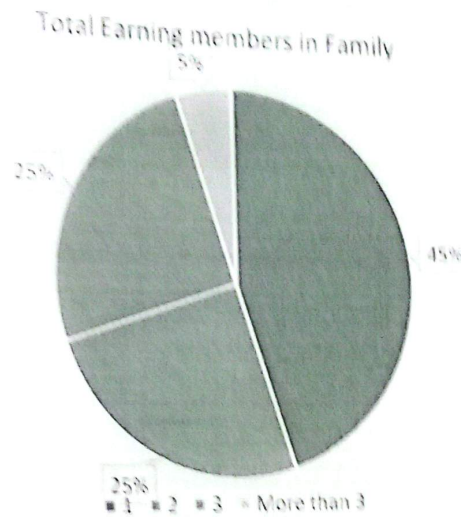


Figure 9.10: Graph Showing Earning Member in Respondents

D. Disease in Respondents

Respondents were asked about diseases, if they have, most of the respondents (60%) reported that they had no disease while 40% respondents informed that they have minor diseases like Blood Pressure, Diabetes etc. in their family.

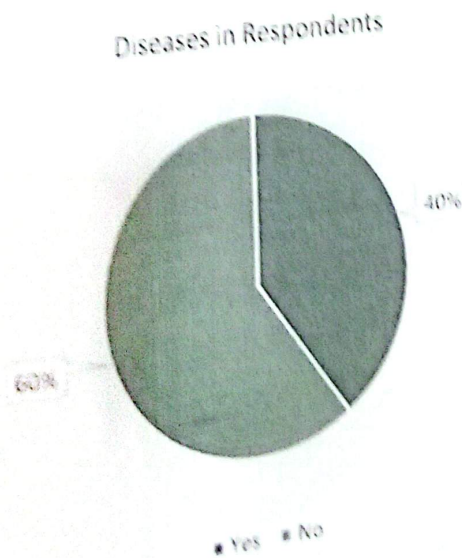


Figure 9.11: Graph Showing Disease

9.4.3. ANTICIPATED ENVIRONMENTAL IMPACTS

The survey group was asked about a few questions regarding their concerns about the environmental impacts of the proposed project. It included an array of questions regarding anticipated impacts on water, soil and air quality. They were also asked if they foresee generation of wastewater, solid waste and accidents related to project activity. These are summarized below:

A. Water

During survey respondents were asked about anticipated impact caused by project activity on Water. Majority of respondents, 85% responded as 'No' and 10% responded as 'Yes' respondents. About 5% respondents didn't know about impacts.

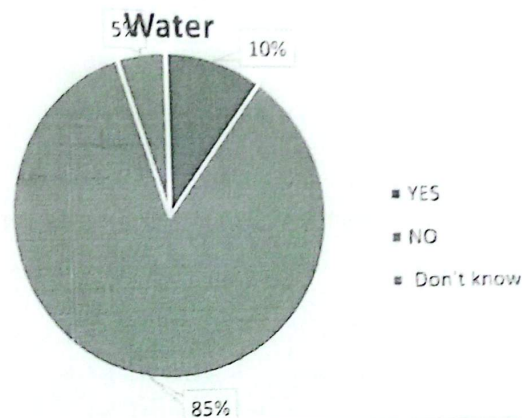


Figure 9.12: Graph Showing Impact Anticipated Caused by Project on Water

B. Soil

Respondents were asked about anticipated impacts on Soil 85% responded as 'No' and 10% responded as 'Yes' respondents. About 5% respondents didn't know about impacts.

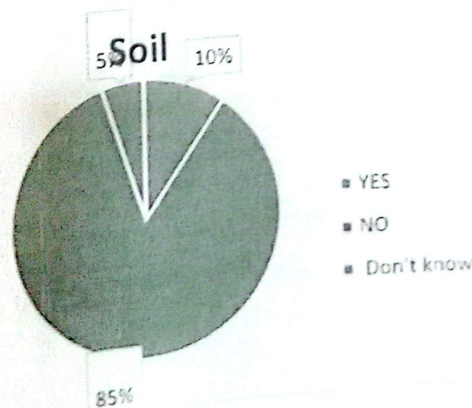


Figure 9.13: Graph Showing Anticipated Impact on Soil

Chapter Nine

C. Air

As per survey, 75% respondents remarked that they observed 'No' impact on the air quality of the area and 10% of them remarked as 'Yes' and 15% said they didn't know.

