

ENVIRONMENTAL IMPACT ASSESSMENT (EIA)

EXPANSION OF M/S LEATHERTEX GLOVING (PVT.) LIMITED BY ESTABLISHMENT OF DYEING UNIT, STITCHING UNIT, WASTEWATER TREATMENT PLANT AND ALLIED FACILITIES

AT



**M/s LEATHERTEX GLOVING (PVT.) LIMITED
8 KM IQBAL NAGAR FERROZEPUR ROAD
KASUR**

October, 2025



SOLUTION ENVIRONMENTAL & ANALYTICAL LABORATORY

Report Disclaimer: M/s Seal Consultancy has conducted this study in accordance with EPA guidelines, relevant Acts and Regulations, and under the directives of Leathertex Gloving (Pvt.) Limited., Kasur. This document is intended for submission to the Punjab EPA to obtain environmental approval for the project's construction phase. Prior permission from LGPL is required for any individual, company, or institution wishing to use this document or any information contained within it. Use of this information is at the user's own risk, and this document is not intended for any legal presentation other than getting NOC from EPA.



ES. EXECUTIVE SUMMARY

ES.1 TITLE AND LOCATION OF THE PROJECT

ES. 1.1 TITLE

Expansion of M/s Leathertex Gloving Pvt. Limited by Establishment of Dyeing Unit, Stitching Unit, Wastewater Treatment Plant and Allied Facilities at 8 Km Iqbal Nagar, Ferozepur Road, Kasur.

ES 1.2 LOCATION

8 Km Iqbal Nagar, Ferozepur Road, Kasur

ES.2 THE PROPONENT

Mr. Amjad Malik (Director)

Phone: 0300-8402856

ES.3 THE CONSULTANT

Solution Environmental & Analytical Laboratory (SEAL)

Contact Person: Syed Nihal Asghar (Director)

ES.4 A BRIEF OUTLINE OF THE PROPOSAL (TYPE, PROCESS, TECHNOLOGY AND LAND REQUIREMENT)

M/s Leathertex Gloving (Pvt.) Limited (LGPL), Kasur has already constructed a Stitching Unit within its premises at 8 Km Iqbal Nagar, Ferozepur Road, Kasur after obtaining Environmental Approval for Construction Phase from EPA dated 13-09-2024.

Now, LGPL intends to carry out expansion project within the same premises at 8 Km Iqbal Nagar, Ferozepur Road, Kasur.

The proposed Expansion Project involves following establishments:

- Dyeing Unit – Dyeing, Finishing
- Stitching Unit
- Wastewater Treatment Plant
- Allied facilities such as warehouses, Stores, Biomass-fired boilers, Mess etc.

As per Punjab EPA Review of IEE and EIA Regulations, 2022, the Project of Dyeing Unit falls in Schedule II-B requiring an Environmental Impact Assessment (EIA):



**SCHEDULE II
(See Regulation 4)
List of projects requiring an EIA**

B. Manufacturing and processing

6. Textile units comprising of dyeing & printing

ES 4.1 Process and Technology

ES.4.1.1 Dyeing Unit

The textile dyeing process involves three main stages: preparation, dyeing, and finishing. Each stage requires various chemical and mechanical treatments to remove impurities and ensure the fabric can properly absorb and retain color.

1. Preparation

This stage removes both natural impurities and those picked up during manufacturing.

- **Singeing:** Burns off surface fibers on woven fabrics for a smooth finish and even dyeing.
- **Desizing:** Removes sizing agents from warp yarns to improve moisture and dye absorption.
- **Scouring:** Eliminates oils, waxes, and dirt using alkali to make the fabric absorbent.
- **Bleaching:** Uses hydrogen peroxide to remove natural color, whitening the fabric for dyeing.
- **Mercerizing:** Treats cotton with caustic soda under tension to enhance strength, luster, and dye affinity.

2. Dyeing

Color is applied to textiles at various production stages—fiber, yarn, fabric, or garment.

- **Batch dyeing:** Material is soaked and agitated in a dye bath until color is absorbed.
- **Continuous dyeing:** Fabric passes through dye baths and is fixed with heat or steam.
- **Application:** Dyes are applied in an aqueous dye bath with chemicals for evenness and fastness.
- **Absorption & Fixation:** Heat and chemicals help fibers absorb and fix dye to prevent washout.

3. Finishing:



After dyeing, fabrics undergo treatments to enhance appearance, texture, and performance.

- **Washing:** Removes excess dye and chemicals for colorfastness.
- **Drying:** Moisture is eliminated using centrifuges and dryers.
- **Setting:** Heat and tension remove wrinkles and stabilize dimensions.
- **Post-treatments:** May include calendering (smoothness), sizing (firmness), softening, or special finishes like anti-static or water repellence.

ES. 4.1.2 Stitching Unit

Key steps include inspecting and pressing the fabric, preparing and pinning the pieces, threading and setting up the machine, and sewing the pieces together in a logical sequence, followed by finishing, quality control, and packaging.

ES 4.1.3 Wastewater Treatment Plant

Capacity: 100 m³ per hr.

Type: Activated Sludge Type

Main Units: Rotary Screens, Equalization Tank, Primary Clarifier, Aeration Tanks, Secondary Clarifier, Belt/Screw Filter Press for Sludge Drying.

ES 4.2 Land Requirement

Total Land of M/s Leathertex =

Stitching Unit (**Already constructed**) = 27 Kanal 6 Marla

New Dyeing Unit: 34.3 Kanal, Covered area = 24 Kanal

New Stitching Unit: 20 Kanal

Wastewater Treatment Plant: 4 Kanal

Mess: 1.33 Kanal

ES 5 MAJOR IMPACTS

The following is a summary of the expected impacts associated with the preconstruction, construction, and operating phases of the proposed expansion project:

ES 5.1 Preconstruction Phase Impacts

Project Location/Land Acquisition/Resettlement



No negative impact is expected associated with Project Location or Land acquisition as the proponent legally owns the required land within the existing premises of M/s LGPL. No resettlement is involved. No protected or sensitive area is nearby.

On the other hand, positive impact of project location is anticipated as the project site is compatible to the surrounding and infrastructure is already established.

Design

- Appropriate design has positive impact as it prioritizes enhancing safety, environmental sustainability, plant integrity, maintenance efficiency and seamless operation of the proposed project while considering site's seismic zone, comply with international design standards, incorporate emergency exits, ensures an optimized layout and address other pertinent design factors. Air emission specifications should be considered during all equipment selection and procurement. An inappropriate design for a wastewater treatment plant can lead to environmental pollution, public health risks, and regulatory fines. Water conservation features may be included in buildings designs such as rainwater harvesting.

ES 5.2 Construction Phase Impacts

Noise: Hearing loss and other physical and psychological issues - Noise Caused by Construction Machinery, Construction activities, Generators, Material transportation, Misuse of mobile.

Dust emissions: Health hazard – Emissions Caused by Excavation, Construction material handling and storage, Vehicles' movement on soft soil.

Air Emissions: Health and Environment Damage - Gaseous emissions from Construction machinery, equipment, vehicles and diesel generators.

Soil Erosion: Safety Hazard - Mainly by excavation, trees removal

Soil Contamination and Water contamination – Caused by improper Solid and Liquid Waste Management; leakages of oil and fuel from poorly maintained machinery and vehicles, spillage of chemicals, oil and fuel during handling and storage.

Water Supply: Poor and insufficient water supplies can lead to health risks and sanitation problems.

Solid Waste Management – Poor waste management can lead to air pollution, water and soil contamination (Open landfills can contaminate groundwater) and disease transmission.

Wastewater Management - Improper management can cause health hazards and ecological disruptions.

Occupational Health and Safety: Construction Activities

Traffic Congestion; Safety Hazard - Construction Material transport

Socio-economic Impacts: Positive impact through job creation and business expansion for local community



Biological Impact: Negative impacts on the environment and ecosystems caused by the clearing of trees and vegetation.

Impact on Occupational Health and Safety All Construction Activities may impact on health and safety of workers.

ES 5.3 Operational Phase Impacts

Noise: Hearing Loss, physical and psychological impact, Sometimes it may cause safety hazard. Source - High Noise from Operation machinery, Operation processes.

Air Emissions: Mainly CO₂, CO, NO_x, SO_x, Particulates, Causing health and environmental harm, originating from the stacks of boilers, diesel generators (standby). Poor indoor air quality can also endanger workers' health.

Dust Emissions: Dust from unpaved land and vehicles moving at high speeds on soft soil can pose health risks to workers and contribute to environmental pollution if not effectively controlled. Dust emissions due to improper restoration.

Poor Solid Waste Management: Soil and water contamination, along with financial losses from excessive waste in the absence of recovery or recycling measures

Poor Wastewater Management: Soil and groundwater contamination, health risks, unpleasant odors, excessive discharges into external drains, penalties, and potential business closure due to non-compliance with PEQS.

Traffic: Traffic congestion and safety risks due to transport for raw materials and final products particularly during peak traffic hours.

Impact on Occupational Health and Safety: Operational activities may lead to safety incidents and health risks. Handling and storage of chemicals, oils may also pose health and safety risks.

ES 5.4 Positive Impacts

Socio-economic Impacts: Have positive impact by creating jobs, and offering opportunities for business growth within the local community.

Change of Land Use: A positive impact as unused land will be utilized for a productive purpose.

ES 6. RECOMMENDATIONS FOR MITIGATION MEASURES

ES 6.1 General:

- Integrate the Environmental Management Plan (EMP) into the agreement with the construction contractor.
- Incorporate safety and environmental considerations into the employee appraisal system.
- Ensure that proper workplace housekeeping is maintained.



ES 6.2 Proposed Mitigations for Construction Phase

Noise:

- Ensure use of PPEs such as ear plugs and ear muffs in areas with high noise level
- Place Sign boards in areas with loud noise levels.
- Ensure well maintained and low noise construction machinery and equipment.
- Address Noise hazards in accordance with “OSHA Standards for Construction”.
- Fit an acoustic enclosure if machine is stationary.
- Ensure to switch off all equipment when not in use.
- Keep the music volume of radio or mobile phone down
- Regular monitoring and control of Noise level.

Dust Emissions:

- Minimize dust emissions by wet suppression – Use water sprays at appropriate frequency. Use water sprinkler system.
- Cover open stockpiles of construction materials with tarpaulin. (Not required as civil construction is complete)
- Cordon off project area to minimize dust migration to nearby facilities
- Carry out Site Restoration as early as feasible.
- Provide PPEs – masks etc. to the workers

Air Emissions:

- Ensure exhaust emissions from construction machinery and equipment, Generators to comply with PEQS for exhaust emissions; Ensure maintenance of Construction machinery.
- Use power supply preferably from Wapda during Construction phase to avoid gaseous emissions from diesel generators.
- Avoid open burning of solid waste

Soil and Water Contamination:

- Ensure appropriate solid waste management
- Ensure proper wastewater management
- Conduct regular and proactive maintenance of all machinery, vehicles, and generators to ensure they remain free of leaks.
- Verify the roadworthiness and fitness of material transportation vehicles.
- Conduct daily inspections of the construction site to identify any leaks or spills of oil, fuel, or chemicals.



- Designate specific areas for vehicle washing and servicing to prevent soil contamination.

Water Supply

- Ensure sufficient supply of water that meet PEQS of drinking water.
- Implement water conservation initiatives, including rainwater harvesting.
- Arrange groundwater analysis by EPA certified Lab on quarterly basis.
- Avoid wastage of water.

Solid Waste Management

- Develop a comprehensive Solid Waste Management Plan and ensure its strict implementation.

Wastewater Treatment

- Install new sewerage lines at construction site and construct a septic tank for holding wastewater before disposal to external drain.

Occupational Safety and Health

- Establish and enforce procedures in compliance with Occupational Health and Safety Administration (OSHA) standards
- Provide fire extinguishers and other firefighting equipment at sensitive places.
- Provide first aid boxes at suitable locations of the site.
- Communicate safety hazards with adequate signage.
- Use SOPs of Department of Health, Govt. of Punjab for prevention and control of dengue.
- Ensure the use of appropriate PPEs for all the contractors and factory's employees.

Traffic

- The existing roads can accommodate the increased traffic from new developments.
- Trucks entering and leaving the mill gate should be supervised by security personnel.
- Avoid material and plant machinery transportation during peak traffic hours.

Socio-economic Impacts

- The majority of unskilled jobs should be allocated to members of the local community.

Biological Impact

- During the construction or restoration phase whenever feasible, compensate for removed trees by planting 5 trees for every one removed within the open area of the premises. Additionally, undertake extensive plantation and develop landscaped areas at the Project site.



ES 6.3 Proposed Mitigations for Operational Phase

Noise

- Install low noise machinery
- Perform regular maintenance of machinery and promptly identify and repair faulty equipment to address noise issues.
- Ensure compliance with PEQS noise standards.
- Install acoustic enclosures for stationary equipment.
- Deploy noise barriers where necessary.
- Place sign boards in areas with loud noise levels.
- Provide and encourage the use of hearing protection, such as earplugs, earmuffs to minimize or eliminate noise exposure when needed.
- Monitor noise level on regular basis.

Dust Emissions

- Undertake restoration as soon as possible and either develop landscapes or cover the open area with concrete pavement.
- Provide PPEs to workers and ensure their use.
- Vehicle speed within the facility should be limited to 20 km/h,
- Water spraying should be used to control dust from unpaved access roads and area

Air Emissions

- As normal power supply is from Wapda, ensure compliance of gaseous emissions from boiler and emergency generators with PEQS.
- Install air pollution control system (APCS) such as wet scrubber/cyclone separator at boiler's exhaust.
- Ensure adequate ventilation in operational areas to prevent the accumulation of chemical vapors.
- Analyse gaseous emissions from boiler by EPA certified lab on quarterly basis and submit the reports to EPA Field Office.

Solid Waste Management

Implement a Solid Waste Management Plan using the waste management hierarchy of prevention, reduction, recycling and recovery with disposal as the least desirable stage.

Segregate solid waste at source and dispose of non-hazardous waste through local contractor whereas hazardous waste will be disposed of through EPA approved contractor.

Dispose of biomass ash from boilers (through a contractor) in a manner to reduce landfilling as much as possible.



Wastewater Management

- Wastewater treatment plant will be installed for wastewater generated at dyeing unit..
- Establish plan for wastewater minimization
- Segregate non-contaminated wastewater streams from contaminated streams.
- Monitor treated effluent quarterly to ensure compliance with the relevant PEQS.
- Spills and leakages of chemicals and dyes should be promptly contained and cleaned with minimal mixing into wastewater flowing towards ETP.
- Dispose of ETP sludge through EPA approved contractor.
-

Water Supply

- Ensure sufficient and clean water supply for the operation phase that meets PEQS of drinking water.
- Conserve water, Recycle condensate, and implement rainwater harvesting systems.
- Monitor ground water quality for relevant PEQS parameters.

Socio-economic Impacts

- The majority of unskilled jobs will be allocated to members of the local community. For semi-skilled positions, academically qualified individuals from the local community should be recruited and given appropriate training.

Biological Impacts

- Undertake extensive plantation and develop landscaped areas at the Project site, ensuring regular follow-up to support tree growth.

Occupational Health and Safety

- Prepare and implement operating and maintenance procedures with emphasis on occupational health and safety in accordance with OSHA standards.
- Enforce the use of PPEs relevant to the potential risk.
- Spills and leakages of oils and chemicals should be promptly contained and cleaned to avoid any safety incident.
- Prepare and implement safety plan for chemicals/dyes handling and storage using guidelines from their MSDS.
- Conduct safety audits on regular basis.
- Arrange trainings of permanent and contractor's employees on HSE topics.
- Prepare and implement emergency preparedness and evacuation plan for production halls and all other allied facilities
- Implement fire prevention and firefighting plan. Place fire extinguishers at every sensitive location.
- Provide first aid boxes at suitable places and train staff on first-aid
- Implement SOPs of Department of Health, Govt. of Punjab for prevention and control of dengue.



ES 7. PROPOSED MONITORING

LGPL will engage third party EPA certified Lab to perform proposed monitoring according to the parameters and frequency suggested in Table ES-1.

. Table ES-1: Environmental Monitoring Plan for Construction and Operational Phases

Components	Parameters (PEQS Compliance)	Remarks	Frequency	
			Construction	Operations
Noise	Noise Level dB(A) (PEQS)	PEQS Compliance	Quarterly	Quarterly
Ambient Air Quality	CO, *SO ₂ , NO _x , Particulates (PM ₁₀ , PM _{2.5}) (PEQS)	PEQS For Ambient Air	Quarterly	Quarterly
Gaseous Emissions	CO, SO ₂ , NO _x , Particulates	PEQS for Industrial Gaseous Emissions	Quarterly	Quarterly
Water Quality	Drinking water PEQS	PEQS for Drinking water	Quarterly	Quarterly
Effluent	Flow, T, pH, COD, BOD ₅ , TSS, Oil and grease	PEQS for Industrial Effluents	Quarterly	Quarterly
Trees Plantation	Visual Inspection	Environmental Sustainability	Regular Monitoring by Site Management.	



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1. INTRODUCTION

1.1 PURPOSE OF THE EIA REPORT

The preparation and submission of an Environmental impact assessment (EIA) Report for any development project is a statutory obligation under the Punjab Environmental Protection Act, 1997 (PEPA, 1997) amended in 2017 in terms of Section 12 of the Act.

The purpose of the 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 the construction and operational stages of the project to minimize the negative impacts to an acceptable level and preparation of Environmental Management Plan (EMP) and Environment Monitoring Plan.

The EIA Report has been prepared in line with Checklist (EIA), PAK EPA Guidelines for Preparation and Review of Environmental Reports, 1997.

1.2 IDENTIFICATION OF PROJECT AND PROPONENT

The proposed project involves Expansion of existing factory where stitching unit (Unit 1) has already been constructed after obtaining environmental approval on 13-09-2024 and now the construction of new dyeing unit, new stitching unit (Unit 2), wastewater treatment plant and Allied Facilities is planned within existing premises of M/s Leathertex Gloving (Pvt.) Limited (LGPL) which is located at 8 Km Iqbal Nagar, Ferozepur Road, Kasur. LGPL is geographically located at 31.33169 N and 74.38428 E.

1.2.1 Proponent

Proponent: Mr. Amjad Malik

Phone No. 0300-8402856

Email ID: Amjad@Leathertex.com.pk

Address: House No 9-A1, Alauddin Road, Lahore Cantt., District Lahore

CNIC # 35201-7499504-9

1.3 Consultant

Solution Environmental & Analytical Laboratory (SEAL) is providing services to conduct EIA study for the proposed Project.

Contact Person: Syed. Nihal Asghar (Director)

Contact No: 04235922295-6 / 0300-9768799

Email ID: nihalasghar@seal.com.pk; nihalasghar@gmail.com

Annexure V presents the Terms of Reference (TOR) for Appointment of Consulting Firms for Environmental Impact Assessment (EIA)



1.4 BRIEF DESCRIPTION OF NATURE, SIZE AND LOCATION OF THE PROJECT

Currently, Leathertex Gloving (Pvt.) Limited (LGPL), has a recently constructed stitching unit of garments at 8 Km Iqbal Nagar, Ferozpur Road, Kasur.

Now, the proponent plans to establish a new dyeing unit, another stitching unit, a wastewater treatment plant and allied facilities within the existing premises of LGPL. The capacities and land area required is given as under:

Table 1.1: Capacities and Land Area of Different Units at LGPL

	Unit	Design Capacity	Land area	
			Total Land	Covered Land
			244.85 Kanal	
Existing				
1	Stitching Unit 1	100,000 Items per month		27.3 Kanal
Expansion				
1	Dyeing Unit	40 Tons per day		34.3 Kanal
2	Stitching Unit 2	70,000 items per month		20 Kanal
3	WWTP	100 m3 per hr.		4 Kanal
4	Mess			1.33 Kanal
For Expansion				56.93 Kanal
After Expansion			244.85 Kanal	86.93 Kanal

The estimated cost of expansion project is PKR 450 Million

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1.4.1 Location

The project site is located within the existing premises of Leathertex Gloving (Pvt.) Limited at 8 Km Iqbal Nagar, Kasur, near Ferozpur Road, as shown in Figure 1.1.

Geographically, LGPL is located at 31.18918 N, 74.44661 E.

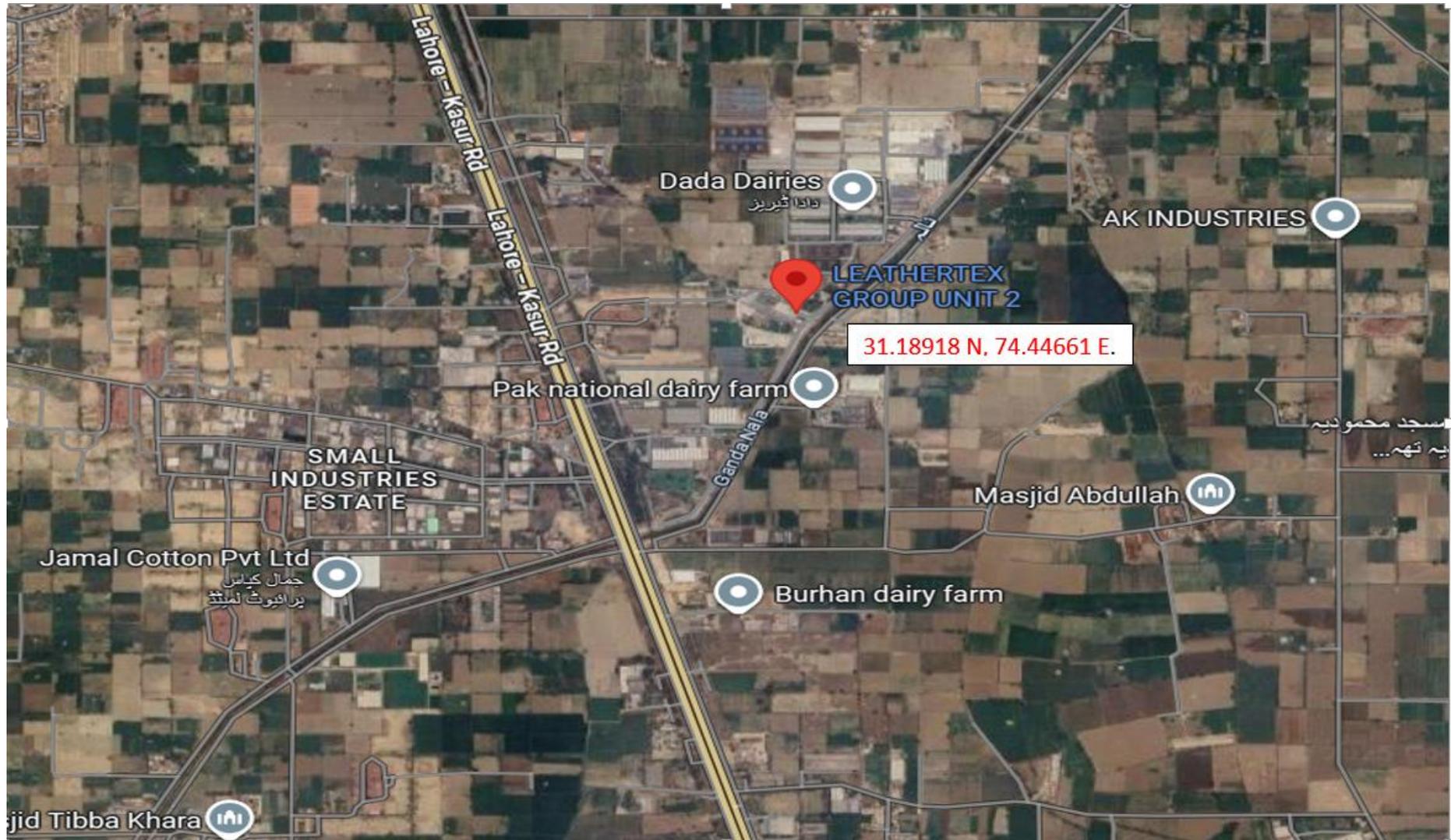


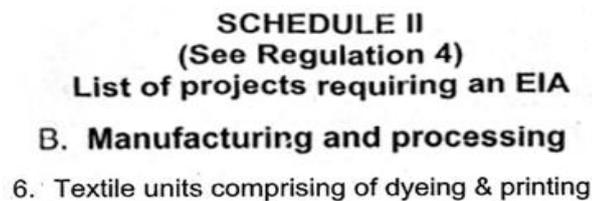
Figure 1.1: Location of Project Site

1.5 SCREENING (EIA OR IEE)

The screening was performed to determine whether the proposed project is required to be supported by:

- Initial Environmental Examination (IEE), Schedule I (Regulation 3), or
- Environmental Impact Assessment (EIA), Schedule II (Regulation 4)

According to the Punjab EPA Review of IEE and EIA Regulations, 2022, the LGPL Expansion Project, which includes a dyeing unit, falls under Subsection B of Schedule II and therefore requires an Environmental Impact Assessment (EIA)



1.6 SCOPING

1.6.1 Spatial and Temporal Boundaries of Environmental Assessment

The expansion project will be constructed/installed within the premises of existing LGPL, therefore the major construction activities of the project will remain confined within the project boundaries, access roads and related infrastructure. For the physical environmental study, the spatial boundary was considered to be “Local” where the impact was limited to the local area in close proximity to the proposed Project. The Local Study Area (LSA) was established based on the zone of the Project influence, beyond which the potential environmental, cultural, and socio-economic effects of the Project are expected to be non-detectable. Some relevant information about Kasur city was also included where required. In the case of the biological and socioeconomic environment, efforts were made to collect the information within two Km around the project area and even up to the region of 10 Km surrounding the proposed project where any direct or indirect impacts were envisaged.

