ENVIRONMENTAL IMPACT ASSESSMENT REPORT

Alfalah Paper & Board Mills, Qila Sattar Shah, 22-Km Lahore-Sheikhupura Road, 1.5 Km towards Pindi Das Road, Sheikhupura

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Glossary	
Proponent	The person who proposes or intends to undertake a project
Effluent	Any material in solid, liquid or gaseous form or combination thereof being discharged from industrial activity or any other source and includes a slurry, suspension or vapor
Municipal waste	Sewage, refuse, garbage, waste from abattoirs, sludge and human excreta
Mitigation	The action of lessening in severity or intensity
Evaluated	Estimate or determine the nature, value, quality, ability, extent or significance
Legislation	Law enacted by a legislative body
Aspects	A distinct feature or element in a problem
Compliance	Acting according to certain accepted standards
Flora	All the plant life in a particular region or period
Fauna	All the animal life in a particular region or period
Screening	The display of a motion picture
Regulations	An authorized rule
Stakeholders	A person or organization with an interest or concern in something
Rehabilitation	The conversion of waste land into land suitable for use of habitation or cultivation

LIST OF ABBREVIATION

AP&BM	Alfalah Paper & Board Mills
LGO	Local Government Ordinance
PPE	Personal Protective Equipment
CMS	Convention on Migratory Species
DAF	Dissolved Air Floatation method for organic matter removal
EHS	Environmental Health Safety
EIA	Environmental Impact Assessment
EPD	Environmental Protection Department
BOD_5	Biological Oxygen Demand
COD	Chemical Oxygen Demand
dB(A)	Decibel
EPA	Environmental Protection Agency

ESMP	Environmental/Social Management Plan
EMP	Environmental Management Plan
GIS	Geographical Information System
GOP	Government Of Pakistan
GPS	Global Positioning System
GRM	Grievance Redress Mechanism
HSE	Health Safety & Environment
I & D	Irrigation And Drainage
IAIA	International Association for Impact Assessment
MW	Mega Watt
NEQS	National Environmental Quality Standards
PEQS	Punjab Environmental Quality Standards
NEAP	National Environmental Assessment Plan
NWFP	North West Frontier Province
Q&EHS	Quality, Environment, Health & Safety
O & M	Operation And Maintenance
PEPA	Pakistan Environmental Protection Act
PKR	Pak Rupees
DCS	Dosing Control System
PPM	Parts Per Million
PAP	Project Affected People
PEPC	Pakistan Environmental Protection Council/Punjab
PSC	Project Steering Committee
CBB	Coated Bleached Board
RAP	Resettlement Action Plan
TDS	Total Dissolved Solids
UNCC	United Nation Convention to Combat Desertification
UNEP	United Nations Environmental Programs
GOP	Government of Pakistan
WHO	World Health Organization
PGEL	Pak Green Environmental Lab
R&R	Rehabilitation And Resettlement
WWTP	Waste Water Treatment Plant

Executive Summary

1. General

At the time of independence, Pakistan had no paper and board production unit. Over the last 70 years paper and board industry has emerged out of its infancy and is now catering nearly 80 percent of the domestic demand.

It produces various grades of paper with the help of 100 old paper and board producing units in organized sector with capacities varying from 10 to 200 tons per day producing around 460,000 tons of paper and board annually. These units produce writing and printing paper, packaging board, liner board. corrugation medium and various other grades while various finer grades, art papers and above all newsprint are imported due to zero wood pulp production capacity in Pakistan.

The per capita consumption of paper and board stands dismally low at 3.4 kg in Pakistan compared to 75-100 in developed countries. Low per capita income and literacy rate and rural concentration are some of the factors for this low demand.

Scenario: The international paper and board sector is dominated by NORSCA (USA, Canada, Finland and Sweden) which comprise for roughly 75 per cent of high-quality products. High wood pulp-based products are produced in these countries due to their proximity to woodlands. Further, developed industrial base, world's leading chemical manufacturing facilities and downstream packaging industry supplement the paper and board sector in the NORSCAN. China, Indonesia and Taiwan dominate Asian markets while, low-grade pulp made of eucalyptus is made in South American countries like Argentina and Brazil. Spain is the main producer in Europe of wheat straw pulp otherwise produced in South Asian region.

In the total world paper and board production North America commands market share in newsprint, writing and printing papers and packaging boards followed by Europe. Asian producers have lately entered into low pulp grades and now commands considerable markets in writing and printing and packaging board grades. Grade wise paper board comprises of around 50 per cent of paper and board market followed by writing and printing and newsprint.

While before going in details it must be understood that basic fibrous raw material for production of paper and paperboard comprise of wood pulp, non-wood pulp and recycled paper. Due to extremely low density of forests in Pakistan and perilously unhindered de-forestation, the availability of consistent wood supplies is not contingent. Pulp production in Pakistan is therefore based on non-wood fibrous material like wheat straw, bagasse and river grass. More than 90 per cent of non-wood pulp is produced by combining wheat straw and river grass fibers while augmenting them with mix of imported wood pulp and recycled paper procured locally and through imports.

In the organized sector paper board production is divided into two types of units: one, those which are integrated pulp and producing units while others only produce paper and board and do not have pulp mills. Integrated pulp and paper industry on the basis of manufacturing process is highly value-added industry and its process is convergent of various process variables. Hence it requires technical and process know how and command over manufacturing processes for continuous quality supplies. It is due to these technical variables that very few units in Pakistan have succeeded to operate and there is a long list of inoperative and closed units.

At present, 13 units are operating in Pakistan. Compared to local size of mills international average economic size of paper mill is 3,000 tons per day that helps in capitalizing on production economies of scale a chemical and fiber recovery processes while co-generating energy and steam. Due to non-wood pulp production and low economies of scale chemical and fiber recovery plants is local paper mills is not viable increasing production costs.

The production costs of paper mills in Pakistan are highly unpredictable as it is dependent on international pricing of wood pulp and recycled paper and seasonal agricultural output of wheat. Paper board market is further vulnerable to economic growth trends as its downstream conversion industry comprising of printing packaging is highly growth elastic. Introduction of innovative packaging designs and high-quality printing on fast machines especially for fast moving consumer goods (FMCG) industries has created a lot of pressures on Paper Board sector in maintaining quality standards.

Paper and its downstream sector are currently enjoying robust growth. Pressures on existing capacities have been created due to weak direct investment in the sector. Further growth in the sector would depend on attainment of GDP growth figures while reduction in tariff rates next year may induce imports especially with weak Asian demand and industry problems arising in Indonesia and with debt ridden companies.

There is a vast gap of demand and production of paper and board in Pakistan that is why Alfalah Paper and Board Mills Private Limited has planned to establish a new project of paper production from the waste paper and board projects which will be used for different packing and stationery purposes.

2. Title and Location of the Project

The proposed project is “Establishment of Alfalah Paper and Board Mills (Pvt) Limited”. This project is located at 22 Km Lahore-Sheikhupura Road,1.5 Km towards Pindi Das Road, Qila Sattar Shah, Tehsil Feroze Wala, District Sheikhupura. The land required for this project is about 2 Acres.

Fig No 1: Location of the Project

3. Name of Proponent

Name:	Sufiyan Ali
Designation:	Chief Executive
Contact information:	Email: Sufiyan.decent@yahoo.com
Cell:	03004551574

4. Name of Organization Preparing Report

The EIA study was carried out by team of Grow Green Environment Consultancy comprising of Environmentalist and Sociologist, with diversified experience on environmental assignments.

5. Objectives of the Project

The purpose of this project is to establish a paper and board mills for contribution towards paper consumer market. The purpose of EIA study is to identify the possible beneficial and adverse environmental impacts of the project as presently envisaged and propose the applicable mitigation measures to be implemented during construction and operational stages of the project to minimize the negative impacts.

To fulfill the social and legal binding upon the investor for compliance of Punjab Environmental Quality Standards (PEQS) for industrial waste, industrial emissions, ambient air, motor vehicles and noise in true letter and spirit, a tremendous amount is likely to be spent on this project of paper and board.

Environment Assessment (EA) is interdisciplinary and multistep procedure to ensure that environmental considerations are included in decisions regarding the project which may affect the environment. In other word EIA helps identify the possible impacts of proposed activity and how these impacts can be mitigated. Section 12 of Pakistan Environment Protection Act of 1997 binds the developer (proponent) to submit an IEE report to a Provincial EPAs and get approval for construction and operation phase of the project in a manner prescribed in IEE/EIA Regulations 2022 and sectorial guidelines pf Pak EPA. Construction of paper machine comes under schedule II where EIA is mandatory to be submitted to EPA. To fulfill the legal obligations the project has been analyzed for possible positive and negative, social and environmental impacts and their abatement, for submission to Punjab-EPA, Lahore for issuance of Environmental approval under above said IEE/ EIA Regulation.

6. Project Description

The Project is a production facility (700 Ton of paper / month capacity) which will use waste paper and board as raw material and produce good quality. The proposed process

would be free of chemical pulping which is a most critical part of traditional paper pulping from environmental viewpoint. Waste paper and board will be purchased from the market which will have no wood digestion making the project environment friendly. It will also be sustainable because it will not use the wood from Pakistan and hence protecting the local fragile forest cover which is estimated to be 2.47 percent. The paper will be soaked and mixed to produce white pulp and then produce the paper sheets of different sizes for marketing. The process is chemical free. The composition of paper will be as follow:

7. Manufacturing Process

I. Product Design

Blending

Different types of paper and pulps, and additives are blended through Dosing Control System (DCS) as per defined ratio of the product.

Blending mixture mainly determines the Caliper, internal Bond Strength, Tensile Strength, Folding Strength and Stiffness of the Paper.

II. Machine Process

Approach Flow

Blended thick fibrous stock is passed through various cleaning systems like, High Density Cleaners, Pressure Screens and Low-Density Cleaners in order to remove heavy, light weight sand particles and other scaling contaminants before paper sheet making

Wire Part

This is comprised of a moving Synthetic Forming Fabric upon which diluted fibrous mixture is thrown with a jet. Basically, sheet is initially formed here with a simultaneous mechanical activity of shaking and dewatering in wet condition through vacuum tubes.

Press Part

After sheet making at wire, the main activity required to make paper sheet is water removal. Initially water is removed by squeezing in press part at three different Nip stages. After sheet pressing, reasonable dry contents are achieved for onward sheet conveying,

Dryer Part

Rest of the water is removed in dryer part through evaporation process Steam is used in rotary dryers as heating media. Here, Sheet is dried through direct heat contact with dryer surface in order to achieve the final moisture 6.0% of the product.

Calendaring

Calendaring to improve paper smoothness & gloss.

III. Monitoring and Control System

On-Line QCS Control

Grammage, Caliper, Moisture & Gloss are controlled by QCS system.

Web Inspection System

On-Line Identification of Product defects.

QAS

Incoming material and in-process variables monitoring & conformance. Finished Product compliance against Customer requirements & Specification before final dispatch.

8. PROJECT BASELINE CONDITIONS

The socio-economic baseline conditions of the site have been established on the basis of field visits, interviews with the local people, scoping sessions with representatives of plant management and from the published material and information relating to the area and plant. The main findings include:

- The project is located in self-developed industrial area
- There is no habitation on the project site. The site comprises of vacant piece of land.
- There is no village or settlement on the site location. It is located besides the Ideal chemical plant.
- The average population in the area is poor and live upon agriculture, livestock rearing and labor in different mills of the area.

- The income group is quite variant from poor to big land owners and politicians.
- The socio-economic situation of the area is greatly influenced by the industrial and agricultural activity. Direct and indirect employment in the mills of the area is dominant feature. Cattle farming and agriculture is also handsome source of income in the area.
- The air quality at project site is good in spite of some small sources of air pollution in the area like acid plant, steel, textiles, poultry unit, and food processing units. The conventional parameters of air quality indicators were measured and found well within Punjab Environmental Quality standards for ambient air. This is due to hot and semiarid climatic conditions of the area which make the atmosphere highly favorable for dispersion of air pollutants emitted from GT road and other sources in the area. There is traffic on Lahore-Sheikhupura segment of highway having negligible impact on the air quality of the site due to dispersion effect. There is no monitoring facility of EPA near this area. The nearest air quality monitoring station of EPA is Shahdara Nawaz Sharif Hospital where AQI was measured 367 which is very unhealthy on 27-12-2024. (EPD website). The CO, NOx, SO2, O3, PM10 at proposed site was tested by Pak Green, an environmental certified laboratory. The monitoring results show that all tested parameters are within PEQS.
- Water quality of the subsoil is good and compliant of PEQS for drinking water.
- None of the endangered wildlife species or sensitive habitat are found at the project site.
- No historical or cultural heritage site exists at or near the proposed site.
- Civic amenities such as road access and electricity are already existent in the project area due to the industrial nature of the area. Electricity from the WAPDA as well as standby power generator will also be available at site.
- The nearest human settlement and villages are lacking in suitable sewage, educational and health facilities.

9. Socio-Economic Impacts

The proposed project will cause positive socio-economic impacts in area by:

- Creating new direct and indirect job opportunities, although on small scale.
- Conserving the local forest cover by using waste paper and board.

- Decrease in import of writing paper and saving of national exchequer. In 2023, Pakistan imported 2,929,220 kg of writing and printing paper.
- Increasing the value of the land of the area.
- Change in attitude and outlook of the people in nearby villages.

The negative impacts may include:

- Usage of water during manufacturing process.
- Generation of waste water with suspended solids.
- Solid waste generation in form of sludge
- Air emissions from the power generation.

10. The Major Impacts

a) Land Use

There is no land use change on the proposed project site, the land is already under the possession of the Ideal chemicals which is industrial use. Hence there will be no significant impact on the land.

Fig No 2: Land Use on the Site

b) Surface Water Quality

Deg Nullah (drain) is recipient of the wastewater from industrial units in Kot Pindi Das area and Sheikhupura road. Alfalah Paper and Board Mills will dispose treated waste water into the Raiwind drain after complying PEQS. The waste will be compliant to the PEQS and hence no Impacts on nearby drain is foreseen. The Upper Chenab (Khanpur) link canal is main surface water body which flows at about 5 Km from the site. No water will be disposed in BS link canal from this project.

c) Groundwater Quality

Paper and board manufacturing is water extensive process which needs large quantity of water. Paper machine's waste water is white water which is reused up to 80 percent in pulp washing. Moreover, the sustainable policy of the mills lays special emphasis on water conservation. In addition to that the pulping process will not be done here. Therefore, minimum amount of water (300 m3/day) will be required. Moderate impact on the quantity of groundwater is foreseen, as the project will use water from the subsoil water. The recharge mechanism of the Punjab alluvial plain will mitigate its impact. It will not dispose any waste water in the underground aquifer, hence impact with respect to waste water disposal is negligible. No water will be disposed in underground. The ground water is deep and the water aquifer is continuous in nature that extends from Jammu to Indus, therefore, extraction of water for this project will have no adverse impact. It is worth mentioning that no law for extraction of water exists in the country to limit the water extraction.

d) Air Quality

No new source of air pollution is added in this project and the existing source of power will be used for the manufacturing process. WAPDA electricity will be used which will be about 1 MW. No SO2, PM and chlorine is likely to be emitted due to absence of the chipper house, pulp washing and caustic extraction are excluded from the process in this project. Good ventilation of the halls will be ensured.

The waste heat recovery from the ideal chemicals furnace will be used for this project. No additional source of air pollution will be installed for steam generation.

The back ground air quality is unpolluted as the site is away from urban areas. No digestion of cellulose is proposed for preparation of pulp hence no impact on surrounding air is foreseen in form of odor or air pollution.

There are some industrial units in the area which emit air pollution but its contribution does not raise the air pollution level above the limits of PEQS for ambient air.

e) Solid waste

Solid waste is likely to be generated from raw material handling and sludge from waste water treatment system.

Paper waste in bulk will be used where minimum waste is going to be generated in this project. Sludge forms the waste water treatment plant will be sold to the market as it has economic value for manufacturing of low-quality packing board.

f) Clean and Sustainable Project

The waste paper is proposed to be used which emit white waste water which is mostly reused and needs a little cost and effort for treatment. It also involves no cutting of trees or plant for wood pulp. Hence, the impact on local flora and fauna is negligible, therefore the project is environmentally clean and sustainable with respect to integrated paper and pulp manufacturing process.

g) MITIGATION MEASURES

The following measures are proposed at the Paper manufacturing to make it environmental clean and compliant to the environmental rules and regulations:

- No pulping processes
- No use of chemicals
- Recycling and reuse of water
- Water conservation
- Treatment of waste water in DAF or other suitable treatment plant for collection of suspended solids in the waste water.
- No new power plant.
- No new boiler for steam
- Use of existing utilities like power house and boiler for electricity and steam

respectively from idea chemicals.

- Water showering will be done to avoid dispersion of soil during construction phase.

h) Health and safety:

Quality, Environment, Health and Safety (Q&EHS) issues of the workers of plant will be addressed properly and personal protective equipment will be provided to operator as per safety and environment policy of the paper Mill. The concerned staff will regularly give training on health and safety issues by hiring professionals from the market like Emergency services of Punjab.

11. Proposed Monitoring

The quality of the air and waste water will be monitored regularly to assure the compliance of PEQS through environmental certified laboratory the project of paper and pulp manufacturing lies in category A for air and waste water emissions. Therefore, it is bound to conduct monitoring of air and water effluents on monthly basis for priority parameters. An amount of Rs.0.27 million rupees is required for monitoring cost.

12. Monitoring and Enforcement

The enforcement of these plans and monitoring of the environment will be conducted by management of the paper mills staff during the plant life. The capacity building of various sections of the mills, including plant management, will be carried out for effective O&M and monitoring of efficiency of systems at plant. The participation of higher management will be ensured in these processes.

The proposed unit will also report regularly to EPA, Punjab for assessment of the impacts and efficacy of proposed control systems to fulfill the regulatory requirements.

Implementation of EMP proposed for the project is responsibility of HSE officer. GM of the project will make sure that EMP is being implemented to its full extent by proper and regular monitoring of the EMP implementation. The responsibility of the Chief Executive Officer is to provide funds for the implementation of EMP for the proposed project.

13. Recommendations.

In the light of the facts obtained from the project baseline study and control measures, it is envisaged that construction and operation of the proposed Paper mill will be useful for national economy and local society. It is also environment friendly due to use of waste paper and least environmental pollution caused from it. The possible impacts have been mitigated through proper measures. Hence it is recommended for environmental approval along with above mentioned mitigation and monitoring systems.

Chapter 1

Introduction

1.1 Introduction

At the time of independence, Pakistan had no paper and board production unit. Over the last 70 years paper and board industry has emerged out of its infancy and is now catering nearly 80 percent of the domestic demand.

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There is a vast gap of demand and production of paper and board in Pakistan that is why Alfalah Paper and Board Mills (AP&BM) Private Limited has planned to establish a new project of paper production from the waste paper and board projects which will be used for different packing and stationery purposes.

1.2 Purpose of the Report

The purpose of this project is to produce paper from the waste paper and board projects which will be used for different packing and stationery purposes. The purpose of EIA study is to identify the possible beneficial and adverse environmental impacts of the project as presently envisaged and propose the applicable mitigation measures to be implemented during construction and operational stages of the project to minimize the negative impacts.

To fulfill the social and legal binding upon AP&BM for compliance of Provincial Environmental Quality Standards (PEQS) for industrial waste, industrial emissions, ambient air, motor vehicles and noise in letter and spirit, a tremendous amount will be spent on this paper and pulp complex.

Environment Assessment (EA) is interdisciplinary and multistep procedure to ensure that environmental considerations are included in decisions regarding the project which may affect the environment. In other word EIA helps to identify the possible impacts of proposed activity and how these impacts can be mitigated. Section 12 of Pakistan Environment Protection Act of 1997 binds the developer (proponent) to submit an EIA report to a Provincial/Federal EPAs and get approval for construction and operation phase of the project in a manner prescribed in review of IEE/EIA Regulations 2022 and sectoral guidelines. Construction of paper mills comes under schedule II where EIA is mandatory to be submitted to EPA. To fulfill the legal obligations the project has been

analyzed for possible positive and negative, social and environmental impacts and their abatement, for submission to Punjab-EPA, Lahore for issuance of Environmental approval under above said IEE/ EIA Regulation 2022.

1.3 Identification of Project and Proponent

1.3.1 Title and Location

Environmental Impact assessment for installation of manufacturing unit for high quality Paper and Board in Alfalah Paper & Board Mills (Pvt) Limited.

Alfalah Paper and Board Mills (AP&BM) is situated at 22 Km Lahore-Sheikhupura Road,1.5 Km towards Pindi Das Road, Qila Sattar Shah, Tehsil Feroze Wala, District Sheikhupura.