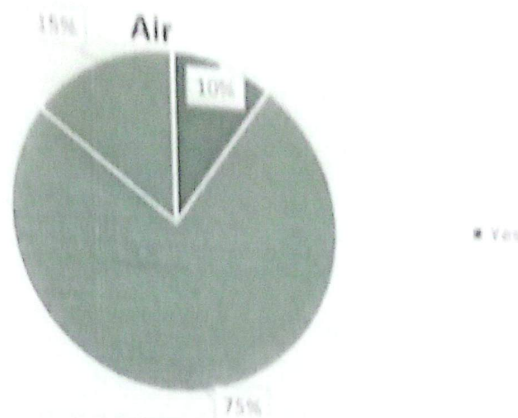


Figure 9.14: Graph Showing Anticipated Impact on Air

D. Noise

During survey, respondents were asked about anticipated noise pollution in the area 80% responded as No, 15% said yes and 5% said they didn't know.

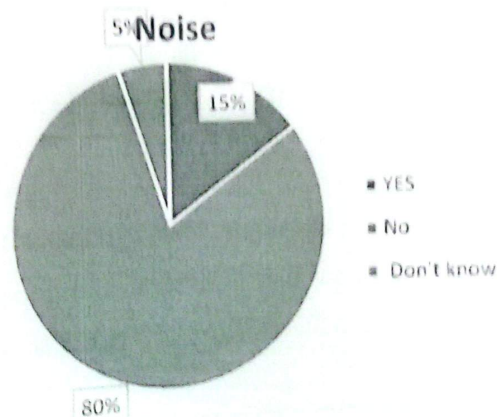


Figure 9.15: Graph Showing Anticipated Impacts on Noise

D. Wastewater

During survey, respondents were asked about anticipated water pollution in the area 85% responded as No, 5% said yes and 10% said they didn't know.

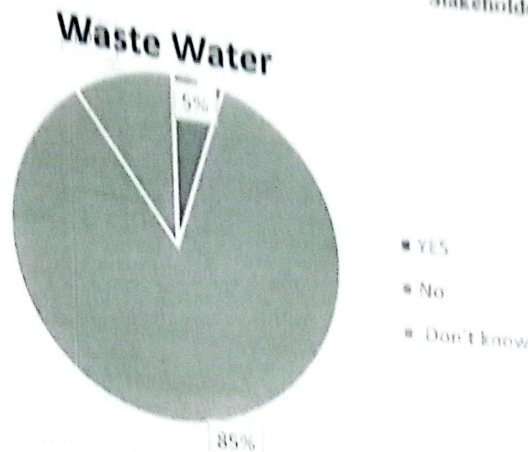


Figure 9.17: Graph Showing Anticipated Impacts Caused by Water Waste

9.5 MAJOR FINDINGS

Following are the findings of the socioeconomic impact assessment:

- Most of the population was uneducated with a poor source of income. Also, the numbers of earning hands per family were less.
- According to collected data respondents were of opinion that project is good for business and employment. They were of the view that local people should be given preference for employment in the proposed project

9.6 STAKEHOLDER CONCERNS AND RECOMMENDATIONS

The community consultations demonstrated that goodwill towards the project proponent indeed exists. Approval for project activities by communities was evident. The consultations were considered a good gesture and were appreciated. Number of earning hands is such that communities are looking forward to any project proponent to improve their financial well-being to a great extent

During interviews with different stakeholders, it was found that some of the people were aware and most of them were in favor the project only because they believed that such projects might provide job opportunities for people of the area. For them earning at any level is equally important. It is the most effective and attractive source of income for them.

