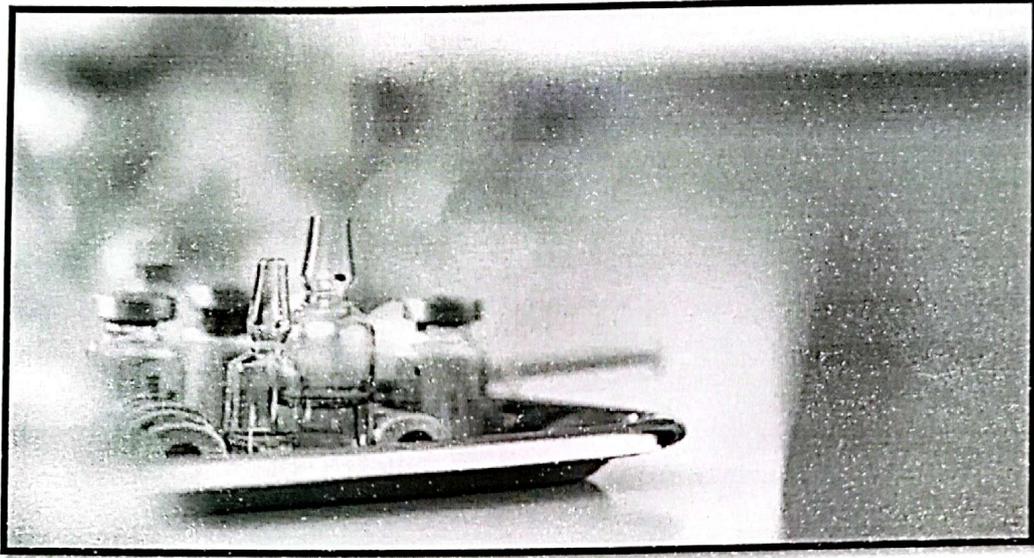


EIA/2025



ENVIRONMENTAL IMPACT ASSESSMENT (EIA) REPORT
"EXTENSION OF PHARMACEUTICAL UNIT"

by

M/S ALLMED (PVT) LIMITED

Plot#591, Sundar Industrial Estate, Lahore

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Annex-C	Layout map of WWTP
Annex-D	Solid waste disposal agreement
Annex-E	Site layout map
Annex-F	List of products to be manufactured
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LIST OF ABBREVIATIONS

CO₂	Carbon dioxide
dB(A)	A weighted decibel scale
EIA	Environmental Impact Assessment
EMP	Environmental Management Program
Engr.	Engineer
EPA	Environmental Protection Agency
ETP	Effluent Treatment Plant
IEE	Initial Environmental Examination
Ltd.	Limited
M/S	Messrs
m³	Cubic meter
m³/h	Cubic meter per hour
No.	Number
NOC	No Objection Certificate
NO_x	Oxides of Nitrogen
PEPA, 2012	The Punjab Environmental Protection (Amendment) Act, 2012
PEQS	Punjab Environmental Quality Standards
PKR	Pakistani Rupees
PM	Particulate Matter
PPEs	Personal Protective Equipment
Pvt.	Private
SOPs	Standard Operating Procedures
SO_x	Oxides of Sulfur
WAPDA	Water and Power Development Authority

EXECUTIVE SUMMARY

Title and Location of Project

The main findings of Environmental Impact Assessment (EIA) Report are summarized in this section for the “*Extension of Pharmaceutical Unit*” by M/s Allmed (Pvt) Limited at Plot # 591, Sundar Industrial Estate (SIE), Lahore. The land coordinates of the project site are **31°17’33.31” North** and **74°9’54.17” East** as longitude and latitude, respectively.