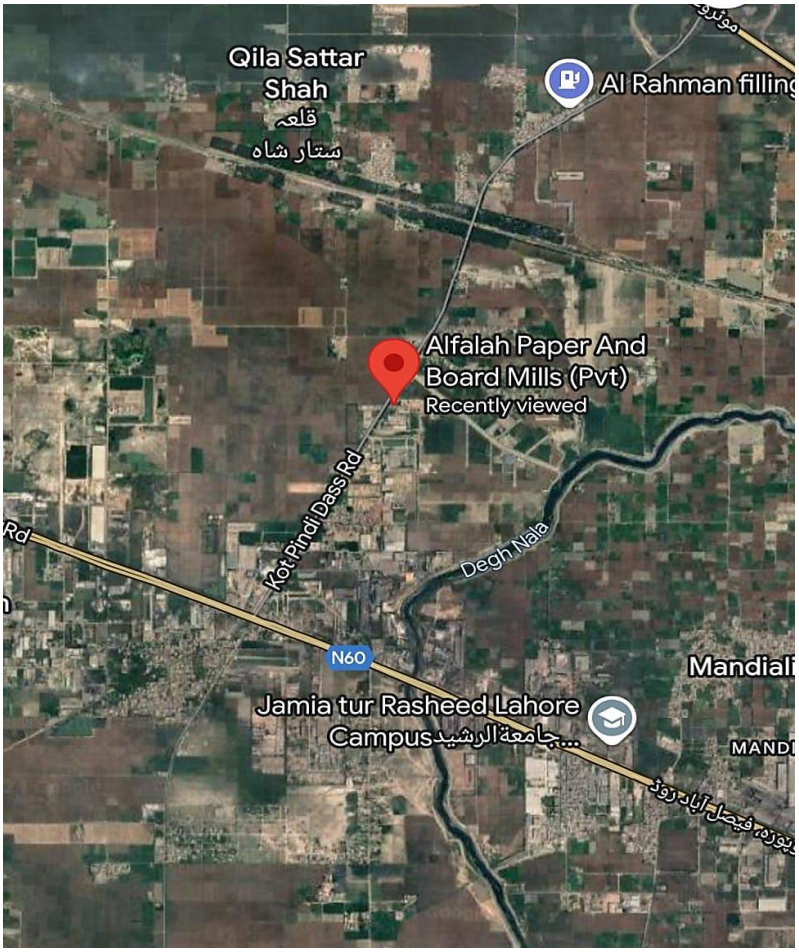

Fig No 1.2: Location of the Proposed Project

1.3.2 Name of Proponent

Name: Sufiyan Ali

Designation; Chief Executive

Contact information: Email: Sufiyan.decent@yahoo.com

Cell: 03004551574

1.4 Name of Organization preparing Report

The EIA study was carried out by team of Grow Green Environment Consultancy comprising of Environmentalist and Sociologist, with diversified experience on environmental assignments

1.4.1 The Address of the Consultant:

- Grow Green Environment Consultancy (GGEC),
- Registered office: 12/73 Vaishno Street, Shamnagar, Chauburji, Lahore
- Cell #. 03004626266, WhatsApp # 03234104253
- E-mail: usmanulhaqad@gmail.com

The Chief Executive of GGEC has 35 years of experience of working in EPA Punjab as Assistant Director (Research) and Assistant Director (Field). He has master of Environmental Sciences and number of foreign trainings in field of environmental management and control. The list of important environmental studies conducted by GGEC so far is as under:

A. <u>IMPORTANT IEE AND EIA PROJECTS</u>

i. Cement Sector

- EIA for lime stone quarry for Gharibwal Cement Limited, Dalmiri, district Khushab.
- EIA for mining of clay for Gharibwal Cement Limited, Dalmiri, district Khushab.

- Revised IEE for waste heat recovery power plant at Gharibwal Cement Limited and its approval from EPA.
- EIA for Large scale mining of lime stone near Zinda Peer, DG Khan for Fauji Cement Limited.
- EIA for Large scale mining of clay near Zinda Peer, DG Khan for Fauji Cement Limited.
- EIA for capacity enhancement of line-II at Gharibwal Cement Limited, Chakwal from 8000 TPD to 10,000 TPD.
- EIA for line-4 of 7300 TPD by Pioneer Cement Limited, Joharabad, District Khushab.
- IEE for establishment of 45 MW Coal fired Power Plant at line-4 by Pioneer Cement Limited, Joharabad, District Khushab.

ii. Highways and Motorway

- Social assessment of Lahore –Abdul Hakim Motorway, proposed by NHA.
- Diligence review of EMP for Lahore to Karachi Motor way, National Highway authority, Islamabad
- EIA of Dualization of Sheikhupura- Gujranwala Road by NHA.
- Presentation before committee of experts for EIA of Construction of Lahore Eastern Bypass by NHA.
- Presentation before committee of experts for EIA of Widening and rehabilitation of Thokar-Hudiara section of N5.

iii. Water supply and Water Treatment

- EIA of water Treatment and Supply System for Faisalabad to be constructed on Jhang Branch canal.
- EIA for installation of water treatment systems in Tehsils of Chicha Watni and Sahiwal district Sahiwal by SAAF Pani Company- North under CM Punjab Clean water initiative in Punjab.
- EIA for installation of water treatment systems in Tehsils of Okara, Depalpur and Renala Kurd, district Okara by SAAF Pani Company- North under CM Punjab Clean water initiative in Punjab.
- EIA for installation of water treatment systems in Tehsils of Kasur and Tandlianwala, district Kasur by SAAF Pani Company- North under CM Punjab Clean water initiative in Punjab.

iv. Thermal power projects (Coal and HFO)

- Environmental Impact Assessment of 660 MW coal fired Power plant in Rahim Yar Khan proposed by Nishat Chunian Group.
- EIA of 220 MW coal fired power plant at Bhikhi by Nishat Chunian Group.
- Regular Environmental monitoring and auditing of Atlas Power 225 MW HFO fired Power plant.
- Regular Environmental monitoring and auditing of Hub Power Company 225 MW HFO fired Power plant
- Regular Environmental monitoring and auditing of Nishat Chunian Power 200 MW HFO fired Power plant

v. Bagasse fired power projects

- IEE of 31.2 MW Bagasse fired power project by Ashraf sugar Mills, Bahawalpur
- IEE of 30 MW bagasse fired Power plant by Sheikhoo Sugar mills, Muzaffar Garh.

vi. Renewable Energy (Power Generation)

IEE of 100 MW solar power plant in Thatta Sindh proposed by Siachen Energy Limited.

Waste Heat Recovery and Carbon Footprints

- Calculation of Carbon Footprints of Nishat Chunian Power limited, 200 MW power plant.
- Calculation of Carbon Footprints of Nishat Power limited, 200 MW power plant.

Paper and Board industry

- EIA of new production line for high quality Duplex Board, in Century Paper and Board Mills, Kasur.

Textile

- EIA of Capacity Building of Sapphire Textile Mills, Sheikhupura.
- IEE of Cotton Web Limited Unit-2, Attari Kamahan road, 16-Km, off Ferozepur Road, Lahore.
- IEE of Cotton Web Limited Unit-3, Attari Saroba, Kamahan road, 16-Km, off Ferozepur Road, Lahore.

Dairy and Milk Processing

- IEE for Establishment of Milk Processing plant by Fine food private limited District Kasur.

Urban Development and commercial buildings

- IEE of construction of building for Punjab Food, Agriculture and Drug Forensic Lab, by Government of Punjab.
- EIA of High rise G+29 building of Afghan Carpet, Karachi.
- EIA of 250 bed Salem memorial Hospital proposed by Nishat Chunian Group.
- EIA of Pearl Resort and Country club in Murree by Hashoo group.
- IEE of Liberty Castle Shopping Mall, Lahore.

Pharmaceutical

IEE of Zodiac Pharma, Lahore.

Beverages

- Expansion of Coca Cola Export Corporation CPS Plant through construction of Site Master Plan-II, Pajian, Raiwind Road, Kasur.
- Expansion of Coca Cola Export Corporation CPS Plant through construction of Site Master Plan-III, Pajian, Raiwind Road, Kasur.

Steel Mills

- EIA of Dost Steel Mills, Kasur.

Waste Water Treatment and water supply

- EIA of Waste water treatment Plant and Collector Channel in Lahore (funded by JICA)
- EIA of Secondary Waste water treatment plant in Century Paper and Board Mills, Kasur.
- EIA of Waste water treatment plant at Nishat Textile Raiwind Manga Road, Kasur.
- IEE of water supply improvement project by WASA (funded by JICA)
- EIA of Waste water treatment plant in Sapphire textile Mills, Sheikhupura.

Solid waste management

- EIA of Solid waste dumping site near Sundar Multan Road, Lahore.

Table 1.1 Showing details of the consultants who participated in the preparation of the EIA report:

Table 1.1: Grow Green Environment Consultancy (GGEC) Team

Name	Qualification	Designation	Role in the team

Mr. Usman-ul-Haq	M.Sc. Environmental Sciences Involved in preparing EIAs, Impact Assessment and mitigation measures, Compliance Statues Reports, EMMP, Social surveys of Power plants, water treatment, Development and water supply schemes etc.	Chief Executive	Team Leader, Guidance and review of draft EIA. Ecology & Environment Specialist EMP Impact Assessment Legal framework and identification of environmental impacts and their mitigation; Preparation of environmental impact assessment matrix.
Ms. Khadija Usman	Bachelor of Engineering. She has 3 years of working experience with GGEC on EIA studies. Involved in preparing EIAs, Impact Assessment and mitigation measures	Environment Officer, Regular associate with GGEC.	Ecology & Environment Specialist. Preparation of environmental impact assessment matrix
Mr. Sallahuddin	Graduate. He has 3 years of working experience with GGEC. Involved in social surveys of Paper Mills.	Field Coordinator	Performed social surveys of Paper Mills

1.5 Brief Description of Size, Nature and Location

1.5.1 Location of the Project

The project is situated in Alfalah Paper and Board Mills (AL&BM) located at 22 Km Lahore-Sheikhupura Road,1.5 Km towards Pindi Das Road, Qila Sattar Shah, Tehsil Feroze Wala, District Sheikhupura.

Fig No. 1.3: Location of the project

1.5.2 Size of the Project

The Project is a production facility (700 Ton of paper / month capacity) which will use waste paper and board as raw material and produce good quality.

1.5.3 Nature of the Project

The proposed process would be free of chemical pulping which is a most critical part of traditional paper pulping from environmental viewpoint. Waste paper and board will be purchased from the market which will have no wood digestion making the project environment friendly. It will also be sustainable because it will not use the wood from Pakistan and hence protecting the local fragile forest cover which is estimated to be 2.47 percent. The paper will be soaked and mixed to produce white pulp and then produce the paper sheets of different sizes for marketing. The process is chemical free. The composition of paper will be as follow:

Manufacturing Process

1.5.4 Product Design

a. Blending

Different types of paper and pulps, and additives are blended through Dosing Control System (DCS) as per defined ratio of the product.

Blending mixture mainly determines the Caliper, internal Bond Strength, Tensile Strength, Folding Strength and Stiffness of the Paper.

1.5.5 Machine Process

a) Approach Flow

Blended thick fibrous stock is passed through various cleaning systems like, High Density Cleaners, Pressure Screens and Low-Density Cleaners in order to remove heavy, light weight sand particles and other scaling contaminants before paper sheet making

b) Wire Part

This is comprised of a moving Synthetic Forming Fabric upon which diluted fibrous mixture is thrown with a jet. Basically, sheet is initially formed here with a simultaneous mechanical activity of shaking and dewatering in wet condition through vacuum tubes.

c) Press Part

After sheet making at wire, the main activity required to make paper sheet is water removal. Initially water is removed by squeezing in press part at three different Nip stages. After sheet pressing, reasonable dry contents are achieved for onward sheet conveying,

d) Dryer Part

Rest of the water is removed in dryer part through evaporation process Steam is used in rotary dryers as heating media. Here, Sheet is dried through direct heat contact with dryer surface in order to achieve the final moisture 6.0% of the product.

e) Calendaring

Calendaring to improve paper smoothness & gloss.

1.5.6 Monitoring and Control System

a) On-Line QCS Control

Grammage, Caliper, Moisture & Gloss are controlled by QCS system.

b) Web Inspection System

On-Line Identification of Product defects.

c) QAS

Incoming material and in-process variables monitoring & conformance. Finished Product compliance against Customer requirements & Specification before final dispatch.

Chapter 2

ENVIRONMENTAL LEGISLATIVE REQUIREMENTS AND FRAMEWORK

2.1 GENERAL

This Chapter deals with the relevant policy, legal and administrative frameworks instituted by the Government of Pakistan and Punjab for the protection of Environment. All the relevant provisions of these policy and legal frameworks have been duly considered in this environmental assessment study. In addition to this, the roles and responsibilities of the Proponent and other key players such as EPA, Punjab under the legal frame work of PEPA, 1997 (amended 2012) has also been discussed in this section. The legal set of documents which will applicable to this project is also discussed in this chapter.

2.2 POLICY FRAMEWORK

The Ministry of Environment was responsible authority for policy making on Environmental Protection in Pakistan. With the 18th amendment all the powers of environmental legislation have been entrusted to provincial government. Presently EPD, Punjab is the legislator department in the present scenario whose draft is whetted by law department, Provincial Environment Protection Council and finally approved by provincial assembly.

2.2.1 National Environment Policy, 2005

The National Environmental Policy (2005) provides an overarching framework for addressing the environmental issues (particularly pollution of fresh water bodies and coastal waters, air pollution, lack of proper waste management, deforestation, loss of biodiversity, desertification etc.) confronting Pakistan. It recognizes the goals and objectives of the Pakistan National Conservation Strategy (PNCS), 1992, National Environmental Action Plans, and other existing environment related national policies, strategies, and action plans. It also provides broad guidelines to the federal government, provincial governments, federally administered territories and local governments to address their environmental concerns and to ensure effective management of their environmental resources.

2.3 LEGAL FRAMEWORK

The Government of Pakistan (GOP) has promulgated laws/acts, regulations and standards for the protection, conservation, rehabilitation and improvement of the environment. In addition to this, they have also developed environmental assessment procedures governing development projects. Following are the glimpse of these laws and procedures relevant to the proposed Project.

2.3.1 Pakistan Environmental Protection Act, 1997

The Act was enacted on December 06, 1997 by repealing the Pakistan Environmental Protection Ordinance 1983. It provides the framework for implementation of the PNCS 1992, establishment of provincial sustainable development funds, protection and conservation of species, conservation of renewable resources, and establishment of Environmental Tribunals, appointment of Environmental Magistrates, Initial Environmental Examination (IEE), and Environmental Impact Assessment (EIA).

Section 11 binds the proponents to emit the effluents and emissions within the prescribed limits as notified in NEQS. Section 12 of the Act stresses the need to carry out EIA /IEE study prior to construction or operation of a project. A committee under the chairmanship of Director General EPA reviews the report and gives its decision for approval or otherwise of any project. Environmental approval is issued for construction phase. After completion of the project construction approval for operational phase is also required to be obtained.

2.3.2 Pakistan Environmental protection Act 1997 Amended 2012

After implementation of the 18th amendment government of Punjab, EPD adopted the federal act as such which is now called Pakistan Environment protection Act, 1997 amended in 2012. All the rules and regulation made there under have been adopted by EPD.

2.3.3 Pakistan Environmental Protection Agency (Review of IEE/EIA) Regulations, 2022

These regulations provide criteria for projects requiring IEE and EIA. The projects have been divided into two schedules according to the scoping of project. The Paper & paperboard fall under schedule II at serial no B (9) which are titled as “Manufacturing and processing” project e.g., Synthetic resins, plastics and man-made fibers, **paper and paperboard**, paper pulping, plastic products, textiles (except apparel), printing and publishing, paints and dyes, oils and fats and vegetable ghee projects, with total cost more than Rs. 10 million. Therefore, this project of Alfalah Paper & board Mils is to submit EIA before Environment Protection Agency, Punjab for its approval under section 12 of PEPA (2012). They also briefly describe the procedure for preparation and review of environmental reports in the department.

2.3.4 Punjab Municipal Solid Waste Management Guidelines, 2007

Punjab Municipal Solid Waste Management Guidelines, 2007 provide the general guidance to the provincial Government departments, local governments, private operators and other agencies that initiate to operate any solid waste management activity in urban areas.

The present set of guidelines is aimed to cover only the municipal solid wastes. Therefore, hazardous wastes do not come under the purview of these guidelines. Various components of solid waste management such as waste generation and collection, waste transfer, recovery of useful components, waste incineration, composting, bio-gas generation and land filling are covered in these guidelines giving a technical guidance to do these operations with minimal impacts to the environment. For the disposal of waste by land filling, it provides the general, design and operational guidelines. Apart from that, these guidelines also explain the pollution control system for the landfill site with design details. As far as environmental monitoring is concerned, these guidelines also prescribed the National Environmental Quality standards for Municipal and liquid Industrial effluent and ground Water Quality Monitoring Standards.

2.3.5 Pakistan Environmental Assessment Procedures, 1997

Pakistan Environmental Assessment Procedures (1997) is, in fact, a package, which contains the following, sets of information relevant to the proposed Project:

a) Policy and Procedures for Filing, Review and Approval of Environmental Assessment Reports

It describes environmental policy and administrative procedures to be followed for filing of environmental examination/assessment reports by the proponents and their review and approval by the concerned environmental protection agencies.

b) Guidelines for the Preparation and Review of Environmental Reports

These guidelines are developed to facilitate both the proponents and decision makers to prepare reports (inclusive of all the information contained therein) and carry out their review so as to take informed decisions.

c) Other Relevant Laws

a) Punjab Local Government Ordinance, 2013

Environmental protection is devolved subject under Punjab Local Government Ordinance (LGO), 2013. Despite any specific provisions, every local government may perform functions conferred by or under the Punjab LGO, 2013 and in performance of such functions may exercise such powers, which are necessary and appropriate. Until different provisions, rules, regulations or bylaws are made, the local governments may exercise such powers as are specified in the Punjab LGO, 2013.

b) CDGL Solid Waste Management By laws, 2005

These by laws explain the powers of District Council and Municipal Council Gujranwala, for the collection, transfer and disposal of solid waste from the public areas. These laws also define the penalties for violations concerning the solid waste pollution. According to the Bylaws, the District Council and Municipal Council concern may appoint adequate staff and adopt other measures for carrying out the effective implementation of these by laws. DOE Environment playing dual role. He exercises the powers of 1997 through DG EPA and PLGO through DCO.

c) Canal and Drainage Act, 1873

This Act entails provisions for the prevention of pollution of natural or man-made water bodies.

The Provincial Government may, by notification in the official gazette, prohibit the discharge of any effluent, including any solid or liquid matter or combination of them from industrial, municipal or any other source, into any river, canal and drainage work including any natural drainage channel.

In case of contravention of sub-section (1), the Divisional Canal Officer, after such enquiry including taking of sample, may impose such special drainage charges as may be prescribed and shall take other necessary steps to prevent such contravention and consequential cost so incurred shall also be recoverable from the person found responsible for such contravention.

After the publication of notification under sub-section (1), any person, organization or entity, interested in discharging such effluent into any river or drainage work, including any natural drainage channel, shall apply to the Divisional Canal Officer or any other person authorized by the Provincial Government in this behalf, for grant of permission for the discharge of such effluent.

The applicant shall obtain a certificate of no adverse impact of such discharge on environment from the authority designated in this behalf under any law for the time being in force relating to environment.

d) Labour Laws

Construction and operational activities during the course of construction could affect the occupational health of the workers. Quantitative national standards for occupational health are yet to be developed in Pakistan and employers are required to abide by the labour laws in respect of their own employees and also ensure that contractors to follow the relevant labour laws and rules relating to safety of workers. The proponents will ensure that the labor force engaged is not exposed to any danger by monitoring the contractor's work frequently. Labour Department Government of Punjab is the relevant department who cares for the implementation of labour laws and watchdog of ILO occupational and health guidelines.

e) Pakistan Penal Code, 1860

The Pakistan Penal Code, 1860 deals with offences where public or private property or human lives are affected due to the intentional or accidental misconduct of an individual or body of people. In the context of the environment, the Penal Code empowers the local authorities to control noise, noxious emissions and disposal of effluents. The NEQS enforced by the EPA supersede the application of this legislation on industries and municipalities. The Penal Code, however, can provide a basis for the client to coordinate its activities with the local authorities to ensure that its construction activities do not become a cause of public nuisance or inconvenience.

f) Factories Act, 1934

The clauses relevant to the proposed project are those that concern the health, safety and welfare of workers, disposal of solid waste and effluent and damage to public and private property. The Act also provides regulations for handling and disposing of toxic and hazardous materials. Given that the construction activity is classified as 'industry', these regulations will be applicable to the project contractors. In addition to this, the following will also be consulted:

Employees' Cost of Living Relief and Allowances - Workers' Children (Education Law) Companies Profit (Workers' Participation) Law, Law of Essential Services, Industrial

Relations Law, Workers' Welfare Law, Employees' Old Age Benefit Law, The Shop Act, The Law of Social Security, The Law of Payment of Wages and Minimum Wages, The Law of Industrial and Commercial Establishments

2.4 PUBLIC PARTICIPATION & CONSULTATION

Public consultation and participation are mandatory for EIA procedure. Sectorial guide lines issued by Pakistan Environmental Agency are required to be consultant during the process of public consultation. IEE & EIA regulations 2022 also give guide line for public participation of schedule II projects. An advertisement is published in to leading newspaper for comments of the public on proposed project. Duration of thirty days is fixed for public comments. Finally, a public hearing is conducted on any public place where each stakeholder is heard by the representative of Director General of EPA Punjab. Proper remedial measure/action is taken by EIA section on the reservation of stakeholders. Prior to this the consultant prepares the social impact of the project in the light of opinion of the people of the project area and accommodated in EIA study.

2.5 ENVIRONMENTAL QUALITY STANDARDS

2.5.1 Punjab Environmental Quality Standards (NEQS), 2016

Compliance of NEQS is the requirement of approval of IEE/EIA. Ministry of Environment notified these standards in 1993. They were revised in 2000. They furnish information on the permissible limits for discharges of municipal and industrial effluent parameters and industrial gaseous emissions in order to control environmental pollution. After the 18th amendment, the Provincial Government of Punjab has established their own quality standards known as Punjab Environmental Quality Standards.

2.5.2 Punjab Environmental Protection (Smog Prevention and Control) Rules, 2023

Punjab Environmental Protection (Smog Prevention and Control) Rules, 2023 are made pursuant to powers granted under Section 31 of the Punjab Environmental Protection Act, 1997 vide notification dated 06TH June, 2023. The rules are applicable to the whole of Punjab.

These rules are implemented at once to mitigate the smog to prevent the air pollution. The Rules defines

the key terms and describes the procedures with strict implementation. The procedures include the standard operating requirements for brick kilns, industrial units and resource recovery units. It imposes restriction on operating tires, pyrolysis plants, burning stubble and solid waste and motor vehicle emission in the province. It also empowers the Director General of the Punjab Environmental Protection Agency; its authorized officer(s); and the inspection team to make visits to such sites and keep a check on the compliance of the operating standards as mentioned in this Rules. The Rules provides for administrative penalty mentioned in the Schedule and also authorizes such officers to give penalty described under the Schedule in the Punjab Environmental Protection (Smog Prevention and Control) Rules in case of non-compliance or violation of the rules, the penalties include fine from 100000 to 500000 rupees on the violation of PEQS.

2.5.3 The Punjab Environmental Protection (Review of Initial Environmental Examination and Environmental Impact Assessment) Regulations, 2022

The Punjab Environmental Protection (Review of Initial Environmental Examination and Environmental Impact Assessment) Regulations, 2022 provides a legal framework for conducting environmental assessments, defining the scope of projects subject to assessment in Schedules I and II respectively.

2.5.4 Single use Plastics (Prohibitions) Regulations 2023

The manufacturer, import, distribution, sale, supply, stocking, purchase, trade or use of single use plastic items listed in Schedule-1 shall be prohibited in ICT as per time-lines mentioned therein.
The manufacturer, import and use of single use plastic beverage containers made entirely from virgin plastic shall be prohibited in ICT in accordance with Schedule-II by beverage manufacturers and producers of beverage manufacturers and producers of beverage containers.