The project related stakeholder concerns and recommendations are mentioned below:

- The project is good for the economy of Pakistan.
- The project will lead to the development of a barren land into developed land.

- The project activities must be thoroughly investigated in order to analyze all of the consequences of those activities.
- All environmental indicators, including ambient air quality, noise levels, and water quality, must be within PEQS permissible limits.
- During the project's lifecycle, specific mitigation measures must be applied.
- To reduce negative environmental consequences, a thorough Environmental Management and Monitoring Plan should be created.
- The project's benefits appear to outweigh its drawbacks. As a result, the project should go live as soon as possible.

9.7 PROPONENT ENVIRONMENT MANAGEMENT TEAM

All possible impacts and mitigation measure related to the project were discussed with the proponent and management. They assured to take all suggested mitigation measures to control any discrepancy arose by the project and to make the project environment friendly.

9.8 THE RESPONSIBLE AUTHORITY

Management of Ayesha Spinning Mills Limited . shall be the responsible authority to take all measures prior to start the project and during operation.

9.9 OTHER DEPARTMENTS AND AGENCIES

The stakeholders consulted in this case are public. The list of stakeholders consulted and their feedback is given below.

In order to ensure the concerns of other government related departments and agencies, the proponent is in a process to acquire their approvals for which applications have already been floated.

Table 9.3: Feedback from other departments and agencies

Academia			
Muhammad Chaudhary	Nawaz	Professor	• Proper monitoring of water and waste water must be conducted to check compliance. • Water Conservation should be practiced.

		• Efficiency of water and waste treatment plant must be examined regularly • EMMP should be implemented in full spirit during project activities to avoid/ mitigate any likely adverse environmental impact.
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9.10 ENVIRONMENTAL PRACTITIONERS AND EXPERTS

The project site was visited, had discussion with stakeholders and consulted with the local people to evaluate the project socio-economic impacts. People of the area belong to different professions like mostly belong to employment, own businesses, doctors etc. People provide the massive information about the project and have positive remarks regarding the project development.

9.11 AFFECTED AND WIDER COMMUNITY

There is no affected community present in the area of project. Inhabitants of different villages were consulted. The remarks of people are positive regarding the project and people foresee positive impacts like employment opportunities, business, development of the area etc.

CHAPTER TEN

CONCLUSIONS AND RECOMMENDATIONS

10.1 CONCLUSION

This report has been prepared in accordance with the guidelines for Review and Preparation of IEE/EIA Reports. Accordingly, this study report describes social, environmental, physical and other relevant aspects of the project during operational stage and at its regular occupancy. The report also specifies necessary measures to be adopted for mitigation of environmental impact on the environment. It also provides information as desired under the format used for the preparation of this Environmental Impact Assessment.

All infrastructure e.g., road, sewerage, water supply, electric supply etc. will be provided for the project area. The project is an environmentally friendly. The project has its own administration set up for environmental monitoring and maintenance of site during operational stage. In order to handle fire hazards, firefighting equipment will be provided. The baseline study has been conducted reviewing the available literature. The overall impact of the project can be considered positive.

For the effective implementation and management of the mitigation measures, an outline Environmental Management and Monitoring Plan (EMMP) has been developed. The project by Ayesha Spinning Mills Limited is also based on the principles of sustainable development.

10.2 RECOMMENDATIONS

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

- Implementation of EMP must be given top priority.
- Proper PPEs including ear plugs, ear muffs, mufflers, goggles, gloves and shoes etc. should be provided to workers
- Train workers to use PPEs
- Advise workers to follow SOPs.
- Equipment maintenance and efficiency must be checked.
- No compromise on public health and environment should be allowed.
- Waste minimization practices should be employed and workers should be encouraged to adopt such methods.
- Wages should be distributed on time.
- Proper tree plantation plan should also be developed in order to make the unit environment friendly.