The temporal boundaries have been defined as lasting with the life of the project. Segments of the temporal boundaries include the duration of the construction and operation phases of the Project.

1.6.2 Important Issues and Concerns raised during Consultation

During consultation, a broad spectrum of concerns and potential impacts were identified related to the project’s activities:

- The local community stressed the need of giving local residents preference when it comes to employment.
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- The local community expressed concern about the untreated wastewater from the dyeing unit, stating that many industries in District Kasur are discharging their effluents without proper treatment.
- They also pointed out the anticipated increase in traffic on the roadways during the Construction phase.
- Academics emphasized the need of safety plan to handle the chemicals used in dyeing unit.
- The concern of water wastage in Textile industry was pointed out.
- Local industries have much space for improvements in terms of energy savings.
- The installation of Solar system was suggested.

1.6.3 Significant Impacts and Factors to be Determined

Significant impacts and factors that need to be determined are noise, dust and gaseous emissions, safety risks, housekeeping, proper arrangements of water supply and wastewater disposal at construction site and provision of jobs to local community and traffic congestion and road accidents during construction phase. During operational phase, major impacts are related to wastewater treatment, occupational health and safety, solid waste management, water conservation, gaseous emissions from stacks, chemicals used in dyeing unit etc.

1.7 APPROACH ADOPTED TO CONDUCT THE STUDY

The following approach and methodology have been adopted for conducting the EIA Study:

1.7.3 Screening

As presented in Section 1.5

1.7.4 Scoping

As presented in Section 1.6

1.7.5 Review of Available Data

A review of the available technical information of the LDPL along with engineering documents including preliminary design data of the project was conducted. Published literature was also reviewed.

1.7.6 Description of Project

This includes a clarification of the purpose and rationale of the project, and an understanding of its various characteristics – including stages of development, location, and processes. Meetings with LGPL's management were conducted to clarify the nature of the project from an environmental perspective. Preliminary analyses of the data



received from the proponent were performed to identify key environmental issues that could arise from the Project.

1.7.7 Consideration of Alternatives

The consideration of alternatives ensures that the proponent has considered other feasible approaches, including alternative project locations, technologies, environment relevance, the 'no action' option, etc.

1.7.8 Environmental Baseline Survey

It includes the establishment of both the present and future state of the environment, in the absence of the project, taking into account changes resulting from natural events and other human activities. The project site was visited to collect primary data on groundwater quality, ambient air quality, noise level, and ecological species surviving in the area and the ecosystems prevalent. Preliminary socio-economic surveys including interviews of people around the site were also carried out to identify relevant environmental aspects. The tests for ambient air, groundwater were conducted by the EPA-certified laboratory M/s Solution Environmental Analytical Laboratory, and noise levels were measured using a noise meter.

1.7.9 Consultation with Stakeholders

The Stakeholders were consulted at each stage of EIA to enhance the quality and effectiveness of the EIA study. It would ensure that the experts' and general public's views were adequately taken into consideration in the decision-making process.

1.7.10 Identification of Main Aspects and Impacts

The aim is to ensure that all potentially significant environmental impacts (adverse and beneficial) against main aspects during preconstruction, construction, and operation phases have been identified.

1.7.11 Screening of Potential Environmental Impacts and Mitigation Measures

The collected data was evaluated and the relative significance of the identified impacts was assessed to allow a focus on the main adverse impacts. Mitigation involves the introduction of measures to avoid, reduce, remedy, or compensate for any significant adverse impacts.

1.7.12 Preparation of Environmental Management and Monitoring Plans

An environmental management plan (EMP) depicting the mitigation measures has been prepared and environmental monitoring plan has also been developed for the effective implementation of the EMP.

1.8 STRUCTURE OF REPORT

The EIA Study report is structured as follows.

The report begins with an executive summary. **Chapter 1** offers a project overview, including information about the proponent, consultant, and the Environmental Impact Assessment (EIA) process. **Chapter 2** outlines the relevant national and provincial legislation, regulations, and policies applicable to the project. **Chapter 3** provides a comprehensive description of the project summarizing its inputs and outputs. **Chapter 4** presents a baseline study of the project area, detailing the current physical, biological, and socio-economic conditions. **Chapter 5** outlines the consultation process conducted with stakeholders and general public. **Chapter 6** evaluates the potential impacts of the project, and propose mitigation measures to eliminate or minimize these impacts, compensate for losses, or rehabilitate the environment and includes residual impacts and defines monitoring requirements. **Chapter 7** delivers an Environmental Management Plan (EMP) and an Environmental Monitoring Plan for both the construction and operational phases of the project.

1.9 STUDY OF ALTERNATIVES

1.9.1 No Project Alternative

The project involves the addition of a Dyeing Unit, a new Stitching Unit, a Wastewater Treatment Plant, and allied facilities. Establishing these units requires a substantial area. Furthermore, the rising costs of electricity and other operational expenses, coupled with increased land prices and the higher capital expenditure for machinery and equipment due to the depreciation of the Pakistani rupee, have significantly reduced profit margins.

However, the proponent already possesses sufficient land for the planned expansion. Supported by a highly skilled team with decades of experience in textiles and marketing, they are confident in their ability to manage these challenges effectively. To overcome potential obstacles, the project will emphasize the use of energy-efficient and environmentally sustainable technologies, promote water conservation, and explore export opportunities.

For these reasons, the proponent has decided to move forward with the expansion rather than opting for the “No Project” alternative.

1.9.2 Location/Site Alternative

The option of establishing an independent plant was evaluated but dismissed during the initial assessment phase. This decision was made as the proponent already possesses sufficient land, and a stitching unit has already been constructed on the same site. Additionally, the necessary infrastructure for expansion is already available within the existing premises. Therefore, no other alternative was considered.

1.9.3 Technology Alternatives

Major criteria of Technology and Equipment Selection:

- Automation and digital technologies to improve energy efficiency and sustainability.
- Advanced process control systems,
- Real-time monitoring, and data analytics to optimize production processes,
- Predictive maintenance technologies can minimize equipment downtime, enhancing overall operational efficiency..
- Use of Variable Frequency drives and efficient pumps to reduce the energy consumption and the carbon foot-prints of the Mill

Different dyeing technologies—such as Conventional Jet/Winch Dyeing Machines, Low Liquor Ratio (LLR) Dyeing Machines, and Supercritical CO₂ Dyeing—were evaluated. After careful consideration, the Dyeing technology has been recommended by the designer due to its superior environmental sustainability, resource efficiency, and lower operational costs.

For wastewater treatment, various technological options were examined, and the Activated Sludge Process (ASP) was finalized, as it has proven to be a reliable and effective treatment system successfully implemented in several other textile dyeing units.

1.9.4 Environment Alternatives

Installation of solar system, wastewater treatment plant and rainwater harvesting are the major considerations to enhance Environmental Sustainability.

1.9.5 Economic Alternatives

The selected technology and design along with the selection of project site for expansion project is economically viable and sustainable.

2. LEGAL, POLICY FRAMEWORK AND GUIDELINES

2.1 GENERAL

This chapter describes the proponent's legal responsibilities in the context of Environmental and Sustainable Development, addressing the relevant current policies, legal requirements and administrative framework for conducting the EIA of the project. Establishing an efficient and effective organizational structure is essential for the successful implementation of the identified mitigation measures. Similar to other projects, the proposed Expansion Project must undergo an Environmental Assessment in compliance with the Punjab Environmental Protection Act 1997 (Amended up to 2017) before implementation.

2.2 EXISTING LEGISLATION AND LEGAL FRAMEWORK

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

2.2.1 Institutional Setup

2.2.1.1 Environment Protection Department, Punjab

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

2.2.1.2 Environmental Protection Council

The Punjab Environmental Protection Council (PEPC) is the apex decision-making body of Punjab. It was developed under the provision of Punjab Environmental Protection (Amendment) Act 2012 and headed by the Chief Minister of Punjab with other members.

2.2.1.3 Environmental Protection Agencies

Pak EPA was established at the Federal level and EPAs are established at Provincial level also. In Punjab an independent Environmental Protection Agency is constituted headed by the Director General. The purpose of EIA is to obtain Environmental Approval from the Environmental Protection Agency (EPA), Punjab in compliance with Pakistan Environmental Protection Act (PEPA) - 1997, that is now applicable having been amended by Punjab Environmental Protection (Amendment) Act 2012 and by Punjab Environment Protection (Amendment) Act 2017.



2.3 RELEVANT LEGAL / INSTITUTIONAL FRAMEWORK

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

2.3.1 Pakistan Environmental Protection Order (PEPO) 1983

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

2.3.2 Punjab Environmental Protection Act 1997

Section 12 of the Punjab Environmental Protection Act 1997 (Amendment 2017) makes it mandatory for the proponent of a project to file with the Environmental Protection Agency either an Initial Environmental Examination (IEE) or Environmental Impact Assessment (EIA), as the case may be, in respect of the project.

2.3.3 Regulations Punjab Environmental Protection (Review of IEE/EIA)

Regulations 2022

Punjab Environment Protection Department notified the Punjab Environmental Protection (Review of IEE/EIA) Regulations 2022 on December 16, 2022.

Categorization of the projects for IEE and EIA is one of the main components of the Regulations. Projects have been classified based on expected degree of adverse environmental impacts. Projects type listed in Schedule I are designated as causing potentially less adverse effects, and require an IEE whereas Schedule II covers projects with potentially high adverse effects and require EIA to be conducted.

2.3.4 The Punjab Local Government Ordinance, 2001

Schedules 4 and 8 of this Ordinance pertain to environmental pollution. There are notwithstanding any specific provisions, every local government may perform functions conferred by or under the Punjab Local Government Ordinance, 2001, and in performance of such functions may exercise such powers, which are necessary and appropriate. Under the ordinance, the local councils are authorized to restrict projects causing pollution to air, water or land. They may also initiate schemes for improving the environment.

2.3.5 Pakistan Penal Code, 1860

Pakistan Penal Code 1860, last amended in 2017, Chapter XIV has Sections that deal with the offences affecting the public health, safety, convenience, decency and moral.



2.3.6 The Land Acquisition Act, 1894

The Land Acquisition Act (1894) deals with the acquisition of private properties for public purposes. There are 55 sections in this Act mainly dealing with area notification, surveys, acquisition, compensation, apportionment awards, disputes resolution, penalties and exemptions.

Although quite old, this act laid out the legal basis for any property affected by a project and for compensating the effected owners of the land.

2.3.7 Labor Laws

Labor Laws include Employment of Child Act-1991; the Bonded Labor System (Abolition) Act 1992; Workmen`s Compensation Act-1923; Minimum Wages Ordinance-1961; The Industrial and Construction Employment Ordinance 1968. Pakistan has ratified 36 ILO conventions including 8 fundamental conventions. Pakistan has declared to bring national labor laws in conformity with the ILO Conventions. Further the Constitution (Eighteenth Amendment) Act, 2010 substantially changed the roles and responsibilities of federal and provincial governments including the devolution of labour administration to the provinces.

Operational activities during construction may affect occupational health of workers. Employers are required to abide by labor laws in respect of their own employees and to ensure that contractors to follow the relevant labor laws and rules relating to safety of the workforce and creating a healthy working environment. The proponent shall ensure that the labor force engaged at the project site is not exposed to any danger by monitoring the contractor`s work frequently.

2.3.7.1 Employment of Children Act 2016

An Act to ban the employment of children and to limit the work of adolescents (ages 15 to 18) in specific occupations and processes, such as the transportation of passengers, goods, or mail; working with live electrical wires over 50 volts; and exposure to toxic materials.

2.3.7 Antiquity Act 1975

The Pakistan Antiquities Act of 1975 aims to safeguard physical cultural resources in Pakistan. This Act specifically protects designated "antiquities" from destruction, theft, neglect, illegal excavation, and trade. It prohibits new construction near protected antiquities and grants the Government of Pakistan (and Provincial Governments following the 18th Amendment to the Constitution) the authority to restrict excavation in areas that may contain archaeologically significant artifacts.

2.4 POLICIES FRAMEWORK

2.4.1 National Environmental Policy 2005



The National Environmental Policy (2005) provides a 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 bio diversity, 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 administrated territories and local governments to address their environmental concerns and to ensure effective management of their environmental resources.

2.4.2 National Drinking Water Policy 2009

The Government of Pakistan (Ministry of Environment) formulated this policy to provide adequate quantity of safe drinking water to entire population of Pakistan. The Policy aims to reduce the incidence of death and illness caused by water-borne diseases. The policy also provides specific guidelines for increasing access to safe drinking water, protection and conservation of surface and groundwater resources, water treatment and safety, community participation, public awareness, capacity development, public private partnership, research and development, emergency preparedness and response and coordinated planning and implementation. It also enforces National Drinking Quality Standards.

2.4.3 Punjab Drinking Water Policy 2011

The “Punjab Drinking Water Policy” provides guiding principles under which the efforts of provincial and local authorities shall be planned and coordinated. To keep the policy framework in line with the aims of the Federal Government, the Government of Punjab has adopted the key principles outlined in the National Drinking Water Policy of 2009.

2.4.4 National Water Policy 2018

The objective of the National Water Policy is to take cognizance of the emerging water crisis and provide an overall policy framework and guidelines for a comprehensive plan of action. The Policy is a national framework within which the provinces can develop their master plans for sustainable development and management of water resources. The water resource is a national responsibility but irrigation and agriculture, as well as rural and urban water supply, environment and other water-related subsectors are provincial subjects.

2.4.5 Punjab Water Policy 2018

This Punjab Water Policy is a sectoral policy document at provincial level. The overall objective of Punjab's Water Policy is to provide clear policy directions to the Government of Punjab on the sustainable management and development of water from all sources of water (surface water, groundwater and rainwater), for all sub-sectors of water use (domestic, stock water, agriculture, industry, commercial and environment) and for all regions (Indus basin canal commands and outside the canal commands) at the basin level through equitable water allocations, management and development.

2.4.6 Pakistan Biodiversity Strategy and Action Plan (2017-2030)



This document provides a framework for implementation as well as monitoring and evaluation of the National Biodiversity Strategies and Actions Plan and also provide a framework for implementation of provincial biodiversity action plans.

2.4.7 National Climate Change Policy 2012

The Policy provides a framework for addressing the issues in various sectors such as water, agriculture, forestry, coastal area, biodiversity and other vulnerable ecosystems. It ensures environmental compliance through IEE and EIA in the development process.

2.4.8 Protection of Trees and Brushwood Act (1949)

The Protection of Trees and Brushwood Act of 1949 prohibits the cutting or lopping of trees along roads and canals planted by the Forest Department unless prior permission of the Forest Department is obtained

2.4.9 Punjab Labor Policy 2018

The Punjab Labour Policy 2018 is a comprehensive policy framework introduced by the Government of Punjab, Pakistan to promote and regulate labor rights and welfare in the province. Overall, the Punjab Labour Policy 2018 aims to strengthen labor rights, promote worker welfare, and create a conducive environment for industrial and economic growth in the province.

2.4.10 National Safety Policy - (NP-02/2020)

The National Safety Policy outlines the Major Implementation Principles and make it clear that the prime responsibility for safety must rest with the person or organization responsible for facilities and activities that give rise to radiation risks. It emphasizes to establish and implement an effective integrated management system to promote a strong safety culture within the organization and ensure that senior management shall demonstrate commitment and leadership for safety and its continual improvement within the organization.

2.4.11 National Disaster Response Plan 2019

The National Disaster Response Plan is the main policy document that guides Pakistan's approach to national disaster management.

2.4.12 Punjab Women Development Policy 2018

The Punjab Women Development Policy 2018 was created by the provincial government with the intention of creating a gender-sensitive Punjab. Its objectives are to address the full spectrum of women's development issues and challenges in accordance with the spirit of the Constitution, Pakistan's international obligations, and the provincial government's pursuit of gender mainstreaming and women's empowerment in Punjab.

2.5 NATIONAL AND INTERNATIONAL GUIDELINES

2.5.1 Guidelines for the Preparation and Review of Environmental Reports 2017

The scope of this guidelines is confined to those aspects of environmental report preparation and review which are of a general nature. Most of the Sections of these guidelines apply to both IEE and to EIA.

2.5.2 Guidelines for Public Consultation 1997

Pakistan EPA's guidelines explain objectives, stakeholders and their level of involvement; techniques for public consultation; factors for effective public consultation; consensus building and dispute resolution etc.

2.5.3 Checklists for IEE/EIA Projects:

These checklists provide guidelines for preparation and review of environmental reports

2.5.4 International Finance Corporation (IFC) Guidelines

IFC Environmental and Social Performance Standards (PSs): The Performance Standards are directed towards clients providing guidance on how to identify risk and impacts, and are designed to help avoid, mitigate, and manage risks and impacts as a way of doing business in a sustainable way, including stakeholder engagement and disclosure obligations of the client in relation to project-level activities. The following are the eight standards that Client is to meet throughout the life of an investment by IFC:

- PS 1: Assessment and Management of Environmental and Social Risks and Impacts;
- PS 2: Labor and Working Conditions;
- PS 3: Resource Efficiency and Pollution Prevention;
- PS 4: Community Health, Safety and Security;
- PS 5: Land Acquisition and Involuntary Resettlement;
- PS 6: Biodiversity Conservation & Sustainable Management of Living Resources;
- PS 8: Cultural Heritage.

Performance Standard 1 applies to all projects that have environmental and social risks and impacts. Specific objectives of PS1 are:



- To identify and assess social and environmental impacts, both adverse and beneficial, in the project area of influence;
- To avoid, or where avoidance is not possible, minimize, mitigate, or compensate for adverse impacts on workers, affected communities, and the environment;
- To ensure that affected communities are appropriately engaged on issues that could potentially affect them;
- To promote improved social and environmental performance for companies through the effective use of management systems.

IFC guidelines and Industry Sector Guidelines:

IFC General Environment, Health and Safety (EHS) Guidelines and Industry Sector Guidelines contain the following information as depicted in Table 2.1.

Table 2-1: EHS Information Available for different Industry Sectors

General EHS Information	Industry Sector Guidelines Available for
1. Environmental	
1.1 Air Emissions and Ambient Air Quality	
1.2 Energy Conservation	Sector 1: Agribusiness /Food Production (14 Subsectors)
1.3 Wastewater and Ambient Water Quality	Sector 2: Chemicals (11 Subsectors)
1.4 Water Conservation	Sector 3: Forestry (4 Subsectors)
1.5 Hazardous Materials Management	Sector 4: General Manufacturing (12 Subsectors)
1.6 Waste Management	Sector 5: Infrastructure (14 Subsectors)
1.7 Noise	Sector 6: Mining (1)
1.8 Contaminated Land	Sector 7: Oil and Gas (3 Subsectors)
2. Occupational Health and Safety	Sector 8: Power (4 Subsectors)
2.1 General Facility Design and Operation	
2.2 Communication and Training	
2.3 Physical Hazards	
2.4 Chemical Hazards	
2.5 Biological Hazards	
2.6 Radiological Hazards	
2.7 Personal Protective Equipment (PPE)	
2.8 Special Hazard Environments	
2.9 Monitoring	
3. Community Health and Safety	
3.1 Water Quality and Availability	



3.2 Structure Safety of Project Infrastructure	
3.3 Life and Fire Safety	
3.4 Traffic Safety	
3.5 Transport of Hazardous Materials	
3.6 Disease Prevention	
3.7 Emergency Preparedness and Response	
4. Construction and Decommissioning	
4.1 Environment	
4.2 Occupational Health and Safety	
4.3 Community Health and Safety	

IFC- The EHS Guidelines for Textile Manufacturing

The EHS Guidelines for Textile Manufacturing were incorporated into the EIA study, offering information relevant to environmental, health, and safety aspects of Textile manufacturing facilities.

2.6 PUNJAB ENVIRONMENTAL QUALITY STANDARDS (PEQS)

The Punjab Environment Department had notified the relevant PEQS in 2016 for:

- Ambient Air
- Drinking Water
- Industrial Gaseous Emissions
- Motor vehicles exhaust and noise
- Noise
- Municipal and Liquid Industrial Effluents



3 DESCRIPTION OF PROJECT

3.1 GENERAL

This section describes brief details of the proposed Project that include the project's objectives, site location and layout, current land use, road access, and vegetation features. The project description encompasses process description, process flow chart, technology, raw materials, products, byproducts, project cost and magnitude and implementation schedule. Rehabilitation (if any) and restoration plans are also presented

3.2 OBJECTIVES OF THE PROJECT

Main objectives of the expansion project are to:

- Establish Textile dyeing unit, stitching unit and wastewater treatment Plant along with necessary allied facilities.
- Generate employment for local community.
- Promote environmental sustainability through the use of biomass as a biofuel for boilers, water conservation measures, wastewater treatment, and minimization of wastewater generation.
- Ensure full compliance with the PEQS.
- .

3.3 LOCATION AND SITE LAYOUT OF THE PROJECT

The project site is located within the existing proximity of M/s Leathertex Gloving Private Limited located at 8 Km Iqbal Nagar, Ferozepur Road, Kasur.

The Site Layout of LGPL is illustrated in Figure 1.1 and Site Layouts before and after Expansion Project are presented in Figures 3.1 -3.3.