2.5.5 The Clean Air Act Amendments of 1990

The Clean Air Act is the law that defines EPA’s responsibilities for protecting and improving the National’s air quality and stratospheric ozone layer.

Table- 2.1 Punjab Environmental Quality Standards for Municipal and Liquid Industrial Effluents (mg/l, Unless Otherwise Defined)

Sr. No.	Parameters	Revised Standards Into Inland Waters	Into Sewage Treatment
1	Temperature or Temperature Increase	$\leq 3^oC$	$\leq 3^oC$
2	pH value (H^+).	6-9	6-9
3	Biochemical Oxygen Demand $(BOD)_5$ at 20^oC (1)	80	250
4	Chemical Oxygen Demand (COD) (1)	150	400
5	Total Suspended Solids (TSS)	200	400
6	Total Dissolved Solids (TDS)	3500	3500
7	Oil and Grease	10	10
8	Phenolic compounds (as phenol)	0.1	0.3
9	Chloride (as Cl^-)	1000	1000
10	Fluoride (as F^-)	10	10
11	Cyanide (as CN^-) total...	1.0	1.0
12	An-ionic detergents (as MBAS) (2)	20	20
13	Sulphate (SO_4^{2-})	600	1000
14	Ammonia (NH_3)	40	40
15	Pesticides	0.15	0.15

Sr. No.	Parameters	Revised Standards Into Inland Waters	Into Sewage Treatment
16	Cadmium (4)	0.1	0.1
17	Chromium (trivalent and hexavalent (4) …..	1.0	1.0
18	Cooper (4)	1.0	1.0
19	Lead (4)....	0.5	0.5
20	Mercury (4)....	0.01	0.01
21	Selenium (4)	0.5	0.5
22	Nickel (4)....	1.0	1.0
23	Silver (4)	1.0	1.0
24	Total toxic metals....	2.0	2.0
25	Zinc....	5.0	5.0
26	Arsenic (4).....	1.0	1.0
27	Barium (4).....	1.5	1.5
28	Iron....	8.0	8.0
29	Manganese....	1.5	1.5
30	Boron (4)....	6.0	6.0
31	Chlorine....	1.0	1.0

2.5.6 PEQS for Noise

In exercise of power conferred under clause (c) of sub-section (I) of section 4 of the Punjab Environmental Protection Act, 1997, the Environmental Protection Council has approved the following as the Punjab Environmental Quality Standards for Noise notified through the notification no. SO (G)/EPD/7-26/2013, dated: 05.08.2016:

Table No 2.2: PEQS for Noise

Sr. No.	Category of Area/Zone	Effective from 1st July, 2010		Effective from 1st July 2013	
		Limits in dB (A) Leq			
		Day time	Night Time	Day Time	Night Time
1	Residential Area (A)	65	50	55	45
2	Commercial Area (B)	70	60	65	55
3	Industrial Area (C)	80	75	75	65
4	Silence Zone (D)	55	45	50	45

2.5.7 PEQS for Ambient Air

In exercise of power conferred under clause (c) of sub-section (I) of section 4 of the Punjab Environmental Protection Act, 1997, the Environmental Protection Council has approved the following as the Punjab Environmental Quality Standards for Ambient Air notified through the notification no. SO(G)/EPD/7-26/2013, dated: 05.08.2016:

Table No 2.3: PEQS for Ambient Air

Pollutant	Concentration in Ambient Air	
	Time-weighted average Annual Average	Time-weighted average 24 hours
Sulfur Dioxide	80 ug/ m^3	120 ug/ m^3
NO	40 ug/ m^3	40 ug/ m^3

NO2	40 ug/ m^3	80 ug/ m^3
O3	--------	130 ug/m^3 (I hour)
PM10	120 ug/ m^3	150 ug / m^3
PM2.5	15 ug/ m^3	35 ug/ m^3
Pb	1 ug/ m^3	1.5 ug/ m^3
CO	5 mg/ m^3	10 mg/ m^3

2.5.8 DRINKING WATER QUALITY STANDARDS

In pursuance of the statutory requirement under clause (e) of sub-section (1) of section (6) of the PEPA, 1997 (amended 2012), the Pakistan Environmental Protection Agency, Ministry of Environment has notified drinking water quality standards. WHO drinking water quality guidelines have been used for bench marking purpose in the drinking water quality standards that are notified and given in **Table 2.4**

Table- 2.4 Punjab Environmental Quality Standards for Drinking Water Quality

Sr. No.	Parameters	Standard values for Punjab (mg/l)	WHO (mg/l)
1	Aluminum (Al)	≤ 0.2	0.2
2	Ammonium (NH3)	-	1.5
3	Antimony (Sb)	≤ 0.005	0.02
4	Arsenic (As)	≤ 0.05	0.01
5	Barium (Ba)	0.7	0.7
6	Boron (B)	0.3	0.3
7	Cadmium (Cd)	0.01	0.003

Sr. No.	Parameters	Standard values for Punjab (mg/l)	WHO (mg/l)
8	Chloride (Cl)	< 250	250
9	Chromium (Cr)	≤ 0.05	0.05
10	Copper (Cu)	2	2
11	Cyanide (CN)	≤ 0.05	0.07
12	Fluoride (F)	≤ 1.5	1.5
13	Iron (Fe)	-	0.3
14	Lead (Pb)	≤ 0.05	0.01
15	Manganese (Mn)	≤ 0.5	0.5
16	Mercury (Hg)	≤ 0.001	0.001
17	Molybdenum (Mo)	-	0.07
18	Nickel (Ni)	≤ 0.02	0.02
19	Nitrate (NO_3)	≤ 50	50
20	Nitrite (NO_2)	≤ 3	3
21	Selenium (Se)	0.01	0.01
22	Silver (Ag)	-	NS
23	Sodium (Na)	-	200
24	Sulphate (SO_3)	-	250
25	Residual Chlorine	0.2-0.5	-
26	Zinc (Zn)	5.0	3.0
27	Color	≤ 15 TCU	≤ 15 TCU

Sr. No.	Parameters	Standard values for Punjab (mg/l)	WHO (mg/l)
28	Taste	Non-Objectionable/ Acceptable	Non-Objectionable/ Acceptable
29	Odor	Non-Objectionable/ Acceptable	Non-Objectionable/ Acceptable
30	Turbidity	<5 NTU	5 NTU
31	Total hardness	<500 mg/l	-
32	TDS	<1000	<1000
33	pH	6.5-8.5	6.5-8.5

2.6 OCCUPATIONAL HEALTH

Construction and operational activities could affect the occupational health of the workers. Quantitative national standards with respect to the above aspect are yet to be developed in Pakistan. However, guidance in qualitative terms can be obtained from the Pakistan Factories Rules, 1962 (based on the Factories Act, 1934) and the Labor Laws (Amended) Ordinance, 1972 and ILO guidelines.

2.7 TOXIC AND HAZARDOUS WASTE

Section 14 of the PEPA Act, 1997 (amended 2012), prohibits the handling trade, collection and storage of hazardous substances. Hazardous substances rules have been formulated in this regard but they are still on the status of draft and available on the web site of EPD and Pak EPA. Protection of the environment with regards to toxic and hazardous waste is also covered by the Pakistan Penal Code (PPC), 1860. Environment Protection Department (EPD), Punjab, is mandated to monitor the transportation of hazardous materials within the provincial limits.

2.8 PRESERVATION OF CULTURAL HERITAGE

The Antiquities Act, 1975, administered by the Provincial Government, is aimed at safeguarding the preservation of cultural heritage, destruction, damage or defacement of antiquities is an offence under the Act.

2.9 ADMINISTRATIVE FRAMEWORK

2.9.1 M/S Alfalah Paper & Board Mils

The implementing agency of the proposed Project is Alfalah Paper & Board Mils who will execute the proposed Project at 22 Km Lahore-Sheikhupura Road,1.5 Km towards Pindi Das Road, Qila Sattar Shah, Tehsil Feroze Wala, District Sheikhupura. The management of Paper mill will ensure that all the proposed measures are effectively implemented at the construction and operational stages and dually report to EPA on the frequency prescribed by EPA during construction phase. The management will also be responsible for implementation of terms and conditions of the environmental approval and get approval for operational stage.

2.9.2 Environmental Protection Agency, Punjab

Pakistan Environmental Protection Council is the apex inter-ministerial and multi-stakeholders decision-making body, which is headed by Prime Minister. While Pakistan Environmental Protection Agency is meant for the enforcement of environmental laws in Pakistan, they have delegated powers to provincial environmental protection agencies for review, approval and monitoring of environmental examination/assessment projects. After 18th Amendment EPD has all powers to enforcement of PEPA 1997 (amended 2012). As regards the proposed Project, EPA Punjab will be responsible for reviewing the report, issuing No Objection Certificate (NOC) and overall/broad based monitoring of the proposed Project activities. Hazardous Substances Rules, 2003.

These guidelines are developed to cope with the storage and disposal of hazardous substances. The proponent shall ensure to carry out EIA and list all the substances

defined by the rules in the proper place. The basic instruction should be mentioned on the substances. The relevant portion of these guidelines will be followed.

2.9.2.1 Punjab Hospital Waste Management Rule, 2014

According to this rule all hospitals, clinics, laboratories, dispensaries, pharmacies, nursing homes, blood banks, autopsy centers, mortuaries, medical research institutes, and veterinary institutions are to strictly follow Punjab hospital waste management rules of 2014 for the environmentally-safe disposal of infectious and hazardous waste. Pakistan Environmental Protection Act, 1997 and Hospital Waste Management Rules, 2014, strictly prohibit unsafe disposal of all types of risk/hazardous waste in hospital. It binds the hospital for formation of hospital management committee and designates the responsible persons for each duty for collection storage and disposal of the risk waste. The safe storage and incineration of the risk waste is mandatory under these rules.

The salient features of the Punjab Hospital Waste Management Rule, 2014 are given below:

a) Waste Segregation

Risk waste (yellow bags) shall be separated from non-risk (white bags) waste.

The disposal of medical waste including infusion bags, the risk waste e.g., chemical waste shall be placed in a suitable yellow colored container made of metal and labeled with sign “Danger! Contaminated Sharps.

The yellow waste bags shall be labeled with time, date, point of production and description of waste and these bags shall be removed when 3rd quarter of these are filled.

b) Waste Storage

All risk waste should be collected in a separate, totally enclosed and secure central storage located close to the incinerator and large enough to contain all risk waste produced by the hospital which should be easy to clean and disinfect and most importantly easily accessible for the collection vehicles and concerned staff.

c) Waste Disposal

Waste shall be inactivated or rendered safe before their final disposal by suitable thermal, chemical incineration or other treatment methods depending on its nature/type of the waste material.

Effluents shall be tested to ensure that it confirms the Environmental quality standards before its final disposal. The method of disposal shall be operated by hospital after its EIA approval. Risk waste shall be incinerated within 24 hours of its delivery to incinerator. The landfill shall be located with minimal risk of pollution of groundwater and rivers. The landfill should be regular monitored by the local council and daily collection of risk waste shall be taken by the vehicles of the local council.

d) Committee

Provincial Committee

The provincial committee comprising of;

- Secretory Environment
- Chairperson

Members of the committee includes:

Secretory health department, Nominee of the local Govt. Dept., Representative of Medical association, Representative of medical university in the Province, Representative of private hospital association and DG, Environment protection agency.

The committee shall monitor the periodically review of implementation of the rules and recommended adaptation of such policy measures, plans and projects as it may necessary for the effective management of hospital waste in the province.

Divisional Committee

- Divisional commissioner
- Chairperson

Members of the committee are;

EDOs Health, Representative of PMA, Medical superintendent of district headquarter hospital, Representative of Private Hospital Association, Representative of two NGOs working in health sector and District Officer Environment.

The divisional Hospital Waste supervisory committee shall monitor the periodically review of implementation of the rules and recommended adaptation of such policy measures, plans and projects in all districts of division as it may necessary for the effective management of hospital waste in the division.

District Committee

District Coordination Officer of the concerned district Chairperson

Members of the committee include;

MPA of constituency concerned, Executive district officer (health), MS concerned chief executive, owner, contractor of the hospital under review, District officer (Livestock), Representative of private hospital association of district concerned, District officer Environment of the district concerned.

The District Hospital Waste supervisory committee shall monitor the periodically review of implementation of the rules and recommended adaptation of such policy measures, plans and projects in concerned district as it may necessary for the effective management of hospital waste in the district.

2.10 ENVIRONMENTAL GUIDELINES

Three sets of guidelines, the Pak-EPA's Environmental Guidelines, the World Bank Environmental Guidelines, and ADB Environmental Guidelines are reviewed here.

2.10.1 Environmental Protection Agency's Environmental Guidelines

The Federal EPA has prepared a set of guidelines for conducting environmental assessments. The guidelines derive from much of the existing work done by international donor agencies and NGOs. The package of regulations, of which the guidelines form a part, includes the PEPA 1997 (amended 2012) and the NEQS. The guidelines themselves are listed below.

- Guidelines for the Preparation and Review of Environmental Reports,

- Guidelines for Public Consultation,
- Guidelines for Sensitive and Critical Areas,
- Sectorial Guidelines

It is stated in the Punjab Environmental Protection (Review of IEE and EIA) Regulations, 2022 that the EIA or IEE must be prepared to the extent practicable, in accordance with the Pakistan Environmental Protection Agency Environmental Guidelines.

Chapter 3

Description of the Project

3.1 Objectives of the Project

The Project is a paper production facility (700 Tons of paper / month capacity) which will use waste paper and board as raw material and produce good quality paper and board. The proposed process would be free of chemical pulping which is a most critical part of traditional paper pulping from environmental viewpoint. Waste paper and board will be purchased from the market which will have no wood digestion making the project environment friendly. It will also be sustainable because it will not use the wood from Pakistan and hence protecting the local fragile forest cover which is estimated to be 2.47 percent.

3.2 Location and site layout of the Project

The project is situated in Alfalah Paper and Board Mills (AL&BM) located at 22 Km Lahore-Sheikhupura Road,1.5 Km towards Pindi Das Road, Qila Sattar Shah, Tehsil Feroze Wala, District Sheikhupura.

Land use on site

There is no land use change on the proposed project site, the land is already under the possession of the Ideal chemicals Limited, which is industrial use. Hence there will be no significant impact on the land.

Fig NO 3.2: Land use on the Site

Road access

Lahore-Sheikhupura Road,1.5 Km towards Pindi Das Road is the road passing adjacent to the proposed site which is access road to the proposed site also.

Fig No 3.3: Pindi Das Road passing in front of the proposed project

Vegetation features of the site

The project site is industrial unit so there is no vegetation present at the proposed project site. The wild grass or ephemerals have no economic value present at site due its vacant ness.

Cost and magnitude of operation

Cost of the proposed project is Rs. 120 million PKR. This is big investment being made in the area.

The Project is a production facility (700 Tons of paper / month capacity) which will use waste paper and board as raw material and produce high quality duplex board used for packing.

Schedule of implementation

The schedule of proposed project is given as under:

The planning and designing of the project have been completed. The financial fusibility is under way. The project will commence as soon as the Environmental Approval will granted. The completion and commissioning period will be one year.

The paper will be soaked and mixed to produce white pulp and then produce the paper

sheets of different sizes for marketing. The process is chemical free. The composition of paper will be as follow:

3.3 Description of the project

The Technology, raw materials and products

Project is a production facility (700 Ton of paper / month capacity) which will use waste paper and board as raw material and produce good quality paper and board. The proposed process would be free of chemical pulping which is a most critical part of traditional paper pulping from environmental viewpoint. It is basically paper machine which uses mixing, blending, wire part, drying, calendaring, cutting and packing.

Process flow chart

The waste paper will be soaked and mixed to produce white pulp and then produce the paper sheets of different sizes for marketing. The process is chemical free. The processes involved the following processes:

A. Blending

Different types of paper and pulps, and additives are blended through Dosing Control System (DCS) as per defined ratio of the product.

Blending mixture mainly determines the Caliper, internal Bond Strength, Tensile Strength, Folding Strength and Stiffness of the Paper.

B. Machine Process

a. Approach Flow

Blended thick fibrous stock is passed through various cleaning systems like, High Density Cleaners, Pressure Screens and Low-Density Cleaners in order to remove heavy, light weight sand particles and other scaling contaminants before paper sheet making

b. Wire Part

This is comprised of a moving Synthetic Forming Fabric upon which diluted fibrous mixture is thrown with a jet. Basically, sheet is initially formed here with a simultaneous mechanical activity of shaking and dewatering in wet condition through vacuum tubes.

c. Press Part

After sheet making at wire, the main activity required to make paper sheet is water removal. Initially water is removed by squeezing in press part at three different Nip stages. After sheet pressing, reasonable dry contents are achieved for onward sheet conveying,

d. Dryer Part

Rest of the water is removed in dryer part through evaporation process Steam is used in rotary dryers as heating media. Here, Sheet is dried through direct heat contact with dryer surface in order to achieve the final moisture 6.0% of the product.

e. Calendaring

Calendaring to improve paper smoothness & gloss.

Monitoring and Control System

a) On-Line QCS Control

Grammage, Caliper, Moisture & Gloss are controlled by QCS system.

b) Web Inspection System

On-Line Identification of Product defects.

c) QAS

Incoming material and in-process variables monitoring & conformance. Finished Product compliance against Customer requirements & Specification before final dispatch.

The major parts include:

- Hydro-pulper
- Refiner
- Turbo charger
- Head box
- wire forming
- High density cleaner
- Inclined screen
- press section
- drying section,
- gas hood section
- sizing machine
- Calendaring machine

- mechanical drive section
- compressed air system
- lubrication system
- hydraulic pressure system
- basic section
- reeling machine

The schematic lay out of the Paper machine is shown below.

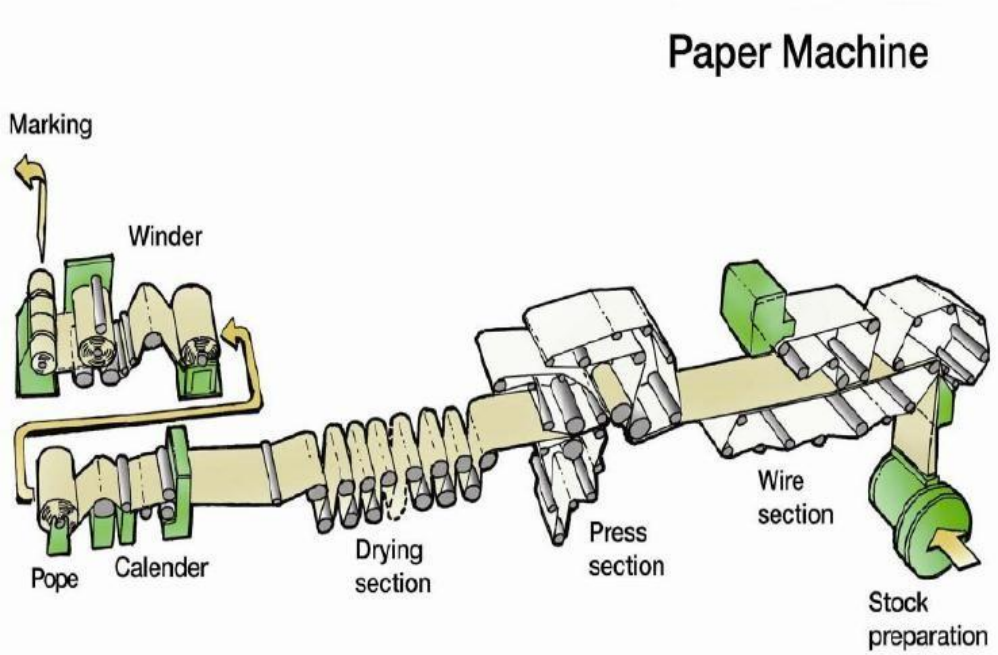

Fig No 3.1: The schematic layout of the paper machine

Restoration and Rehabilitation plans

The present project does not include the new land acquisition therefore no rehabilitation is involved in this case. The vacant land will be converted into the paper and board manufacturing unit which will not be restored in its original shape. However, design of the building will be according to the local features of the area and maximum plants and trees will be planted after completion of the project so that rural and agriculture look may be attained to some extent.

3.4 Govt. approvals

The following approvals are required for this project:

1. Environmental Protection Agency Punjab under section PEPA 1997

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Chapter- 4

DESCRIPTION OF BASELINE ENVIRONMENT

4.1 DESCRIPTION OF BASELINE ENVIRONMENT

This chapter gives an overview of the prevailing environmental and social baseline conditions of District Sheikhupura. The information has been compiled from primary and secondary resources. This chapter also refers to the theoretical analysis of the methodology adopted for collection of baseline data. The underlying principles and practices adopted in this regard are also discussed.

4.2 APPROACH AND METHODOLOGY

Review of Previous Studies

Prior to the detailed site investigations, it was important to overview the relevant previous studies. The previous reports/studies that have been reviewed to ascertain their applicability in the prevailing conditions of Project area are:

- District Census Report of Lahore Division.
- EIA study of Ideal Chemicals Limited.

Acquisition of Secondary Data

The secondary data was collected by visiting various offices. These included Environmental Protection Agency and offices of District/Tehsil Administration, Meteorology, Forest, Agriculture, Wildlife, Revenue, Industries, Health Department and Education Departments of Project area.

Collection of Primary Data

The primary data was collected and assessed within the Project area of Impact; which lies within 500 meters boundary of the proposed Alfalah Paper Mills Project. The data regarding physical, parameters (topography, geology, seismology, and climate) was obtained by visiting relevant offices.

The biological (flora, fauna) parameters were also studied in the Project area. The vegetation of Project area is scarce so it was studied by preparing a floristic list based on visual observation.

Information on wildlife fauna species (mammals, amphibians, reptiles, birds etc.) in the assessment area was compiled based on opportunistic observation, gathering the existing information and consultation with local experts, community members and government and non-government organizations.

The socio-economic aspects were studied and analyzed by conducting area profile and household surveys.

Sampling Design

Social baseline data of the persons residing in the district Sheikhupura (study area) has been estimated and collected through sampling at confidence level of 95% and margin of error 5% in the form of pre-developed questionnaires.