Proponent Details

The details of the proponent are as follow:

Proponent Details	
Proponent Name	Mr. Muhammad Ismail (Director Plant Operations)
Contact #	0332-3000113
Company	M/S Allmed (Pvt.) Ltd.
Office Address	Plot No. 590-91, Sundar Industrial Estate, Lahore
Email address	ismail.mastoi@allmed.com.pk

Copy of proponent’s CNIC is attached as **Annex-A**

Name of Consultant

M/s Ecogreen Company (Pvt) Ltd. has been engaged for conducting EIA study of the above stated project. The main objectives of the said project are to establish baseline environmental conditions, identify potential environmental impacts and to suggest suitable mitigation measures accordingly. The details of consultant of the consultants are given below:

Consultant Details	
Consultant	M/s Ecogreen Company (Pvt) Limited
Address	2nd Floor, Plot # 7, A - Block Commercial Area, Canal View Society, Lahore
Contact No.	042-35294298 042-32355915
Focal Person	
Name	Dr. Areej Tahir
Designation	<i>Lead Environmental Professional</i>
Contact No.	0370-4178838

To prepare an EIA Report of the respective project the company nominated the following experts. The details of the experts are given below

Sr. #	Name	Qualification
Team Leader		
i.	Dr. Areej Tahir	Ph.D. Environmental Sciences
Environmental Scientist		
ii.	Ms. Kiran Irshad	M.Phil. Environmental Sciences

A brief outline of the proposal (type, process, technology and land requirement)

As per discussion with EIA Section of EPA Punjab under the provisions of the Punjab Environmental Protection Review of Initial Environmental Examination and Environmental Impact Assessment 2022 said project has been categorized under **Category B (2): Chemical Manufacturing Units including Pharmaceuticals and Cosmetics** of the projects mentioned in **Schedule II**.

The instant project is **extension of existing pharmaceutical unit** as it is proposed to be constructed on Plot No. 591, Sundar Industrial Estate – Lahore, which is adjacent to the existing building of **Allmed (Pvt.) Ltd** at Plot No. 590 in Sundar Industrial Estate (Allotment letter attached as **Annex-B**). In this proposed plant; tablets, sterile infusion/vial & sterile infusion/ampoules will be manufactured which will not only facilitate consumers' demand of pharmaceutical products but will also reduce the shortage of medicines at local and international level. The covered area designated for extension of pharmaceutical unit is approximately **25,036 Sq.Ft.** Total cost of the project is approximately **PKR 500 million**.

Salient Features of Project

Project Title	Extension of Pharmaceutical Unit
Purpose of Project	<p>The purpose of the proposed project are:</p> <ul style="list-style-type: none"> • To meet the local and international requirement of medicines. • To improve sustainable availability and access to affordable, quality, safe, efficacious essential medicines. • Socio-economic uplift of the proponent. • To generate foreign revenue. • To reduce the import reliance to reduce foreign exchange. • To reduce the existing shortage between availability and demand of medicines such as: tablets, syrups, vial and ampoules. • To improve the health conditions and standards. • Creation of new job opportunities and promoting income prospects for those engaged in the allied activities associated with the operation of the proposed project as indirect objectives of the project.
Site Coordinates	Longitude 31°17'33.31" North and Latitude 74°9'54.17" East
Total Area of Unit	45,682.94 Sq.Ft. approximately
Covered Area	25,036 Sq.Ft. approximately
Open Area	30,119.94 Sq.Ft. approximately
Final products	Tablets, infusion vials and ampoules
Cost of the Project	Approximately 500 Million PKR

Environmental Budget	0.8 million PKR
Proponent Name	Mr. Muhammad Ismail Director Plant Operations
Consultant Name	Ecogreen Company (Pvt.) Ltd.
Tree Planation	Trees will be planted along the boundary of Project Area.
Water Source	Groundwater from SIE
Water Requirement	Instant project will require water for domestic usage and during processing of products
Wastewater	Domestic wastewater will be generated during constructional and operational phases whereas, the procedural wastewater from RO plant and processes will be produced. The wastewater generated from unit will be treated in wastewater treatment plant (Layout attached as Annex-C) and discharged into SIE drain.
Air Emissions	Only dust emissions will be generated during construction of the instant project while during operational phase, airborne particles released from processing will be captured with filters installed in exhaust points.
Solid Waste	Constructional and domestic solid waste generated during construction phase will be disposed off as per practices of area. While, the laboratory waste and rejected waste will be handed over to EPA certified contractor for incineration (Annex-D).
Power source	WAPDA as primary and generator (already installed at plot #590) as backup power source
Production Capacity	5,000 packs per day
Manpower/Staff	10-15 workers during construction phase and 25-30 workers during operation phase will be hired