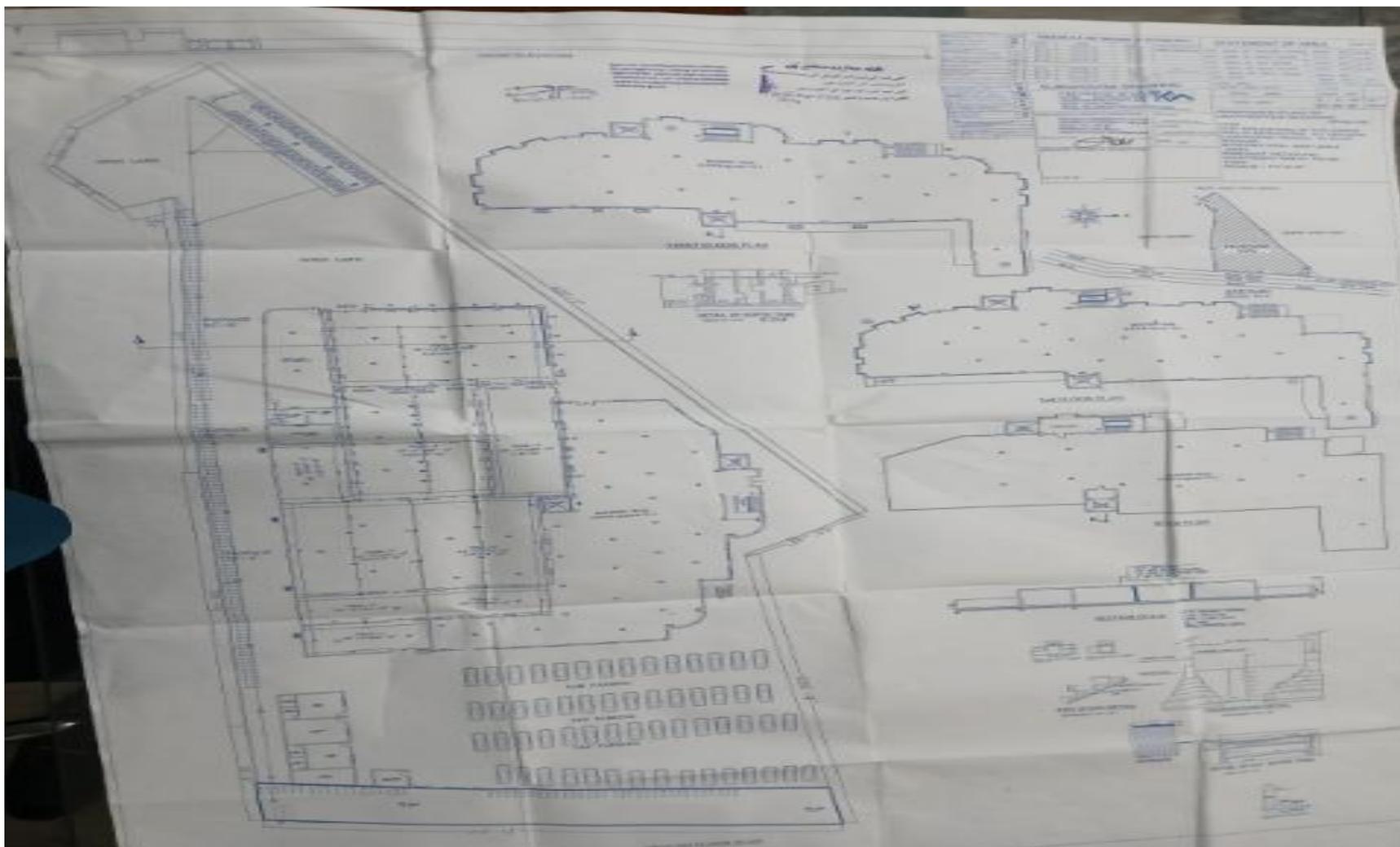


Figure 3.1: Existing Site Layout – Stitching Unit

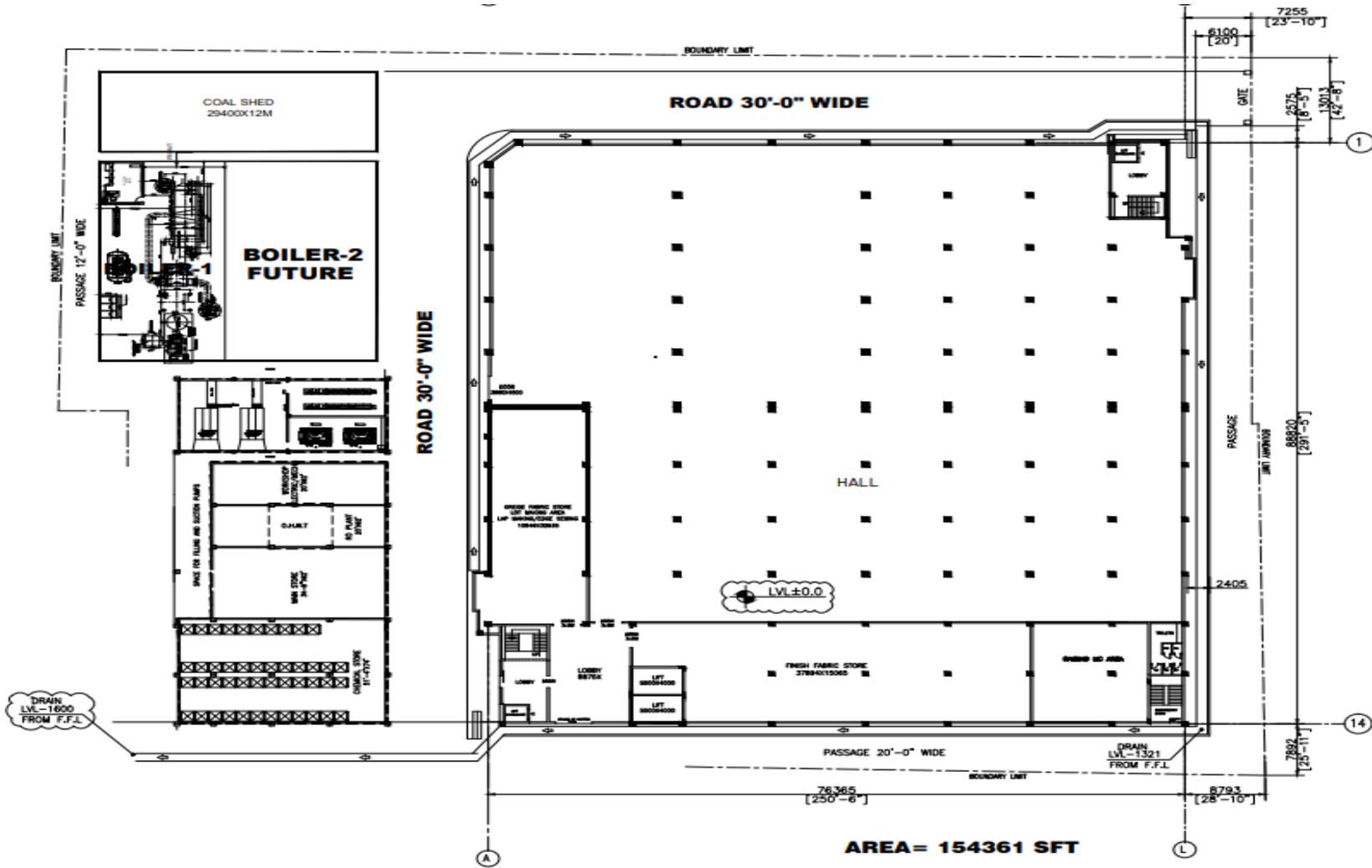
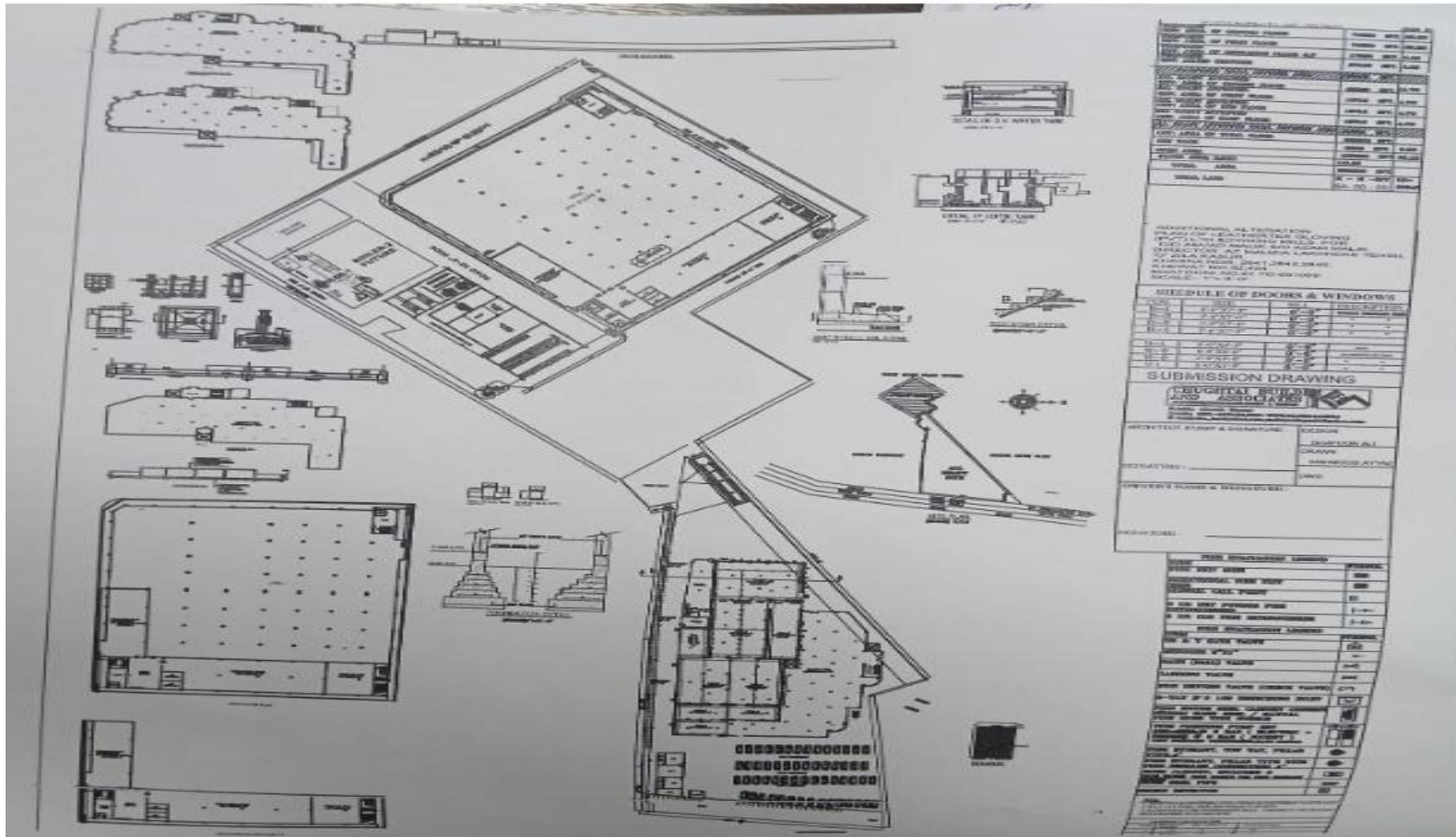


Figure 3.2 Layout Plan of Dyeing Unit (Expansion Project)



3.4 LAND USE ON THE SITE

Current use of the land is Open land within the existing LGPL's premises as shown in Figure 3.4



Figure 3.4 Current Land Use of Project Site

3.5 ROAD ACCESS

The Ferozpur Road, also known as Lahore-Kasur Road, is less than 1 Km away from the LGPL project site in District Kasur and provides easy access to both Kasur and Lahore cities as well as to other parts of Pakistan.

Figure 3.5 illustrates the road accessibility of the project site.

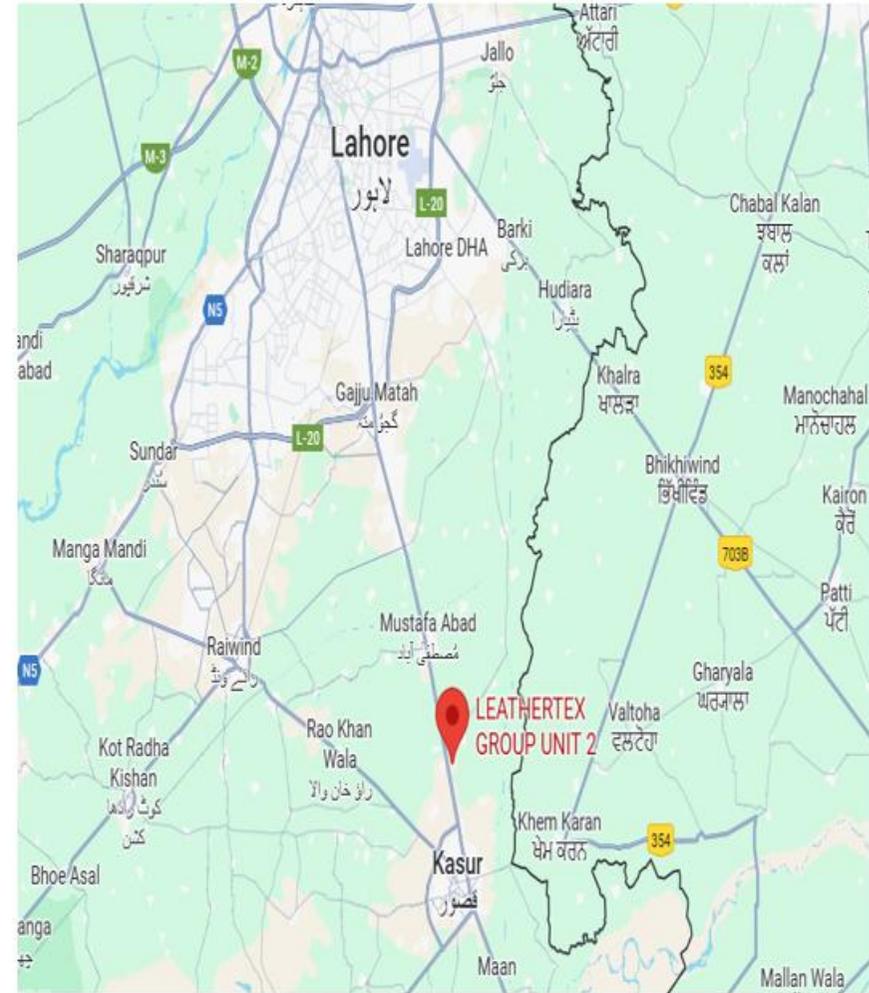
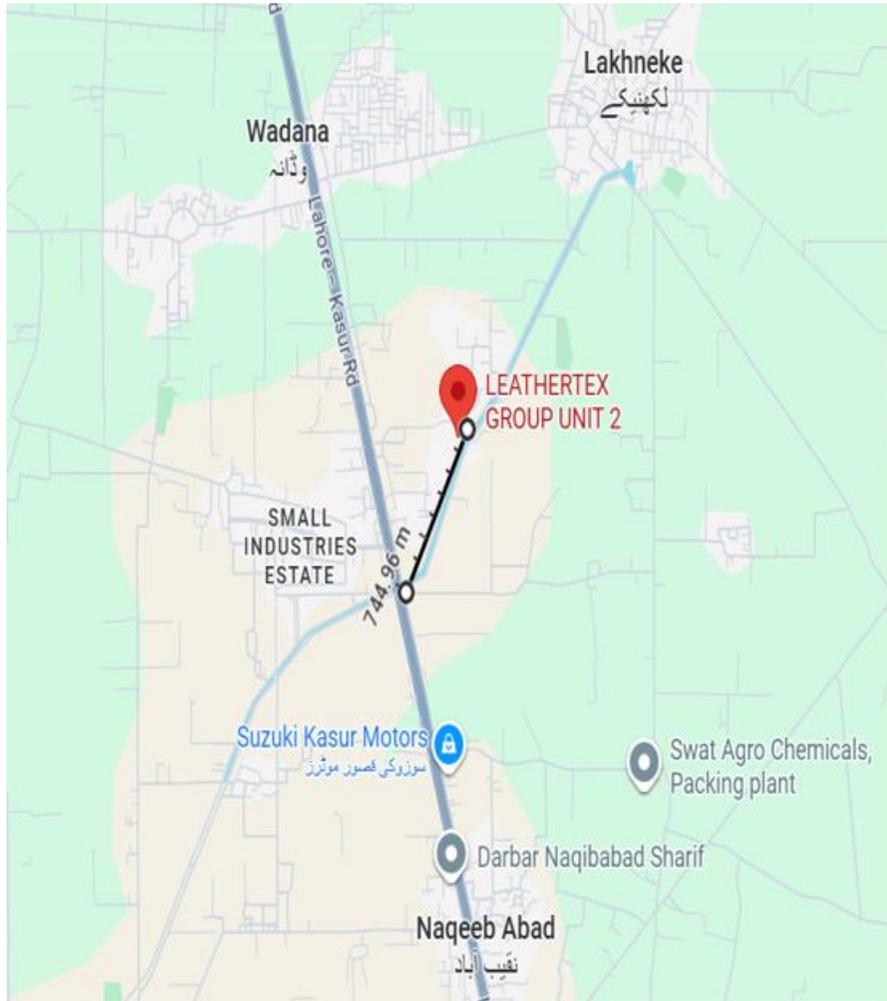


Figure 3.5 Road Access of Project Site

3.6 VEGETATION FEATURE ON SITE

The project site is an open, undeveloped area (Figure 3.6) with a few shrubs, grassy land and a few trees. If tree removal becomes unavoidable, ten native tree species will be planted for each tree removed as compensation.



Figure 3.6 Vegetation at Site

3.7 COST AND MAGNITUDE OF THE PROJECT

The estimated cost of the Expansion project (Civil, Mechanical, Electrical and others) is around PKR 450 Million.

The Expansion Project involves civil, electrical and mechanical activities along with the installation of diverse equipment, machinery, instrumentation and pipelines etc. to install a dyeing unit, stitching unit, wastewater treatment plant and allied facilities including stores, warehouses, Buildings (Offices, Mess), Utilities such as biomass fired boilers, RO Plants,

3.8 SCHEDULE OF IMPLEMENTATION

The construction will be started just after getting the Environmental approval. As per original plan, the completion duration for Construction phase is about 1.5 years. The process is divided into 3 phases

3.8.1 Preconstruction phase

This phase includes:



- Site investigation and Evaluation
- Budgeting
- Design
- Work Scheduling
- Obtaining all relevant Approvals and NOC
- Finalization of construction contractor

3.8.2 Construction phase

This phase includes:

- Job description of Management Team and Construction Crew
- Safety inductions
- Construction activities including civil work and Plants installation
- Provision of allied facilities
- Mitigation process
- Managing safety
- Monitoring and Evaluation

3.8.3 Operational phase

This phase includes:

- Implementation of fire safety, emergency evacuation plans
- Security management
- Finalization of Operation and Maintenance Work Instructions/Procedures
- Steam/air blowing of pipelines
- Final checking for operation of the Factory and ancillaries
- Commissioning

3.9 DESCRIPTION OF THE PROJECT

.3.9.1 Main Features of Proposed Project:

Proposed project involves an expansion the addition of a Textile Dyeing Unit, another Stitching Unit, Wastewater Treatment Plant and associated allied Facilities all of which will be established within the existing LDPL premises at 8 Km Iqbal Nagar, Ferozepur Road, Kasur.

3.9.2 Process and Technologies

3.9.2.1 Dyeing Unit

The textile dyeing process involves three main stages: preparation, dyeing, and finishing. Each stage requires various chemical and mechanical treatments to remove impurities and ensure the fabric can properly absorb and retain color.

Preparation

This stage removes both natural impurities and those picked up during manufacturing.

- **Singeing:** Burns off surface fibers on woven fabrics for a smooth finish and even dyeing.
- **Desizing:** Removes sizing agents from warp yarns to improve moisture and dye absorption.
- **Scouring:** Eliminates oils, waxes, and dirt using alkali to make the fabric absorbent.
- **Bleaching:** Uses hydrogen peroxide to remove natural color, whitening the fabric for dyeing.
- **Mercerizing:** Treats cotton with caustic soda under tension to enhance strength, luster, and dye affinity.

Dyeing

Color is applied to textiles at various production stages—fiber, yarn, fabric, or garment.

- **Batch dyeing:** Material is soaked and agitated in a dye bath until color is absorbed.
- **Continuous dyeing:** Fabric passes through dye baths and is fixed with heat or steam.
- **Application:** Dyes are applied in an aqueous dye bath with chemicals for evenness and fastness.
- **Absorption & Fixation:** Heat and chemicals help fibers absorb and fix dye to prevent washout.

Finishing:

After dyeing, fabrics undergo treatments to enhance appearance, texture, and performance.

- **Washing:** Removes excess dye and chemicals for colorfastness.
- **Drying:** Moisture is eliminated using centrifuges and dryers.
- **Setting:** Heat and tension remove wrinkles and stabilize dimensions.
- **Post-treatments:** May include calendering (smoothness), sizing (firmness), softening, or special finishes like anti-static or water repellence.
-

3.9.2.2 Dyeing Unit Process Flow Chart

Figure 3. 7: Process Flow Diagram of Dyeing Unit



3.9.2.3 Stitching Unit

Key steps include inspecting and pressing the fabric, preparing and pinning the pieces, threading and setting up the machine, and sewing the pieces together in a logical sequence, followed by finishing, quality control, and packaging.



3.9.2.4 Wastewater Treatment Plant

Capacity: 100 m³ per hr.

Type: Activated Sludge Type

Treatment Scheme:

1. PRELIMINARY TREATMENT

- Screening of feed effluent through Mechanical screen to remove the large floating material which may damage downstream equipment and collection of effluent in effluent collection sump. Feeding of effluent in the equalization tank via effluent transfer pumps
- Equalization of screened effluent as per process requirement in the Equalization Tank.
- Provision of acid dosing system for pH Correction.

2. AEROBIC BIOLOGICAL TREATMENT

- Collection of the effluent in anoxic tank
- Biological treatment in the Aeration Tank. Aeration will be provided by fine bubble diffused aeration.
- Excess sludge from aeration tanks shall be wasted to the Sludge Thickener for sludge thickening.
- Overflow from Aeration tanks shall overflow to Secondary Clarifier.
- Collection of Clarified water in Clarified water storage Tank.
- Hypo dosing shall be provided to disinfect the clarified water
- After disinfection the treated water outlet shall be discharged complying with PEQS
-

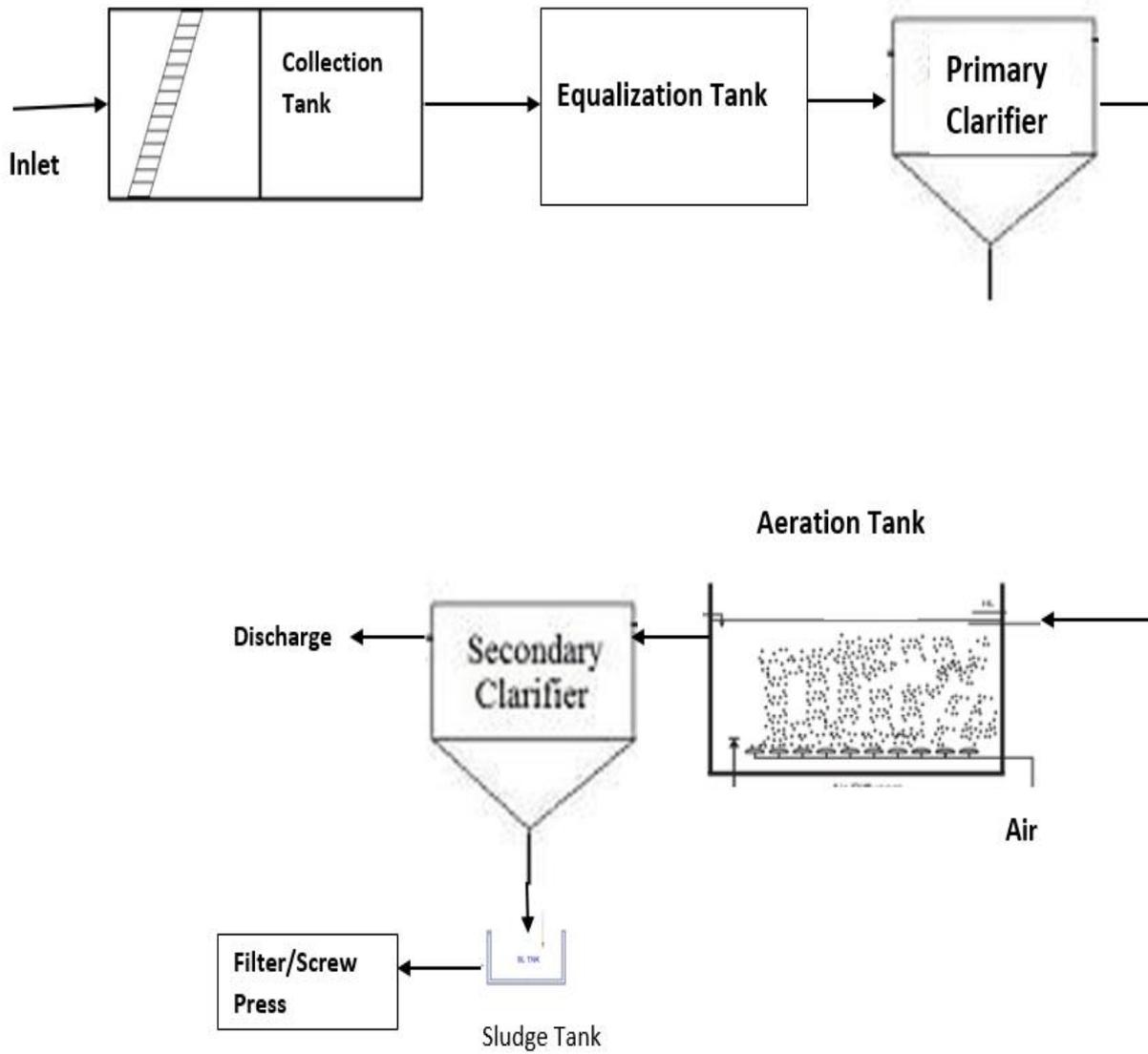
3. SLUDGE HANDLING SYSTEM

- Sludge generated from the Clarifier shall be sent to Sludge Thickener.
- Thickened sludge from Sludge Thickener will be sent to Sludge drying bed.
- Dried sludge will be disposed of through a contractor

4. TERTIARY POLISHING SYSTEM (Optional)

- Clarified water shall be pumped to Self-Cleaning Filter via Self Cleaning Filter feed Pumps.
- Decolorizing agent dosing & anionic polymer shall be done for color removal of treated effluent
- Filter outlet shall be discharged

Figure 3.8 Wastewater Treatment Plant



3.9.2.5 Salient Features of Expansion Project

Table 3. 1 Salient Features of Expansion Project at LGPL

Project	Expansion of M/s Leathertex Gloving Pvt. Limited by Establishment of Dyeing Unit, Stitching Unit, Wastewater Treatment Plant and Allied Facilities at 8 Km Iqbal Nagar, Ferozepur Road, Kasur.	
Nature of Project	Textile dyeing/Finishing, garments stitching, wastewater treatment	
Final Product	Dyeing Unit: Dyed Yarn/Faber; Stitching Unit: Garments	
Proponent:	Name: Mr. Amjad Malik Phone No. 0300-8402856 Email ID: amjad@Leathertex.com.pk Address: H. No. 9-A1 Allauddin Road, Lahore Cantt, Lahore CNIC #: 35201-7499504-9	
Land Area	Total Land Area	244.85 Kanal
	Existing Stitching Unit	27.3 Kanal
	Dyeing Unit (Expansion)	34.3 Kanal
	Stitching Unit (Expansion)	20 Kanal
	Wastewater Plant (Expansion)	4 Kanal
	Mess (Expansion)	1.33 Kanal
	Total Land Area Required for Expansion	59.63 Kanal
	Total Covered Land Area After Expansion	86.93 Kanal (59.63+27.3)
Design Capacities of Units	Existing Stitching Unit	100,000 items per day
	Dyeing Unit	40 Tons per day
	New Stitching Unit	70,000 items per day
	Wastewater Treatment Plant	100 m3 per hr.
Utilities (Expansion)		
Boilers (No., Capacity, Fuel)	No. 2; 10 Ton, --Ton, Fuel: Biomass, Wet Scrubbers/Cyclone Separators (APCS)	
Power Supply		
	Wapda	2MW
	Standby DG Set	1800 KVA
Water Supply	Tube-wells: 2, RO Plant=.	
Air Compressor	2 x 55 KW	
Wastewater Disposal	Will be discharged into Lakhneki Drain (NOC in Annexure VII)	



3.9.2.6 Machinery and Utility Details

Following is the list of major machines (among others) and Utilities for dyeing unit including finishing and dyeing machines and equipment.