Social Surveys

The purpose of social survey was to record the present conditions of the people living in the Project area and to assess the expected Project impacts on their life, subsistence systems and socio-cultural conditions. Prior to conducting the field surveys, the following steps were taken:

- Geographic boundaries of the Project area were identified
- Decided the sampling procedure in order to draw a representative sample size of the target population and households
- Developed the tools for data collection i.e., questionnaires for household survey and village profile survey.

Questionnaires

In order to test the validity and reliability of the proposed questionnaires, interviewing guides were pre-tested in the area and then the questionnaires were reviewed to assess whether questions needed to be clarified, changed or re-sequenced and then a final editing of questionnaires was conducted prior to their subsequent application in the Project area.

Field Enumerators

Field enumerators were given one day job orientation and training on the objectives of the study and operational definitions of the questions/statements which are included in the questionnaires as well as role playing exercises to enhance their interviewing skills in the field.

The role-playing exercises provided the field investigators with the ability and confidence to establish a rapport with the respondents in order to minimize the non-sampling error and wrongly asked or recorded questions.

Quality Control and Data Editing

The filled-in questionnaires and recorded information was edited by the same field investigators who were involved in the data collection. This was done immediately after completing the field investigations.

Data Analysis

Data sets were processed after the editing of socio-economic information. Analysis of this diversified data and preparation of conclusions in the minimum possible time was done using statistical techniques of data analysis.

4.1 Physical Resources

Agro-ecological Zones

Following map of Pakistan describes the agro-ecological zones of Pakistan. The country is divided into eight agro-ecological zones. The province of Punjab is distinctly divided in four zones having hilly tract, agricultural tract, and desert and scrub zone. Although all the zones are productive but the central agriculture area is the most productive where irrigated agriculture is the mainly practiced.

The study area is located in alluvial zone dominated by agriculture tract irrigated through River Ravi and Chenab.

Surface Water Recourses in study area

The detail of surface water sources in district and its distance from the main city is described in the following section.

Apart from River Ravi entering into Sheikhupura, main canals, branch canals and their relatively big distributaries are main sources of fresh water

Fig No.4.1: Upper Chenab canal (UCC)

Table 4.1: Main branch canals flowing through the area

Sr.#	Name of Main Canal	Name of Branch Canal
	Upper Chenab Canal (UCC)	• Marala-Ravi Link Canal • Qadirabad-Balloki (QB) Link Canal

The major surface water resources in the province are rivers, canals drawn from the rivers and some wetlands. The major rivers are Ravi and its tributaries. However, to meet irrigation needs of the command areas of the eastern rivers, waters from the western rivers have been diverted into the eastern rivers through the link canals. The link canals are conduits for water transfer only and are not used for irrigation. However, they help in ground water recharge.

Deg Nullah, Bhed Nullah and Bharian wala drain are other surface water bodies which

carries all the municipal and industrial waste of Sheikhupura as well as all industries located on Sheikhupura Road and G.T Road. Their water quality is not so good. Treated waste water will be disposed in Deg Nullah. Deg Nullah passes near the Alfalah Paper & Boards Mills which collects the effluent of all the industries in the area.

Fig No.4.2: View of Deg Nullah passing by AP&BM

Ground Water

Major part of the groundwater abstraction for irrigation is within the canal commands or in the flood plains of the rivers. However, the amount of abstraction varies throughout the area, reflecting inadequacy/unreliability of surface water supplies and groundwater quality distribution. The quality of groundwater ranges from fresh (salinity less than 1000 mg/l TDS) near the major rivers to highly saline farther away, with salinity more than 3000 mg/l TDS. Availability and quality of groundwater, the depth of water table, and the aquifer recharge rates considerably differ from area to area depending on precipitation, proximity to surface water, channels, and other meteorological factors.

The alluvial deposits consist principally of fine and medium-grained sands and silts, although there are discontinuous lenses of silt and clay. Their depth ranges from 450 meter in upper Punjab to about 60 meter in lower Sindh, where it is layered with silty and heavy deltaic sediment. In total, about 80% of the area in Punjab and 28% of the area in Sindh has fresh groundwater which is suitable for irrigation. However, the residual sodium carbonate (RSC) which results from use of groundwater is often hi h. Exclusive reliance

on groundwater can lead to a build-up of salts, resulting in binding of the soil structure, reduced water infiltration into the root zone, and falling yields. The groundwater is mixed with canal water for irrigation use.

The project area is underlain by unconsolidated alluvial deposits laid by river Ravi and its tributaries. Fine to medium sands from aquifer material and fine sediments (clay, silt) occur as discontinuous layers/lenses. The aquifer is fairly thick and may be considered continuous on regional basis. Groundwater table generally occurs at the site from 4 to 6 meter below the existing surface.

Keeping in view the general hydro-geological set up of the regional aquifer, it is estimated that existing water source is sufficient to meet small water requirements of proposed plant.

The project site has good water quality and enough water reserves for the project

The all parameters analyzed for drinking water are well within PEQS and WHO limits for drinking water quality. Water Samples for drinking water were taken from the area around the proposed project. The drinking water quality results are attached at **Annex-I.**

Table No. 4.4: Water Quality Analysis

Sr. No.	Parameters	Unit	WHO	PEQS	Results
1.	pH	-	-	6.5 - 8.5	7.472
2.	Electrical Conductivity	µS/cm	-	-	833
3.	Total Dissolved Solids	mg/l	1000	<1000	560
4.	Turbidity	NTU	5	5	0.30
5.	Taste	-	-	Non-Objectionable	Non- Objectionable
6.	Odor	-	-	Non-Objectionable	Non- Objectionable
7.	Total Hardness	-	-	<500	170
8.	Chloride(Cl^{-1})	mg/l	250	<250	45
9.	Sodium(Na)	mg/l	200	-	120.42

Fig No. 4.4: Ground water sampling

Soil Morphology

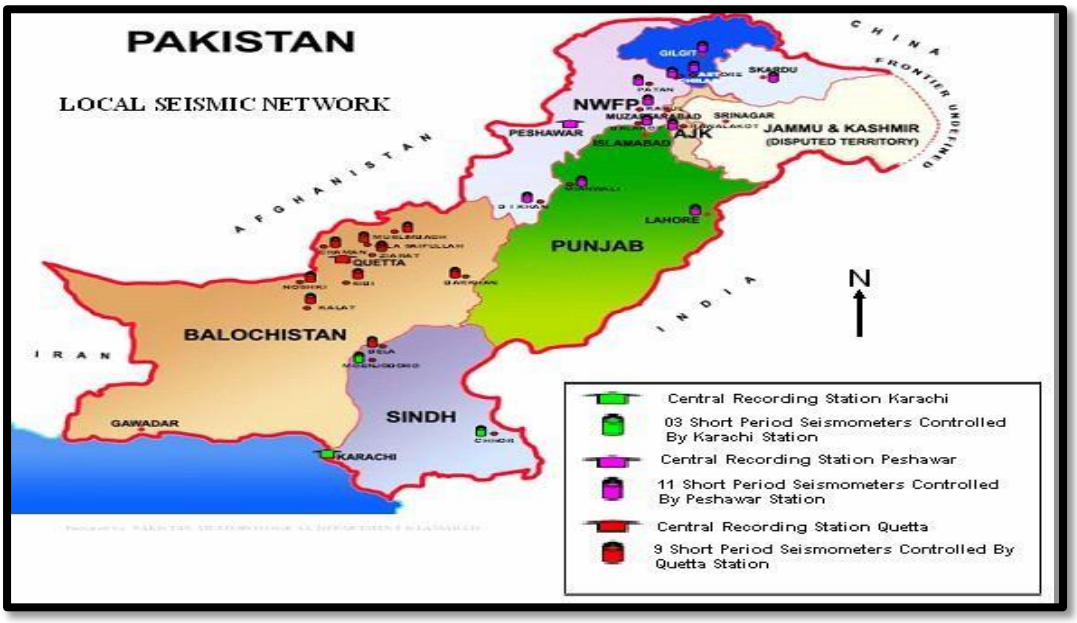
The soils of the project area are typical of the soils of the Punjab. The soils of the Punjab are composed of alluvial material which was carried from the Himalayan ranges by tributaries of the vast Indus River system. Frequent changes in the rate of flow of the streams, recurrent floods, and ponding of the sediment-laden waters have created a varied and mixed soil pattern throughout the area. Although the magnitude of reworking of the alluvium by wind action cannot be ascertained everywhere, it is generally believed that the soils in much of the area have been modified by deflation and re-deposition. The soils of the Punjab are of recent origin and nearly everywhere a zonal. Generally, the soils cannot be classified by genetic characteristics, and therefore they have been grouped into five basic series according to subsoil texture. In many respects the soils show a high degree of similarity throughout the area. They are reddish-brown to grayish-brown, mostly moderately coarse and medium-textured soils, containing high percentages of fine to very fine sand and silt. The clay part consists largely of non-swelling minerals, which may account for the generally favorable permeability characteristics of the soils. Most soils in the Punjab are moderately to highly permeable; only a small percentage displays low coefficients of permeability. The lime content of the soils is high, which is normal for areas of low rainfall. The soils of the area, in general, are intrinsically fertile and have high potential productivity. The geotechnical presence of the three distinct litho logical units is revealed in this area. First one is Lean Clay (LC) present in a firm to stiff state up to a

depth of 3.0 to 4.0 m below NSL. Second is silty fine Sand (SM) and poorly graded Sand with Silt (SP-SM) present in medium dense to very dense state following the top layer and extending up to maximum investigation depth of 30 m. Third layer is Lean Clay/Sandy Lean Clay (LC) of thickness ranging from 1.0 to 9.0 m is present at depths ranges from 14.0 to 23.0 m. The groundwater table was observed at a depth of 5 to 8 m below top of ground.

Seismology

Earthquakes are generated due to tectonic processes in the upper part of the earth called lithosphere, which is divided into several rigid parts called “Plates”. Due to the movement of these plates, stress build up takes place and results in the deformation of the crustal mass in the form of folding and faulting. The energy produced due to movement along the faults is depicted in the form of earthquakes.

The Project site is located north of the collision zone between the Indian and Eurasian plates. This contact represented by the Himalayas has always been generating moderate to large earthquakes including Kashmir (2005), Kangra (1905), Nepal-Behar (1934) and Assam (1897 and 1950) that caused huge damage to life and property. Any major to large earthquake along Himalayan frontal faults can cause appreciable ground motion at site. The Punjab Plain, in which the Project is located, also shows low to moderate level of seismicity which is associated with the faulting in the Basement rocks covered by the alluvial deposits. A concentration of earthquakes has been observed west of the site between Shahkot and Sargodha which could be associated with faults in the Basement High. A minor to moderate earthquake originated from the Basement rocks in Punjab Plain could also produce appreciable ground shaking due to thick alluvial deposits. The project site lies in Zone IV where ground acceleration of g/20 or less is expected.



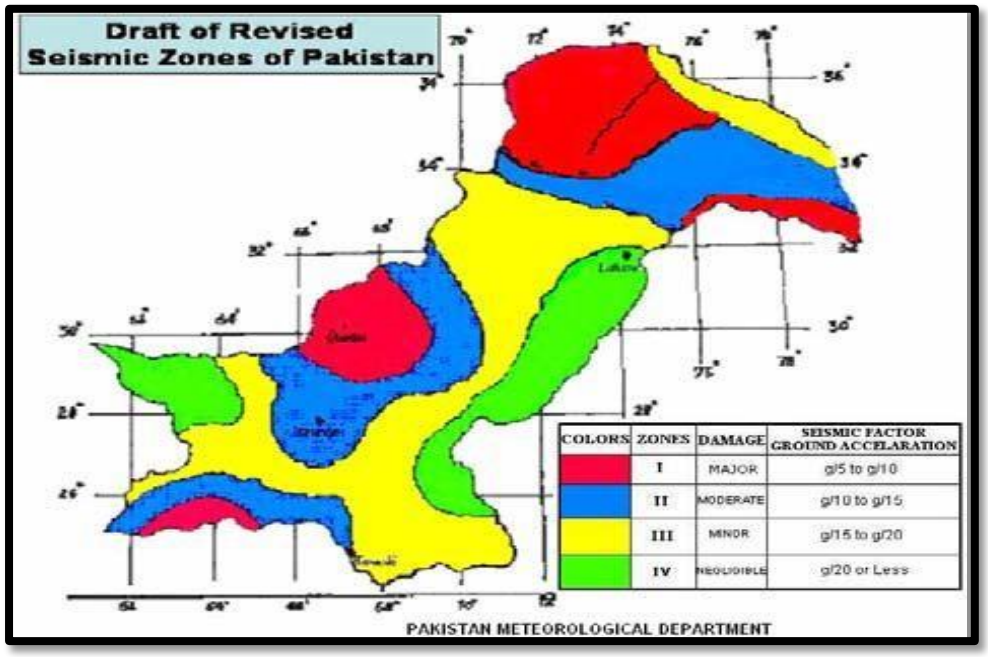


Fig 4.5: Revised seismic Zones of Pakistan

According to Seismic Zoning Map of Pakistan included in the Pakistan Building Code Seismic Provisions (2007), the project site falls in Zone 2A, therefore project structures should be designed in accordance with the requirement of seismic designing Zone 2A after giving due consideration to the foundation material about g/20 or less.

Climate and Meteorology

Sheikhupura has extremes of climate. The summer season is very hot. June is the hottest month. The winter season is mild January is the coldest month. The summer rain (monsoon) falls from June to September. The winter rain falls during January, February and March. Eighty percent of the yearly rainfall falls during monsoon period. The nearest Met station is at Lahore.

Lahore features a five season semi-arid climate with five seasons:

- Foggy winter (15 Nov – 15 Feb) with few western disturbances causing rain;
- Pleasant spring (16 Fe– 15 April);
- Summer (15 April – June) with dust, rain storms and heat wave periods;
- Rainy monsoon (July – 16 September); and
- Dry autumn (16 September –14 November).

The hottest month is June, where average highs routinely exceed 40 °C. The wettest month is July, with heavy rainfalls and evening thunderstorms with the possibility of cloudbursts. The coolest month is January with dense fog and average low temperature is about 6o C. Annual average rainfall of Lahore is 629 millimeters.

The Project Area has extreme climate: it has hot summer and cold winters. The summer starts from April and lasts till September. May, June, and July are the hottest months. The mean maximum and minimum temperature ranges from 40.4 °C and 27.3 °C respectively for these months. The winter seasons last from November to March. December, January and February are the coldest months. The mean maximum and mean minimum temperature ranges from 21.1°C to 7.2 °C in January. Few days earlier, temperature went down to -2.2 °C, ever minimum recorded in the history. Temperatures in the Project Area vary from -2.2 °C to 40.4 °C. The Project Area receives rains in all the seasons but monsoon rain is pronounced and constitutes a definite rainy season between the month of July and September. The average rainfall is about 629 millimeters per year. **Table-4.2** summarizes month-wise temperature, precipitation, and relative humidity. Based on climatic elements, five seasons are recognized in the Project Area;

Table No 4.2: Climate and Meteorology

Month	Mean Temperature		Precipitation (mm)	Relative Humidity At 05:00 (HRS (%)	Relative Humidity At 20:00 HRS (%)
	Maximum	Minimum			
January	19.8	5.9	28.92	80.4	51.9
February	22.0	8.9	37.14	79.0	52.4
March	27.1	14.0	34.3	68.6	42.2
April	33.9	19.6	44.32	50.2	25.3
May	38.6	23.7	24.38	45.7	27.2
June	40.4	27.3	91.62	59.1	40.9
July	36.1	26.8	150.52	76.7	60
August	35.0	26.4	161.42	78.8	65.9
September	35.0	24.4	67.28	74.4	56.4
October	32.9	18.2	11.74	70.6	44.2
November	27.4	11.6	4.44	77.1	48.8
December	21.6	6.8	9.94	82.9	53.73
Annual	**30.8**	**17.8**	**666**	**70.34**	**47.4**

Rainfall

Towards end of June monsoon condition appears and during the following 2 and half months spell of season alternates with intervals of sultry weather. The winter rain falls during January, February and March ranging from 23 to 31 millimeters. Month wise mean precipitation recorded is given in Table- 4.3.

Humidity

The Relative humidity in project area varies from 17 to 70% and humidity in the area increases from July to September and goes to its highest in the range of 60 - 70 %, while in the rest of year it is in range of 30 - 40 %.

Table No 4.3: Rainfall data of the area

Month	Precipitation (Millimeters)
January	23
February	28.5
March	41.2
April	19.7
May	22.4
June	36.3
July	202.1
August	163.9
September	61.1
October	12.4
November	4.2
December	13.9
Annual	628.7

Source: **Metrological Department, Jail Road Lahore**

Noise and Air Analysis

The air quality of the project area is influenced by the industrial activity of large manufacturing units and Line source of M2 where thousands of motor vehicles pass daily. Yet the air quality of the area is well within the PEQS limits. Noise from vehicles and other powered mechanical equipment is intermittent. There are no significant disturbances to the quiet rural setting. However, the construction from the proposed project will use

powered mechanical equipment.

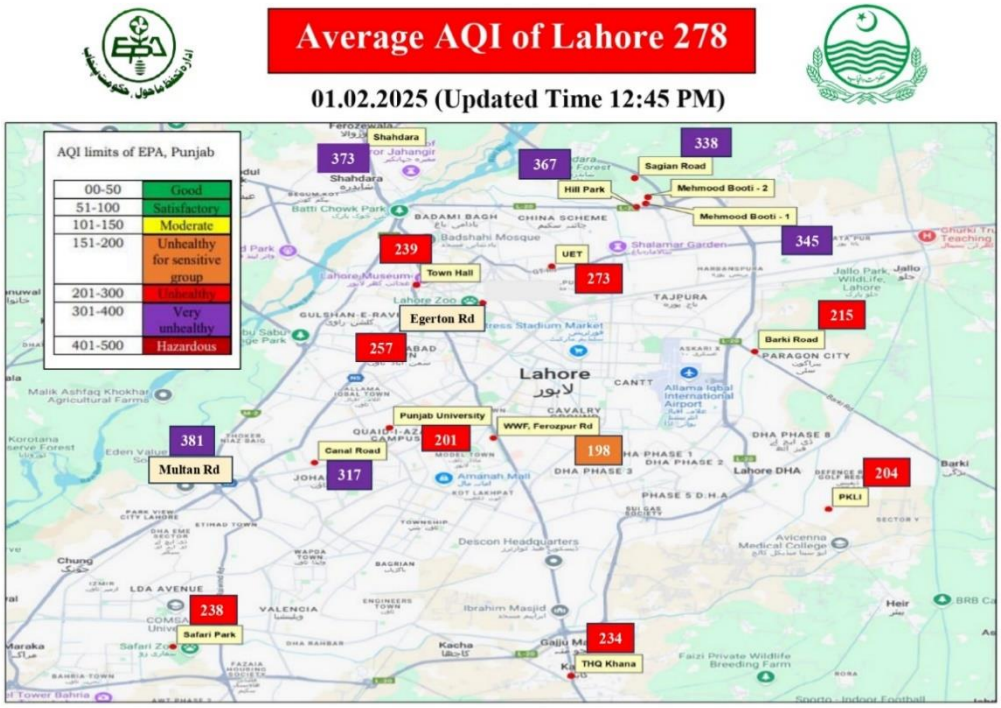
Pak Green Environmental Lab team has carried out noise level measurements at various locations within the premises. They analyzed Log equivalent values at site which were much below the PEQS limit prescribed by the EPA. Typical values were: average 63.6 dB A; high 67.0 dB A; and low 59.5 dB A. The noise level monitoring results are attached at **Annex-II.**

Air analysis

- The air quality at project site is good in spite of some small sources of air pollution in the area like acid plant and textile mills. The conventional parameters of air quality indicators were measured and found well within Punjab Environmental Quality standards for ambient air. This is due to hot and semiarid climatic conditions of the area which make the atmosphere highly favorable for dispersion of air pollutants emitted from M2 and other sources in the area.

Fig No. 4.6: Some industrial establishments in the area

There is traffic on M2 segment of highway having negligible impact on the air quality of the site due to dispersion effect. The nearest air quality monitoring station is near Nawaz Sharif Hospital, GT Road, Shahdara. Its air quality Index was recorded on Ist February, 2025 is 373 which is very unhealthy. The air quality Index of 15 sites across Lahore as recorded by EP & CCD monitoring stations is given below:



Note: Parameter used to Calculate AQI = ***Particulate Matter (PM2.5)***-PEQs value of PM2.5= **35 µg/m³**
All hourly values of AQI in Lahore are monitored by EPA Punjab- Air Quality Monitoring Stations

Biological Environment

Flora

In Sheikhupura the flora is similar to rest of the irrigated tracts at central Punjab. In general, the vegetation found in this part of the arid region is sparse. Only plants with xerophytes adaptations such as deep roots, rod like thick or fleshy stems, leaves either absent or reduced are able to survive in this extremely dry climate. Distinctly scattered trees of stunted growth are found along the depressions technically known as desert scrub.

Table No 4.5: Vegetation of Irrigated Zone

Sr. No.	Botanical Name	English Name	Local Name
1.	*Acacia nilotica*	Gum acacia	Baber
2.	*Albiaaiz procera*	Indian walnut	Achosirhan
3.	*Azadirachta indica*	Ash-leaved bead tree	Nim
4.	*Cassia fistula*	Pudding pipe tree	Amaltas
5.	*Conocarpus lancefoleus*	Ethiopian teak	Kono
6.	*Dalbergia sisso*	Shisham	Talee
7.	*Eucalyptus camaldulensis*	Red-gum	Sufada
8.	*Ficus bengalensis*	Ficus	Bur
9.	*Pithecellobium dulce*	Jangle pithecolobium	Jungle Jalebee
10.	*Salmalia malabarica*	Silk cotton tree	Simal
11.	*Sesbania aegyptica*	Egyptian sesbania	Manjathri
12.	*Terminalia arjuna*	Terminalia	Aarjan
13.	*Thespesia populnea*	Tulip tree	Pyrus peepal

Source: Punjab Forest Department (2010)

Fauna

The unblemished geographical feature of vast arid land; provides an ideal opportunity for variety of wildlife. Other animals found are pig, wolf, jackal, fox, squirrel, rats.