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- a. Small waste storage bins should be installed in different groups for proper waste collection and discharge.
- b. Proper and/or first aid kit should be provided for workers.
- c. Smoking should be avoided within premises of project site and near fuel storage areas.
- d. The security guards shall also be trained to act in case of all possible emergency situations. The emergency alarms can be activated to signal evacuation. At the same time, communication shall be made with hospitals, emergency services and police for proper support.
- e. The proposed Environmental Management & Monitoring Plan should be implemented.

In view of the above it has been concluded that the proposed project of Ayasha Spinning Mills limited is environmental friendly and with sound practice. The project will have no significant adverse impact on the whole. It is therefore requested to issue the Environmental Approval under section 12 of the aforesaid Act to the said project.

CHAPTER TEN

CONCLUSIONS AND RECOMMENDATIONS

1 CONCLUSION

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All infrastructure e.g., road, sewerage, water supply, electric supply etc. will be provided for the project area. The project is an environmentally friendly. The project has its own administration set up for environmental monitoring and maintenance of site during operational stage. In order to handle fire hazards, firefighting equipment will be provided. The baseline study has been conducted reviewing the available literature. The overall impact of the project can be considered positive.

For the effective implementation and management of the mitigation measures, an outline Environmental Management and Monitoring Plan (EMMP) has been developed. The project by Ayesha Spinning Mills Limited is also based on the principles of sustainable development.

10.2 RECOMMENDATIONS

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

- Implementation of EMP must be given top priority.
- Proper PPEs including ear plugs, ear muffs, mufflers, goggles, gloves and shoes etc. should be provided to workers
- Train workers to use PPEs
- Advise workers to follow SOPs.
- Equipment maintenance and efficiency must be checked.
- No compromise on public health and environment should be allowed.
- Waste minimization practices should be employed and workers should be encouraged to adopt such methods.
- Wages should be distributed on time.
- Proper tree plantation plan should also be developed in order to make the unit environment friendly.

- Small waste storage bins should be installed at different corner for proper waste collection and discharge.
- Proper and/or first aid box should be provided for workers
- Smoking should be avoided within premises of project site and near fuel storage areas.
- The security guards shall also be trained to act in case of all possible emergency situations. The emergency alarms can be activated to signal evacuation. At the same time, communication shall be made with hospitals, emergency services and police for urgent support.
- The proposed Environmental Management & Monitoring Plan should be implemented.

In view of the above it has been concluded that the proposed project of Ayesha Spinning Mills Limited is environmental friendly and with sound practice. The project will have no significant negative impact on the whole. It is therefore requested to issue the Environmental Approval under section 12 of the aforesaid Act to the said project.

GLOSSARY

WORDS	DICTIONARY
Anticipated Impacts	Expected Impacts
Air Quality Sensitive Receptors	People, property, species or designated sites for nature conservation that may be at risk from exposure to air pollutants potentially arising as a result of a proposed development.
Air Quality Standard	Air quality limiting values and objectives.
Annual Average Rainfall	Average amount of precipitation falling at a specified site recorded by the Meteorological Office. It gives a measure of the overall wetness of the local climate.
Anticipated Impacts	Expected Impacts
Aquifer	A water-bearing bed of porous rock, often sandstone
Aspects	A distinct feature or element in a problem
Adhesive	Adhesive, any substance that is capable of holding materials together in a functional manner by surface attachment that resists separation
Baseline	Existing environmental conditions present on, or near a site, against which future changes can be measured or predicted.
Biodiversity	The variety of life in the world or in a particular habitat or ecosystem.
Compliance	Acting according to certain accepted standards
Dyeing	Dyeing is the application of dyes or pigments on textile materials such as fibers, yarns, and fabrics with the goal of achieving color with desired color fastness.
Decibel(S)	A unit used to express relative differences in sound power or intensity. There is a million to one ratio in sound pressure (measured in Pascal (Pa)) between the quietest audible sound and the loudest tolerable sound. The decibel (dB) scale, based on a logarithmic ratio, is used in sound measurement because of this wide range. Audibility of sound covers a range of approximately 0-140dB.
Discharge	spilling, leaking, pumping, depositing, seeping, releasing, flowing out, pouring, emitting, emptying or dumping