Finishing Machines

- 1 stenter (10 chambers)
- 1 compactor
- 1 dryer
- slitters & hydros
- 1 hydro
- 1 raising machine
- 1 brushing machine
- 1 combing machine

Dyeing Machines (No of machines

- 8 dyeing machines including sampling

Utility Area

- 1 boiler (10 tons)
- 1 boiler (---kcal)
- turbines
- RO plant (75 cu)
- Generators (---MW)



3.9.2.7 Chemicals

The tentative list of Textile chemicals and dyes is given in the following

Textile: Chemicals

STBILON RGN
LICISOL CSD
BIAVIN BPA
FABROLIZER SO2
HYDROGEN PER OXIDE 50%
SODIUM HYDROSULFITE
REFINE SALT
SODIUM SULPHATE
SODA ASH
CAUSTIC SODA LIQUID 50%
EXOLINE FAST
EXOLUBE NC
EXOLINE MAGIC 3M
MACROS 31 HQ
OPTICID PB CONC
SYNO WHITE 4 BK
OPTIC KY-250

Textile: Disperse Dyes

SYNOLON RED EXW
SYNOLON SUPER RED EXW
SYNOLON TURQUOISE EXW
SYNOLON YELLOW BROWN EXW
SYNOLON NAVY EXWS HI CONC
SYNOLON RUBINE EXWN
SYNOLON BLUE EXW



Textile: Reactive Dyes

SYNOZOL GOLDEN YELLOW HF-4GR
SYNOZOL TURQUOISE BLUE HF-G 165%
SYNOZOL BLUE KRF
SYNOZOL ULTRA BLACK DR
SYNOZOL BRILLIANT RED K3G
SYNOZOL YELLOW HF-4GL
SYNOZOL ORANGE SHF-RR
SYNOZOL RED SHF-GD
SYNOZOL RED HF-6BN 150%
SYNOZOL BLACK B 150%
SYNAZOL BRILLIANT ORN KR
SYNOZOL YELLOW K-3RS
SYNOZOL RED K-3BS
SYNOZOL NAVY K-BF
SYNOZOL BLUE K-BR

3.10 CONSTRUCTION PHASE

3.10.1 Construction Activities

Major construction activities include:

- Preparation of Construction Site - Define the boundaries of the construction area and proceed with leveling the ground, ensuring it is flat, clean, and at an appropriate height. Clear obstacles, waste, and unnecessary materials from the construction site. Ensure a good drainage system to prevent flooding during construction. Maintain safety corridors for the movement of vehicles and construction equipment.
- Establish a Construction Camp and arrange Utilities for construction phase
- Mobilization of Construction Machinery
- Construction of Infrastructure
- Transportation of Construction Material and Steel Components
- Developing infrastructure
- Excavation
- Construction of Foundations/Foundation anchor bolts,
- Installation of Wastewater Treatment Plant
- Electric and instrumentation networks
- Installation of Process and Utilities Pipelines
- Transportation of Plant Machinery, Equipment and components to Project site



- Installation of Vessels, Equipment, Machinery, Boilers, Generators, Cooling Tower Control Room, Instrumentation, Electric Substations, air conditioning etc.,
- Insulation jobs
- Building Warehouses, Stores, Admin Buildings and Offices, other buildings, Residential Colony
- During construction phase, the construction activities will be managed to minimize disruption and damage to the surrounding environment.
- Restoration and handing over

3.10.2 Construction Machinery

Construction contractor will mobilize machinery and equipment to plant site including, but is not limited to, cranes, hydraulic excavators, concrete mixers, steel cutters, welding machines, pneumatic drilling machines, scaffoldings, dump trucks, bulldozers, diesel generators main electricity supply will be from the existing power supply system of Stitching Unit), Mobile water tankers, etc.

3.10.3 Workforce

The construction project will involve the deployment of administrative and professional staff, as well as unskilled, semi-skilled, and skilled workers. Unskilled workers will be provided with appropriate training. As part of the construction contract, the contractor will be obligated to prioritize hiring members of the local community, particularly for unskilled labor positions. The workforce is expected to consist of approximately 100 individuals.

3.11 RESTORATION AND REHABILITATION

The objective of the restoration and rehabilitation activities is to minimize the environmental impact of the construction and industry installation, and to ensure the site is safe, functional, and aesthetically pleasing after the work is completed.

- A clause will be included in the contract with the contractor to ensure restoration and rehabilitation of the site after completion of construction phase.
- All the temporary cabins and containers will be removed from the construction site.
- The construction area will be thoroughly cleaned, including the removal of material stockpiles, and proper disposal of any metal, hazardous or non-hazardous waste, debris, and residues remaining after the completion of construction.
- The excavated earth will be stored at a designated location and utilized for leveling, filling pits, and landscaping during and after the construction phase.
- Any damaged infrastructure, such as fences, roads, or utility services, will be repaired or restored to their original condition.
- Finally, the EMP Team will inspect the site to ensure proper restoration has been completed before granting clearance to the contractor for final payments.
- Landscaping and the plantation of indigenous trees will be carried out on the open land and along the boundary wherever practicable.

3.12 SAFETY, HEALTH AND ENVIRONMENT

Safety and Occupational Health are integral considerations at LGPL.

3.12.1 Personal Protective Equipment

Workers will be provided with dust mask, ear plug, ear muffs, safety boots, safety gloves, safety belt, helmet and goggles etc. during the working hours to ensure personnel health & safety. Implementation of PPEs is ensured by the proponent for the proposed project.

The detail of PPEs is given in Table 3.2.

Table 3.2 Recommended PPES for Various Hazards

Protection Required	Potential Hazard	Recommended PPEs
Head Protection	Falling objects, inadequate height clearance, and overhead power cords	Helmets with or without electrical protection
Hand protection	Hazardous material, cuts or lacerations, vibrations, extreme temperatures	Synthetic or Rubber gloves, leather, insulating material etc.
Eye and face protection	Flying particles, molten metal, liquid chemicals, gases or vapors, light radiation	Safety goggles, shield protective, etc.
Hearing protection	Noise	Hearing protectors like ear plugs, ear muffs
Respiratory protection	Dust, fogs, fumes, gases, smokes, vapors, oxygen deficiency	Facemasks or air supply
Body protection	Extreme temperatures, hazardous materials, biological agents, cutting and laceration	Aprons, insulating clothing etc. of appropriate materials
Foot Protection	Chemical/Biological, Compression, Impact, Electrical shock, Extreme heat/cold, cutting tools, Slippery/wet surface, fire/explosion	Safety shoes/boots according to hazard



Fall Protection (Work at height)	Severe injury, Disability and even death	Safety harness, lanyards and other gears designed to safeguard workers from fall
Electrical Protection	Electric Shock	<p>Shock protective equipment to isolate the wearer from the electrical current. All equipment should be non-conductive materials and rated for voltage.</p> <p>Always read the labels of shock protective equipment. Color is just a guideline</p> <ul style="list-style-type: none"> - Rubber and leather gloves and sleeves. Leather gloves are used to protect the rubber insulating gloves. - Foot Protection – EH rated leather footwear - Eye Protection – Nonconductive safety glasses or goggles <p>Other Shock Protective equipment is listed below:</p> <ol style="list-style-type: none"> a. Rubber mats b. Rubber blankets c. Rubber tubes and line covers d. Non-conductive ladders e. Non-conductive Tools <p>Arc Flash Hazard PPE</p>

3.12.2 Fire Protection and Firefighting System

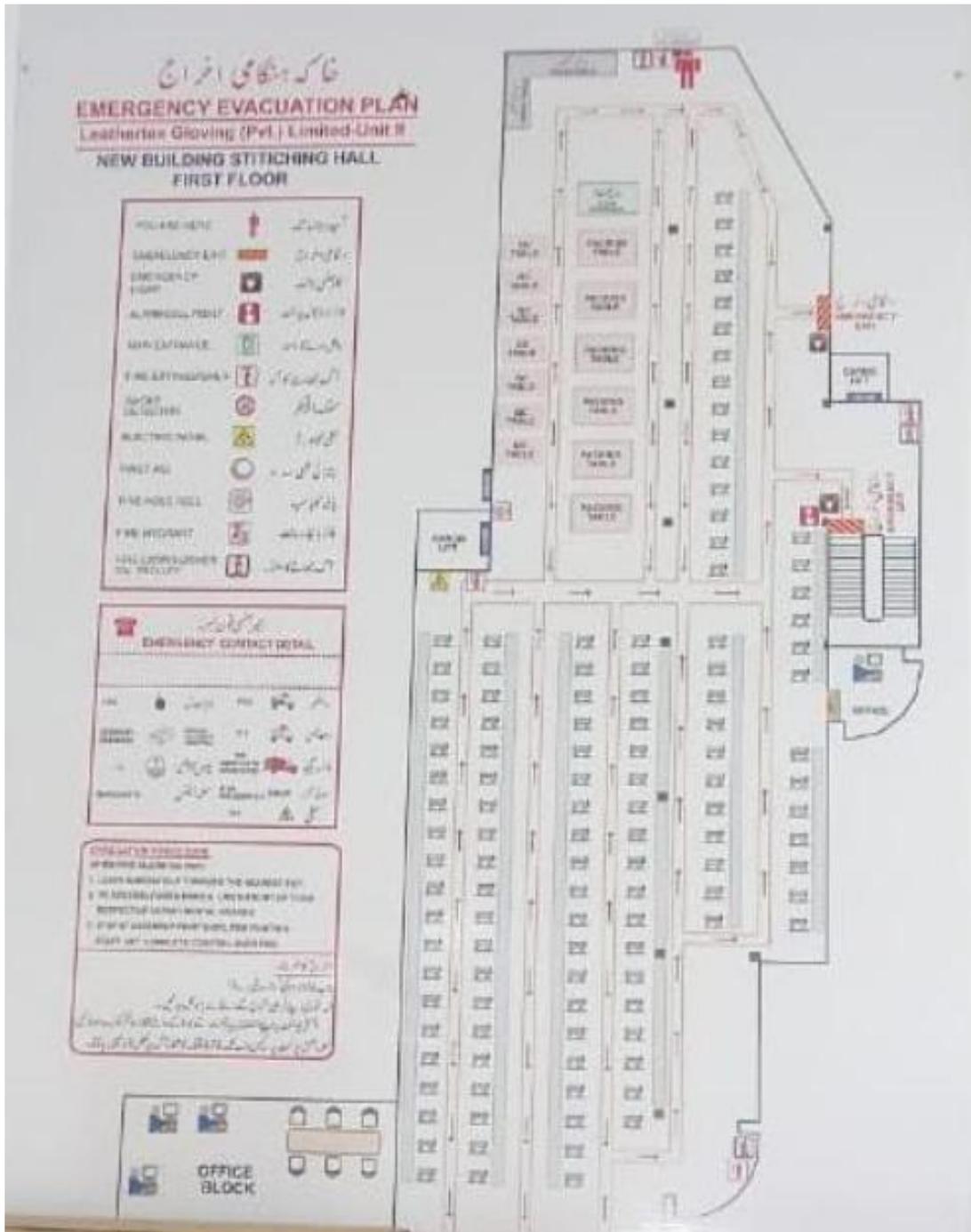
An addressable fire protection system with detection, alarm annunciation, and other installations has been implemented to safeguard against fire hazards. Fire extinguishers, fire hydrants Fire buckets, and fire hose pipes are strategically placed at all critical locations within the unit. A list of fire extinguishers is illustrated in Table 3.2. The placement of fire extinguishers, fire hydrants etc. are illustrated in Figure 3.2

Table 3.3 Details of Fire Extinguishers Installed at LGPL (Existing)

Leathertex Gloving (pvt.) Ltd Workwear (Unit-2)												
Fire Equipment List												
Date=02-05-2025												
S.NO.	Equipment position	Total Qty.	Hydrent	Buckets Set	Cylinder Type					Trolley Type		
					Haltron	CO2	Dry Powder	AFFF	Water	CO2	Dry POWDER	AFFF
					4kg	5kg						
1	Generator&Electric Room	8	1	1		3	2	1				
2	Fabric Store	6	1			2		2		1		
3	Cutting Hall	6				3	2				1	
4	Stitching Area	8				4	4					
5	Training Area	4				2	1				1	
6	Packing&Finishing	8	1			3	3				1	
7	Mess	8	1		1	2	3	1				
8	Assembly Area	5		1		2	2					
9	Farm house	5				3	2					
10	Ground Floor	10				4	4				2	1
11	First Floor	10				4	4			1	1	
12	Second Floor	10				4	4			1	1	
Total		88	4	2	1	36	31	4	0	3	7	1

Figure 3.8: Firefighting at LGPL (Existing)









3.12.3 First Aid Boxes

First aid boxes are placed at suitable places of LGPL

3.12.4 Security:

The present site is secured by means of boundary walls along with the presence of security guards round the clock

3. 12.5 Dengue Control

Housekeeping of the premises is up to the mark. It is ensured on daily basis that there is not any stagnant water in the premises. SOP for Dengue control is strictly followed.

3.12.6 Adherence to Environmental Regulations

The LGPL strictly adheres to environmental regulations to ensure the safety of employees and the environment. This commitment includes researching and implementing practices that align with environmental sustainability. It is ensured to comply with Punjab Environmental Quality Standards (PEQS) notified in 2016.

3.12.7 Tree Plantation

The management has carried out extensive plantation of native trees within the premises and in the surroundings. Tree plantation is illustrated in Figure 3.4.

Figure 3.10 Tree Plantation at LGPL





4 DESCRIPTION OF ENVIRONMENT

4.1 GENERAL

This section describes the baseline conditions, which covers all the relevant information on the current status of the environment of the Project Area. Information on these aspects has been derived from the desk study of available data, field visits to the project area as well as information obtained from official websites of Government departments and other relevant agencies.

The data regarding the physical environment was collected mainly within the project surroundings. In case of the biological and socioeconomic environment, efforts were made to collect the information within one Km around the project area and even up to 10 Km where any direct or indirect impacts were envisaged.

4.2 METHODOLOGY OF CONDUCTING BASELINE STUDY

Establishing the environmental baseline includes both the present and likely further state of the environment, taking into account changes resulting from natural events and other human activities, assuming the project is not undertaken – the no action alternative.

The guiding factors for the present baseline study are the EPA's requirements for the Environmental Impact Assessment and IEE/EIA Regulations 2022, local regulations and directives. The studies were conducted by considering both primary and secondary means i.e. by sampling, monitoring, observations and field verification along with review of past relevant EIA/IEE studies and literature survey.

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

The baseline data provides the “baseline” against which severity of the future impacts can be assessed.

4.3 BASELINE PHYSICAL ENVIRONMENT

This Section examines the physical resources such as topography, geology and soil, climate, surface and groundwater resources, wastewater effluent handling, noise levels and ambient air quality of not only the Project site but also the surroundings as a whole to assess whether the project under assessment can or does have any impact on any of these parameters.

4.3.1 Topography, Geology and Soil

Kasur District's topography is characterized by a flat, alluvial plain bordered by two major rivers, the Sutlej and the Ravi. This creates two distinct geographical zones: a low-lying, riverine area and a higher, flatter upland area.

The Sutlej River forms the district's boundary with India to the south and east, while the Ravi River marks its boundary with the Nankana Sahib District to the north and northwest. The former course of the Beas River, an old channel, divides the district into two parts locally known as *Hither* (low-lying riverine area) and *Uthar* (the upland).

The eastern and western parts of the district are riverine floodplains, marked by meandering river channels that often form braided bars. These areas are prone to inundation during the monsoon season.

Despite having sandy soil in some areas, the district is largely blessed with fertile and rich alluvial soil, ideal for agriculture. The district is ecologically situated in a subtropical thorn woodland biome. Some forests, like the Changa Manga reserve, also exist within the district.

The general elevation is between 150 and 200 meters above sea level, with the overall topography being flat, having a gentle slope from the north-west to the south-west. The elevation of Project site is 229.49 m.

4.3.2 Seismology

According to Seismic zoning map of Pakistan proposed by the building code of Pakistan, Pakistan is divided in five seismic hazards zones (Zones 1, 2A, 2B, 3 and 4); Zone 1 being the lowest and Zone 4 is the highest seismic zone. Figure 4.1 shows the seismic zoning map of Pakistan. The project area falls in Zone 2A that shows a low to moderate level of seismicity. Zone 2A represents peak ground acceleration (PGA) from 0.08 to 0.16g (Table 4.1). These factors have been carefully considered during the design phase of the proposed project.

Table 4-1: Seismic Zones

Seismic Zone	Peak Horizontal Ground Acceleration	Zone Factor Z
1	0.05 to 0.08g	0.075
2A	0.08 to 0.16g	0.15
2B	0.16to 0.24g	0.20
3	0.24 to 0.32g	0.30
4	➤0.32 g	0.4

Where “g” is acceleration due to gravity

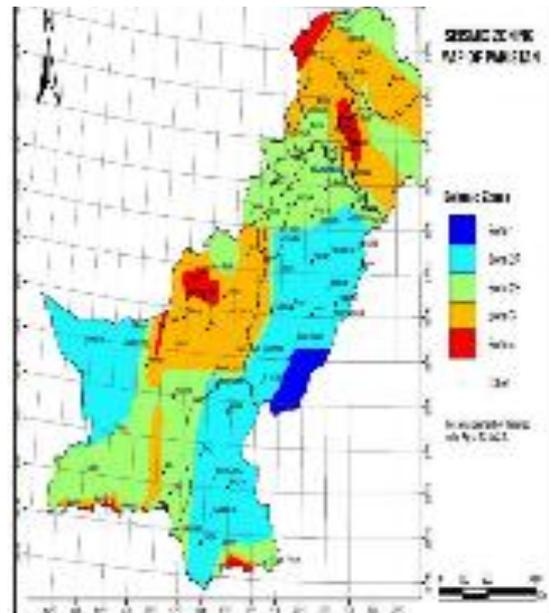


Figure 4.1: Seismic Zones of Pakistan

4.3.3 Land Use and Land Cover (LULC) Changes

Land use/land cover (LULC) changes are among the most significant human-caused global variations affecting the natural environment and ecosystems. Pakistan’s LULC patterns have undergone huge changes since the 1900s, with no clear mitigation plan. Transformation of one land-use type to another, may bring changes in surface energy, because different classes of LULC have different reflectance and evapotranspiration. Such rapid changes lead to significant changes in local climate, particularly having impacts on land surface temperature (LST) and local air temperature. The LST increases with decrease in vegetation and with increase in urban built-up and barren land.

The findings of Zhao et al. 2024 revealed that the Urban area of Kasur expanded by around 16.27%. The vegetation cover experienced a slight decline of just 1%, while water bodies declined by 0.26%. Forest cover experienced a decrease of about 0.54%, and bare land decreased significantly by 14.4% in Kasur District from 1991 to 2021.

4.3.4 Climate

Kasur District, has a dry climate with extreme heat in the summer and short cold spells in the winter. May to August have intense heat with night temperatures rarely below 28 °C whereas December to February are the coldest months with average temperatures of 8-11° C.

4.3.4.1 Temperature

The hot season lasts from April to September, with an average daily high temperature above 36°C. The hottest month of the year in Kasur is June, with an average high of 43°C and low of 31°C. The cool season lasts for December to February with an average daily high temperature below 24°C. The coldest month of the year in Kasur is January, with an average low of 8°C and high of 20°C.

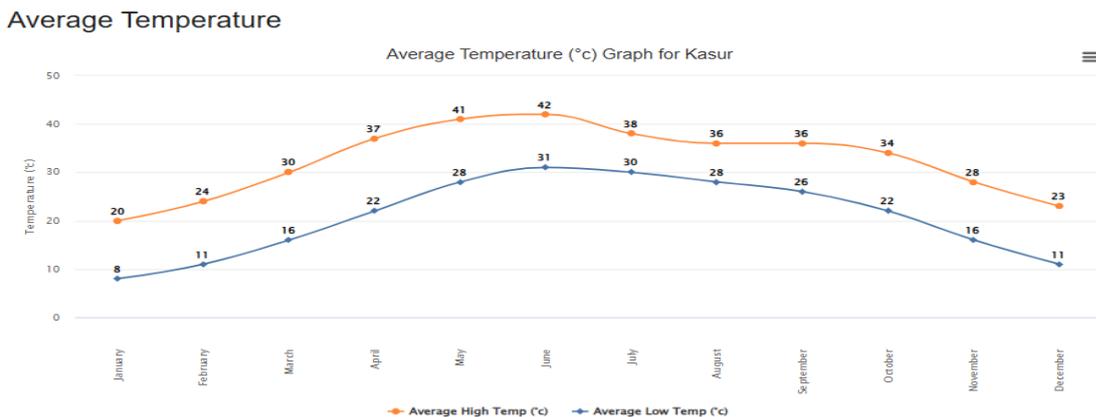


Figure 4-2: Temperature Data Kasur(Data Source: World weather online))

4.3.4.2 Rainfall

There is some seasonal variation in the monthly rainfall in Kasur District. July is the wettest month in Kasur. The rainy season lasts for about three months, from the last week of June to the middle of September.

Figure 4.3 shows average monthly rainfall whereas Figure 4.4 illustrates yearly average of rainfall in Kasur from 2009 to 2025.