Important Fauna at Study Area

The area is very important of resident and migratory bird species. More than 100 species of have been recorded from the area. Table.4.6. lists the important birds of the study area:

Table No. 4.6: Important Birds of study area

Sr. No.	English Name	Scientific Name	Local Name
1.	Great Bustard	*Ardeotis nigricps*	Barri Tiloor, Hukria
2.	Houbara/Macqueen's Bustard	*Chlamydotis macqueeni*	Tiloor, Houbaia
3.	Common/ Blue Peafowl	*Paro cristatus*	Neela More, Mor
4.	Black Francolin/ Partridge	*Francolinus*	Kala Titer, Karo Titar

5.	Grey Francolin/ Partridge	*Francolinus pondicerianus*	Bhura Titer, Achho Tittar
6.	Yellow Legged Green Pigeon	*Treron phocnicoptera*	Harrial Kabutar
7.	Red Turtle Dove	*Streptopclia Tranquebarica*	Surkh Fakhta
8.	Dalmatian Pelican	*Pelecanus crispus*	Hawasal, pain Pakhhi
9.	Lesser Flamingo	*Phoenicopterus minor*	Lum Dheeng/Laakho Jani
10	Oriental Darter/Anhinga/Snake bird	*Anhinga melanogaster*	Jall Kawwa
1.1	White Stork	*Ciconia*	Safaid Laqlaq/Achhhi Toor
12.	Greater Painted Snipe	*Rostratula benghalensis*	Rangeen Isnif
13.	Sociable Lapwing	*Vanellus gregarius*	Tattihri, Sehkari teeto
14.	Pheasant tailed Jacana	*Hydrophasianus*	Peehoo, Peehoorri

Source: Punjab Wildlife Department (2010).

Fig No 4.7: Important Birds in this area

Agricultural Habitats

Most parts of the study area are under very intensive irrigated cultivation. In addition, livestock rearing is also practiced extensively, and milk animals are common. The use of the chemical fertilizers and pesticides is very common. Several species of wildlife have adapted to the changed habitat. These include: Jackal; Jungle Cat, Bengal Fox, Small Indian Mongoose, Shrew, Rodent pests including Porcupine, Fruit Bats and Wild Boar. The avifauna which survived the modified habitat include Doves, Black Partridge, Cuckoos, Koel, Woodpeckers, Parakeets, Bulbuls, Babblers, Black Drongo, Bee-eaters, Finches and House Sparrow. The reptilian species of this modified habitat include Krait, Cobra, Saw-scaled Viper, Rat Snake and Monitor Lizard. In these modified habitats, the winter bird species from Himalayas have reduced due to the extensive use of pesticides in these areas, since these species feed on the insects. These birds play an important role in controlling insects particularly in the forests. Almost all of the project interventions will be undertaken in this habitat type. (Agriculture Department Government of Punjab (2011) (Environmental and Social Assessment Report of Punjab Irrigated-Agriculture Productivity Improvement Project.)

During both the seasons i.e. kharif and winter variety of crops are grown in the study area. The crops grown are wheat, cotton, maize, rice, sugarcane, sorghum, sunflower, rapeseed, ground nut, guwar, variety of vegetables and other food, fodder, oilseed, and other crops.

Among fruit crops the pre-dominant species are mango, variety of citrus and several other fruits.

Rain fed agriculture is also practiced in the arid areas of district Sheikhupura where the areas are arid directly to indirectly influence by the Thal desert. Dry crops and grasses are grown naturally or by artificial reseeding of grasses by the people during the rainfall during summer season.

Forests and Vegetation

The forest resources of the study area included riverine bela forests, irrigated plantations, linear plantations and range lands. The Riverine forests are located along the rivers within the embankments and are managed by the Punjab Forest Department. Irrigated plantations are located within the irrigated zone and get water from irrigation network. Linear plantations are the trees planted along the irrigation network, roads, railway strips and rangelands are located in the rain-fed areas of the study area. On farmlands lot of trees of different varieties were found grown in the study area tehsils of district Kasur. Mango and Citrus gardens on the farmlands were very common in almost all tehsils of Kasur district but except in the pockets where the quality of lands was either waterlogged or soils were saline.

Major trees grown in all types of forest resources are Shisham, Eucalyptus, Simal, Babul and other species.

The types of forests are as under:

- Tropical Thorn Forests Indus Floodplains
- Tropical Thorn Forests (Sandy) Thal (District Kasur) and hilly tract of D.G. Khan.
- Irrigated Forest Plantations on farmlands and Tropical Thorn Forests
- Rivers, Wetlands, and Waterlogged Areas throughout the study area
- Farmlands/Agricultural Areas Throughout the study area
- Molanwal Guzara Forest is about 25 Km away from the site.

Livestock

After agriculture the second important source of economy is the livestock. Almost all households are involved in livestock rearing on their agriculture farms and in houses. The

main species of livestock are Buffalo, Cow, Bullock, Goat, Sheep, Camel, donkey and other animals. Poultry farming is another source of earning of the people of the study area. People use this resource for variety of uses such as milk, meat, hides, cultivation, draught, and several other uses.

Fig No 4.9: Livestock in this area

Wildlife

The existing natural habitat of the province is largely modified habitat owing to human interventions. Construction of an extensive irrigation network during early 20th century paved the way for transformation of the tropical thorn forest into agricultural lands. This has led to changed landscape and loss of wildlife. Nine habitat types have been identified in the province, of which, deserts, sub-tropical deciduous and wetlands are of concern with regard to threat to wildlife. The major habitats along with their geographical areas have been discussed in this report.

The areas located in the Sheikhupura districts are semi -arid areas. Agricultural and irrigated is the main habitat type in the area which is an important hotspot where the natural, bio- physical and social environment and natural resources are different from the irrigated areas of the package area and rest of the irrigated areas. The wild life has been restricted in fields like sugarcane and riverine banks of river and canals. Some of the wild life jackal, fox, carpenpine, hedgehog, snakes, lizards, mangoos, squirrel.

Environmental/Biological Hotspots

The environmental hotspots in the study area are essentially the wildlife protected sites, flora, fauna vegetation, rangelands and others. They are considered as biodiversity hotspots due to the availability of diverse habitats and relatively low anthropological disturbance.

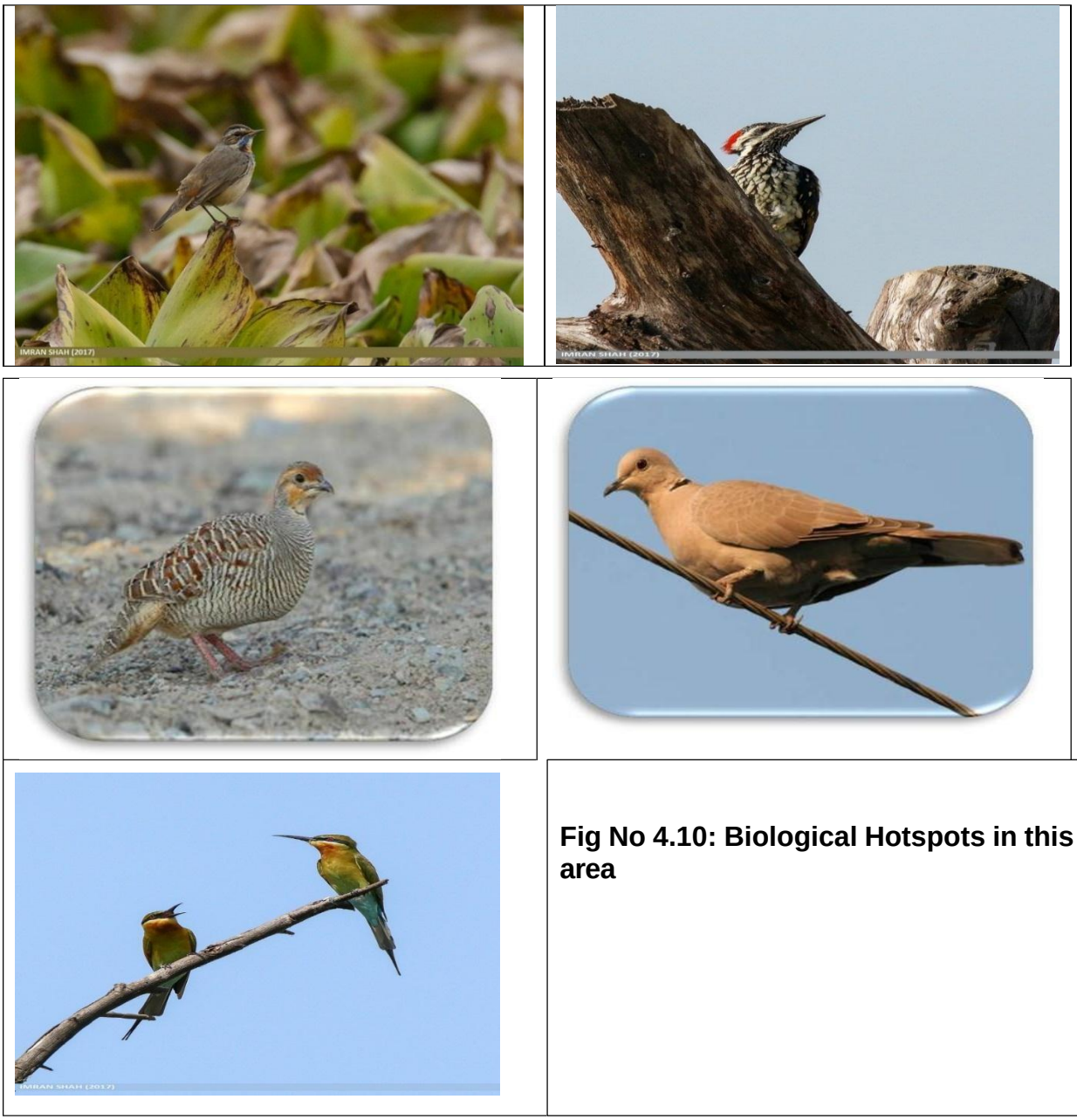


Fig No 4.10: Biological Hotspots in this area

Mammals in Study Area

A variety of mammals are found in the study area that include Hog deer, Chinkara, Desert Cat, Fishing Cat, Caracal, Smooth coated Ottor, Wild boar, Desert hare, Foxes, Jackal and Feral wild ass. **Table-4.7** lists the important mammals in Sindh and the study area:

Table 4.7: List of Mammals in Study Area

Sr. No.	English Name	Scientific Name	Local Name
1.	Ibex / Persian Wild Goat	*Capra aegagrus Blythi*	Sarah, Pahari Bakra
2.	Afghan Urial / Asian Wild Sheep	*Ovis vignei blanfordi*	Gad, Pahari Dumba
3.	Indian Desert Gazelle / Chinkara	*Gazella bennettii*	Chinkara, Hiran
4.	Black Buck / Indian Savana Antilope	*Antilope cerricapra*	Kala Hiran
5.	Hog Deer / Parah Deer	*Axis porcinus*	Phara, Barasingha
6.	Blue Bull / Nilgai	*Boselaplus Tragocamelus*	Neel Gai, Rojh
7.	Indian Wild Ass / Gorkhar / Onagar	*Equus hemionus*	Khur Jungli Gadha, GorkharKhuchhar
8.	Striped Hyaena		Hyaena
9.	Indian Desert Wolf	*Cains lupus pallipus*	Bherria, Bagharr
10.	Indian Desert Fox	*Vulpes vulpes Pusillus*	Lomrri, Lomarr
11.	Caracal / Red Lynx	*Felis caracal*	Siah Gosh, Harola
12.	Jungle Cat / Swamp Cat	*Felis chaus*	Jungli Billi
13.	Fishing Cat	*Prionailurus Viverrinus*	Machhi khor billi
14.	Small Indian Civet	*Viverricula indica*	Mushk Billi, Rasse
15.	Honey Badger / Ratel	*Mellivora capensis*	Bijju, Gor Pat
16.	Scaly Anteater / Pangolin	*Manis crassicandata*	Chiunti Khor, Chhalerano
17.	Indus Blind Dolphin	*Platanista minor*	Bulhann, Susu Dolphin, Andhy Dolphin
18.	Smooth Coated Otter	*Lutrogale Perspicillata*	Udh Bilao, Luddharr
19.	Flying Fox / Fulvous Fruit Bat	*Rousettus leschenaultia*	Urra Lomrri, Meva Khore Chimgadar

20.	Blue Whale / Sulphur Bottom Whale	*Balaenoptera musculus*	Neeli Whale, Mangrail
21.	Mouse-like Hamster	*Calomyscus hotsoni Hamster*	Chooha

Source: Punjab Wildlife Department, 2010

Buffalo, goat, sheep, camel, donkey, bull, horse, hen, peacock, deer, dog and cat are the common animals reared as domestic and livestock animals which are source of income for the people of the area.

Table 4.8: Important Reptiles and Amphibians of Punjab

Sr. No.	English Name	Scientific Name	Local Name
1.	Indian Ocean Green Turtle	*Chelonia mydas*	Samundri Subz Katchhwa
2.	Pacific Olive Ridley Turtle	*Lepidochelys olivacea*	Sumundri Zaituni Katchhwa
3.	Spotted Pond Turtle	*Geoclemys hamiltoni*	Talabi Katchhwa
4.	Indian saw back River Turtle	*Kachuga tecta*	Daryai Katchhwa
5.	Starred Tortoise	*Geochelone elegans*	Sitara Katchhwa
6.	Marsh/Snub-Nosed Crocodile	*Crocodylus palustris*	Magar Much, Mugger, Wagu
7.	Yellow/Striped Monitor – Lizard	*Varanus flavescens*	Goh, Dhari Dar Goh
8.	Fat-Tailed/Leopard Gecko	*Eubleparis macularius*	Hann Khann, Cheetah Chhupkali
9.	Banded Dwarf Gecko	*Tropiocolotes helenac*	Dhari Dar Chhoti Chhupkali
10.	Sindh Broad Tailed	*Gecko teratolepis Fasciata*	Sindh Moti Dum Chhupkali
11.	Orange Tailed Sand Skink	*Eumeces schncideri*	Narangi Dum Regmahi, Makh Chatti

12.	Indian Sand Swimmer	*Ophiomorus Tridactgylus*	Regmahi, Makh Chatti
13.	Indian Spiny Tailed Lizard	*Uromastix hardwicki*	Sandha, Sandho
14.	Indian Chameleon	*Chamaeleo zeylanicus*	Rung Badal Girgit
15.	Indian Rock Python	*Molurus*	Azdaha, Arrarh Blah
16.	Russelle Sand Boa	*Eryx conicus*	Russelle Ki Do Muhi
17.	Oxus/Black Cobra	*Naja oxiana*	Kala Naag, Cobra
18.	Indian Common Krait	*Bungarus caeruleus*	Sang Choor, Peeun Blah
19.	Russelle's Viper	*Vipera russelii*	Ghorriala, Dumbhar Blah
20.	Red Spotted Diadem Snake	*Sphalcrosoplis Arenarius*	Shahi Naag, Korarr
21.	Pakistan Ribbon/Sand Snake	*Psammophis leithi*	Regis Amp, Shehgi
22.	Glossy Bellied Racer	*Coluber ventromaculatus*	Paharri Samp, Par Blah
23.	Common Rat Snake/Dhaman	*Ptyas mucosus*	Dhamman, Kua Mar
24.	Sindh River Snake	*Enhydris pakistanicus*	Daryai Samp
25.	Beaked Sea Snake	*Enhydrina schistosus*	Chonch Dar Samundari Samp
26.	Annulated Sea Snake	*Hydrophis cyanocinctus*	Dhari Dar, Samundari Samp
27.	Slender Blind Snake	*Typhlops porrects*	Andha Samp, Sampolia
28.	Tiger Bull Frog	*Rana tigerina*	Maindak Dedhar
29.	Indus Toad	*Bafo andersori*	Khushki Ka Maindak

4.4Socio-Economic Environment of Study Area

Population and Demographic Features of Study Areas:

Demographic Features of study areas as per the demographic indicators of the Tehsils are presented below**.**

As of the 2023 census, Sheikhupura district has 593,260 households and a population of

4,049,418. The district has a sex ratio of 105.58 males to 100 females and a literacy rate of 68.88%: 72.09% for males and 65.46% for females. 1,087,191 (26.85% of the surveyed population) are under 10 years of age. 1,550,793 (38.30%) live in urban areas.

Poverty

Due to small land holdings and self-cultivation is majority of areas of the project, the people are well to do due to earnings from agriculture. The quality of most lands is good where variety of agriculture in the form of crops and orchards are practiced. There are small to medium industries in the project area and also there are sugar mills and other industries providing sources of earnings. The farmers also grow variety of fruit trees on their lands. Farmers are also very hard working in every aspect of earnings. All these factors described above are indicators of rate of poverty. It was revealed during the stakeholder consultations and discussions with the communities that people living below the poverty line range between 20-30%. This is a better indicator compared to some parts of Punjab and the most parts of the country. *(Estimates given by stakeholders during consultations).*

Infrastructure and social services

The study areas are well connected through road, rail and other infrastructure. There are motorways, highways, provincial and district roads, village roads and farm to market roads. The consultants did not observe any difficulty with respect to road infrastructure, their quality and connectivity. Like-wise when asked direct questions about also did not express any difficulty in infrastructure and social services. This was also felt by the EIA team also. When asked direct questions about also infrastructure and social services the villagers did not express any difficulty in infrastructure and social services.

Education

Education is an important aspect of social service. During travelling and communicating with the communities during stakeholder consultations, visiting the private and government educational institutions (primary and secondary schools) and observing while passing it was seen that the level, quality of education and cleanliness was above average than other parts of the country.

When asking direct questions about education the stakeholders were satisfied with education system and opportunities for educational institutions and overall quality of

education in the study area.

Health

There are adequate health facilities in the study area right from tehsils headquarters to villages. The communities did not have any complain on this social aspect. This was also observed during the community consultations.

Livelihood sources

Agriculture and livestock are the dominant sources of livelihood for the people. People also have many opportunities of earnings from labor work in industries other works, shop keeping, road and building construction etc. etc. The people also did not have any complain on the un-employment aspect in government and private agencies. Majority of land holdings are small to medium resulting in self-sufficiency in earning their livelihood. Some big landlords located in the study area were having large landholdings.

Quality of life values

Quality of life values of the areas are good enough. The area is basically agriculture in nature which is changing rapidly into industrial one which is providing more job opportunities for the locals to improve their life style. Good educational institutes and adequate health facilities are available in the area. The M-2 passing by the area which helps people connecting with near big cities and to transport their goods to the market to earn handsome money.

The quality-of-life value of the project area will be improved by implementation of the project through following ways:

By providing job opportunities at local level which will enable the people to invest on education and health. The enhancement in income will make people able to use their income to use to improve their quality of life.

4.5 Cultural Heritage in Study Area

This chapter of report provides the baseline of important archeological and heritage sites. A large number of sites exist in the province having archeological, historical, cultural, and religious significance, and the ones that have been officially notified and protected under the Antiquity Act, 1975. The data/information has been collected from primary and secondary data sources and surveys in the study area conducted prior to preparation of

this report.

Sheikhupura has a rich cultural heritage that includes forts, tombs, and other historic sites.

Sheikhupura Fort: Built in 1607 during the reign of Emperor Jahangir, this fort was altered during the Sikh era. The fort was later given to Maharani Datar Kaur, the wife of Maharaja Ranjit Singh, who lived there until her death.

- **Mughal emperor Jahangir's fort**: Located in the centre of the town, this fort was completed in 1619.

Tombs

- **Hiran Minar Tomb**: A popular attraction in Sheikhupura, the Hiran Minar is a massive tower that overlooks the countryside.

Other historic sites

- **Sangla hill**: An important town in the Sheikhupura District, Sangla hill is said to be the site where the founder of Sikhism, Gurunanak, preached and helped the needy.
- **Jamia Masjid Muhajarin**: A popular attraction in Sheikhupura.
- **Ali Masjid**: A popular attraction in Sheikhupura.

Sensitive Habitat

No sensitive habitat has been seen or reported by any authority in or around the proposed site.

The installation of Alfalah Paper Mills will a boost to the social and economic baselines of district Sheikhupura.

Chapter 5

ENVIRONMENTAL IMPACTS ASSESSMENT

5.1 Introduction

This chapter presents identification and appraisal of various impacts from implementation of the installation of manufacturing unit for high quality Paper & Board Project in Alfalah Paper and Board Mills (AP&BM) in the study area. Generally, the environmental impacts can be categorized as either primary or secondary. Primary impacts are those which are attributed directly and secondary impacts are those which are indirectly induced and typically include the associated investment and changed patterns of social and economic activities by the proposed action.

5.1.1 Assessment of Environmental Impact during Construction and Operational Phase

Identification of negative impacts and their assessment through scoring have been done. Their negative impacts, mitigation measures and implementation agencies are also described in the report.

The project is installation of Paper and Board manufacturing from recycling of wastepaper and board, which has minimum environmental impacts. Rather it is expected to produce positive economic and environmental impacts. Environmental impacts have been identified and mitigation measures are recommended within the Project Area of Influence. The major impacts on physical, biological and social environments and their mitigation measures are described as below:

5.1.2 Identification of environmental issues:

The environmental issues identified are enumerated in the following Table:

Sr.	Environmental Component	Environmental Issue
1.	PHYSICAL	

	Water	Channel water quality Channel water discharge Groundwater quality Groundwater level Surface run-off Drainage
	Land	Soil salinity Soil erosion Land utility/productivity
	Climate	Micro-climatic changes
	Atmosphere	Dust Noise
2.	BIOLOGICAL	
	Flora	Forests/trees Other terrestrial vegetation
	Fauna	Mammal communities/habitats Reptile communities/habitat
3.	HUMAN	
	Social	Population Security Social cohesion/attitude Food/nutrition Health Education

	Economic	Income levels Employment Land value
	Institutional	Institutional activities Institutional effectiveness
	Human Use	Cultivation Livestock Infrastructure Industry and domestic water supply Community development
	Resettlement	Land lease Dislocation of population Loss of property Loss of infrastructure Resettlement of affectless
4	Geomorphic impact	The project location is within the existing industrial boundary which has scares plantation and has little scenic value. Installation of Stitching unit and wastewater treatment plant will have almost nil geomorphic impact.

The impacts have been predicted for construction of paper & board project. The proposed project would create impact on the environment in two distinct phases:

- During the construction phase, which may be regarded as temporary or short term

- During the operation phase, which would have long term effects.

The constructional and operational phases of the proposed project comprise various activities, each of which will have an impact on some or other environmental parameters. Various impacts during the construction and operational phase on the environmental parameters have been studied and are discussed below.