Major Impacts and Recommended Mitigation Measures

In order to identify all the impacts associated with the project having potential to cause adverse environmental impacts, a thorough review has been conducted. Although, there are no chances of any adverse impacts on the surrounding environment if unit is established as planned, however, in case of any impacts arising during construction and operations possible necessary mitigation measures will be adopted to control the same. Overall, the project has positive social and environmental impacts. The project may also have some adverse environmental impacts of minor to moderate magnitude and mostly temporary in nature, which can be controlled through adequate mitigation measures, proposed in Environmental

Management and Monitoring Plan (EMMP). Moreover, no vegetation clearance during extension will be done as the instant project is proposed to be constructed within the premises of Allmed (Pvt.) Ltd. in SIE. However, plantation is planned to be done along the boundary of project site and designated area for vegetation by industry.

Proposed Impacts and their Mitigation Measures

Environmental Parameters	Impact Assessment during Different Phases		Mitigation Measures
	Construction	Operational	
Planning and Designing			
Location	+2p	+2p	<p>Following mitigation measures will be adopted to reduce the impact of said project location on the sensitive receptors:</p> <ul style="list-style-type: none"> ❖ The selected site is situated within the premises of Allmed Pvt. Ltd. which is located in an approved and designated Sundar industrial estate. So, the anticipated impacts of said project will not cause adverse impact on the sensitive receptors. ❖ The sewerage wastewater will be treated through the septic tanks before its final disposal in the SIE drains. ❖ The generated domestic solid waste will be will be disposed off as per practices of SIE while procedural waste will be handed over to EPA certified contractor.
Design	+1t	+2p	<p>No mitigation measures will be required as the project is designed according to the principle of sustainable development and this technology is adopted because of the following reasons:</p> <ul style="list-style-type: none"> ❖ The process will take place in a fully closed system which will ensure zero emissions from the proposed plant. ❖ The proposed emergency system will be semi-automatic and it will control through computerized systems which will be connected with smoke alarms. ❖ In this process almost 98% of raw-material will be converted

			<p>into the final good.</p> <ul style="list-style-type: none"> ❖ Through the selected system high quality of medicinal drugs will be produced. ❖ The generated sewerage wastewater will be treated in septic tanks while the procedural wastewater will be directed towards wastewater treatment plant (Annex-C) by Allmed (Pvt) Ltd.
A: Physical			
1. Land Resources			
Soil Erosion and Contamination	-1t	+1p	<p>Following mitigation measures will be adopted to protect the soil from erosion and contamination:</p> <ul style="list-style-type: none"> ❖ As the instant project is located on proponent's owned land, so no cutting or deep excavation is required and hence there is negligible chances of soil contamination and loss of vegetation. ❖ It will be ensured that native and fast growing trees will be planted in the designated green areas. ❖ Spill prevention and response plan for storage, usage and transfer of fuel should be prepared (if used on site) and implemented. ❖ Maintenance and washing of vehicles as well as equipment will be carried out at designated areas within the facility. ❖ The project site will have concrete flooring hence no chances of soil contamination.
Solid Waste	-1t	+1p	<p>General waste management practices will be adopted which will include:</p> <ul style="list-style-type: none"> ❖ The recyclable and reusable waste will be sold to the vendors which will include; paper, plastic and non-ferrous material. ❖ Waste bins will be placed in the facility at the strategic position for the collection of solid waste. ❖ The installed bins will be covered in order to reduce the