Rainfall Averages

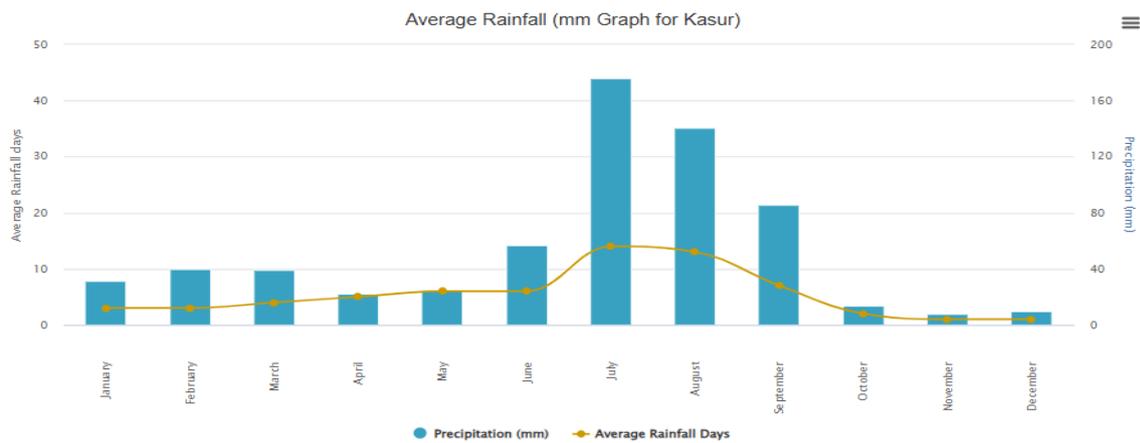


Figure 4-3: Average Monthly Rainfall Kasur (Data Source:Worldweather online)

Yearly Rainfall and Rain Days Averages

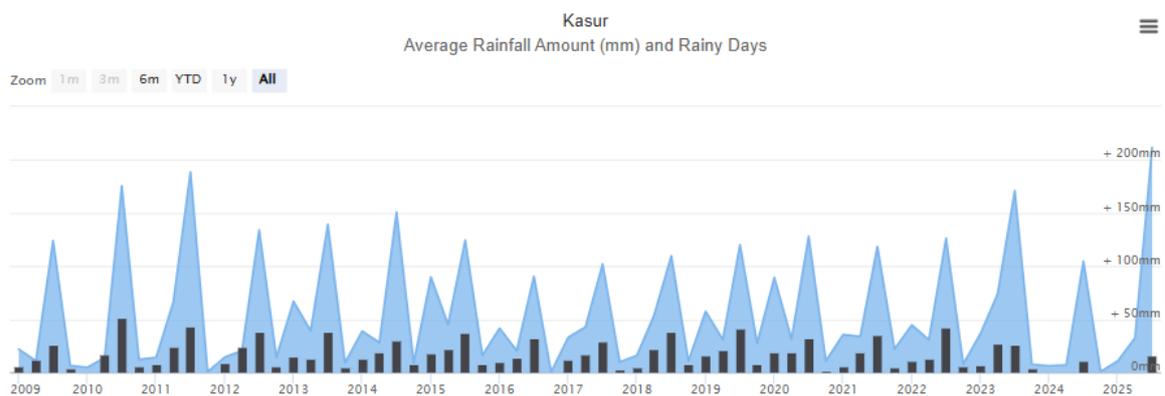


Figure 4-4: Average Yearly Rainfall Kasur (Data Source:Worldweather online)

4.3.4.3 Humidity

Kasur experiences extreme seasonal variation in the perceived humidity.

The high humid period of the year lasts for 3.0 months, from Mid June to Mid-September. The month with the most humid days in Kasur is July. Figure 4.6 represents the average humidity data of Kasur.

Annual Cloud and Humidity Averages

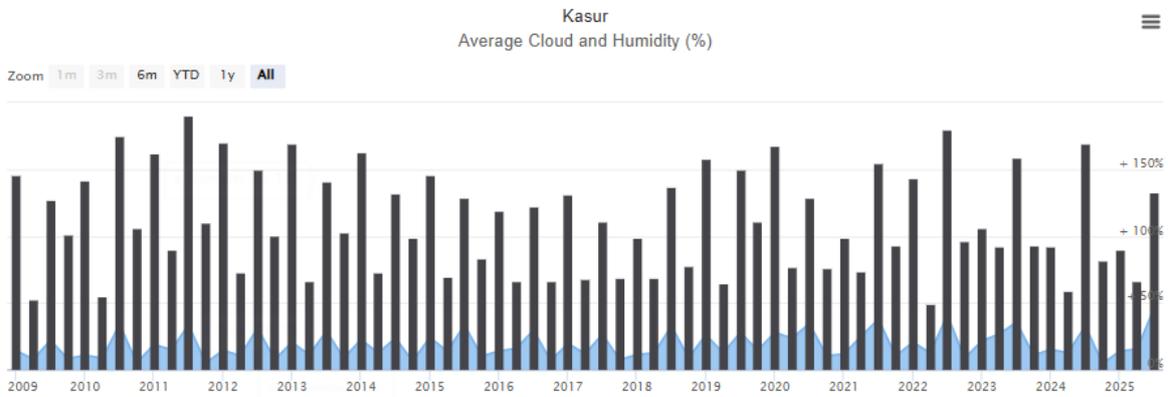


Figure4-5 :Humidity Data Kasur – Yearly (Data Source: World weather online)

4.3.4.4 Wind

The wind speed in Kasur experiences seasonal variation over the course of the year. Monthly mean velocities are given in Table 4.2.

Table 4- 2Average Wind Speed, Kasur Region (Data Source: Weather Spark.com)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Wind Speed (mph)	5.3	5.7	6.0	6.2	6.3	6.2	5.7	5.0	4.5	4.6	4.8	5.1

4.3.5 Water Resources

4.3.5.1 Surface Water and Drain

There is no Surface water source near the Project site. Lakhenki Irrigation Drain is adjacent to the Project Site.

4.3.5.2 Groundwater

As illustrated in Figure 4.7., the quality of groundwater water in the Kasur district is Mixed (brackish and barani) district.

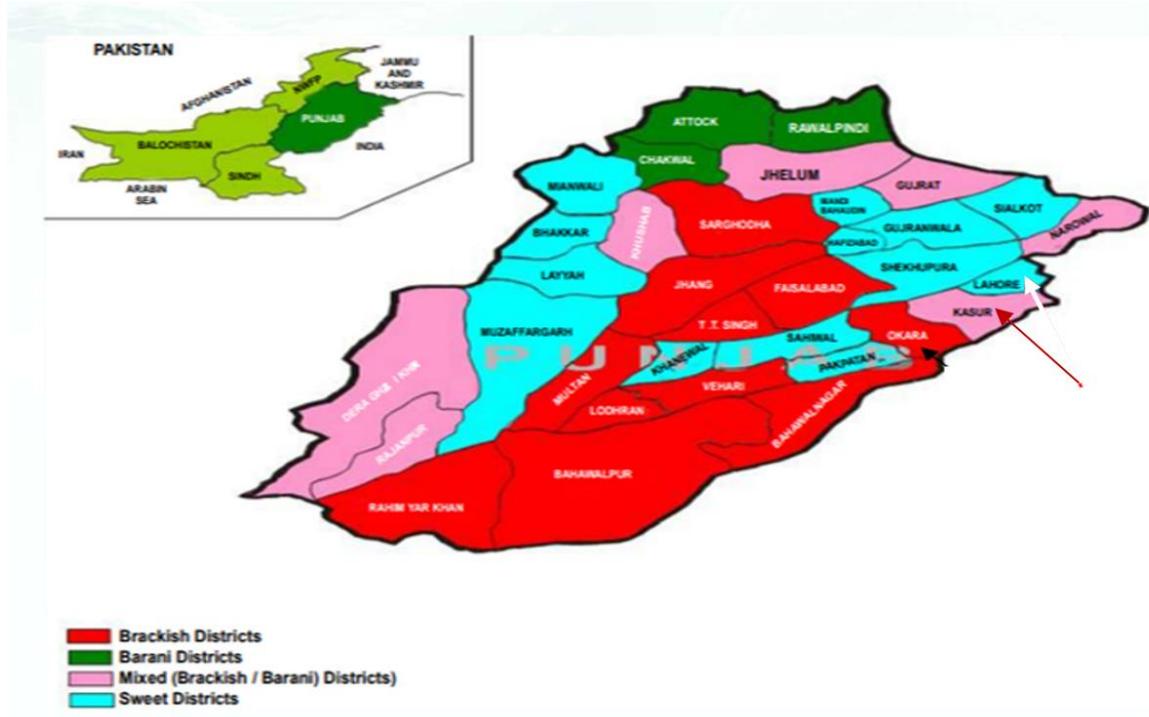


Figure 4.6 Quality of Water in Punjab

4.4 BIOLOGICAL ENVIRONMENT

4.4.1 Flora

The project site is surrounded by agriculture land. Wheat, rice and corn are the major crops. Native trees such as Sheesham (*Dalbergia sissoo*), Keekar (*Acacia arabica*), Bar (Jujube), and Jamun (*Syzygium cumini*) are commonly found in and around villages near the project site.

4.4.2 Fauna

Common birds found in neighborhood of the Project site are house crows, sparrows, pigeons, and common mynas.

Buffaloes, cows, stray dogs, feral cats, palm squirrel, frogs, house mouse and common lizards were observed in the study area. No protected species are present.

4.5 SOCIOECONOMIC ENVIRONMENT

4.5.1 Demographics

The population of Kasur was determined (Census 2023) to be at 4.084 m with 2.9% annual growth from 2017 to 2023. Gender-wise, 51.1% of the population is male, while 48.9% is female. (Table 4.3)

Table 4.3 Population of Kasur District

Name	Status	Population	Population	Population	Population	Population
		Census 1972-09-16	Census 1981-03-01	Census 1998-03-01	Census 2017-03-15	Census 2023-03-01
Kasur	District	1,186,386	1,528,002	2,354,506	3,454,881	4,084,286

Around 30.8% of its inhabitants are ≤ 14 year, 56.7% between 15-64 year and remaining 12.5% above 65%. The predominant religion in Kasur is Islam, with 98.1% of the population identifying as Muslim, and has small Christian and Hindu minorities.. The majority of people speak Punjabi (84.3%), followed by Mewati (11.5%), Urdu (3.4%), while Pashto, Saraiki, Hindko, and other languages are also spoken. Around 69.5% people live in rural areas and 30.5% live in urban areas.

4.5.2 Education

Literacy rate of Kasur District is 62.8%.

Several schools and colleges are easily accessible from the project site.

4.5.3 Health Facilities

Healthcare needs are met by both the public and private sectors. All major hospitals in Lahore and Kasur are conveniently accessible from the LGPL project site.

4.6 LAB ANALYSIS REPORTS

Baseline environmental data of the project area was monitored. The lab monitoring reports of noise, ambient air quality and groundwater quality are given in **Annexure VIII** and are summarized in the following.

4.6.1 Noise

The sound levels at center of the project area were measured continuous for 24 hr. during day (6 AM – 10 PM) and night time (10 PM -6 AM). The results are summarized in Table 4.4 and monitoring report is attached as Annexure VIII. The measured sound levels comply with PEQS for noise of Category C.

Table 4-4: Noise Levels at Project Site

Sr. No.	Location	Day Time dB(A) 6 AM -10 PM	Night Time dB(A) 10 PM – 6 AM
1.	Site	(Avg)	(Avg.)
2.	PEQS	75	65

4.6.2 Ambient Air Quality:

Monitoring was carried out for SO₂, NO_x, CO, and particulates PM₁₀ and PM_{2.5} for 24 hours at Project Site. The measured data are exhibited in Table 4.5. Lab analytical report is attached as Annexure VIII. Results for all parameters are well within PEQS limits for Ambient Air.

Table 4.5 Ambient Air Quality at Project Site for 24 hours.

		Unit	Results	PEQS
1	Particulate Matter (PM ₁₀)	µg/m ³		150
2	Particulate Matter (PM _{2.5})	µg/m ³		35
3	CO	µg/m ³		5
4	NO _x	µg/m ³		120
5	SO ₂	µg/m ³		120

4.6.3 Groundwater Quality

Analysis report of groundwater by EPA certified lab is given in Annexure VIII and also illustrated below.

Table 4.6: Groundwater Analyses Results

Sr. No	Parameters	Units	Results	PEQS
1	pH	--		6.5-8.5
2	Total Dissolved Solids (TDS)	mg/l		1000
3	Chloride	mg/l		250
4	Fluoride	mg/l		1.5
5	Taste	Objectionable. /Acceptable		Acceptable
6	Odour	Objectionable. /Acceptable		Acceptable.
7	Colour	TCU		15
8	Nitrate (as NO ₃ ⁻)	mg/l		50
9	Nitrite (as NO ₂ ⁻)	mg/l		3
10	Lead	mg/l		0.05
11	Total Hardness as CaCO ₃	mg/l		500
12	Turbidity	NTU		5
13	Zinc	mg/l		5
14	Aluminum	mg/l		0.2
15	Chromium	mg/l		0.050
16	Cadmium	mg/l		0.01
17	Copper	mg/l		2
18	Boron	mg/l		0.300



19	Barium	mg/l	0.700
20	Antimony	mg/l	0.020
21	Arsenic	mg/l	0.050
22	Cyanide	mg/l	0.05
23	Mercury	mg/l	0.001
24	Nickel	mg/l	0.020
25	Residual Chlorine	mg/l	0.2 – 0.5
26	Total Thermo Coliform	Number/100ml	0/100 ml
27	Total Coliform	Number/100ml	0/100 ml
28	E. coli	Number/100ml	0/100 ml

*BDL: below detection limit

4.7 SUITABILITY OF SITE

The proposed site was further evaluated based on the following parameters and deemed suitable.

Table 4.7 Site Suitability

Parameters	Current Status
Dislocation, Resettlement, Rehabilitation, Infrastructure Clearing	Not Required
Land Legal Status	The land is legally owned by the proponent and has no legal obligations
Natural Hazards	Site is not prone to any natural hazard – flood, landslide or any other hazard
Hydrology or Waterways	Project will not alter/deteriorate surface hydrology or waterways
Sensitive or Protected area	Project site is not in or near any sensitive or protected area. There are no historical or archeological structures of any kind on or near the property.
Accessibility	The project site is conveniently accessible through road network from all Pakistani towns and ports. Directly connected to 40 Km, Ferozepur Road.
Availability of Utilities	All the Utilities needed are available. Wapda supply is available, Groundwater complies with PEQS of drinking water. Many industries are in the neighborhood.



5. STAKEHOLDERS CONSULTATION

5.1 GENERAL

Any person, group or organization with an interest in the project or who can be affected directly or indirectly, negatively or positively by the project activities is a project stakeholder. There are two types of stakeholders - 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. Stakeholder consultation is a mean of involving the primary and secondary stakeholders in the project decision making process by getting feedback from the community and addressing their concerns.

Stakeholder consultation was therefore conducted in the project area, not only to comply with the obligation imposed by Punjab EPA for conducting EIA Study but also to improve and enhance the social and environmental design of the project and achieve the goal of sustainable development.

5.2 OBJECTIVE OF THE STAKEHOLDER'S CONSULTATION

Role of the public participation is very important in the design making process to achieve the goal of sustainable development. The major objectives of public consultation are as follows:

- Promote better understanding of the project, its objectives and its likely impacts and their management.
- Identify and address the concerns of all interested and affected parties of the project.
- Provide a mean to Identify and resolve issues before plans are finalized and development commences, thus avoiding public anger, resentment and potentially costly delays.
- Encourage transparency and inculcate trust among various stakeholders to promote cooperation and partnership with the communities and local leadership.

5.3 STAKEHOLDERS IDENTIFICATION

Identifying the stakeholders for the proposed project is crucial for its success as it helps to quantify and integrate the contributions of the various parties. Residents of neighboring communities of the project site are considered to be the primary stakeholders. Construction activities, if not properly performed, may cause damage to their health, stakeholders' crops and agriculture land. Therefore, their concerns should be incorporated into the EIA for both the construction and operational phases. Furthermore, employees involved in the operation and maintenance of the Mill are at risk, if the Mill is poorly designed or if inappropriate equipment or contractors are selected. Therefore, engaging LGPL personnel as stakeholder and considering their suggestions is vital to avoid equipment failure or safety incidents. Projects should always leverage the expertise and vision of environmental and social experts to meet sustainability goals.



5.4 CONSULTATION PROCESS

Based on the discussion above, the following stakeholders should be engaged:

- Local Community (living in the vicinity of project site)
- Environment & Social Experts (Public and Private Institutes/Academia)
- Grass-root stakeholder discussions

Stakeholders were consulted during informal and formal meetings held in the project area. The consultation process was carried out in Urdu and native language. During these meetings, a simple, non-technical, description of the project was presented, with the overview of the project's likely human and environmental impacts. This was followed by an open discussion allowing participants to voice their concerns and opinion. Their feedback along with their major concerns and suggestions were documented for analysis and mitigation. Focus group discussions and in-depth interviews were also conducted. The issues recorded in the consultation were examined, validated, and addressed in the EIA report.

The consultation process will continue even after the EIA report submission to create consensus among the stakeholders on specific environmental and social issues in context of the project in order to incorporate sustainability in the on-going project.

It is important not to raise community expectation unnecessarily or unrealistically during the stakeholder consultation meetings in order to avoid undue conflicts with local administration

5.5 STAKEHOLDERS FEEDBACK

The consultation with various stakeholders is summarized in Tables 5.1 and 5.2.

Table 5.1 Consultation with Stakeholders

Name	Designation	Organization	Concerns/Advice
Mr. Amjad Malik	Director	M/s LGPL	<ul style="list-style-type: none">- The current project is expected to enhance the community's standard of living and improve the overall skill level of the local population.- We are committed for environmental sustainability in all aspects of our operations.- The proposed project will contribute towards National economic growth and development



			<ul style="list-style-type: none">- We will ensure to use the water spraying during construction phase to effectively control and minimize dust emissions.
Mr. Amir	HR Manager	M/s LGPL	<ul style="list-style-type: none">- Child labor is strictly prohibited in LGPL.- We ensure the provision of high quality RO drinking water to all employees.- The EIA report will be shared with the contractor to ensure effective implementation of EMP during the construction phase.
Mr. Abid Alamgir	Civil Consultant	Tahir Engineering Pvt. Limited	<ul style="list-style-type: none">- All civil and mechanical structures should be designed in accordance with recognized international engineering standards.- Cranes should undergo thorough load testing prior to their use in construction and equipment installation activities.- Seismic zones data must be incorporated in building designs.
Dr. Naveed Ramzan	Dean Engineering	UET, Lahore	<ul style="list-style-type: none">- Right selection of wastewater treatment technology is essential to achieve desired results and compliance with PEQS.- The safety incidents can be prevented by implementing process safety management- Ensure the use of PPEs by the employees during all phases of the project.
Mr. Adeel Ahmad	Production Manager	Fatimafert Limited	<ul style="list-style-type: none">- LGPL should hire highly skilled staff to operate dyeing unit and handle wastewater generated from this unit.



			<ul style="list-style-type: none"> - Develop safety plan to handle all chemicals used at Dyeing Unit based on their MSDS. - All the workers should be trained on emergency preparedness procedures.
Dr. Jabir Hussain Syed	Associate Professor	Environmental Studies, COMSATS, Islamabad	<ul style="list-style-type: none"> - Utilizing biomass as an alternative to fossil fuels has a positive impact in reducing greenhouse gas emissions. It is also recommended that LGPL install a solar power system to offset electricity consumption from the grid, which is primarily generated through fossil fuels. -
Hafiz Nasir Anwar	Director-	Power-Link Pvt. Limited	<ul style="list-style-type: none"> - Restoration and plantation activities should commence progressively during construction, rather than waiting for the entire construction phase to be completed. - Air Pollution Control Systems can be manufactured locally that must be used for abatement of gaseous and particulates emissions.
Mr. Adnan Khan	Manager Environment Social Risk Management	MCB BANK LIMITED, LAHORE	<ul style="list-style-type: none"> - Try to use green chemicals in place of chemicals listed in Punjab Hazardous substances draft Rules 2020. - Ensure the use of relevant PPEs.
General Public			-

5.5.1 Public Consultation

Conversations were held with those who lived close to the project. Additionally, general public feedback was gathered. Below is a summary of the public consultation.

- Most of the Community members showed their interest in Job opportunities



- Overall, the public expressed satisfaction that the project would positively contribute positively towards the national growth and development.
- Several local residents are already associated with various activities at the Stitching Unit.
- Some people raised concerns over the discharge of wastewater from the proposed dyeing unit. They pointed out that many industries in Kasur District are discharging their wastewater without treatment.
- The local public stressed the need for caution during transportation of construction materials, suggesting to avoid transport during peak traffic hours.

Table 5.2 Consultation with General Public

Sr No	Name	ID Card Number	Tehsil/District	Comments
1	Fiaz Ahmad	35102-5634240-5	Kasur	It will provide job opportunity for local people and improve their skill level.
2	Dilshad Haneef	35102-2924208-5	Lahore	
3	Adnan Ulfat	35102-4439917-9	Kasur	The project will improve living standard of local community.
4	Ahsan Ahmad	35102-0784893-9	Kasur	
5	Umar Farooq	35102-9982562-9	Kasur	
6	Waqas Zafar	35102-1999676-1	Kasur	LGPL should initiate CSR activities particularly in education and health facilities.
7	Shahbaz Shareef	35102-9360547-1	Kasur	
8	Muhammad Ashraf	35102-6427395-7	Kasur	The project will help in National growth and development.
9	Muhammad Yasir	35102-1473247-1	Kasur	
10	Samreen Aslam	35201-6772453-4	Kasur	The construction phase may cause road incidents particularly during transportation of construction material. LGPL should discharge wastewater after appropriate treatment.
11	Muhtaq Ali	35102-6781777-9	Kasur	
12	Asif Ali	35104-0415486-1	Kasur	
13	Shakeela Bibi	35102-5971163-8	Kasur	
14	Muhammad Ramzan	35102-5269863-5	Kasur	



6. POTENTIAL ENVIRONMENTAL IMPACTS AND MITIGATIONS

6.1 GENERAL

This section addresses the Project's potential impacts on physical, biological and socio-economic environment of the area that may be encountered during preconstruction, construction and operations phases. Impacts have been predicted and assessed. Where applicable, mitigation measures have been suggested to be implemented in order to reduce the adverse impacts, if not eliminated. It is aimed to:

- Find different alternatives and ways of doing the project activities.
- Enhance the environmental and social benefits of proposal.
- Avoid, minimize and remediate adverse impacts.
- Ensure that residual adverse impacts are kept in acceptable limits

6.2 IMPACT ASSESSMENT METHODOLOGY

Based on site visits, observations, brainstorming sessions, provided data, and social interviews, significant impacts were evaluated considering both technical and regulatory concerns. A qualitative and, where possible, quantitative assessment of these anticipated impacts was conducted. Various EIA methodologies are available for impact identification, including checklists, interaction matrices, networks, and overlays. For the impact assessment of the proposed LGPL expansion project, the Project Interaction Matrix method was utilized.

6.2.1 Project Interaction Matrix

An interaction matrix is a two-dimensional framework in which project activities are listed along y- axis, while the x- axis includes various environmental parameters that may be affected by the proposed project activities. These parameters are grouped into categories such as Physical, Ecological, and Socioeconomic. A matrix was developed for the proposed Project which relates Project's activities with various components of the environment. The impacts were ranked with respect to their severity as under:

High negative impact	- 2	No impact	N
Low negative	-1	Low positive impact	+ 1
Insignificant impact	0	High positive impact	+2

NA Not applicable

Table 6.1 illustrates the Impact Matrix for the proposed expansion project.

Before suggesting mitigation measures, following six impacts were categorized as moderate to highly negative in severity. These impacts were considered to be significant and mainly focused in EIA.