5.2 Impact due to Project location

The impacts due to the location are mixture of negative and positive. The positive impacts include the availability of the infrastructure, the land, power source which reduces the project cost for the development of the infrastructure. The construction activities for utilities emit dust and smoke emissions which have been saved due to selection of the site at present premises.

The negative impacts may include the cumulative effect of noise and air pollution which may aggravate existing levels of noise and air pollution. The negative impacts have been mitigated through selection of low noise machinery whereas, no source of air pollution is involved in this project because no new source of power or steam is added which may emit air pollution or add to the existing load. Through use of already existed sources of steam and power nullified/mitigated impact due to location of this project.

5.3 Environmental Impacts due to project Design

The design of the machinery has been selected in such a manner that make sure the reduction in use of required process water and use of pulp instead of wood or lignin. These two design parameters have served as vehicles for conservation of water and local forest resources. In this way, the effects due to the design are positive in nature which will ensure the conservation of the water as well as local forests.

5.4 Impact during Construction Phase

This includes the following activities related to levelling of site, construction and erection of plant components.

5.4.1 Impact on Land use

The total land area of the plant is 2 acres. No additional land is required to be procured for the proposed project. The land required for the project 2 acres which is already under the possession of Ideal Chemicals Limited and is located adjacent to Ideal Chemicals Limited. Hence, there is no additional land acquisition process and no Rehabilitation and Resettlement (R&R) issues involved in the installation of this project.

The construction of plant will not bring any changes in the land use pattern of the project area as the land is already categorized as Industrial land use category. There will not be any adverse impact on the surrounding land use during the construction period.

5.4.2 Impact on Soil Quality

The land identified for the paper mill has already been filled and levelled to the plant formation level. The topsoil requires proper handling like separate stacking so that it can be used for greenbelt development. Apart from much localized construction impacts at the plant site, no significant adverse impact on soil in the surrounding area is anticipated.

5.4.3 Impact on Air Quality

Impacts of construction activities on air quality are cause for concern mainly in the dry months due to dust particles. The main sources of emission during the construction period are the movement of equipment at the construction site and dust emitted during construction related activities. The dust emitted during the above-mentioned activities depend upon the ambient humidity levels. The impact will be for short duration and confined locally to the construction site. The composition of dust in this kind of operation is, however, inorganic and non-toxic in nature. Exhaust emissions from vehicles and

equipment deployed during the construction phase are also likely to result in marginal increase in the levels of SO2, NOx, PM, CO and un-burnt hydrocarbons. It may, therefore, be deduced that construction activities may cause changes in the PM levels locally. The impact will, however, be reversible, marginal and temporary in nature and will be confined within the project boundary and is expected to be negligible outside the plant boundaries.

5.4.4 Impact on Water Resource and Quality

The peak requirement of water during construction will be about 10-12 m3/day, which will be supplied from the existing water system. The construction equipment is more related to mechanical fabrication, assembly and erection. Temporary sanitation facilities (soak pits/septic tanks) will be set up for disposal of sanitary sewage generated by the work force as per the prevailing labour laws. Since most of the construction work force will consist of floating population, the demand for water and sanitation facilities will be low and it will be managed by the existing water supply system and additional sanitation facilities for constructional activities at the site would be provided during construction phase. The overall impact on water environment during constructional phase due to the proposed project is likely to be short term and insignificant.

5.4.5 Impact on Noise Levels

The major sources of noise during the construction phase are vehicular traffic, construction equipment like dozers, scrapers, concrete mixers, cranes, pumps, compressors, pneumatic tools, saws, vibrators etc. The operation of these equipment will generate noise ranging between 85 - 100 dB (A) near source. These noises will be generated mostly within the existing plant boundary and will be transient in nature. Due to existing greenbelt all around the periphery of the plant boundary, these noises will be attenuated to a large extent and are not likely to have any significant impact on the nearby villages. Overall, the impact of noise due to construction on the environment is likely to be insignificant, reversible and localized in nature.

Mitigation measures

- Low noise generators
- Generators fitted in canopies.

- The area is industrial and residential area is away from the site.

5.4.6 Impact on Terrestrial Ecology

The initial construction work at the project site involves land clearance and filling and levelling to the plant formation level, which has already been done during the construction of the existing plant. Since the land is already under the possession of Ideal Chemicals Limited, therefore no terrestrial life exists on site .hence no adverse impact is foreseen on terrestrial ecology.

The construction activities lead to inward migration of labour force in the area and thus there would be increase in fuel demand. The construction site falls under the category of Industrial land use and does not harbor any fauna of importance; therefore, the impact of construction activities on fauna will be insignificant.

5.4.7 Impact on Aquatic Ecology

There will not be any adverse effect on aquatic life during the construction phase, since the water requirement for the construction phase is less.

There are no water bodies near the construction site, which will get polluted due to the construction activities.

5.4.8 Demography and Socio-Economics

The impact of the proposed big project would begin to be realized with the start-up of the construction activities. The investment in this area will have positive socioeconomic impacts for locals.

Since the entire land, which is needed for paper machine, is already under the possession of Ideal Chemicals Limited, there will not be any further land acquisition and thereby need of Rehabilitation and Resettlement does not arise.

There will be some migration of labour force from outside the study area during construction phase, which may put some pressure on the local settlements and resources. However, this impact is envisaged to be minor and a temporary phenomenon. It is already industrial area. Camping, if required, will be set up within the factory and hence no

negative social impact is foreseen on local society due to the construction activity. The non-workers constitute in the total population in radius study area. Some of them will be available for employment in the proposed project during construction activities.

As the laborers are generally un-skilled, the locals would get opportunities for employment during construction activities. It is estimated that at least two-third of the labour force will be sourced from the local area.

In addition to the opportunity of getting employment as construction laborers, the local population would also have employment opportunities in related service activities. Consequently, this will contribute to economic development of the area positively.

5.5 Impacts during Operation

The following activities related to the operational phase will have varying impacts on the environment and are considered for impact assessment:

- Land use
- Soil quality
- Topography and climate
- Air quality
- Hydrology
- Water resources and quality
- Solid waste
- Noise levels
- Terrestrial ecology
- Aquatic ecology
- Traffic load
- Demography and socio-economics
- Infrastructural facilities
- Archeological/ heritage sites

5.5.1 Land Use

The proposed project is adjacent to Ideal Chemicals Limited and the land use is already categorized under industrial area. Hence, there will not be any change in the land use pattern in the study area due to the proposed project.

5.5.2 Impact on Soil Quality

Most of the impacts of the project on soils are restricted to the construction phase, which will get stabilized during operational phase.

The treated wastewater will be disposed in the drain hence no impact on soil quality is likely to occur. So, no adverse impact on soil quality had been foreseen due to this project.

5.5.3 Topography and Climate

There will not be any cutting and felling involved in the proposed project. The building halls will be constructed at vacant site. The change in topography will be permanent and irreversible. But no negative impact is likely to occur with respect to topography. The construction in the existing plant area will not result any topographical changes or visual impact. There will not be any tall structures, which will not have any impact on the climate.

5.5.4 Impact on Air Quality

No new source of air pollution is added in this project and the existing source of power will be used for the manufacturing process. The background air quality is unpolluted as the site is away from urban areas. No digestion of cellulose is proposed for preparation of pulp hence no impact on surrounding air is foreseen in form of odor or air pollution. There are some industrial units in the area which emit air pollution but its contribution does not raise the air pollution level above the limits of PEQS for ambient air. Traffic on highway, M2 section, will have negligible impact on the air quality of the project area.

5.5.5 Impact on Water Resources

The water requirement of AP&BM will be about 200 Gallons/day. After implementation of the AP&BM, the additional use of water for new project will have moderate negative impact on the subsoil water resources. The stress on underground water resource is likely to be increased. However, this additional load on subsoil water will be nullified due to continuous and replenish able underground water reservoir.

Indus Basin represents an extensive groundwater aquifer covering a gross command area of 16.2 million hectares. Water table was well below the surface and aquifer was in a state of hydrological equilibrium before the development of canal irrigation system in the early 19th century. The recharge to aquifer from rivers and rainfall was balanced by outflow and crop evapotranspiration. The major part of the present-day Indus basin irrigation system was completed around 1880. Since the introduction of the canal irrigation system, percolation to the aquifer was increased in irrigated areas of the Indus basin resulting in twin menace of waterlogging and salinity. Estimated recharge to the groundwater in the Indus Basin is around 56 billion m3, out of which 36 billion m3 occurs in areas of usable groundwater. (Dr. Shahid Ahmad, Shams ul Mulk, and Dr. Amir Muhammad).

5.5.6 Impact on Water Quality

The wastewater will be generated about 40 to 50 gallons/day. This will be treated in the Wastewater Treatment facility. The treated wastewater will be disposed off ultimately into Deg Nullah.

5.5.7 Wastewater Generation from the Project

The wastewater generation from the proposed project includes wastewaters from paper machine and mill sanitary waste.

The volume of wastewaters after the implementation of proposed project of the plant will be about 40 to 50 gallons/day. After recycling, wastewater will be treated in dissolved air flotation/ secondary wastewater treatment plant to bring the effluents within PEQS w.r.t COD and BOD, the treated wastewater transferred to neighbor for further processing.

5.5.7.1 Wastewater Characteristics and Disposal

The quality of wastewater generated from recycling paper industry contain higher number of COD and BOD. The proponent will use the technology of Dissolved Air Flotation (DAF)/ secondary wastewater treatment plant which will ultimately reduce the amount of BOD & COD in wastewater. The quality of treated wastewater will continue to meet the discharge standards for inland surface water. The treated wastewaters from the mill shall be well within the prescribed standards of PEQS. The treated wastewater shall be disposed off ultimately into Deg Nullh.

5.5.7.2 Impact on Ground Water Quality

Paper and board manufacturing is water extensive process which needs large quantity of water. Paper machine wastewater is white water which is reused up to 80 percent in pulp washing. Moreover, the sustainable policy of AP&BM lays special emphasis on water conservation. In addition to that the pulping process will not be done here. Therefore, minimum amount of water (200 gallons/day) will be required which will be taken from the underground water. Moderate, impact on the quantity of groundwater is foreseen, as the project will use water from the subsoil water. The recharge mechanism of the Punjab alluvial plain will mitigate its impact. It will not dispose any waste water in the underground aquifer, hence impact with respect to waste water disposal is negligible. No water will be disposed in underground. The ground water is deep and the water aquifer is continuous in nature that extends from Jammu to Indus, therefore, extraction of water for this project will have no adverse impact. It is worth mentioning that no rule for extraction of water exists in the country to limit the water extraction.

5.5.7.3 Surface Water Quality

Deg Nullah is recipient of the untreated wastewater from industrial units in Sheikhupura. AP&BM will have waste water treatment facility where this waste will be treated and disposed off into Deg Nullah. The waste will be compliant to the PEQS and hence no Impacts on nearby drain is foreseen. The Upper Chenab Canal (UCC) is main surface water body which flows at about 6 Km from the site. No water will be disposed in Upper Chenab canal from this project.

Fig No. 5.1: Deg Nullah passing by the AP&BM

Upper Chenab Canal

- AP&BM effluents will have BOD and COD issue which will be treated in wastewater treatment plant to bring them within PEQS. The high efficiency wastewater treatment plant is based on aerobic and biological activation which will ensure the compliance of the PEQS.

5.5.8 Impact of Solid Waste

The project is waste paper utilization facility, where no solid waste is foreseen, except screening waste and wastewater treatment sludge. The screening solid waste will be disposed on the official land fill site of Sheikhupura and Lahore, whereas the sludge will be resolved to the market for making cheap quality card board

5.5.9 Impact on Terrestrial Ecology

There is no such source of air pollution in the proposed project which is likely to affect terrestrial ecology

5.5.10 Impact on Aquatic Ecology

The treated wastewater, after conforming to the PEQS, will be discharged into drain, where no aquatic life exists. Hence no impact on aquatic life is foreseen.

5.5.11 Demography and Socio-Economics

The impacts of the paper mill installation would begin to be felt with the start-up of the operational activities. There will be better economic opportunities available in the area.

The socio-economic impacts discussed in the construction phase of the proposed project will also be manifested during the operational phase. The area is not so developed and by adding to the economy of the area there will be positive impact on the economical values of the area. The 50—100-man force will be hired for this project and about 40 — 50 % of the workers will be hired from the area which will enhance the economy of the area.

5.5.12 Impact on Health

Impact on health, if any, will be primarily due to air pollution i.e., emissions of PM and SO_2 and noise generation during construction phase. Adequate air pollution and noise pollution control measures will be provided to conform to regulatory standards. Employees working in high noise work place would be provided with personal protective devices like ear plugs/ear muffs to ensure that there will not be any adverse impact on

human health.

The environmental management and emergency preparedness plans are proposed to ensure that the probability of undesired events and consequences are greatly reduced and adequate mitigation is provided in case of an emergency.

5.5.13 Impact on Flora & Fauna

There will be no impact on flora & fauna of the area as the project is already industrial use land and no flora and fauna exist there. No air pollution source is likely to disturb the biological pool of the area which is already self-developed industrial use

5.6 Potential Environmental Enhancement Measures

The environmental enhancement measures will be done through

- Plantation of trees of indigenous species,
- Quality of environment will be improved by using waste paper.
- Water will be conserved by reusing wastewater.

5.6.1 Corporate Social Responsibility (CSR)

The social and environmental issues will be addressed through:

- Provision of employment during construction and operation phase of the project.
- Helping out the needy employees
- Strong linkages with local community through Community Relations Office or Human Resource Officer.

Employment

More than 50% direct employees and about 90% contractual workers are from this vicinity which shows an encouraging participation of this area.

More employments will be created with the operation of the proposed project.

Healthcare

- Alfalah paper and board mills will arrange campaign to control dengue fever and display / distribute the information / precautions on Dengue Fever.

5.6.2 Identification of Positive Impacts

- On the overall basis there will be positive impacts of the project.

- In addition to the above, socio-economic condition of the locals will show significant positive improvement. With proper management of enhancement measures more dividends from the project can be obtained.

Environmental and Social impacts during various Project Phases

Subject ns	**Environmental and Social impacts during various Project Phases**			**Proposed Mitigation Measures**
	Planning	**Construction**	**Operation**	
Social Impacts				
Resettlement	No resettlement required as site is in possession of the same Proponent of Ideal Chemicals Limited	No resettlement in construction phase is involved. As it is installation of Alfalah Paper & Board machine adjacent to the Ideal Chemicals Limited of the same proponent.	Nil	Not required as land is already in the possession of the proponent

Change in Land use	Land is already in possession of Ideal chemicals Limited	No change in land use as project is the addition of AP&BM machine adjacent to Ideal Chemicals Limited	Nil	Not required
Employment	About 5 people are employed indirectly in planning stage of the project who is accommodated who are working in different offices. Like EIA team,	About 50 persons unskilled, semiskilled and skilled workforce will be employed during construction phase.	About 30-40 personnel of all categories will be employed.	Employment has positive impact during construction and operation phase.

	designing and planning.			
Air Pollution (noise and dust).	Not Significant	The main sources of emission during the construction period are the movement of equipment at the construction site. The impact will be for short duration and confined locally to the construction site. Exhaust emissions from vehicles and equipment deployed	There will be no direct source of air pollution from this project as it will depend upon waste paper. No new source of power or steam is going to be established for this project.	**Construction Phase** • Mitigated by using appropriate dust control measures, such as minimizing the amount of ground disturbance, safe construction material handling, and water use for dust suppression and providing the project construction personnel with dust protection equipment. The construction site will be cordoned by the sheets to discourage the dust emission.

		during the construction phase are also likely to result in marginal increase in the levels of SO_2, NOx, PM, CO and un-burnt hydrocarbons. The impact will, however, be reversible, marginal and temporary in nature.		• Planned sites of piled materials • Fencing of excavated site or covering of excavated soil Sprinkling of water on loose soil and roads during construction. **<u>Operation Phase</u>** • Implementation of environment policy of the air pollutants from stacks • Selection of low noise generators
Soil Quality	Nil	The construction activities will slightly result in loss of vegetation cover and topsoil to some extent in the plant area. The topsoil requires proper handling like separate stacking so	The treated wastewater will be disposed of into drain. The oil spillage from oil storage tanks may deteriorate top soil quality So, no major adverse impact on soil quality had	• The proper handling of construction material and machinery • Proper handling of oil transport • Proper maintenance of oil storage tanks • Plantation of trees on vacant sites to reduce the impact on soil

		that it can be used for greenbelt development.	been foreseen due to this project.	
Water resources	The minimum use of water is preferred during this manufacturing facility	Water used during construction is expected to be 10 — 12 m^3/day for construction and sanitation activities, which will be taken from ground water and has no significant impact on ground water.	The water requirement for AP&BM will be about 200 gallons/day. After implementation of the AP&BM, the stress on underground water resource is likely to be increased. However, this additional load on subsoil water will be nullified due to continuous and replenish able underground water reservoir.	The area of the project is situated in alluvial plane of central Punjab which has continuous aquifer and is recharged by the rainfall which is 35 mm per annum and through the irrigation crops. Moreover, Upper Chenab Canal passing by the area which is also source of recharging of ground water by seepage. Water conservation techniques including reuse and recycling of water and waste water.
Wastewater	Nil	The wastewater from construction will mostly generate from construction activity and sanitation water and will	The wastewater after the AP&BM will be about 40-50 gallons/day. This will be treated in the Wastewater Treatment facility.	To minimize the amount of BOD and COD, the AP&BM will use the technology of Dissolved Air Flotation (DAF)/ which will ultimately reduce the amount of BOD and COD in wastewater.

				After DAF treatment the wastewater will
		be disposed of in sewer drain. The overall impact on water environment during constructional phase due to the proposed project is likely to be short term and insignificant.		be sent to secondary treatment plant for further treatment. The quality of treated wastewater from the WWTP outlet will continue to meet the discharge standards for inland surface water
Solid waste	Soil and ground water contamination	Solid waste generates from construction activities and construction material. And small amount of domestic waste.	Screening waste and sludge generated from wastewater treatment facility are the other solid wastes.	The additional solid wastes generated via WWTP sludge is non-hazardous in nature. The sludge from WWTP will be given to small industries for manufacture of low-quality cardboards.
Aesthetic values		The Project construction activities will not affect aesthetic/scenic values of the area as the proposed project involve	The project does not involve any stack are source of air pollution. therefore, no effect on the aesthetic value of the area foreseen	Construction of the paper mills within the present industrial boundary.

		construction in the present industrial boundary		
Social changes	Employment of technical team for the planning and designing of the project have positive social impact.	The involvement of local and regional humane resource will bring positive social change with respect to education, Health and employment.	The involvement of local and regional humane resource will bring positive social change with respect to education, Health and employment.	The construction of paper mills is positive change in the area with respect to education and employment of native people of the area
Economical Changes	Huge investment is being made in the project area which will benefit not only the economy of nearby population but also national level in term of revenue generation in form of taxes and levies	The fanatical flow on the construction activity will affect the area positively	It will reduce the import bill by manufacturing stationery paper which is being important.	Positive impact is foreseen in form of investment, employment, revenue and deduction in import bill.

Environmental Matrix

Sr. No.		Physical Environment							Bio-Environment		Socio –Economic Environment							
	Environmental component / Project Activities	Topography	Soil Quality	Landscape PC	Surface water Quality	Ground water quality	Air Quality	Noise and Vibration	Flora	Fauna	Agricultural Land	Health & Safety	Disruption of public utilities	Employment	Population Disturbance	Social Disorder	Cultural/religious values	Traffic Management
1	Construction camps, Workshops etc.	O	LA	O	LA	O	LA	LA	O	O	O	LA	O	B	O	O	O	LA

2	Transportation of construction materials	O	LA	O	O	LA	LA	MA	O	O	O	LA	O	B	LA	O	O	MA

3	Open storage of construction materials, fuels etc.,	O	MA	LA	MA	LA	LA	O	O	O	O	MA	O	B	O	O	O	O
4	Storage of chemicals or lubricants	O	LA	O	LA	LA	O	O	O	O	O	LA	O	O	O	O	O	O
5	Relocation	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
6	Use of generators	O	LA	LA	LA	LA	MA	MA	O	LA	O	LA	O	B	LA	O	O	O
7	Stripping and leveling	LA	LA	LA	O	O	LA	LA	O	O	LA	LA	O	O	O	O	O	O
8	Secondary developmen t	O	LA	O	O	O	LA	O	O	O	LA	O	O	B	O	O	O	LA
9	Land use change	O	LA	B	O	O	LA	O	O	O	B	LA	O	B	O	O	O	LA
10	Operation of Proposed units	LA	O	LA	B	B	O	LA	LA	O	LA	MA	O	B	O	O	O	LA

Legends: O=Negligible/No Impact B=Beneficial	LA= Low Adverse	MA= Medium Adverse	HA= High Adverse

Chapter 06

ENVIRONMENTAL MANAGEMENT PLAN

6.1 Introduction

The industrial development in the study area needs to be intertwined with judicious utilization of natural resources within the limits of permissible assimilative capacity. The assimilative capacity of the study area is the maximum amount of pollution load that can be discharged in the environment without affecting the designated use and is governed by dilution, dispersion and removal due to natural physio-chemical and biological processes. The Environment Management Plan (EMP) is required to ensure sustainable development in the area of the project site. Hence, an all-encompassing plan is envisaged. The identification and quantification of impacts based on scientific and mathematical modelling have been presented in Chapter 6. At the industry level, pollution control measures include in-built process control measures and also external control measures at the end of the pipeline before pollutants are discharged into the receiving bodies. It has been evaluated that the study area has not been affected adversely with present industrialization and urbanization. The proposed project is likely to provide new economical fillip, not only for the study area but also for the region as a whole. Mitigation measures at the source level and an overall EMP for the study area are planned for implementation so as to improve the supportive capacity of the study area and also to preserve the assimilative capacity of the receiving bodies.

The environmental attributes in the region include air quality, water quality, ecology and public health. The Management Action Plan aims at controlling pollution at the source level to the possible extent with the available and affordable technology followed by treatment measures. The following mitigation measures are recommended in order to synchronize the economic development of the study area with the environmental protection of the region:

Explore the techno-economic feasibility of adoption of the latest technology in the pulp and paper making process

This section provides brief description of environmental issues, mitigation measures to contain eliminate and/or reduce environmental and social impacts to an acceptable level, institutional arrangement for the implementation of the mitigation measures and also

carrying out environmental monitoring for air quality, water quality, and noise pollution related parameters.