Drainage	The process of removing surplus ground or surface water either by artificial means or by gravity flow.
Dust	All airborne particulate matter.
Environment Budget	Monetary assets reserve for Environmental activity
Face	The exposed area –E.g. of a coal bed from which coal is being extracted.
Groundwater	All water that is below the surface of the ground and within the permanently saturated zone.
Groundwater Body	A distinct volume of groundwater within an aquifer
Knitting	Knitting is a method for production of textile fabrics by interlacing yarn loops with loops of the same or other yarns.
Labor	Workers, excavator operators, truck drivers, managers, engineers, geologists, environmental analysts, surveyors, security, secretaries, accountants and many more.
Legislation	law enacted by a legislative body
Mitigation Measures	Measures aimed to curtail or entirely control an adverse impact or to compensate some loss or cause additional improvements
Nuisance	Annoyance
Potential Issue	Problems likely to arise
Proposed Project	Planned activity
Reclamation	The restoration of land and environmental values to a surface mine site after the mineral is extracted. The process includes restoring the land to its approximate original appearance by restoring topsoil and planting native grasses and ground covers.
Rehabilitation	The conversion of wasteland into land suitable for use of habitation or cultivation
Residual Impacts	Impacts left behind after implementation of the mitigation measures
Resource	The calculated amount of material in a mineral deposit, based on limited drill information.
Risk Assessment	An assessment of the probability of a hazard occurring that could result in an impact.
Scoping	An initial stage in the environmental impact assessment process to determine the nature and potential scale of environmental effects arising

Screening	as a result of a proposed development, and an assessment of what further studies are required to establish their potential environmental impacts and effects.
Screening	The first stage in an environmental impact assessment. It is used to determine if further assessment is necessary and to categorize the project.
Significant	Important
Soil Erosion	The detachment and movement of soil by the action of water and/or wind.
Soil Profile	A vertical cross-section through a soil.
Spinning	Spinning is a twisting technique to form yarn from fibers.
Seaming	The joining of two pieces (as of cloth or leather) by sewing usually near the edge.
Stakeholders	A person or organization with an interest or concern in something
Substitutions	An event in which one thing is substituted for another
Surface Water	Waters including rivers, lakes, reservoirs, canals, streams, ditches, coastal waters and estuaries.
Sustainability	Such developments that meet the needs of the present generation without compromising the ability of future generations to meet their needs.
Stockpile	Broken ore heaped on surface, pending treatment or shipment.
Topography	The natural or artificial features, level and surface form of the ground surface.
Topsoil	Upper layer of a soil profile, usually darker in color (because of its higher content of organic matter) and more fertile than subsoil, and which is a product of natural biological and environmental processes.
Weaving	Weaving is a method of textile production in which two distinct sets of yarns or threads are interlaced at right angles to form a fabric or cloth.
Waste	Unmineralized, or sometimes mineralized, rock that is not minable at a profit.
Yarn	Yarn is a long continuous length of interlocked fibres, used in sewing, crocheting, knitting, weaving, embroidery, ropemaking, and the production of textiles.

LIST OF ABBREVIATION

	Carbon dioxide
(O)	Degree Celsius
°C	A weighted decibel scale
dB(A)	Deputy Commissioner
DC	Environmental Impact Assessment
EIA	Environmental Management and Monitoring Plan
EMMP	Environmental Management Plan
EMP	Environmental Protection Agency
EPA	Environmental Protection Agency
EPA	Initial Environmental Examination
IEE	Kilometer
km	Limited
Ltd.	Cubic meter
m ³	Cubic meter per hour
m ³ /h	National Environmental Quality Standards
NEQS	Number
No.	No Objection Certificate
NOC	Oxides of Nitrogen
NO _x	Pakistan Environmental Protection Council
PEPC	Pakistan Environmental Protection Ordinance
PEPO	Punjab Environmental Quality Standards
PEQS	Pakistani Rupees
PKR	Particulate Matter
PM	Personal Protective Equipment
PPEs	Oxides of Sulfur
SO _x	