- Air Quality
- Noise
- Health Hazard mainly due to inappropriate waste management
- Safety Hazards: Handling of chemical waste; construction and operation activities,
- Soil Contamination
- Water contamination



Table 6-1: Environmental Impact Matrix

Project Activities	Physical							Ecological			Social and Socioeconomic									
	Soil	Air Quality	Surface Water (Quantity/Quality)	Groundwater	Water Consumption	Topography	Noise and Vibration	Natural Vegetation	Terrestrial Fauna	Reduction of Biodiversity	Living Standard of Community	Livelihood of Community	Cultural Issues	Public Safety	Employment	Traffic congestion	Occupational Health and Safety	Gender Issues	Site Aesthetic	
Preconstruction Phase																				
Project Location	0	N	N	N	N	N	N	N	N	N		+1	+1	N	-1	+2	-1	-1	N	-1
Design	N	+1	+1	+1	+1	0	+1	0	N	N		N	N	N	+2	0	0	+2	N	+1
Construction Phase																				
Contractor Mobilization	-1	-1	-1	-1	0	-1	-2	-1	-1	0		0	0	-1	-2	0	-1	-1	NA	-2
Site Preparation	-1	-1	0	0	0	-1	-2	-1	-1	-1		0	0	N	0	0	-1	-1	NA	-2
Transportation of Construction Material	-1	-1	-1	-1	-1	-1	-1	-1	0	0		0	0	0	-2	0	-1	-1	NA	-2
Transportation of Plant Equipment	0	0	0	0	0	0	-1	0	0	0		0	0	0	-1	0	-1	-1	N	-1



	Soil	Air Quality	Surface Water (Quantity/Quality)	Groundwater	Water Consumption	Topography	Noise and Vibration	Natural Vegetation/Trees		Terrestrial Fauna	Reduction of Biodiversity	Living Standard of Community	Livelihood of Community	Cultural Issues	Public Safety	Employment	Traffic congestion	Occupational Health and Safety	Gender Issues		Site Aesthetic	
Construction of Campsites	-1	0	0	0	0	0	-1	-1		0	-1	+1	0	N	0	+1	0	-1	N		-1	
Excavation	-1	-1	-1	-1	0	-2	-1	-1		0	-1	N	0	N	0	+1	0	-1	N		-2	
Machinery, Generators Operation	-1	-2	-1	-1	0	N	-2	0		0	-1	0	0	N	0	+1	0	-1	N		-1	
Construction of buildings	-1	-1	-1	0	-1	0	-1	0		0	-1	+1	0	N	0	+2	-1	-1	N		-1	
Installation of Plant equipment	0	-1	0	N	N	0	-1	N		N	0	0	+1	N	0	+1	0	-2	N		0	
Solid Waste disposal	-1	-1	-1	-1	N	0	0	0		-1	0	-1	-1	N	-1	N	N	-1	N		-1	
Liquid Effluent disposal	-1	-1	-1	-2	N	0	N	0		-1	0	0	-1	N	-1	N	N	-2	N		-2	
Contractor's Demobilization	-1	-1	0	-1	0	0	-1	0		-1	-1	0	0	N	-1	-1	-1	-1	N		0	
Restoration	+2	0	0	0	0	+1	0	+1		0	+1	N	N	N	0	0	0	0	N		+2	



Project Activities	Physical						Biological				Social and Socioeconomic												
	Soil	Air Quality	Surface Water	Groundwater	Noise	Water Consumption	Vegetation/Trees	Terrestrial Fauna			Living Standard of Community	Livelihood of Community	Cultural Issues	Public Safety	Public Health	Employment	Traffic congestion	Occupational Health and Safety	Gender Issues	Site Aesthetic			
Operational Phase																							
Operations	-2	-2	0	-1	-2	-2	-1	0		+2	+2	-1	-1	-1	+2	-1	-2	-1	0				
Solid Waste Disposal	-1	-1	-1	-1	N	N	0	-1		0	-1	N	N	-1	N	0	-1	N	-1				
Raw Material/Final Product transport	-1	-1	-1	-1	-1	N	0	0		+1	+1	0	-1	0	+1	-1	-1	0	-1				
Wastewater disposal	-1	0	0	-1	N	0	0	0		-1	0	0	0	-2	N	0	-2	N	-1				
Handling of chemicals	-2	-1	0	-2	0	0	0	0		0	0	0	-1	-1	0	0	-2	0	0				

Note: Key: -2: High negative impact; -1: Low negative impact; 0: insignificant/negligible impact; +1: low positive impact; +2: High positive impact, N: no impact. NA Not applicable;

6.3 IMPACT CHARACTERIZATION

Impacts are characterized on the basis of significance, probability and prevalence of the potential impacts on the surrounding environment. Primarily, anticipated impacts have been categorized as:

- Direct or Indirect
- Positive or Negative
- Local or Widespread
- Reversible or Irreversible
- Probability (Unlikely, Likely, Certain)
- Severity (Low, Medium, High)

6.3.1 Significance of Impact

Significance of impact is assessed as low, medium and high based on Impact consequences severity and likelihood (Table 6.2), reversibility, impact duration, public concern and mainly the compliance with the EPA Rules and Regulations.

Table 6-2: Impact Assessment

Probability of Impact Occurrence	Impact Severity			
		Mild	Moderate	High
		1	2	3
Unlikely	1	Low Significance	Low Significance	Medium Significance
Likely	2	Low Significance	Medium Significance	High Significance
Certain	3	Medium Significance	High Significance	High Significance

Summary of characterization and significance is summarized in Table 6.3 and 6.4

Table 6-3: Summary of Characterization and Significance of Impacts for Construction Phase.

	Air Quality	Noise	Health Hazard	Safety Hazard	Soil Contamination	Water Contamination
Direct and indirect	Direct	Direct	Direct	Direct	Direct	Indirect
Positive and negative	Negative	Negative	Negative	Negative	Negative	Negative
Local or widespread	Local	Local	Local	Local	Local	widespread
Short- or long-term	Short	Both	Both	Short	Short	Short
Reversible or Irreversible	Reversible	Both	Both	Both	Reversible	Reversible
Severity	Moderate	Moderate	Moderate	High	Moderate	Moderate
Probability	Likely	Likely	Likely	Likely	Likely	Likely
Significance	Medium	Medium	Medium	High	Medium	Medium

Table 6-4: Summary of Characterization and Significance of Impacts for Operational Phase

	Air Quality	Noise	Health Hazard	Safety Hazard	Soil Contamination	Water Contamination
Direct and indirect	Direct	Direct	Direct	Direct	Direct	Indirect
Positive and negative	Negative	Negative	Negative	Negative	Negative	Negative
Local or widespread	Local and widespread	Local	Local	Both	Local	Widespread
Short- or long-term	Short term	Both	Both	Both	both	Long Term
Reversible or Irreversible	Reversible	Both	Both	Both	Reversible	Both
Severity	Moderate	Moderate	High	High	high	high
Probability	Likely	Likely	Likely	Likely	Likely	Likely
Significance	Medium	Medium	High	High	High	High



6.4 IMPACTS ASSOCIATED WITH PROJECT LOCATION

Potential Impact:

Environmental and social impacts may arise with poor siting and improper land acquisition. Impact significance can be high.

Mitigation

Negative impacts can be mitigated by investigating following parameters:

<u>Parameters</u>	<u>Project Site</u>
Dislocation, Resettlement, Rehabilitation, Infrastructure Clearing	Not Required
Land Legal Status	No legal obligations or case in any court
Land ownership	Proponent legally owns project land
Natural Hazards	Site is not prone to any natural hazard – flood, landslide or any other hazard
Hydrology or Waterways	Project will not alter/deteriorate surface hydrology or waterways
Sensitive or Protected area	Project site is not in or near any sensitive or protected area. There are no historical or archeological structures of any kind on or near the property.
Accessibility	The project site is alongside Ferozepur Road and easily accessible from all towns and ports across Pakistan.
Compatibility to surroundings and suitability	The project site is within the existing premises of LG, having all the amenities and infrastructure needed indicating its compatibility to surroundings having different industries.
Availability of Basic Utilities and Industrial Drain	WAPDA power is available. Groundwater of sufficient quantity is available that can be treated for drinking as well as process use. Wastewater will be discharged in nearby external Lakhneki Drain. Application for obtaining the NOC from Irrigation Department is currently under process.
Availability of workforce at an industry location	The required number of workers with the right skill are available for construction as well as operational phase.

Residual Impact

Impacts significance pertaining to Project location will reduce to low significance



6.5 IMPACTS ASSOCIATED WITH DESIGN

Potential Impacts

Impacts that may be addressed during design phase include:

- Physical trauma associated with failure of building structure
- Seismic zone
- Energy Conservation
- Water Conservation/Water quality
- Wastewater Treatment
- Appropriate solid waste disposal system
- Sustainability considerations such as rain water harvesting, use of renewable or low/No carbon fuels
- Safety and health hazards – including firefighting system, emergency exits,
- Selection of Technology and equipment
- Proper Plant layout
- Infrastructure

Reduction of potential hazards is best accomplished during the design phase when the structural design, layout, technology selection and site modifications can be adapted more easily.

Impact is assessed to be of high negative significance prior to mitigation.

Mitigation Measures

The following issues should be considered and incorporated as appropriate into the planning, siting, and design phases of a project.

- Inclusion of buffer strips or other methods of physical separation around project sites to protect the public from major hazards associated with hazardous materials incidents or process failure, as well as nuisance issues related to noise, odors, chemicals or gaseous emissions
- Incorporation of siting and safety engineering criteria to prevent failures due to natural risks posed by earthquakes, wind, flooding, landslides and fire. To this end, all project structures should be designed in accordance with engineering and design criteria mandated by site-specific risks, including but not limited to seismic activity, slope stability, wind loading, and other dynamic loads.



- Application of locally regulated or internationally recognized building codes to ensure structures are designed and constructed in accordance with sound architectural and engineering practice, including aspects of fire prevention and response
- Address the concerns relevant to lighting, sound, water quality, plant layout.
-

6.6 IMPACTS ASSOCIATED WITH CONSTRUCTION PHASE

The Impacts associated with the construction activities of the proposed project are:

- Impacts on Physical Environment
- Impacts on Biological Environment
- Socioeconomic Impacts

6.6.1 Impact on Physical Environment

6.6.1.1 *Impact on Soil and Topography*

Potential Impact

Soil of the Project site may be affected by earthworks including excavation, dumping of construction debris, leveling of the site; installation of water drainage channels; spillage of fuel and oil from construction machinery, transportation and storage; silt-water from concrete batching and accidental leakage of chemicals to be used.

The likely impacts of these activities may include:

- Localized changes to topography
- Soil erosion, Physical scarring of the landscape.
- Increased risk of land slippage.
- Increased sediment load in surface run off.
- Soil contamination

Mitigation Measures

- Good engineering practices will help control soil erosion.
- Excavation work should be sprayed with water.
- Spill Prevention and Response Plan for storage, use and transfer of fuel and hazardous materials should be prepared.
- Workers should be trained on spill prevention and response plan.
- Fuels, lubricants and chemicals should be stored in covered areas, underlain with impervious lining.



- Maintenance and washing of vehicles and equipment should be carried out at designated areas.
- Regular inspections should be carried out to detect leakages in construction vehicles and equipment. Their scheduled maintenance should be carried out.
- Appropriate arrangements, including shovels, plastic bags and absorbent materials, should be available near fuel storage areas.
- Document all related incidents of spillage to take corrective actions and to avoid recurrence.

Residual impacts:

The implementation of above-mentioned measures is expected to reduce the adverse effects within low range.

Monitoring requirement:

Soil of the construction site should be visually inspected for any adverse effect and its mitigation on daily basis by Contractor's Engineer/Supervisor.

6.6.1.2 Water Consumption

Potential Impact

Water during construction phase will be required mainly for domestic water consumption at the construction camp and for the construction activities.

An adverse impact on the water resources is not expected as water consumption is low and construction phase is for a short period.

Mitigation Measures:

Water supply will be from tube-well. Water conservation program will be initiated to prevent wastage of water.

Residual Impact

No residual impact is expected.

6.6.1.3 Water Quality

Potential Impact

The quality of surface and groundwater supplies may deteriorate in case pollutants mix with surface runoff during rain are carried to water resources in the vicinity, or if pollutants leach into the ground. Potential sources of pollution in such cases may include:

- Domestic waste (sanitary and kitchen discharge)
- Oil and grease from vehicles and construction machinery



- Sediments from altered land surfaces
- Spillage of fuel or chemicals on ground

Chemicals in dyes, fuel and oil can quickly move through soil and pollute groundwater. A significant impact on the groundwater will be interpreted if construction material and other pollutants are not effectively controlled.

Mitigation Measures

- Effluents from Construction camp will be diverted through sewerage channels to Septic Tank.
- Fuels, lubricants and chemicals will be stored in areas with impervious floors. The accidental spills should be handled in accordance with the relevant SOPs.
- The scheduled maintenance of vehicles and construction machinery shall be carried out to prevent fuel and oil leakages. Fueling and vehicles washing will be carried out at designated areas.
- Recently groundwater has been analyzed for various parameters which will be used as a base case.

Residual Impact

Low scale residual impact is predicted if mitigation measures are incorporated.

Monitoring Requirement

The Contractor's mechanical crew will closely monitor any leakages from vehicles and machineries on regular basis. Groundwater will be analyzed for parameters of drinking water PEQS on quarterly basis during Construction Phase.

6.6.1.4 Air Quality

Potential Impact

During the construction phase, major sources of potential impacts on air quality are:

- Dust emissions generated from civil work and transportation of construction material.
- Wind during construction shift the dust to neighboring area and make the situation worse.
- The movement of heavy machinery and vehicles on the dirt tracks also causes dust emissions.
- Exhaust emissions of CO, NO_x, SO₂ and particulates from diesel generators, construction machinery/vehicles (like batching plants, excavators, dump trucks, and



other transport vehicles) can pose significant adverse impact on health and environment when the emissions are not in compliance with PEQS.

- The other construction activities which can pose occupational health hazards are welding, metal cutting and painting fumes.
- Moreover, the possibility of exhaust emissions increases when vehicles and equipment are utilized without scheduled maintenance.

Mitigation

- Tuning of vehicles should be made mandatory to reduce the emissions of NO_x, SO_x, CO, and particulates.
- Equipment and vehicles powered with diesel should be well maintained to operate at their design specifications to minimize particulate and gas emissions.
- Haul trucks carrying earth, sand, aggregate, and other materials should be kept covered during transportation of materials and storage at site, with tarpaulin.
- The sprinkling of water by water trucks should be done on roads and other dusty areas
- Enforce the use of PPEs where required.
- Commence landscaping as early as practicable.

Potential impact is of moderate significance.

Mitigation Measures

To make the construction activities lawful and neighbor friendly, following are the practical ways to control nuisance:

- Dampening of material and unsurfaced roads. Ensure water sprays to control and minimize dust emissions. Commence landscaping as early as practicable.
- Haul trucks carrying earth, sand, aggregate, and other materials should be kept covered during transportation of materials with tarpaulin.
- Dust emission from soil piles and aggregate storage stockpiles will be reduced by covering the piles, for example with tarpaulin or thick plastic sheet.
- Restricting dust generating activities during extremely dry or windy days.
- Construction materials that are susceptible to dust formation will be transported only in securely covered trucks to prevent dust emission during transportation. Restrict vehicles speed.
- Provision of dust respirators (such as N95) to equipment operators and other permanent and contract employees who are exposed to heavy dust. Use PPEs.
- Use of vehicles, machinery and generators with high combustion efficiency. Scheduled maintenance will be carried out to meet specifications of the



Manufacturer as to minimize the emissions. Do not leave machinery, vehicle or equipment running when not in use.

- (Before and during the building works, all excavations must be fenced or otherwise guarded against being a danger to the life or property.)
- Welders, painters and their co-workers should understand the hazards of material they are working with. Prolonged exposure of fumes may cause serious health complications. They should be enforced to wear PPEs. Develop SOPs for welding including relevant guidelines of OSHA.

Residual Impact

- After taking mitigation measures, impact is assessed to be of low to moderate significance.

Monitoring requirements

- Dust emission will be visually monitored on regular basis
- Ambient air quality will be checked for CO, NO_x, SO₂ and **particulates** near or at project site on quarterly basis.

6.6.1.5 Noise

Potential Impacts

The potential sources of significant noise include the construction machinery, generators at camps and construction related traffic, crushing, scaffolding and radios and mobile phones. The noise will be maximum during the day time when construction and operational activities are ongoing.

The noises loud enough to impair someone's hearing will contribute to hearing loss and accidents when can't hear the alarm.

Loud sound levels at workplace leads to unhappy workers.

Impact is of moderate significance and preventable.

Mitigation Measures:

- Noise hazards are addressed in OSHA standards for construction.
- Use low noise machinery (use of silencer and mufflers) which is properly maintained and operated.
- Fit an acoustic enclosure if machine is stationary.
- Switch off all equipment when not in use.



- For scaffolding, reduce drop from heights.
 - Keep the music volume of radio or mobile phone down
 - Provide sound related PPEs to the workers.
-
- Noise levels shall be controlled within PEQS limits as monitored near the project boundaries. For noisy areas, the workers must use hearing protective devices such as ear muffs, ear plugs.
 - Place Warning Sign Boards at high sound level areas.

Residual Impact

Low residual impact is expected after taking mitigation measures however use of ear muffs or ear plugs are essential where sound levels are above the PEQS.

Monitoring requirement

Monitoring of ambient sound levels and machinery generated noise will be done by Contractor's Inspection engineer in coordination with NKP's HSE Engineer on quarterly basis to avoid increase in noise level beyond PEQS limits.

6.6.1.6 Solid Waste Management

Potential Impacts

Solid waste during Construction Phase is classified as domestic solid waste, packaging waste, construction waste (includes cables, copper, empty containers, steel etc.) and excavated material. Other waste includes oily rags, used air and oil filters, waste fluorescent and used cartridge etc. The waste if inadequately managed, can cause health hazard and contamination of soil and groundwater.

Impact is of moderate negative significance

Mitigation Measures

- Site Waste Management Plan (SWMP) shall be prepared and implemented by the Construction Contractor that details the amount and type of waste that will be produced at construction site and how it will be reused, recycled or disposed of at a legitimate site.
- Solid waste will be segregated at the source.
- Hazardous waste will not mixed with no-hazardous waste.
- Wastage of any useable material will be strictly controlled.

Residual Impact

Impact can be significantly reduced to low intensity provided the above-mentioned mitigations are appropriately incorporated.



Monitoring Requirements

The Contractor's site engineer will monitor and ensure the good practices of SWMP at Construction site.

6.6.1.7 Occupational Health and Safety

Occupational health and safety hazards include:

- Over exertion
- Slips and Falls
- Work on height
- Struck by objects
- Moving Machinery
- Dust/stack emissions
- Confined Spaces and Excavations, other site hazards such as exposure to dust, chemicals, hazardous or flammable materials, and wastes in a combination of liquid, solid, or gaseous forms
- People from the project area cannot be considered isolated from the rest of the country. They are regularly exposed to illnesses common to other populations and have similar levels of immunity.

Impact before mitigation is of high significance.

Mitigation Measures

- Enforce the use of PPEs
- Ensure the use of SOPs for work on height and in confined space and excavations.
- Manage proper housekeeping to avoid safety incidents.
- Excavation sites should be barricaded.
- Provision of appropriate warning sign boards at near work site.
- Spray water to suppress the dust as required.
- Limit vehicles' speed at 20 Km/hr. within the NKP's premises.
- Control spillage and leakages of fuel and oil
- Ensure appropriate solid and liquid waste handling and disposal.
- Fire prevention and evacuation plans for Construction Phase should be implemented.
- Ensure first aid boxes are available at the construction site and provide first aid training to the contractor's staff.
-

Residual Impact

Impact of low to medium significance is expected after implementing mitigation measures.

6.6.1.8 Vegetation/Trees Loss

Potential Impact



During construction phase, cutting or removal of a few trees is not required.

Potential impact is of low significance.

Mitigation Measures

- Management is committed to plant native trees on the available open land where feasible.
- Landscaping will be done after construction phase
- Maintain a record of new planted trees for follow up and maintain their growth

Residual Impact

Positive impact.

Monitoring

Planting and maintaining trees will be monitored by NKP's Admin Officer.

6.6.1.9 Impact on Fauna

Since the project site is within the existing premises of NKP, the avifauna associated with the trees in the surrounding community will not be affected by the construction activity. However, the heavy traffic may disturb the local fauna and pose safety risks to reptiles or stray dogs of the community.

Potential impact is of low significance.

Mitigation Measures

- Trees plantation
- Limit vehicles speed below 20 Km per hr.
-

6.6.2 Socio-Economic Impacts

6.6.2.1 Land Use

Potential Impact

Positive effects are anticipated since the land use will create jobs and boost the nation's economy when in operation

Mitigation Measures

Tree Plantation

Residual Impact



Overall positive impact.

Monitoring Measures

Project Manager will ensure restoration of site by the Contractor. Admin Manager will ensure plantation of new trees on open area.

6.6.2.2 Impact on Livelihood of Local Communities

Potential Impact

The construction phase will generate employment. The project will provide the communities with the opportunity to expand their existing businesses such as restaurants, transport.

Overall, it will pose a positive impact on livelihood of local communities.

Mitigation Measures

- Local community would be preferred for employment of unskilled labor. They may also be given priority as semi-skilled and skilled workforce if they qualify the job criteria.
- Training will be provided to the unskilled local workers.
- The condition of hiring from local community will be included in the contract with the Construction contractor/s.

Residual Impact

Overall positive impact

6.6.2.3 Community Health and Safety

Potential Impact

Inappropriate management of solid waste, wastewater, emissions, and mainly noise and traffic may pose a threat to the community. However, as the construction activities will be carried out within the NKP existing premises, therefore insignificant negative impact of construction activities is expected. There will be a temporary increase in traffic due to the construction of the proposed development, however this will cease once the development has been completed. This will involve deliveries of steel, concrete, building materials, equipment etc.

The potential health impacts are low; however, the safety impact on the local community could be considered of moderate to high significance due to the movement of heavy traffic for construction activities and the transportation of plant equipment.



Mitigation Measures

- Unauthorized entry to the construction site will be restricted and barricaded where required.
- Environment management will ensure that all waste disposal, air emissions and noise from construction activities comply with EPA rules, PEQS and Safety Standards.
- To reduce road accidents involving project vehicles during construction, avoid activities during heavy traffic at office and schools timings.
- Provision of appropriate warning sign boards at near work site and roads where necessary
- Adopt risk management strategies to safeguard the community from physical, chemical, and other hazards related to the construction.

Residual Impact

Impact after mitigation measure is expected to be within low-moderate significance.

6.6.2.4 Traffic Annoyance

Potential Impact

Due to the movement of large construction vehicles, there may be traffic congestion causing problems to the workers and the local community

Mitigation

- During the construction phase, traffic control plan will be prepared and implemented.
- Constructional materials will not be transported at peak working hours to avoid traffic congestion and avoid accidents.
- Vehicle speed will be limited to 20 Km/hr.
- During delivery of Plant Equipment and vessels, District Traffic Police will be involved if necessary.

Residual Impact

The significance will be minimal after implementing the mitigation measures

Monitoring

Contractor and NKP's Admin Department will monitor the implementation of traffic control plan for construction phase.



6.7 IMPACTS ASSOCIATED WITH OPERATIONAL PHASE

6.7.1 Impact on Physical Environment

6.7.1.1 Air Emissions

Potential Impact

Boiler is the major source of gaseous emissions where biomass is used as a renewable fuel. Electric supply is from WAPDA.

Replacement of coal or NG with a renewable fuel has a positive impact on environment.

However, uncontrolled gaseous and particulates emissions particularly from boilers may cause a negative impact of high significance.

Inappropriate ventilation may lead to poor indoor quality within production halls and chemicals storage areas.

Mitigation

- Ensure that the exhaust emissions from boilers comply with PEQS of industrial gaseous emissions;
- Air Pollution Control System (APCS) is installed at Boiler exhaust.
- Renewable fuel will be used in boilers minimizing greenhouse gas emissions
- Provide proactive maintenance of standby generators.
- Operate boiler at design efficiency to avoid excessive CO, UHC, NO_x, particulates
- Install a proper ventilation system to avoid accumulation of chemicals vapors or mist in operational and chemical storage areas.
- Ensure that all personnel use appropriate and task-specific personal protective equipment (PPE).

Residual Impact

Low to moderate impact

Monitoring

Gaseous emissions from stacks should be analyzed for given parameters of PEQS on Quarterly basis. Indoor air quality will be monitored on regular basis.

6.7.1.2 Noise

Potential Impact

If you need to raise your voice to speak to someone 3 feet away, noise levels might be over 85 decibels.

Noise may be a problem in your workplace if you:

- Hear ringing or humming in your ears when you leave work.



- Have to shout to be heard by a coworker an arm's length away.
- Experience temporary hearing loss when leaving work.

Source of high noise is plant operation machinery, standby power generators, steam venting etc. Exposure to high noise levels can lead to psychological effects and physical harm. Prolonged exposure to environmental noise may result in premature death, contribute to ischemic heart disease, cause chronic high annoyance and sleep disturbances, and even lead to hearing loss.

Impact before mitigation is of high significance.

Mitigations

- This may be addressed by using noise barriers or noise canceling acoustic devices.
- Select the machines with low sound level. (The machinery manufacturers make considerable efforts in keeping the noise emission as low as possible while improving the speed of their machines)
- Ensure the use of ear plugs and ear muffs by the employees working near high Noise level.
- Place Warning Sign Boards at high sound level areas.