The Environmental Management Plan (EMP) is developed to eliminate and / or mitigate the impacts envisaged at the design, construction and the operational stages and provide specific guidelines for long-term monitoring by identifying the roles and responsibilities of the Proponent, Design Consultant, and Contractor(s).

The reason for making EMP is to eliminate and mitigate the potential impacts at the design, construction and operational stage of the project. It provides the specific guidelines for long term monitoring by identifying the role and responsibilities of the proponent, design consultant and contractors.

6.2 OBJECTIVES OF THE ENVIRONMENTAL MANAGEMENT PLAN

The Environmental Management Plan (EMP) will help AP&BM to address the future likely negative impacts of the proposed Project, enhance the Project's overall benefits and introduce standards of good environmental practice. The primary objectives of the EMP are to:

- Define the responsibilities of the Project Proponent and other key players during the design, construction and the operational phases;
- Facilitate the implementation of the mitigation measures by providing technical details of each project impact, and proposing an implementation schedule of the proposed mitigation measures;
- Develop a monitoring mechanism and identify monitoring parameters to ensure that all the proposed mitigation measures are completely and effectively implemented;
- Identify training requirements at various levels and provide a plan for the implementation of training sessions;

- Identify the resources required to implement the EMP and outline corresponding financing arrangements;
- Providing a cost estimate for all the proposed EMP actions.

6.3 Institutional Capacity

The proponent of Alfalah paper and Board Mills is engaged in other manufacturing process like paper manufacturing and sulfuric acid. The technical team of the project deals with project execution. Production and Environment manager of AP&BM will look after environment issues, environmental monitoring and reporting of the proposed project to EPA. All the environmental and other executing process are under the supervision of Director of Alfalah Paper and Board Mills.

6.4 Environmental Training Schedule

Environmental training will help to ensure that the requirements of the EMMP are clearly understood and followed by all Project personnel throughout the Project period. The primary responsibility of providing training to all project personnel will be that of the Contractor's Environmental Inspector. The training will be given to different professional groups separately such as manager level group, skilled personnel group, and unskilled labor. An indicative Environmental Training Program is given in **Table 6.1.**

Table 6.1: Training Program

Staff	Trainer	Contents	Schedule
Selected field staff	Environment Inspector of the Project	Environmental sensitive areas of the Project; Key finding of the EIA and EMMP of AP&BM; Social and cultural values of the area	Before construction Activities

All site personnel of Contractor: -Managerial staff -Engineers Environment Consultant: -Managerial staff -Engineers	Contractor and Environmental Inspector of the Project	Environmental sensitive areas of the Project; Key finding of the EIA and EMMP of AP&BM; Social and cultural values of the area	Before construction Activities
Construction crew: Helper Skilled Labour Unskilled Labour	Environmental officer of the Project	EMMP Waste disposal (Construction, Solid and liquid waste generated from camp site)	Before construction Activities
Drivers	Contractor and Environmental Inspector of the Project	Road safety Road restrictions Vehicular restrictions Vehicular maintenance Waste disposal Social and cultural values of the area.	Before and during construction Activities
Mechanic	Contractor and Environmental Inspector of the Project	Waste disposal Vehicular maintenance	Before and during construction Activities
Camp staff	Contractor and Environmental Inspector of	Camp operation Waste disposal (Construction, Solid and liquid waste	Before and during construction

(third party

	the Project	generated from camp site)	Activities
All workers	Safety officer and third party	Health and safety issues and use of PPEs.	During operation on quarterly basis
Lab staff (third party)	Environment Officer/Manager	Sampling and analysis of wastewater and water in accordance with the protocol.	During operation biannual basis
Restoration team	Contractor and Environmental Inspector of the Project	Waste disposal Leveling of waste disposal area	Before the start of restoration

6.5 KEY ENVIRONMENTAL ISSUES

Following are the key issues, which are envisaged for the proposed Project at the design, construction and operational stages;

- Selection of clean technology and new plant machinery for efficient performance and emissions.
- Bringing down the pH, TSS, COD and BOD within the PEQS ;
- Control of air pollution (especially PM and NOx, during construction stage);
- Maintenance of Noise levels within PEQS;
- Monitoring of ambient air quality
- Use of water conservation techniques
- Treatment of waste water and its monitoring.
- Health and safety of workers; and

- Local socio-economic conditions in the area with interaction of the factory management.

6.6 SPECIFIC IMPLEMENTATION RESPONSIBILITIES

This section describes the responsibilities of different functionaries during the design, construction and operational phases of the proposed Project.

6.6.1 Stakeholders Role and Responsibilities in EMP

a) Contractor(s)

a) General manager

b) Manager utilities

c) Admin head and welfare officer

d) Manger (IMS&MR)

e). Assistant Manager HSE

6.7 Anticipated Environmental Impacts & Management Plan

A summary of anticipated environmental impacts and mitigation measures are given in Table 6.2.

TABLE 6.2: ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Sr. No	Component	Description	Recommended Mitigation Measures	Implementation Responsibility
1	**Construction Phase**			
1	Land Acquisition	Land is already in possession of Ideal Chemicals Limited. No change in land use as project is the addition of AP&BM machine adjacent to Ideal Chemicals Limited.	Land is already in possession of same owner of Ideal Chemicals Limited.	Alfalah Paper & Board mill

2	Contractor Camps	Contractor camp will be established near the Project site to carry out the Project activities. Though the number of labour and size of camp will not be large, even then this will have an Impact on the surrounding environment.	Ensure that camp size is as per standard Specifications.	Alfalah Paper & Board mill
3	Dust	The earthen portions of road/tracks may prone to dust emissions due to moving machinery. Machinery consisting of dumpers, trucks, crane used for construction material. This may emit smoke and dust pollution in the air	Wind breaks or barriers (either natural or constructed) should be installed at susceptible Construction sites that reduce wind velocity and reduce the possibility of suspended particles. Wind breaks can be trees or shrubs left in place during site clearing or constructed barriers such as a wind fence or sediment wall. Ensure that the access tracks which are prone to dust emissions should be maintained by water spraying daily. Ensure that all equipment, generators vehicles used during the project are properly tuned and maintained in good working condition, in order to minimize the exhaust emissions.	Alfalah Paper & Board mill

4	Noise	Noise will be produced from constructional Activities.	Noise barriers should be installed where possible to keep the noise levels within permissible limits. • Ensure prohibition of use of vehicle horns anywhere inside the industry boundary or on the access roads is strictly observed.	Contractor and Alfalah Paper & Board mill
			• Noise-reducing devices (silencers and baffles) should be used for the machinery • Engines should be turned off when they are not in use • Contractor obligation is to use appropriate and fit machinery.	

5	Solid Waste Generation	The Contractor camp will generate small amount of solid waste. Improper disposal of solid waste will contaminate land and can sprout numerous diseases.	Ensure following steps while disposal of solid waste: i. Solid waste should be segregated according to its type. ii. Material suitable for recycling should be Stored separately and sold afterwards. iii. Combustible waste to be burnt at designated burn pit only as demarcated by Resident Engineer. iv. Non- combustible, non-recyclable garbage sent to the designated landfill site in Project area as demarcated by Resident Engineer.	Contractor, Alfalah Paper & Board mill
6	Waste Water	The Contractor camp will produce waste water.	• Ensure septic tanks of appropriate design have been used for sewage treatment and outlets are released into village's drainage system.	Alfalah Paper & Board mill

	Discharge and disposal	Unmanaged disposal of this water will contaminate land and will lead to water borne diseases.	• Ensure that latrines, septic tanks, are built at a safe distance from water body, Stream, or dry streambed and the bottom of the drainages above the ground water level.	
7	Construction Waste	Project activities will generate construction waste. Improper disposal of that waste could create nuisance to the surrounding community.	Ensure that the site selected for waste material disposal is demarked by Resident Engineer before starting the work. • Ensure that all trucks used for the transportation of waste material are airtight and watertight. Ensure that the movement of waste lifting machinery and vehicles is limited to the work area. Ensure that waste material is properly disposed-off in a manner that does not affect the natural drainage. • Ensure that the dumping area has been leveled properly after disposal of waste material.	Alfalah Paper & Board Mills
8	Land Contamination	The construction machinery including cranes, trucks, loaders/ dumper and batching plants will be used during the construction period. There are chances of land	• Ensure that the maintenance of vehicle and other equipment takes place only in designated areas underlined with concrete slabs and a system to collect runoff in to mud pit.	Alfalah Paper & Board Mills

		contamination due to release / spill of lubricants, oil, chemicals materials.	• Ensure that no contaminated effluent is released in to the environment. • Ensure machinery wash and other potentially contaminated effluents are released in mud pit. • Ensure that fuels, oils, and other substances are handled and stored according to standard safety • Ensure that shovels, plastic bags, sand bags and absorbent materials, are kept available near fuel and oil storage areas. • Ensure that operating vehicles are checked regularly for any fuel, oil, or battery fluid leakage.	
9	Water conservation	Water may be wasted during daily activities of labour camps.	Avoiding undue wastage of water through conservation techniques and selection of adequate water supply sources to ensure that water usage does not affect local consumption • Ensure that during aligning the access roads, minimum vegetation is lost. If any tree uprooted, ensure that the Contractor has planted at least three fold of trees lost.	Alfalah Paper & Board Mills

			• Ensure that endangered trees species (if any) indicated in Section 7 (EIA) are not cut. • Ensure that trees and shrubs are not used as fuel during construction or operation. • After completion of construction phase, the vegetation of the area should be restored through plantation.	
10	Health impacts due to water borne diseases	Construction activities can lead to stagnant water. This may govern water borne diseases.	Good design and construction management to Avoid stagnant water. Proper management and disposal of rubbish and wastes from camp site.	Contractor
11	Job Opportunities	The project will open job opportunities which the local population can avail. Contractor should hire skilled and unskilled labor force from the local communities	95% of unskilled, up to 43% of semi-skilled employment and up to 100% of skilled jobs are provided to people from local communities, provided that the persons with required qualifications are available. Ensure Project staff interaction with local community is minimized.	Alfalah Paper & Board Mills

			Ensure that guidelines are prepared and implemented to sensitize non-local laborers to local norms and customs in order to minimize cultural tensions.	
	Archeological and Environmental protected sites	No Archeological sites are found in the Project area. So, there will be no impact on environment protected sites.	No mitigation measure required	Alfalah Paper & Board Mills
2	**Operation Phase**			
12	Water Intake	The water requirement for AP&BM will be about 200 gallons/day. After implementation of the AP&BM, the stress on underground water resource is likely to be increased. However, this additional load on subsoil water will be nullified due to continuous and replenish able underground water reservoir.	The area of the project is situated in alluvial plane of central Punjab which has continuous aquifer and is recharged by the rainfall which is 35 mm per annum and through the irrigation crops. Moreover, Upper Chenab Canal passing by the area which is also source of recharging of ground water by seepage. The water	Alfalah Paper & Board Mills

13	Treatment and Disposal of wastewater	Waste water from pulp washing having BOD and COD along with TSS	Waste water treatment plant will be installed to reduce the pollution load within the PEQS	Alfalah Paper & Board Mills
14	Air Emissions	The air may be polluted due to vehicular emissions and dust producing activities.	The vehicles compliant to the PEQS will be employed for transportation of goods and workers.	Alfalah Paper & Board Mills
15	Aesthetic/ Scenic Quality	The Project construction and operational activities may affect aesthetic/scenic quality of the area.	The acquired lands are situated in villages / population centers and no green fields are to be brought in use for this plant.	Alfalah Paper & Board Mills
16	Environmental Monitoring	Environmental monitoring of air quality, noise, water and wastewater will be conducted on the monthly basis .As the project lies in category A with respect to SMART Rules where in monthly reporting of the priority parameters is obligation of the industry.	The monitoring will be conducted by environmental certified lab in the meaning of NEQS (Certification of Environmental Laboratories Regulations, 2000). The monthly report will be submitted to EPA Punjab as the project lies in category A of (Self-Monitoring and Reporting by Industry) Rule, 2001.	Environmental Officer and environmental manager, Alfalah Paper & Board Mills

17	Environmental Cost	The environmental cost includes The selection of environment friendly technology, Treatment of wastewater, tree plantation environmental management staff health and safety equipment and environmental monitoring	Rupees 100,000,000/- will be required for implementation of environmental monitoring plan which include tree plantation, HSE equipment, monthly environmental monitoring for wastewater, gaseous emission and waste water treatment etc.	Management of AP&BM

6.8 Environmental Management during Construction

The impacts during the construction phase on the environment would be basically transient in nature and are expected to reduce gradually and return to status quo ante on completion of the construction activities.

6.8.1 Site Preparation

Since the project site terrain is flat and already levelled during the construction of the existing plant, there will not be any requirement for levelling. There is no vegetation on the land identified for AP&BM. During dry weather conditions, dust may be generated by activities like excavation and transportation. The dust will be suppressed using water sprinkling and may continue after completion of construction.

The industry shall make provision for water sprinklers.

As soon as construction is over, the surplus earth shall be utilized to fill up low-lying areas, the rubbish shall be cleared and all un-built surfaces be reinstated. Appropriate vegetation shall be planted and all such areas shall be landscaped. Hazardous materials [e.g., acids, paints etc. shall be stored in proper and designated areas. Efforts shall be made by the contractor to provide fuel to the construction workers. Water sprinklers as recommended by the EPA will be installed for dust suppression.

6.8.2 Water Quality

During construction period, the groundwater quality may be affected due to the construction activities and loosening of topsoil. The water table is not shallow at the present project site. The chemicals (paints, oils etc.) shall be stored in designated areas. There is no likelihood of groundwater contamination as there will not be any process wastewaters discharge on to the ground during construction.

6.8.3 Air Quality

During construction period, which will be for a brief duration during the initial stage of the implementation of the AP&BM project, there will be generation of dust and NOx emissions. This may be attributed to construction activity and vehicular movement. The transport vehicles using petrol or diesel shall be properly maintained to minimize smoke in the exhaust. Water sprinkling on roads shall be done to reduce the dust emission.

6.8.4 Noise

The noise impact on the surrounding population during the construction phase will be within the acceptable limits. High noise generating equipment, if used, shall be sparingly operated during the night times to minimize any discomfort to the nearby residents.

Community noise levels are not likely to be affected because of the vegetation and likely attenuation due to the physical barriers already present. Earmuffs shall continue to be provided to the workers and their use by workers shall be enforced.

6.8.5 Ecological Aspects

As the new equipment for AP&BM is proposed to be located within the existing industrial premises, no effect on vegetation is anticipated. Similarly, there will not be any impact on the aquatic ecology as there are no aquatic bodies in the plant site.

6.8.6 Socio-Economic Aspects

The land required for the construction under the proposed project is already under the possession of same owner of Ideal Chemicals Limited. There will not any resettlement and rehabilitation. Thus, there will not be any adverse socio-economic implications. The economic status of the area is likely to improve, as there will be direct /indirect employment generation during construction and operational phases.

6.8.7 Storage of Hazardous Materials

The hazardous materials used during the construction may include petrol, diesel, welding gas and paints. These materials shall be stored and handled according to the guidelines specified under Hazardous Chemicals Storage, handling and transportation Rules of EPA, 1997 (amended 2012) Rules. As AP&BM is already implementing the relevant requirements of Hazardous Chemicals Storage, handling and transportation Rules of EPA, 1997 rules. Storage of hazardous materials shall not pose any problem.

6.8.8 Migrant Laborers

Safe and secure camping area shall be provided for the migrant laborers during the construction period. Adequate arrangements shall be made for water supply and sanitation.

Existing toilet facilities for workers to allow proper standards of hygiene shall be available for usage by migrant laborers.

6.8.9 Facilities to be provided by the Labor Contractor

AP&BM is following good systems for procedures for occupation safety. The contractor engaged by AP&BM shall ensure the following facilities to construction work force:

6.8.10 First Aid

At work place, first aid facilities shall be maintained at a readily accessible place where necessary appliances including sterilized cotton wool etc. shall be available. Ambulance facilities already available with mill shall be utilized to take injured person to the nearest hospital. Potable Water sufficient supply of water fit for drinking shall be provided at suitable places.

6.9 Management during Operational Stage

The AP&BM project in the design stage endeavors to mitigate the problems related to health, safety and environment at the process technology selection stage and at the design stage. The proposed plant facilities shall be designed taking into account all applicable standards/norms both for regulatory and safety purposes.

The design specifications for control of pollution at the source level shall be implemented during the plant construction. Further, the environmental mitigation/management measures specified by AP&BM and GGEC in their clearances for the plant shall also be implemented after EMP wherever applicable. The specific control measures related to gaseous emissions, liquid wastewater discharges, noise generation, solid waste disposal etc. are described below.

6.9.1 Air Quality Management

The main sources of air pollution from the proposed project have been discussed in earlier chapters and the impacts on air environment due to the operation of the plant have been discussed in previous chapter. It may be seen that the ambient air quality is well within the ambient air quality limits prescribed by the EPA.

6.9.2 Reduction of Emission at Source

Major pollutants envisaged from the AP&BM project are PM and SO_2 along with NO_X. The baseline ambient air quality levels in the project area are within the permissible limits specified by regulating agency. The following methods of abatement shall be employed for the air pollution control:

Sufficient stack height will be provided as per the regulatory agencies for wider dispersal of pollutants

Development and maintenance of a greenbelt around the plant area, and plantation along the internal roads within the plant premises.

All the internal roads have been asphalted during the implementation of the existing plant. Therefore, vehicular movement may not generate fugitive dust. However, water spraying shall be practiced frequently at all dust generating and coal handing areas.

6.9.3 Ambient Air Quality Monitoring

The concentration of PM, SO_2 and NOx in the ambient air at the project boundaries shall be monitored. The existing monitoring network can be continued after the implementation of EMP.

6.9.4 Water and Wastewater Management

The main sources of wastewater generation and their impacts have been discussed in previous chapters. The wastewater treatment plant, after envisaged improvements, shall be adequate after the EMP of the plant. However, additional in-plant measures shall be taken to minimize the discharge of pollutants into the stream leading to wastewater treatment plant.

Wastewater Generation from the Project

The wastewater generation from the proposed project includes wastewaters from paper machine and blow down from the boilers and mill sanitary waste. The total pollution load (plant and domestic) generated after an implementation of AP&BM project is discussed. The volume of wastewaters after the implementation of proposed AP&BM project of the plant will be about 40 to 50 gallons/day.

Wastewater Treatment

The wastewater treatment system will be designed to treat all liquid wastewater generated so as to meet the standards as mentioned in PEQS. The WWTP shall be adequate to treat the wastewater generated with additional facilities. As the project is paper manufacturing so there is more chance of higher number of COD, TDS, TSS and BOD in waste water and to mitigate this issue DAF & Biological method will be used to minimize the excessive values of COD, TDS, TSS in waste water.

Final Disposal of the Liquid Waste

The treated wastewater from the WWTP will be used for irrigation. The treated water would also meet the prescribed standards. Also, the extent of pollution due to the disposal of the treated wastewater. The management will make efforts by improving the quality of wastewater entering the treatment plant, in order to achieve better and improved efficiencies of operation.

6.9.5 Monitoring of Waste Treatment

The treated wastewater shall be monitored regularly for the flow rate and quality to identify any deviations in performance of wastewater treatment plant. Wastewater monitoring instruments shall be provided in the wastewater discharge line. Flow integrators shall be utilized properly both at the plant intake and discharge point.

6.9.6 Noise Level Management

The incremental noise levels due to the operation of the plant will be <40 dB (A) at 1 km distance from the plant site and on the surrounding villages of the plant in all the directions. The ambient noise levels in the region are within permissible limits and are envisaged to be within the permissible limits even after commissioning of the proposed facilities.

The specifications for procuring major noise generating machines/equipment shall include built-in design requirements to have minimum noise levels meeting Occupational Safety and Health Association (OSHA) requirement. Appropriate noise barriers/shields, silencers etc. shall be provided in the equipment, wherever feasible. As far as possible, noise emanating from noisy equipment shall be adequately attenuated by enclosures, insulations etc.

Recommendations

Efficient flow techniques for noise associated with high fluid velocities and turbulence shall be used (like reduction in noise generated by control levels in both gas and liquid systems achieved by reducing system pressure to as low as possible.

Inlet and outlet mufflers shall be provided which are easy to design and construct Ear plugs shall be provided to workmen working near high noise generating sources

The distance between the source of noise and the receiver shall be increased by altering the relative orientation of the source of the noise and the receiver. Noise level at the receiver end reduces in inverse proportion to the square of the distance between the receiver and the source.

6.9.7 Solid Waste Management

No major solid wastes are generated in the process. All the solid wastes generated in the mill are from the auxiliary plants. They include sludge from the wastewater treatment plant.

6.9.8 Management of Hazardous Chemicals

During storage and handling of hazardous chemicals, all precautions shall be taken to avoid spillage of chemicals. All these chemicals shall be stored in well-ventilated areas. Personal protective equipment shall also be provided at the work place.

The mill already has a set procedure for disposal of Hazardous waste.

6.10 Equipment Maintenance Detail:

There will be different kind of analytical equipment in this project which have different repair and maintenance requirement. However daily, weekly, fortnight, monthly and annual maintenance will be conducted according to the O&M manual of each equipment.

The detail is given hereunder:

MAINTENANCE SCHEDULE OF EQUIPMENT	
Name of Equipment	**Frequency**
Hydro-pulper	Monthly
Refiner	Quarterly
Turbo charger	Monthly
Head box	Monthly
Wire forming	Quarterly
High density cleaner	Monthly
Inclined screen	Quarterly
Press section	Quarterly
Drying section	Half Yearly
Hood section	Monthly
Sizing machine	Quarterly
Calendaring machine	Quarterly
Mechanical drive section	Monthly
Compressed air system	Half Yearly
lubrication system	Weekly
Hydraulic pressure system	Weekly
Reeling machine	Monthly

6.11 Environmental Budget

Table No 6.2: Recurring Environmental Cost for the proposed project

Category	**During Construction phase (PKR)**	**Operation Phase (PKR) (annually)**
Environmental Monitoring For Wastewater, Air Quality & Noise	1.2 million rupees for 2 years, @50,000/- rupees every month during construction phase.	50,000/- rupees monthly monitoring at site during operation.
Environmental Officer	1.2 million rupees for 2 years @50,000/- rupees every month during construction phase.	50,000/- per month
Grand Total	**2.4 million during construction for two years**	**0.1 million rupees per month &** **1.2 million rupees per year.**

Cost for HSE Equipment & Maintenance

HSE Equipment's PPEs, Extinguisher etc.	100,000/- during Construction	100,000/- during Operation
Equipment Maintenance	50,000/-	20,000/-
200 Tree plantation at site @1000 per tree	Nil	200,000/-
One Time Environmental Cost	**150,000/-**	**320,000/-**

6.12 Potential Environmental Enhancement Measures

Implementation of afforestation program is of paramount importance for any industrial development. In addition to augmenting the present vegetation, it will also check soil erosion, make the eco-system more complex and functionally more stable, make the climate more conducive and restore water balance. It may also be employed to bring areas with special problems under vegetal cover and prevent further land deterioration.

The main objective of the greenbelt is to provide a barrier between the plant and the surrounding areas. The greenbelt helps to capture the fugitive emissions and to attenuate the noise generated in the plant.

Geometry of planting of trees is more important in order to have effective wind break by the plantation. For an effective greenbelt, a mixture of tree species is necessary and some shrubs and grasses shall be inter-cropped.

As far as possible, there shall be no gaps in the greenbelt. Where opening is imperative, alignments to the roads shall be such that open gaps are prevented to overcome funneling action of wind.

The main purpose of greenbelt development is to contribute to the following factors:
To attenuate noise levels generated from the plant
To trap the vehicular emissions and fugitive dust emissions
To act as pollution sink for gaseous emissions
To maintain ecological balance
To prevent soil erosion and to protect the natural vegetation.
To improve the aesthetics of the plant area

6.12.1 Tree Plantation and Landscaping

200 trees of indigenous species will be planted after completion of the project. Management of AP&BM will have their own environmental policy which will be followed in true spirits to improve the environmental quality of the area. The AP&BM shall make landscaping at the entrance of the factory as well as inside. Excellent landscaping and plantation will be done outside the Halls.

About 200,000/- rupees has been allocated for the landscaping and plantation of trees and about 100,000/annum is allocated for the maintenance & care of the plants for new project. The species of the plants include native and decorative species which include;Poplar, Neem, Hibiscus, Motia, Delia, Rose, Ficus microphilla, and different

seasonal decoration plants will be included in the plantation.

Chapter 7

ENVIRONMENTAL MONITORING AND REPORTING

7.1 Introduction

Usually, as in the case of the study, an Impact Assessment study is carried over short period of time and the data cannot bring out all variations induced by the natural or human activities. Therefore, regular monitoring program of the environmental parameters is essential to take into account the changes in the environment. The objective of monitoring is:

- To verify the result of the impact assessment study in particular with regard to new developments
- To follow the trend of parameters which have been identified as critical
- To check or assess the efficacy of the controlling measures
- To ensure that new parameters, other than those identified in the Impact Assessment study, do not become critical through the commissioning of new installations or through the modification in the operation of existing facilities
- To check assumptions made with regard to the development and to detect deviations in order to initiate necessary measures
- To establish a database for future Impact Assessment Studies for new projects.

The attributes, which merit regular monitoring, are specified below:
_ Air quality

_ Water and wastewater quality

_ Noise levels

_ Soil quality and

_ Ecological preservation and afforestation.

The post EMP monitoring to be carried out at the industry level is discussed below.

7.2 Monitoring and Reporting Procedure

Regular monitoring of important and crucial environmental parameters is of immense importance to assess the status of environment during plant operation. With the knowledge of baseline conditions, the monitoring program will serve as an indicator for any deterioration in environmental conditions due to operation of the plant, to enable taking up suitable mitigatory steps in time to safeguard the environment. Monitoring is as important as that of control of pollution since the efficiency of control measures can only be determined by monitoring. The copy of project monitoring report will be submitted to

management of AP&BM and after their review and approval another copy of monitoring will be submitted to EPA. As the project lies in Category "A" of SMART Rules, 2001 in which the industry is require to submit copy of monitoring report on monthly basis to the EPA as per regulations. The following routine monitoring programme would therefore be implemented.

Table No 7.2: MONITORING SCHEDULES FOR ENVIRONMENTAL PARAMETERS

Sr. No.		**Monitoring Frequency**	**Method of Sampling**	**Important Monitoring Parameters**
1		**Air Quality**		
		Stacks of the power generation	Quarterly	PM10, SO_2. NOx, CO
		Ambient Air Quality Monitoring	Quarterly	
		Locations around the plant area	Quarterly	PM10, SO_2. NOx, CO
2		**Industrial Water & Wastewater quality**	Monthly	pH, TDS, BOD, COD, TSS & Temp
3		**Industrial Noise Level**		
		Near administrative office	Monthly	Noise levels in dB(A)
		Paper machine	Monthly	Noise levels in dB (A)
4		**Ambient Noise Levels**		
		Near the plant boundaries	Monthly	Noise levels in dB (A)

7.3 Air Quality Monitoring

7.3.1 Stack Monitoring

The emissions from all the stacks will be monitored regularly. The exit gas temperature, velocity and pollutant concentrations will be measured. Any unacceptable deviation from the design values will be thoroughly examined and appropriate action will be taken. Air blowers will be checked for any drop in exit gas velocity.

7.3.2 Workspace Monitoring

The concentration of air borne pollutants in the workspace environment will be monitored periodically. If concentrations higher than threshold limit values are observed, the source of fugitive emissions will be identified and necessary measures taken. If the levels are high, dust suppression measures like water sprinkling will be initiated.

7.3.3 Ambient Air Quality Monitoring

The ground level concentrations of PM, SO_2 and NOx in the ambient air outside the project boundaries will be monitored at regular intervals. Any abnormal rise will be investigated to identify the causes, and appropriate action will be initiated. The existing arrangement for suppressing dust levels by provision of barricades separating the mill and the colony shall be continued in future as well. Additional green belt shall be developed for minimizing dust propagation.

7.4 Water and Wastewater Quality

To ensure a strict control over the water consumption, flow meters are installed for all major inlets. All leakages and excess will be identified and rectified. In addition, periodic water audits will be conducted to explore further possibilities for water conservation.

7.4.1 Monitoring of Wastewater Streams

All the wastewater streams in the mill are regularly analyzed for flow rate and physical and chemical characteristics. Such analysis is carried out for wastewater at the source of generation, at the point of entry into the wastewater treatment plant and at the point of final discharge. These data are properly documented and compared against the design values for any necessary corrective action.

7.4.2 Monitoring Receiving Body of Treated Wastewater

The treated wastewater is used for land irrigation and plantation. A part of it is also used for the greenbelt developed in and around the mill.

As a matter of abundant precaution, to safeguard the soil quality against any long-term adverse effects, representative soil samples are taken from the lands irrigated with the treated wastewater and analyzed for physical, chemical and microbiological characteristics, on a routine basis. All the data are documented and scientifically evaluated to detect any degradation of soil quality. In the unlikely event of any degradation

Being detected, wastewater discharge on the identified land will be discontinued and appropriate action will be taken to redeem the soil quality.

7.4.3 Monitoring of Groundwater

In order to detect any contamination of the groundwater from the mill wastewater, groundwater samples are taken from representative locations, on-site as well as off-site periodically and analyzed for necessary corrective actions, if any.

7.5 Noise Levels

Noise levels in the work zone environment such as paper machine, turbine house, power boiler/compressor, recovery boiler etc. will be monitored. The frequency will be once in three months in the work zone. Similarly, ambient noise levels at plant boundary will be monitored once in three months.

CHAPTER 08

PUBLIC & STAKEHOLDERS CONSULTATION

1.PUBLIC & STAKEHOLDERS CONSULTATION

This Chapter provides the objectives, process and outcome of the stakeholder consultations and disclosure conducted as part of the Environmental and Social Assessment Study. Consultation with the stakeholders is an important step for any development activity.

Stakeholder consultations were carried out during the Environmental & Social Impact Assessment (ESIA) study. Meetings were held with the stakeholders and key environmental and social issues discussed. Extensive consultations with the grass root stakeholders were carried out during extensive visits to the District Sheikhupura and the area near AP&BM.

AIMS AND OBJECTIVES OF CONSULTATIONS

The aim of the participation of the local population was to safeguard the interests of people and ultimately improve the well-being of population and assure that the project will not create any negative impact on the people directly or indirectly. Public consultation will reveal new information, improve understanding and enable better choices to be made.

The primary objectives of stakeholder's consultations were as under;

- To provide two-way communication channel between stakeholders and the project proponents
- To develop and maintain communication links
- Provide key project information to the stakeholders and to solicit their views on the project and its potential and perceived impacts
- Ensure that the views and concern of the stakeholders are incorporated into project design and implementation with the objectives of reducing or mitigating negative impacts and enhancing benefits of the project.

SCOPE OF CONSULTATION

The scope of consultations was to visit the area which is located near AP&BM. Where at random sites and provide full chance to the stakeholders to express their problems related to the proposed Alfalah paper and Board mill project.

The agenda of consultation with stakeholders included the following:

- To discuss the project in detail to the stakeholders.

- To have inputs from the local villagers and communities about different alternatives for the proposed Alfalah Paper & Board Mills project.
- To describe the benefits of project
- To describe the potential impacts
- To obtain the views, comments, apprehensions, and recommendations from the stakeholders and impacts.
- To make the project people friendly through mitigation measures
- To promote participatory approach in project design and implementation,
- To increase the projects ownership by the beneficiaries.

8.1 PARTICIPATION FRAMEWORK

Stakeholder analysis was carried out to identify relevant stakeholders on the basis of their ability to influence the project or their vulnerability to be negatively impacted from it. This approach ensured that no relevant groups are excluded from the consultation, and appropriate engagement strategies are developed for each stakeholder. Following groups of stakeholders were consulted:

- Visit of random sites along with the proposed project
- Ensure that all the villagers from all walks of life could participate such as village heads, farmers, small business holders, teachers and students, grown up children, shopkeepers, small businessmen and passer byes etc.
- Project beneficiaries
- District government offices like EPD

Sample Size

For effective public consultation it is necessary that principles of public consultation given in section 2.1 of the guidelines ibid. No specific size of the sample has been determined in the guidelines; therefore, this socio-economic survey involved all the stakeholders which are mentioned in the guideline so that the true picture of views of the people pro and against may be reflected in the results. Total 16 people were interviewed which involve the following stakeholders:

Proponent

The management of the AP&BM was interviewed to take the technical administrative and financial information about the project and also the details of corporate social program

which AP&BM is conducting in the area which is helping to raise the income level of the people and improve the lifestyle.

Local People

The people from the adjoining villages and towns in project area. The people of these villages are employed in this factory and are direct beneficiaries of the development project. At the same time, these people are the affected person with respect to the air pollution episodes which may happen in case of shutting down the electrostatic precipitator in the industry. In this segment the laborer's, farmers, shopkeepers, service men, workers of the factory were interviewed to record they're about the project.

Govt. Agencies

Abdul Qayum, Deputy Director EPA, Sheikhupura and Executive Engineer Irrigation Department, were consulted in this project.

NGOs

NGOs have usually biased, views about any project and it is difficult to search for the impartial NGO.

Experts

Mr. Iftikhar Ahmad, Consultant was interviewed to know the expert opinion about the emissions and effluents of the cement plant.

Fig. No 8.1: Images of Public consultation in the project area

8.2 IDENTIFICATION OF MAIN STAKEHOLDERS

There are two types of stakeholders related to the project i.e. primary and secondary stakeholders. Primary stakeholders are those which are directly affected by the Project activities and secondary stakeholders are those which are affected indirectly.

Fig. No 8.2: Images of Public consultation in the project area

The proposed Project may have direct impacts on individual; therefore, primary stakeholders are identified in the project area. Secondary stakeholders are institutional stakeholders, which includes Project Proponent, local Government representatives, and Government officials of the relevant departments (WASA officials), NGO, general public, local residents, shop keepers, vendors, hospital owners/staff, teachers, pedestrians, and businessmen/traders of the city. Prior to consultation, the stakeholders were

informed about the date, venue and time of consultation. The categories of the stakeholders who provided useful feedback, included:

- Project Proponent
- Government officials
- Environmental practitioners and experts
- Neighbourer
- Teachers/students
- Shopkeepers

All those stakeholders have different types of stakes according to their involvements in various aspects of the Project. The consultant tried to contact all the stakeholders and shared their views and concerns and also interacted with the community-based organizations that can support the community.

Table No. 8.1: List of Individual Consulted

Sr. No	Name	Designation	Address	CNIC# / Contact
1	Muhammad Rafaqat	Labour	Kot Pindi Dasi	35501-0970011-9
2	Mohsin Raza	Labour	Wandala Nasir, Kot Pindi Das Road	0370-4751869
3	Abdul Ghaffar	Labour	Kot Pindi Das	35401-27476217
4	Muhammad Rafiq	Labour	Kot Pindi Das, Tehsil Feroze wala	35501-0588209-9
5	Zafar Hussain	Shopkeeper	Wandala Nasir village, Pindi Das Road	35401-7439767
6	Muhammad Zeshan	Labour	Kot Pindi Das	35401-6108456-5
7	Muhammad Saleem	Labour	Ali Town, Pindi Das	35404-1602050-7
8	Muhammad Adil	Labour	Kot Pindi Das	0304-7848717
9	Muhammad Tayyab	Labour	Kot Pindi Das	35401-1233724-7

10	Ali Raza	Labour	Ali Town, Kot Pindi Das	35401-6826976-1
11	Muhammad Khalid	Labour	Kot Pindi Das	0326-8853707
12	Abdul Razzaq	Labour	Qila Sattar Shah, Garden town	0326-5293474
13	Ali Haider	Labour	Ali town village, Kot Pindi Das	0328-5214820
14	Muhammad Shehbaz	Labour	Maseet wala, Qila Sattar Shah	0309-7014816
15	Jamshed Ahmad	Labour	Ali Town village, Qila Sattar Shah	35401-8388890-3
16	Muhammad Ikram	Labour	Ali Town village, Qila Sattar Shah	35401-1518101-5
17	Abdul Sattar	Inspector EPA, Sheikhupura, Punjab	EPA, Sheikhupura	0301-4299262
18	Fahim Nasim	Consultant	Gulshal Ravi, Lahore	0333-6878606
19	Ummair Rasheed	Consultant	Gulberg, Lahore	0309-4442334
20	Abdul Qayyum	Deputy Director	EPA, Sheikhupura	0333-4312974

Consultation with Proponent

Name	Designation	Address	Contact
Munawar Hussain	Director AP&BM	Falcon Society	0309-4442334

Govt. Departments

Sr. No.	Name	Designation	Address	Contact
1	Abdul Qayyum	Deputy Director	EPA, Sheikhupura	0333-6878606
2	Abdul Sattar	Inspector EPA, Sheikhupura, Punjab	EPA, Sheikhupura	0301-4299262

Environmental Experts

Name	Designation	Address	Contact
Iftikhar Ahmad	Environmental Consultant Pak Green Environmental Lab	Gulberg, Lahore	0303-4442334
Fahim Nasim	Consultant	Gulshal Ravi, Lahore	0333-6878606

Environmental and Social Team Composition

A team of senior and juniors and experienced professionals headed by Environmental and Social Specialist and two environment engineers/scientist and one social expert were constituted for conducting EIA study. After review of study documents the team visited the selected site of district Sheikhupura for the project Alfalah Paper & Board Mills for collection of data on various aspects of the study as required for the EIA. They also conducted meetings with all stakeholders.

8.3 PARTICIPATION FRAMEWORK OF STACKEHOLDERS:

Stakeholder analysis was carried out to identify relevant stakeholders on the basis of their ability to influence the project or their vulnerability to be negatively impacted from it. This approach ensured that no relevant groups are excluded from the consultation, and appropriate engagement strategies are developed for each stakeholder.

- Visit of random places which will be affected to this proposed project AP&BM.
- Within each village identification of a place where villagers could meet.

Directly Affected People included

The directly affected people will include farmers, livestock holders, growers, craftsmen, local shopkeepers, villagers, visitors, etc.

8.4 CONSULTATION PROCESS:

The consultations with the project stakeholders were carried out while conducting the EIA. A participatory and consultative approach was employed for information gathering and data collection. Meetings and consultations were held with a range of key

informants as well as government and civil society stakeholders at different levels. The focus group discussions with smaller groups of grassroots stakeholders were held. These discussions were held with project affected people, project beneficiaries and other local communities. This process of stakeholder consultation was conceived to interact meaningfully with affected communities and other stakeholders. The consultations also helped better understand local knowledge with respect to the various sets of issues and concerns, and integrate these into the project design and EMP.

Data Collection/Compilation

During this phase, data was collected and compiled to develop a baseline of the project area's Physical, Biological and Social Environment. For this purpose, both review of secondary sources and field data collection were carried out.

The secondary resources that were consulted included reports of the studies carried out earlier, published books and data, and relevant websites. With the help of these resources a generic profile of the entire feasibility/project area was developed.

Consultative Meetings with Stakeholders

A series of consultation was carried out with stakeholders and general public in proposed Alfalah Paper & Board Mills project.

In this regard, the rounds of public consultation and social assessment survey was held on December 16, 2024 with selected persons including Government/ Non-Government Officials, village notables and general community of Project area.

The purpose of this survey was to achieve the objectives of the consultation, highlight the main issues in the implementation of the proposed Project and finally propose mitigation measures. Open and close ended questionnaire was used to collect the views concerning the assessment survey. Scoping sessions and informal group discussions were also carried out with local residents and local government representatives regarding the proposed Project. The outcome of whole consultation process was very encouraging. The following issues were discussed during Informal Meetings with local representatives:

i. Brief Description of the Project
ii. Current Condition of the area along with Alfalah Paper & Board Mills.
iii. Perceptions about the proposed Project

iv. Perceived impacts of the proposed Project

The community took a keen interest in the objectives and interventions of the Project and gave their comments accordingly. Generally, people were found to be aware of the need to improve the drinking water quality. Residents of the area were very much supportive to implement the proposed Project and perceived the proposed Project to be helpful in enhancing the economic value of the area. The school teachers and other local representatives also showed the positive attitude about the proposed Project and emphasized that the proposed Project should meet the requirement of the area and to fulfill the needs of the growing population. The people also showed their concern about the economic and social issues of the area during operation stage.

The local poor people predominantly requested for unskilled and semi-skilled jobs during implementation of the Project. On the basis of the consultations so far, it appears that the Project will have no insurmountable environmental and social impact. The community generally supported the proposed project “Alfalah Paper and Board Mills”. They have opinion that the Project will not only provide livelihood during construction stage, but also will help in having job opportunities during operation stage.

8.5 ISSUES IDENTIFIED BY STAKEHOLDERS IN STUDY AREA.

Following general and specific issues were identified by the stakeholders:

- Irrigation department has no issue with disposal of wastewater into Deg Nullah but it should be properly treated and disposal should be done after compliance of PEQS limits.
- Paper manufacturing is required extensive use of water so AP&BM should make sure that the water should be used as minimum as possible. The wastewater from industry should be properly treated to bring it within to PEQS limits.
- 1.5 trees require for manufacturing of one ton of paper rim. However, the AP&BM is going to use waste paper and board for Duplex board manufacturing which is very great step in conserving forest of Pakistan.
- There is dire need of development and employment opportunities in the area but these activities should not deteriorate environmental quality in any sense.
- There is no Mosque in the boundary of Alfalah Paper & Board Mills. They have

problem for offering prayers.

- The People lives along the site area have the problem of noise, so do something to control noise.
- The people of areas/villages located closer to the Alfalah Paper & Board Mills shall have problem of smoke which may cause different diseases.
- To give job opportunities to the local community living around the project area.

8.6 REDRESSAL OF THE CONCERNS

- Effort has been made to address the concerns/issues raised by stakeholders. Following actions are recommended as redress of the concerns;
- The Company will give jobs to the community living around the project area.
- The Company will comply with regulations to control Noise & Smoke generated from the industrial units and will look up to this issue to mitigate the problems associated with Noise & smoke emissions.
- Wastewater treatment plant will be installed to treat wastewater generated from AP&BM project.

Sr. No	Address	Individual Consulted	Main Concerns	Expectations
1	Kot Pindi Das	7	Most of the locals are jobless.	AP&BM should prefer locals for skilled and unskilled jobs. Maximum Jobs should be given to locals.
2	Gulshan Adda	2	People living near the industry may face problem of noise pollution.	AP&BM should control their plant noise by installing equipment for noise control
3	Jamber Khurd,	3	People living near the industry may face problem of smoke	AP&BM should control their air emissions to keep environment safe and healthy.

4	Jamber Kalan,	4	There is no mosque in the industry area.	Management of AP&BM should construct mosque for the workers of industry to offer prayers.

CHAPTER 9

CONCLUSION AND RECOMMENDATIONS

9.1 CONCLUSION

Based on the environmental and social impacts assessment of the proposed project "Alfalah Paper & Board Mills., it is concluded that Project will have short term and reversible impacts with moderate to minor magnitude. Implementation of AP&BM project will definitely enhance the economic and employment opportunity and will also contribute to country's economic. The major impacts of the Project are summarized as under:

- All the impacts like soil erosion, soil contamination, solid waste generation, water contamination, air pollution, high noise level, etc. are of temporary nature and can be controlled and mitigated.
- No protected forest area or wildlife sanctuary or any other environmentally sensitive site exists within the Project Area of impact, which may be affected by the Project.
- No indigenous affecteis have been identified in the Project.
- A comprehensive EMMP has been developed identifying the impacts, mitigation measures, agencies responsible for implementation and monitoring of the proposed measures. EMMP also describes the environmental and social monitoring responsibilities.

In the light of the above discussions, it may be concluded; as most of the above impacts are of temporary nature and manageable through proper planning/execution and good engineering practices and none of these are irreversible, therefore proposed Project is environment friendly and will have the least impacts on the area's existing social and environmental settings.

9.2 RECOMMENDATIONS

Although comprehensive mitigation measures have been proposed in the report to minimize the negative impacts and to enhance the positive impacts of the Project, however, major recommended measures are summarized as under:

- Soil erosion and contamination, solid waste management, water contamination, air pollution and high noise levels should be controlled with the use of good engineering practices.
- The Contractor will have to adopt suitable timing (8am-5pm) for the construction activities so as to cause the least disturbance to the local community.

- Contractor should take due care of the local community and its sensitivity towards local customs and traditions.
- Locals should be preferred for the job opportunities during construction/operation of the Project.
- Special emphases will be given for disposal of wastewater.
- EMMPs proposed in Chapter 7 should be implemented in their true spirits

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