Residual Impact

Residual impact is anticipated to be of low to moderate significance. However, where sound level exceeds the recommended limits, wearing ear muffs/ear plugs by the employees should be ensured.

Monitoring

Monitoring on quarterly basis to comply with PEQS of Noise. The noise surveys will be conducted to identify high noise areas.

6.7.1.3 Water Quality

Potential Impact

The quality of surface and groundwater supplies may deteriorate in case pollutants mix with surface runoff during rain are carried to water resources in the vicinity, or if pollutants leach into the ground.

Poor solid and liquid waste handling and disposal may result groundwater contamination.

Impact significance is of moderate level.



Mitigation Measures

- Effluents from Operation site will be diverted through sewerage channels to Wastewater Treatment Plant
- Fuels will be stored in areas with impervious floors.
- Ensure the implementation of Solid waste management Plan to avoid soil contamination.
- Arrange RO water for the workers if groundwater does not meet the PEQS of drinking water.

Residual Impact

Low scale residual impact is predicted if mitigation measures are incorporated.

Monitoring Requirement

Groundwater will be analyzed for parameters of drinking water PEQS on quarterly basis during Operational Phase.

6.7.1.4 Solid Waste

Potential Impact

Improper solid waste management may cause a negative impact on environment, safety and health.

Sources of solid waste are:

- Process waste and domestic waste
- Ash

Potential impact is of moderate significance'

Mitigation Measures

- Develop a solid waste management plan based on waste management hierarchy of prevention, reduction, recycling, recovery using disposal as a least preferred phase.
- Solid waste is segregated at the source.
- Domestic waste is disposed of through a local contractor.
- Ash will be disposed of through a contractor

Residual Impact

Expected Impact after mitigation is of low significance.

6.7.1.5 Wastewater

Potential Impact

- Soil and Water contamination and health hazard can be caused by improper wastewater management.



- At LGPL, wastewater generated from dyeing unit needs treatment to comply with PEQS of Municipal and Liquid Industrial Effluent.
- Potential impact is of high significance.

Mitigation Measures

- Wastewater will be passed through Wastewater Treatment Plant before discharge into Lakhneki Drain
- NOC from the Irrigation department for discharge of wastewater into external Lakhneki Drain has been obtained (Annexure VII)
- Ensure the compliance of effluent from LGPL with PEQS of Municipal and Liquid Industrial Effluent.

Residual Impact:

Implementing mitigation measures, impact can be reduced to low significance

Monitoring Measures

- Lab analysis of treated effluent after Wastewater Treatment will be carried out by EPA certified lab along with submission of validated reports to EPA field office on quarterly basis.

6.7.1.6 Tree Planation

Potential Impact

Planting native trees has a positive environmental impact and will help compensate for any disturbances to avifauna caused by construction and operational activities.

Mitigation Measures

- The management is committed to extensive planting of native trees and developing landscapes in the open areas within the LGPL premises.
- Serious efforts are required to ensure the proper growth and maintenance of the planted trees.

Residual Impact

Highly positive

Monitoring

Monitoring by Admin Officer for growth and maintenance of the planted trees.



6.7.1..7 Occupational Safety and Health

Potential Impact

The most common risks for accidents are trips and falls caused by slippery floors, stairs, and elevated platforms, working in enclosures and at heights, contact with process equipment involving loose dressing, fires and explosions, leakages and spillages, etc., and Health hazards associated with gaseous emissions, high noise, **exposure to hazardous chemicals**, high pressure air or steam, inadequate ventilation in enclosures

Mitigation

- Process safety management (PSM) system will be implemented
- In existing Mill, following plans are already implanted at Stitching Unit:
 - Emergency preparedness procedure including evacuation plan
 - Firefighting plan

These plans will be updated upon the completion of the Expansion Project.

- Fire-extinguishers will be placed at different locations
- Work permit system for maintenance is already implemented in NKP.
- SOPs will be prepared for all operation and maintenance activities.
- Employees will be provided with PPEs including gloves, safety shoes, helmets, safety goggles, face masks, ear plugs/muffs
- Sign boards will be placed at risk and high noise areas
- Assembly points will be notified and rehearsals/drills will be arranged
- Proper lighting will be provided
- Safety hazards will be communicated with adequate signage,
- Spills will be quickly handled and contained,
- Adequate ventilation system will be installed in Production Halls and Chemicals Stores.
- The staff will be trained on emergency handling, firefighting and first aid.
- Inspection schedule will be prepared to check fire-extinguishers and first aid boxes on bi-monthly basis.
- First aid boxes will be placed at different locations. One worker from each shift will be trained on first aid
- SOPs for Dengue control will be implemented
- Safety plans for handling chemicals will be developed and implemented according to the guidelines of each chemical's MSDS.

Residual Impact

Residual impact can be lowered to an acceptable level by implementing mitigation measures

Monitoring Requirements

Regular safety audits, Environmental monitoring – gaseous emissions, effluent, groundwater, noise, ambient air on quarterly basis.



6.8 POTENTIAL ENVIRONMENTAL ENHANCEMENT MEASURES

Besides the concrete measures to be adopted as described above, the quality of the environment will further be enhanced through the running of the project in complete accordance with the 5RS Principles- Reduce, Reuse, Recycle, Refurbish and Retrofit. Good housekeeping practices will be the order of the day. The proposed project will be installed with all precautionary measures to enhance and save the environment. Following necessary measures will be adopted during construction and operation:

The sprinkling of water will be done on dusty roads and tracks. PPEs will be provided during construction activity. Constructional waste and domestic solid waste will be disposed-off or utilized properly. Machinery will never be left unattended. Efforts should also be made to discuss traffic conditions so that regular traffic is not disturbed. Safety signs and boards will be placed at risky and high noise areas during construction and operational phases. Air pollution controlling system will be installed at boiler exhaust. Machinery will be kept maintained. Safety Plan will be developed and implemented for handling of chemicals according to their MSDS. The area will be restored with native plants. A proper tree plantation plan will be formulated to save the environment. Solid waste will be handed over to contractors and an agreement will be made. Noise will be controlled by adopting proper measures. Firefighting equipment and the system will be installed. Hygienic conditions will be ensured and proper quality will be maintained by quality control testing. Employees will be provided with good quality drinking water complying with PEQS. First aid facilities will be made available. Every possible measure will be adopted to make the project safe and environment-friendly.



7. ENVIRONMENTAL MANAGEMENT AND MONITORING PLAN

This chapter outlines a comprehensive approach to managing and monitoring environmental issues while detailing the institutional framework and reporting mechanisms for implementing the Environmental Management Plan (EMP) during the pre-construction, construction, and operational phases of the proposed project.

The EMP has been developed with the following objectives:

- Detail the project's impacts along with proposed mitigation measures and an associated implementation schedule.
- Establish the roles and responsibilities of the project proponent, contractor, and supervisory consultants to ensure effective communication of environmental issues among all stakeholders.
- Develop a monitoring framework, including reporting frequency, auditing processes, and identification of monitoring parameters, to ensure complete and effective implementation of all mitigation measures.
- Specify the requirements for documenting EMP compliance and effectively communicating it to the relevant regulatory authorities.
- Provide an estimated cost for implementing the key actions outlined in the EMP.

7.1 MANAGEMENT APPROACH

The organizational roles and responsibilities of the Proponent and Contractor are outlined as follows:

Proponent:

The project proponent will hold overall responsibility for ensuring compliance with the EMP. Relevant Departments will carry out verification checks to confirm that the contractors are effectively accomplishing their environmental and social responsibilities.

Contractors:

The contractors will implement the majority of environmental and social mitigation measures within their field activities as part of the project. The contractors are subject to certain liabilities under the national laws and specific clauses outlined in their contract with the proponent. The responsibilities detailed in the EMP should be explicitly in the contractor's scope of work during the agreement.

7.2 ENVIRONMENT MANAGEMENT TEAM, ROLES AND RESPONSIBILITIES

The project proponent of LGPL is committed to implementing the Environmental Management Plan (EMP) and holds the primary responsibility for ensuring compliance with EMP. The proponent has designated GM Plant to oversee overall activities involved in implementation of EMP during Construction and Operation phases.



The main personnel involved in the EMP Implementation are

- General Manager Plant
- HSE Manager
- Admin Manager.
- Project Engineer

7.2.1 Construction Phase

As the EMP is included in the contract between LGPL and the contractors, it becomes the contractor's responsibility to ensure its implementation during the construction phase. The Contractor's Site Manager will oversee all construction activities, manage the construction crew and site personnel, and ensure environmentally responsible practices. The Site Manager will coordinate with LGPL's Manager HSE and Project Engineer. The Manager HSE will look after the environment and social aspects. For environmental monitoring, the Manager HSE will collaborate with an EPA-certified laboratory. In addition, Manager HSE will also coordinate with the EPA Punjab to ensure compliance of provisions of environmental approval of the project. Additionally, LGPL will establish an Inspection Team to conduct daily inspections and weekly/monthly audits of construction activities, with a particular focus on those related to the EMP.

The Site Engineer of the Contractor will:

- Prepare compliance reports as per schedule and will submit to LGPL's Manager HSE
- Ensure the use of PPEs by the workers and train them on proper use;
- Conduct the environmental and health and safety trainings to the workers / labor.
- Prepare Emergency Preparedness and Evacuation Plan and train the workers on these Plans.

7.2.2 Operational Phase

Throughout the Project operational phase, GM Plant will oversee the timely implementation of EMP and Monitoring Plan. Manager HSE is responsible to manage timely environmental monitoring including Noise level and ambient air monitoring and lab analyses of Effluent, gaseous emissions and groundwater on quarterly basis. HSE Team and Admin Manager will assist GM Plant in implementing EMP and provide support in implementation of Sustainability Projects

7.3 ENVIRONMENT MANAGEMENT PLAN (EMP)

Table 7.1 illustrates the overview of proposed mitigation measures for possible implications for location, design and construction and operation phases of the proposed project The responsibilities for each mitigation measures have been marked to use this Table as an EMP.



7.4 ENVIRONMENT MONITORING PLAN

Environmental monitoring is a vital component of the Environmental Management Plan.

The feedback provided by the environmental monitoring is instrumental in identifying any problem or lapse in the system under implementation and planning the corrective actions.

Main objectives are:

- To provide a mechanism to determine whether the Construction contractors are carrying out the project in conformity with the EMP.
- To document the actual project impacts on physical, biological, and socioeconomic receptors, quantitatively where possible, in order to evaluate adequacy of EMP and determine the need for any improvement.
- To ensure that all the negative impacts generated during Construction and Operations activities have been mitigated to an acceptable level to meet EPA Rules and Regulations and are compliant with Punjab PEQs.

Table 7.2 presents the Monitoring Plan for Construction and Operational Phases.

Following record should be maintained:

- Periodic inspection reports of the site
- Audit reports of Environment, Energy, Safety and Health
- Record of all moderate and major spills and other incidents; investigation reports.
- Waste tracking registers keeping records of waste generation and disposal.
- Analyses reports of groundwater, Ambient air, particulates emissions and sound level survey reports
- Record of Utilities
- Employment opportunities offered to local community
- Community complaints and corrective measures taken

Table 7.1 ENVIRONMENTAL MANAGEMENT PLAN (EMP)

	Potential Impacts	Proposed Mitigation Actions	Institutional Responsibility		Monitoring/ Actions
			Mitigation	Supervision	
A	PROJECT LOCATION				
A.1	<ul style="list-style-type: none"> - Land acquisition - Resettlement/ Displacement - Environmentally sensitive or protected area - Conflict with stakeholders - Road accessibility - Natural Hazards - Compatibility to surroundings - Availability of Utilities and industrial drain - 	<ul style="list-style-type: none"> - Land is legally owned by the proponent - No resettlement or displacement is required - There is no sensitive or protected area around the project site. - No conflict exists with the stakeholders. - Adjacent to one of the major provincial highways and easily accessible to all cities and ports. - All the amenities and infrastructure needed is available and well compatible to surroundings. - Site is not prone to any natural hazard – flood, landslide or any other hazard - Wapda power supply is available and groundwater is of sufficient quality. Irrigation Drain is adjacent the project Site for wastewater disposal 	Admin Manager	Proponent	Monitor and resolve any conflict with stakeholders that may arise during construction and throughout the project’s lifespan



B	DESIGN				
B.1	<ul style="list-style-type: none">- Improper design may result in health and safety hazards and can lead to environmental and social impacts in addition to financial loss due to energy and production loss.	<ul style="list-style-type: none">- All project structures will be designed in accordance with international engineering codes and standards- Environmental and energy conservation related considerations are also incorporated.- Water conservation will be ensured by incorporating water-management, water recirculation option.- RO Plant will be designed for installation to obtain required quality of drinking and process water.- Fire-extinguishers, fire alarms, water sprinklers emergency evacuation plans all have been taken into account at design phase- Appropriate site layouts should be created to support employees and ensure safe and efficient operations and maintenance.	Designing Firm	GM	The plant project team will monitor the timely submission and review of design documents.



		<ul style="list-style-type: none"> - Technology of wastewater treatment plant has been selected that is most suitable for dyeing unit wastewater. - Provision of air pollution control system for boiler exhausts will be included in the finalized design of boilers. 			
C	CONSTRUCTION PHASE				
C.1	Soil Erosion and Soil Contamination				
	<p>The likely impacts of earthworks may include:</p> <ul style="list-style-type: none"> - Soil erosion, Physical scarring of the landscape. - Increased risk of land slippage. - Increased sediment load in surface run off. <p>Spillage of fuel and oil from construction machinery, transportation and storage may cause:</p> <ul style="list-style-type: none"> - Soil contamination with subsequent groundwater contamination 	<ul style="list-style-type: none"> - Good engineering practices will help control soil erosion. - Water will be sprayed on excavation work. - Spill Prevention and Response Plan will be prepared and implemented. - Restoration will be done as soon as feasible. - To restore the natural Landscapes, native trees will be planted and green lawns will be developed - Groundwater will be analysed on quarterly basis to check for any contamination 	Contractor's Site Manager	Project Engineer/ HSE Manager	<p>Daily inspection of Construction site to check any fuel/oil leakage on the soil or leakage from vehicles or machinery or in storage area.</p> <p>Coordination with EPA certified Lab for quarterly analysis of groundwater.</p>



C.2	Noise					
	<p>Long-term exposure to Environmental noise may cause premature deaths, contribute to ischemic heart disease, chronic high annoyance and chronic high sleep disturbance</p> <ul style="list-style-type: none"> - Source of Noise during Construction phase is construction machinery and construction activities. - Use of mobile phone at work place 	<ul style="list-style-type: none"> - Proper PPEs such as ear plugs and ear muffs will be provided to each employee. - Sign boards will be placed in areas with loud noise levels. - An acoustic enclosure will be fitted if machine is stationary. - It will be ensured to switch off all equipment when not in use. - It will be ensured to keep the volume of mobile phone down - Only low-noise, well-maintained machinery will be permitted on the construction site. 	Contractor's Site Engineer	LGPL HSE Manager	Noise level monitoring.	
C.3	Air Emissions					
	<p>Health hazard due to:</p> <ul style="list-style-type: none"> - <u>Dust emissions</u> generated from civil works. - Dust emissions due to vehicles on un-metalled roads. - Dust emissions due to construction material unloading at site and improper storage 	<ul style="list-style-type: none"> - Haul trucks carrying earth, sand, aggregate, and other materials will be kept covered during transportation of materials and storage at site, with tarpaulin. - The sprinkling of water by water trucks will be done on roads and other dusty areas - Enforce the use of PPEs where required. - Commence landscaping as early as practicable 	Contractor's Site Manager/ HSE Engineer	HSE Manager	Daily inspection of construction site to monitor any dust emissions due to poor management.	



	<ul style="list-style-type: none"> - Exhaust emissions of CO, NO_x, SO₂ UHC and particulates from diesel generators, construction machinery/vehicles - Other construction activities which can pose occupational health hazards are welding, metal cutting and painting fumes. - 	<ul style="list-style-type: none"> - Limit speed limit of vehicles to 20 Km/hr. - Tuning of vehicles shall be made mandatory to reduce the emissions of NO_x, SO_x, CO, and particulates. - Equipment and vehicles powered with diesel shall be well maintained to operate at their design specifications to minimize particulate and gas emissions. - Electricity will be supplied to Construction site from the existing facility. This will avoid the gaseous emissions and noise nuisance from Diesel Generators - . 			Quarterly monitoring of ambient air for PEQS parameters and submit the verified reports to EPA
C.4	Water Supply				
	<p>In-sufficient water supply can cause inadequate sanitation and health hazards</p> <p>Poor Water Quality is one of the major health hazards</p> <p>Water wastage adversely affects environmental sustainability.</p>	<ul style="list-style-type: none"> - Sufficient Groundwater supply will be available through tube-wells - Treated groundwater from RO plants will be supplied to workers for drinking purposes. - Prepare water conservation plan (e.g., reduce, reuse and recycle) to reduce water use and wastewater generation. - To avoid groundwater contamination, ensure proper management of solid and liquid wastes, chemicals spillage/leakages, vehicles' washing etc. 	Contractor's Site Engineer/ HSE Engineer	HSE Manager	. Arrange groundwater/ drinking water analysis by EPA certified lab for compliance with PEQS of drinking water.



		<ul style="list-style-type: none"> - Groundwater will be analyzed on quarterly basis. 			
C.5	Wastewater				
	<p>Inappropriate wastewater management can cause:</p> <ul style="list-style-type: none"> - Soil and water contamination - Health Hazard 	<ul style="list-style-type: none"> - Sewage from Construction site and campsite will be diverted to the Septic Tank before its discharge to External Drain - NOC from Irrigation Department has been obtained (Annexure VII) 	Contractor's Site Manager	HSE Manager	Quarterly analysis of Effluent before discharge to External drain
C.6	Solid Waste				
	<p>Solid waste during Construction Phase if inadequately managed, can cause health hazard and contamination of soil and groundwater</p> <ul style="list-style-type: none"> - 	<ul style="list-style-type: none"> - Contractor will submit Solid Waste Management Plan (SWMP) before mobilizing to Construction Site. - It will be ensured that contractor is properly implementing the SWMP. - Ensure proper house keeping - Waste to be segregated at source - Hazardous waste will not mixed with non-hazardous waste. - Wastage of any useable material will be strictly controlled 	Contractor's Site Manager	HSE Manager	Daily Inspection of Construction site to ensure proper housekeeping and the use of separate bins for different type of waste



		<ul style="list-style-type: none"> - Construction waste will be utilized for road infill or upkeep. - Open solid waste burning is prohibited. 			
C.7	Occupational Health and Safety				
	<p>Occupational safety and health hazards include:</p> <ul style="list-style-type: none"> - Over exertion - Slips and Falls - Struck by objects - Moving Machinery - Work on height - Confined Spaces and Excavations - Exposure to dust, chemicals, flammable material <i>and wastes in a combination of liquid, solid, or gaseous forms</i> - Installation of Plant and Equipment Machinery 	<ul style="list-style-type: none"> - Enforce the use of PPEs - Ensure the use of SOPs for work on height and in confined space and excavations. - Manage proper housekeeping to avoid safety incidents. - Excavation sites should be barricaded. - Provision of appropriate warning sign boards at near work site. - Spray water to suppress the dust as required. - Limit vehicles' speed at 20 Km/hr. within the premises. - Ensure proper maintenance of construction machinery and vehicles to minimize exhaust emissions and leakages of fuel and oil - Ensure appropriate solid and liquid waste handling and disposal. - Load testing of the cranes will be carried out before installation of Plant equipment and machinery. - Fire extinguishers will be placed at Construction site especially where welding jobs are executed 	Contractor's Site Engineer	HSE Manager	<p>Safety Audits</p> <p>Monitoring the compliance of PEQS</p>



		<ul style="list-style-type: none"> - Fire prevention and evacuation plans for Construction Phase should be implemented. - Ensure first aid boxes are available at the construction site and first aid will be provided training to the contractor's staff - Follow SOP for dengue control and prevention - Child labor is prohibited - A qualified doctor will conduct annual medical examination for all worker. 			
C-8	SOCIOECONOMIC IMPACTS				
C-8.1	Traffic				
	<p>Traffic congestion increases the environmental pollution, noise, stress and exhaustion and decrease the time availability for people to spend with their families</p> <ul style="list-style-type: none"> - Safety Hazard 	<ul style="list-style-type: none"> - Construction materials will not be transported at peak working hours to avoid traffic congestion and avoid accidents. - Vehicle speed will be limited to 20 Km/hr. - During delivery of Plant Equipment and vessels, District Traffic Police may be involved if necessary. - Gate security guard will ensure the safe exit and entry of a vehicle to and from the road. 	Contractor's Site Manager	Admin Officer	The traffic control plan will be monitored regularly.



		- All drivers will hold valid and appropriate driving licenses.			
C-8.2	Livelihood Of Local Communities And Economic Growth				
	Overall, positive impact is anticipated by <ul style="list-style-type: none"> - Creating stable Employment opportunities - Economic growth - Skill improvement of locals. - Providing the chances of business expansion 	<ul style="list-style-type: none"> - Local community shall be given priority for employment - Any grievances or concerns raised by Project-affected community shall be appropriately addressed through a grievance mechanism - 	Admin Officer	Admin Manager	Auditable record will be maintained
C.9	Biological Environment				
	Tree Plantation has positive impact	- Extensive tree plantation of native trees will be carried out during and after restoration.	Admin Officer	Manger Admin	Trees growth will be monitored on regular basis.
D	OPERATION				
D.1	Air Emissions				
	Uncontrolled gaseous and particulates emissions	- Scrubber/Cyclone Separator will be installed at the boilers exhausts.	I/C Utilities	HSE Manager	Boiler stack emissions will



	particularly from boiler may cause a negative impact of high significance.	<ul style="list-style-type: none"> - Design combustion efficiency of boilers will be ensured - Appropriate generalized and localized ventilation systems will be installed to maintain clean indoor air quality; particularly at Production Halls and chemicals stores. 			be monitored for compliance with PEQS
D.2	Noise				
	<p>Exposure to high noise levels can lead to psychological effects and physical harm including hearing loss.</p> <p>Source of high noise is plant operation machinery, power generators, steam venting etc.</p>	<ul style="list-style-type: none"> - This may be addressed by using noise barriers or noise canceling acoustic devices. - Machines with low sound level will be installed. - Use of ear plugs and ear muffs by the employees will be ensured in working areas of high Noise level. - Warning Sign Boards will be placed at high sound level areas. 	HSE Engineer	HSE Manager	Noise level survey will be conducted on regular basis.
D.3	Water Supply				
	Insufficient and poor quality of water supply can cause sanitation issues and health hazard	<ul style="list-style-type: none"> - Sufficient water supply from Tubewells will be ensured - Groundwater will be treated in RO Plants before supply as drinking water 	HSE Engineer	HSE Manager	Groundwater /Drinking Water will be analyzed by EPA certified Lab
D.4	Solid Waste				
	<p>Solid waste includes</p> <ul style="list-style-type: none"> - Non-hazardous waste 	<ul style="list-style-type: none"> - Solid Waste Management Plan will be prepared and implemented - Waste will be segregated at the source 	HSE Engineer /Admin Officer	HSE Manager	Auditable record will be maintained.



	- Ash from Biomass fuelled Boilers	<ul style="list-style-type: none"> - Domestic waste will be disposed of through Municipal Waste Management Authority. - - Ash will be disposed of through a contractor Open burning of solid waste is not permitted. - - The dried sludge from Wastewater Treatment Plant will be disposed of through EPA approved contractor. 			
D.4	Wastewater				
	Improper wastewater management can contaminate soil and groundwater and cause health hazard	<ul style="list-style-type: none"> - - Wastewater Treatment Plant will be installed to treat wastewater generated from dyeing Unit. - NOC from Irrigation Department has been obtained for treated wastewater disposal (Annexure VII) - .Effluent Compliance with PEQS will be ensured. - Dried sludge from ETP will be disposed of through EPA approved contractor. 	Admin Officer / HSE Engineer	Admin Manager/ HSE Manager	Lab analysis of treated effluent will be carried out on quarterly basis and validated reports will be submitted To EPA
D.5	Handling of Dyes/Chemicals				
	Safety and health hazards associated with handling and	<ul style="list-style-type: none"> - Prepare and implement Safety Plan for handling of chemicals. 	HSE Engineer	HSE Manager	Maintain a register to



<p>storage of chemicals and disposal of Chemical generated waste such as:</p> <ul style="list-style-type: none"> - Chemicals that expires - Chemical waste generated as a result of spillage handling 	<ul style="list-style-type: none"> - Develop chemical waste management plan in accordance with guidelines given MSDS of each chemical. - Dispose of chemical waste in accordance with the Chemical Waste Management Plan - Chemical waste containers will be kept tightly sealed, properly labeled, and stored in a designated safe area before being handed over to an EPA-approved contractor for disposal. - Review and adjust maximum inventory levels of hazardous chemicals to prevent stock from expiring. - Contain the spillage to avoid hazardous chemicals drain to sewer. - Ensure that adequate ventilation is maintained in the chemical handling and chemical waste storage area. - Appropriate PPE will be provided to all workers handling chemical waste 			<p>record spillage incidents, expired chemicals and the quantities handed over to EPA approved contractor</p>
Occupational Safety and Health				
<p>The most common risks for accidents are:</p>	<ul style="list-style-type: none"> - Process safety management (PSM) system will be implemented - Emergency evacuation plan and firefighting plan will be developed for expansion project and implemented. 	<p>HSE Engineer</p>	<p>HSE Manager</p>	<p>Safety audits will be conducted.</p> <p>Monitoring will be carried out</p>



<ul style="list-style-type: none"> - Trips and falls caused by slippery floors, stairs, and elevated platforms, - Working in enclosures and at heights, - Contact with process equipment involving loose dressing, - Fires and explosions, - Leakages and spillages, - High pressure air or steam, etc. 	<ul style="list-style-type: none"> - Fire-extinguishers will be placed at different locations - Work permit system for maintenance will be implemented - SOPs will be prepared for all operation and maintenance activities. - Employees will be provided with PPEs including gloves, safety shoes, helmets, safety goggles, face masks, ear plugs/muffs - Sign boards will be placed at risk and high noise areas - Assembly points will be notified and rehearsals/drills will be arranged - Proper lighting will be provided , - Spills will be quickly handled and contained, - Adequate ventilation systems will be installed in Production Halls and chemicals stores. - The staff will be trained on emergency handling, firefighting and first aid. - First aid boxes will be placed at different locations. One worker from each shift will be trained on first aid - SOPs for Dengue control will be implemented - All drivers entering the project site will hold valid and appropriate driving licenses. 		<p>by EPA certified Lab and validated reports will be submitted to EPA field office on quarterly basis.</p>
<p>Health hazards are associated with</p> <ul style="list-style-type: none"> - Gaseous emissions, - High noise, - Exposure to hazardous chemicals, - Inadequate ventilation in enclosures 			



		- Safety Plan will be prepared and implemented for handling of chemicals.			
	New Hiring for Plant Operation				
	Positive Impact of New Hiring for Plant Operations	- New plant operators, maintenance technicians, and HSE personnel will be recruited from the neighborhood and given training in occupational health and safety and other necessary skills. -	Manager HR	GM Plant	Grievance Mechanism will be monitored
	Tree Plantation				
	Positive impact of tree Plantation	- Extensive plantation of native trees will be carried out and landscapes will be developed on open areas.	Admin Officer	Manager Admin	Growth of planted trees will be monitored on regular basis.



Table 7.2 Environment Monitoring Plan for Construction and Operational Phases

Components	Parameters	Standard	Frequency		Responsibility	Performed By
			Construction	Operations		
Noise	Noise Level dB(A) Survey	PEQS For Noise	Quarterly	Quarterly	Lead HSE &Q	To be Performed by EPA Certified Lab and validated reports will be submitted to EPA, Punjab on Quarterly basis
Ambient Quality	Air CO, SO ₂ , NO _x , Particulates (PM ₁₀ , PM _{2.5})	PEQS For Ambient Air	Quarterly	Quarterly	Lead HSE &Q	
Gaseous Emissions	CO, SO ₂ , NO _x , Particulates	EPA PEQS for Industrial Gaseous Emissions	Quarterly	Quarterly	Lead HSE &Q	
Water Quality	Drinking water PEQS,	PEQS/WHO for Drinking water	Quarterly	Quarterly	Lead HSE &Q	



Effluent	All parameters PEQS	PEQS for Industrial Effluents	Quarterly	Quarterly	Lead HSE &Q	
Trees Plantation	Visual Inspection	Environmental Sustainability	Regular Monitoring by Site Administration		Manager Admin	

7.5 SCHEDULE FOR IMPLEMENTATION AND ENVIRONMENTAL BUDGET

7.5.1 Schedule for Implementation

- The design phase has almost completed
- The Civil contractor has been engaged.
- Construction of Expansion Project is planned to start just after obtaining Environmental Approval for Construction Phase from EPA Punjab
- The Planned duration for Construction Phase is 1.5 years

7.5.2 Environment Budget

LGPL is committed to creating and promoting an environmentally sustainable and responsible culture and foster continuous improvement in its performance in terms of its environmental footprint. The budget proposed for effectively implement the EMP is summarized in Table 7.3.

Table 7.3 Environment Budget for EMP Implementation

Activity	Description	Cost (PKR)
Environment Monitoring Cost	Analyses of Noise, ambient air, Effluent and Water Quality (Quarterly)	300,000
Solid Waste Disposal	Solid Waste management	600,000
HSE	PPEs etc.	800,000
Plantation Plan	Tree Plantation	300,000
Training Program	Trainings	200,000
	Grand Total	2,200,000

7.6 PROPOSED EMP REPORTING AND REVIEWING PROCEDURE

The EMP will be incorporated into the contract between project contractor/s and LGPL. It will be a contractor's responsibility to implement the EMP during Construction Phase. However, LGPL's HSE Manager and Admin Department will provide support to the Contractor's team whenever required to work for a common cause.

- The contractor's Site Manager will prepare periodic progress report of EMP implementation and share with HSE Manager of LGPL. After review by HSEM, the report will be submitted to GM Plant.



- MR will review the report and assess the compliance with EMP and discuss the report with internal departmental meetings.
- At the completion of project construction, the Contractor will prepare the project completion report and submit to GM Plant.
- In case of non-compliance by the contractor, GM Plant will take proper action on non-compliance in accordance with a clause of contract and may recommend to make deductions from the payments to the contractor.
- Change of management plan will be implemented to incorporate any change required in the EMP during design and construction stage.

7.7 ENVIRONMENT TRAININGS

LGPL will provide periodic Environmental and HSE trainings to their permanent and Contract Employees. A comprehensive annual training calendar will be developed for the employees whose trainings are organized based on Training Need Analyses. Environment, Health and Safety (EHS) are considered to have a high weightage in their performance evaluation process.

7.8 GRIEVANCE REDRESS MECHANISM (GRM) SUMMARY

Key features of the GRM include:

1. **Social Complaint Register (SCR):** The contractor will maintain an SCR at project sites to document all complaints from Project Affected Persons (PAPs) and local communities.
2. **Complaint Resolution Process:**
 - Upon receiving a complaint, the contractor will record it in the SCR and attempt to resolve it within 15 days in coordination with LGPL's HSEM and Admin Manager.
 - If the issue remains unresolved, it will escalate to the GM Plant, who will address it within another 15 days.
 - Further unresolved issues will be taken to the Company's Director if they are of serious nature, with a resolution timeframe of one month.
 - If the complainant is still dissatisfied, they have the right to pursue legal action.
3. **Documentation and Communication:** Proposed remedial actions will be documented in the SCR, along with implementation responsibilities and schedules. Complainants will be informed of the proposed and actual actions taken, and their feedback will also be recorded.
4. **Review Process:** The SCR will be reviewed in fortnightly site meetings to monitor the progress of remedial actions.

Overall, the GRM aims to provide a structured approach for addressing grievances, ensuring community concerns are managed effectively throughout the project lifecycle.



8. CONCLUSION AND RECOMMENDATIONS

8.1 CONCLUSION

The Environmental Impact Assessment (EIA) study was carried out for the Construction of Expansion Project of LGPL including establishment of dyeing unit, stitching unit, wastewater treatment plant and allied facilities within the existing premises of LGPL. The EIA Study confirms that the proposed Expansion project is environmentally, socially, legally and economically viable. The proponent is committed to executing the project in an environmentally responsible manner, taking all necessary measures to mitigate potential impacts. Furthermore, the project will generate employment opportunities for the local community during both the construction and operational phases.

8.2 RECOMMENDATIONS

Considering the comprehensive screening process and the findings of this study, no further investigations are deemed necessary. Overall, the project will have positive impacts on the local population and country as a whole. Therefore, it is strongly recommended to grant Environmental Approval for the Construction Phase of the Proposed Project, provided the Proponent effectively implements the Environment Management and Monitoring Plans.

It is emphasized that:

- The Environmental Management and Monitoring Plan should be implemented with full commitments.
- Stakeholders' grievances must be addressed as a priority.
- The management should undertake corporate social responsibility initiatives.
- Regular monitoring and maintenance of the planted trees must be ensured.
- Environmental sustainability projects should be prioritized.
- Housekeeping and proper use of personal protective equipment (PPE) must be ensured wherever necessary.
- The drinking water of required PEQS should be provided to the workers after treatment through RO Plant.
- First aid boxes should be strategically placed at various locations across the site.
- Dengue prevention SOPs must be implemented effectively.
- Process Safety management in line with OSHA standards should be adopted and implemented.



ANNEXURES



ANNEXURE I: GLOSSARY

Term	Definition
Aesthetic Value	The value derived from the beauty, visual appeal, and experiential qualities of a landscape or place.
Ambient air quality	Ambient air quality refers to the quality of outdoor air in our surrounding environment.
Archaeology	The study of human history and prehistory through the excavation of sites and the analysis of artefacts and other physical remains.
Biodiversity	The variety of plant and animal life in the world or in a particular habitat, a high level of which is usually considered to be important and desirable.
Climate.	The weather conditions prevailing in an area in general or over a long period
Conservation	Official supervision of rivers, forests, and other natural resources in order to preserve and protect them through prudent management
Construction Waste	Waste generated from the buildings and construction industry and includes material like bricks, concrete, tiles, debris, ceramics and more.
Consultant	A person who provides professional advice or services to companies for fee
Cultural Heritage	Valued objects and qualities such as historic buildings and cultural traditions that have passed from previous generations.
Demographic	A single vital or social statistic of a human population, as the number of births or deaths
Ecology	The branch of biology that deals with relations of organisms to one another and to their physical surroundings
Effluent	Liquid wastes such as sewage and liquid waste from industries
Environment	Relationship of natural world (human beings, animals and plants) with physical surroundings (air, land, water).
environmental impact assessment (EIA)	(EIA) is an analytical process that systematically examines the possible environmental consequences of the implementation of projects, programs and policies
environmental management plan	(EMP) is a site-specific plan developed to ensure that all necessary measures are identified and implemented in order to protect the environment and comply with environmental legislation.
Excavation	The act or process of digging, especially when something specifics being removed from the ground.
Fauna	The animals of a particular region, habitat, or geological period.
Flora	The plants of a particular region, habitat, or geological period.



Framework	A real or conceptual structure intended to serve as a support or guide for the building of something that expands the structure into something useful
Hazardous Waste	Waste that poses substantial or potential threats to public health or environment
Impact	The action of one object coming forcibly into contact with another.
IEE	Initial Environmental Examination
Livelihood	A set of activities involving securing the basic necessities –food, water, shelter and clothing of life.
Peak ground acceleration	Peak ground acceleration (PGA) is equal to the maximum ground acceleration that occurred during earthquake shaking at a location
Policy	A policy is a deliberate system of principles to guide decision and achieve rational outcomes
Proponent	A person who advocates a theory, proposal, or course of action.
Rehabilitation	To restore to a condition of good health, ability to work, or the like
Resettlement	The settlement of people in a different place
Resource	A stock or supply of money, materials, staff, and other assets that can be drawn on by a person or organization in order to function effectively.
Sanitation	Conditions relating to public health, especially the provision of clean drinking water and adequate sewage disposal
Seismic Hazard.	A seismic hazard is the probability that an earthquake will occur in a given geographic area, within a given window of time, and with ground motion intensity exceeding a given threshold.
Seismology	The branch of science concerned with earthquakes and related phenomena.
Stakeholder	A stakeholder is a party that has an interest in a company, and can either affect or be affected by the business. The primary stakeholders in a typical corporation are its investors, employees and customers.
Topography	Topography is the study of the shape and features of the surface of the Earth and other observable astronomical objects including planets, moons, and asteroids
Vegetation	Plants considered collectively, especially those found in a particular area or habitat.



ANNEXURE II: ABBREVIATIONS & ACRONYMS

CO	Carbon Monoxide
CSR	Corporate Social Responsibility
dB(A)	Decibel- A
ERP	Emergency Response Plan
EHS	Environmental Health & Safety
EMMP	Environmental Management and Monitoring Plan
EPA	Environmental Protection Agency
EPD	Environmental Protection Department
HSE	Health Safety & Environment
GRM	Grievance Redress Mechanism
IEE	Initial Environmental Examination
IFC	International Finance Corporation
ILO	International Labor Organization
LGPL	Leathertex Gloving Private Limited
LAA	Land Acquisition Act
LST	Land Surface Temperature
LULC	Land Use and Land Cover
MSDS	Material Safety Data Sheets
NCSW	National Commission on the Status of Women
NFPA	National Fire Protection Association
NOC	No Objection Certificate
OSHA	Occupational Safety & Health Administration
NOx	Oxides of Nitrogen
SOx	Oxides of Sulfur
PM	Particulate Matter (2.5 or 10)
PGA	Peak Ground Acceleration
PPE	Personal Protective Equipment
PEPA	Punjab Environmental Protection Act
PEPC	Punjab Environmental Protection Council
PEQS	Punjab Environmental Quality Standards
3R	Reduce, Reuse & Recycle
SEAL	Solution Environmental & Analytical Laboratory
SF	Square Foot
SOPs	Standard Operating Procedures
WHO	World Health Organization



ANNEXURE III:

**LIST OF INDIVIDUALS AND ORGANIZATIONS
CONSULTED ALONG WITH THEIR FEEDBACK**



Consultation with Stakeholders

Name	Designation	Organization	Concerns/Advice
Mr. Amjad Malik	Director	M/s LGPL	<ul style="list-style-type: none"> - The current project is expected to enhance the community's standard of living and improve the overall skill level of the local population. - We are committed for environmental sustainability in all aspects of our operations. - The proposed project will contribute towards National economic growth and development - We will ensure to use the water spraying during construction phase to effectively control and minimize dust emissions.
Mr. Amir	HR Manager	M/s LGPL	<ul style="list-style-type: none"> - Child labor is strictly prohibited in LGPL. - We ensure the provision of high quality RO drinking water to all employees. - The EIA report will be shared with the contractor to ensure effective implementation of EMP during the construction phase.
Mr. Abid Alamgir	Civil Consultant	Tahir Engineering Pvt. Limited	<ul style="list-style-type: none"> - All civil and mechanical structures should be designed in accordance with recognized international engineering standards. - Cranes should undergo thorough load testing prior to their use in construction and equipment installation activities.



			<ul style="list-style-type: none"> - Seismic zones data must be incorporated in building designs.
Dr. Naveed Ramzan	Dean Engineering	UET, Lahore	<ul style="list-style-type: none"> - Right selection of wastewater treatment technology is essential to achieve desired results and compliance with PEQS. - The safety incidents can be prevented by implementing process safety management - Ensure the use of PPEs by the employees during all phases of the project.
Mr. Adeel Ahmad	Production Manager	Fatimafert Limited	<ul style="list-style-type: none"> - LGPL should hire highly skilled staff to operate dyeing unit and handle wastewater generated from this unit. <ul style="list-style-type: none"> - Develop safety plan to handle all chemicals used at Dyeing Unit based on their MSDS. - All the workers should be trained on emergency preparedness procedures.
Dr. Jabir Hussain Syed	Associate Professor	Environmental Studies, COMSATS, Islamabad	<ul style="list-style-type: none"> - Utilizing biomass as an alternative to fossil fuels has a positive impact in reducing greenhouse gas emissions. It is also recommended that LGPL install a solar power system to offset electricity consumption from the grid, which is primarily generated through fossil fuels. -
Hafiz Anwar Nasir	Director-	Power-Link Pvt. Limited	<ul style="list-style-type: none"> - Restoration and plantation activities should commence progressively during construction, rather than waiting for the entire construction phase to be completed. - Air Pollution Control Systems can be manufactured locally that must be used



			for abatement of gaseous and particulates emissions.
Mr. Adnan Khan	Manager Environment Social Risk Management	MCB BANK LIMITED, LAHORE	<ul style="list-style-type: none">- Try to use green chemicals in place of chemicals listed in Punjab Hazardous substances draft Rules 2020.- Ensure the use of relevant PPEs.
General Public			-



ANNEXURE IV: REFERENCES

[1] World Bank Group/IFC, “Environmental, Health, and Safety (EHS) Guidelines – Textile Manufacturing”: 2007

[2] World Bank Group/IFC, “Environmental, Health, and Safety (EHS) Guidelines - General EHS Guidelines”: 2007.

[3] Zhao Et Al 2024, “Evaluation of Land Use Land Cover Changes In Response To Land Surface Temperature with Satellite Indices and Remote Sensing Data.” Rangeland Ecology & Management, Volume 96, September 2024, Pages 183-196

[4] Naeem, Muhammad, Ali, T, “Land Use Classification” Pakistan Geographical Review, Vol.74 (1), 61-73; 2019.

[5] NESPAK (2007), “Building Code of Pakistan” Ministry of Housing and Works, Govt. of Pakistan

[6] EIA Checklist



ANNEXURE V: TERMS OF REFERENCE (TOR)

PURPOSE: Terms of Reference (TOR) For Appointment of Consulting Firm For Conducting Environmental Impact Assessment (EIA) For The Project “Expansion of M/s Leathertex Gloving Pvt. Limited by Establishment of Dyeing Unit, Stitching Unit, Wastewater Treatment Plant and Allied Facilities at 8 Km Iqbal Nagar, Ferozepur Road, Kasur”.

.”

The Consultant will conduct the EIA and prepare a report in accordance with guidelines of EIA set by EPA Punjab and the IEE/EIA regulations 2022.

The Consultant will:

- Review published literature and all relevant data/drawings provided by the Proponent, as well as collect additional pertinent information.
- Examine all applicable legislation, standards, and policies.
- Conduct a Baseline Environmental Study, including environmental monitoring of the project site by a field team from an EPA-certified laboratory.
- Engage in public consultations and hold meetings with stakeholders.
- Identify all potential positive and negative impacts of the proposed project during the pre-construction, construction, and operational phases.
- Recommend mitigation measures to eliminate or reduce negative impacts to acceptable levels.
- Prepare an Environmental Management Plan (EMP) and a Monitoring Plan.
- Finalize the EIA report in collaboration with LGPL.
- Assist the proponent (until obtaining the NOC) with:
 - Submission of the report to the Punjab EPA for review.
 - Addressing all queries raised by the EPA following their review of the report.
 - Public Hearing

The **Consultant EIA Team** will consist of environmentalists, ecologist, sociologist (as a minimum requirement), all possessing relevant academic qualifications and experience. The team leader must have over 15 years of diversified experience and have conducted at least 10 large size industrial-level IEE and EIA studies.

Duration: Preparation of draft EIA report within 6 weeks for review of Proponent and submission of final report to EPA within 8 weeks for review of EPA, Punjab.



ANNEXURE VI: EIA TEAM

Team Members

Name	Position	Qualification
Dr. Sajid Hassan	Team Leader	PhD Combustion Engineering, Imperial College, London Diploma In "Combustion and Environment Pollution" Imperial College London BSc Chemical Engineering, UET, Lahore
Mrs. Habiba Daud	Environmentalist	BSc Environment Science, PU MSc Environment Sciences, (NUST)
Mr. Muhammad Tayyab Muzzammil	Environmentalist	BSc Environment Sciences,
Mr. Arshad Ali	Chief Chemist	BSc Chemistry (Hon) University of Punjab, Lahore
Sheikh Obaid ur Rehman	Sr. Ecologist	MSc Forestry
Mr. Naveed Sajjad	Sociologist	MA Sociology, University of the Punjab



ANNEXURE VII

NOC FOR WASTEWATER DISPOSAL



حکومت پنجاب محکمہ آبپاشی
ایگزیکٹو انجینئر لاہور ڈرینج ڈویژن
کینال بسکدرہمپورہ لاہور

GOVERNMENT OF THE PUNJAB
IRRIGATION DEPARTMENT
OFFICE OF THE EXECUTIVE ENGINEER
LAHORE DRAINAGE DIVISION LAHORE

☎ 042-99250327

✉ xenidd@yahoo.com

To,

Mr. Amjad Malik,
Director Leathertex Gloving Pvt Ltd. Unit II
8 KM Iqbal Nagar Ferozpur Road Kasur.

No.LDD/2025/ 1418 /124-M Dated Lahore, the 16 October,2025

SUBJECT:- NOC FOR WATER DISPOSAL OF SEWERAGE / EFFLUENT WASTE WATER OF M/S LEATHERTEX GLOVING (PVT) LTD. UNIT II 8 KM IQBAL NAGAR FEROPUR ROAD KASUR. INTO LAKHNEKI DRAIN AT R.D 41+000-42+000/ RIGHT.

Reference; -Your request No.NII Dated.07-10-2025

On the recommendations of Sub Divisional Officer River Survey Drainage Sub Division Lahore for issuance of NOC to disposal off 0.25 Cs effluent wastes water of MS Leathertex Gloving (Pvt) Ltd. Unit II into Lakhneki Drain at RD. 41+000-42+000.The conditional NOC hereby granted to M/S Leathertex Gloving Pvt Ltd.Unit II, to discharge 0.25 Cs effluents into the Lakhneki Drain subject to the fulfillment following condition.

1. The "Management" will get the effluent treated through a disposal works / process in order to eliminate passing of injurious substance into the drain. The process will be so designed, constructed and operated by the Management at its own expenses, so that the treated effluent eliminates injurious substance and that the resultant quality of the effluent at any time remains within the acceptable limits and is not injurious to human / animal life.
2. The "Management" will design, construct and maintain at its own expenses and to the satisfaction of the Government, such works as effluent channel, cross irrigation / drainage works, outfall structure, silting bank or other appurtenant works as may be necessary to properly treat and safely discharge the effluent into the "Drain" without causing any obstruction to the flow of the "Drain".
3. The "Management" will at its own cost get the chemical analysis of the effluent done on quarterly basis from the Directorate of Land Reclamation of the Government for review of the later.
4. The "Management" will pay to the Government an amount of Rs.8750/- each year in the month of June as per the received bill, towards the cost of maintenance of the "Drain". This amount shall be subject to review every year by the Government in



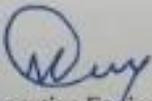
- order to accommodate the higher maintenance charges on account of escalation / increase in labor costs etc.
5. The "Management" will not change the maximum discharge of the wastewater and its quality without prior approval of the Government so as to control and the disposal and bring quality of the effluent within acceptable limit
 6. The agreement shall remain in force for a period of one year commencing on July, 2025, and terminated 30th June 2026. The agreement may also be renewed every year before the 1st July on such terms and conditions as may be agreed upon between the parties.
 7. The "Management" shall be responsible to abide by all the law/rules of the Government of the time being in force for the purpose of controlling pollution of water of natural / artificial streams, Nullahs, drains etc.
 8. In case the Management fails to comply with any terms and conditions of this Agreement, the agreement shall stand terminated after expiry of 30 days notice given by the Government after such failure and in such an event the Management will not be entitled to any compensation or claims damages whatsoever from the Government.
 9. This agreement may also be terminated by any party by giving 30 days prior notice in writing to the other.
 10. In case any dispute or difference of opinion in respect of this Agreement or any matter relating thereto arises between the parties, it shall be referred to the Superintending Engineer, Lahore Drainage Circle, Lahore of the Government whose decision thereon shall be binding and final on the parties.

You are accordingly requested to collect the bill from the office of the undersigned for payment on the date specified in the agreement.(Copy of agreement attached).

D.A/ As Above

C.C

Sub Divisional Officer, River Survey Drainage Sub Division, Lahore


Executive Engineer,
Lahore Drainage Division,
Lahore.



ANNEXURE VIII

ENVIRONMENTAL MONITORING REPORTS

(BY EPA CERTIFIED LAB)