			<p>chances of the disease vector production.</p> <ul style="list-style-type: none"> ❖ Record of all waste generated during the project activity should be maintained on the regular basis. ❖ The hazardous waste will be handed over to EPA certified contractor for incineration (Annex-D). ❖ Regular training will be given to the workers dealing with the waste management; it will include; identification, segregation and management of waste.
Land Use	NA	+1p	<p>The said project is being constructed within the premises of Allmed Pvt. Ltd. which is located in an approved Sundar industrial estate. Hence, no impact due to the land use change is being envisaged. Following mitigations measures will be adopted to reduce the land use impact:</p> <ul style="list-style-type: none"> ❖ The designated green area will be vegetated and native vegetation present on-site will be preserved as far as practically possible. ❖ All the SOPs issued by SIE will be adopted with true spirit.
2. Air Resources			
Dust and Gaseous Emissions	-1t	NA	<p>Following mitigation measures will be adopted to mitigate the anticipated impact:</p> <ul style="list-style-type: none"> ❖ Ensure that the trucks carrying the raw- material should be covered by tarpaulin to reduce fugitive dust emissions. ❖ Water spraying/sprinkling should be done on the regular basis. ❖ Ensure that all equipment and vehicles, used during the construction phase, are properly tuned and maintained in good working condition, in order to minimize the exhaust emissions and it will be regulated by the concerned

			<p>authority.</p> <ul style="list-style-type: none"> ❖ Ensure that dust emission generated due to vehicular movement is minimized by restricted speed limit and vehicular movement impacts which will be minimized through good traffic management at site. ❖ Ensure that dust emission during the construction phase will be minimized by implementing best management practices.
Air pollution	-1t	-1t	<p>Following measures will be adopted during the operation phase of the proposed project:</p> <ul style="list-style-type: none"> ❖ Air filters will be installed at the exhaust points. ❖ The system will be fully closed. ❖ Masks will be given to the workers. ❖ Regular monitoring will be carried out to measure the air emissions.
3. Water Resources			
Ground Water	-1p	-2p	<p>Following mitigation measures will be adopted:</p> <ul style="list-style-type: none"> ❖ Water conservation techniques would be adopted to ensure sustainable consumption for domestic usage ❖ Water required for cooling system will be treated with RO plant and recycled to conserve water usage. ❖ Monitoring of groundwater shall be carried out as per provision of Self-Monitoring and Reporting (SMART) Rules to ensure compliance with the PEQS.
Surface Water	NA	NA	No mitigation measures are required.
			<p>Following mitigation measures will be adopted:</p> <ul style="list-style-type: none"> ❖ Monitoring of effluents shall be carried out as per requirement of SMART Rules to ensure compliance with the PEQS ❖ It will be ensured that no solid

Wastewater	-1p	-2p	<p>waste enters wastewater.</p> <ul style="list-style-type: none"> ❖ The sludge generated from process activity or chemical waste will be collected and handed over to EPA certified contractor. ❖ The procedural wastewater will be treated through the wastewater treatment plant (Annex-C) before its final disposal in the SIE operated drains. ❖ Proper monitoring of the effluents will be carried out on regular basis before discharging in the SIE drain.
B : Ecological			
Flora			
Tree Cutting	NA	+1p	<p>Following mitigation measures will be adopted:</p> <ul style="list-style-type: none"> ❖ Avoid un-necessary disturbance and removal of the tree at any stage of the project. ❖ The designated green area will be vegetated and native vegetation present on-site will be preserved.
Fauna			
Terrestrial Fauna	NA	NA	No mitigation measures will be required as no impact on fauna is being envisaged.
C: Socio-Economic			
Employment Opportunities	+1t	+2p	It will be ensured that preference will be given to the locals during construction and operation of the instant project.
D: Hazards			
Physical Hazards	-1t	-1p	<p>The following mitigation measures are suggested that could be applied to reduce the risk of health and safety:</p> <ul style="list-style-type: none"> ❖ Standard Operating Procedures should be adopted and it should be implemented effectively. ❖ Floor surfaces shall be maintained and cleaned on regular basis. ❖ The effective use of hearing-

			<p>protection devices and goggles shall be ensured.</p> <ul style="list-style-type: none"> ❖ Protective measures and emergency rescue procedures should be followed strictly. ❖ The electric equipment must be properly earthed to avoid electric shock. ❖ Detectors would be installed to monitor any leaks from tanks or pipelines, valves etc.
Health and Safety	-1t	-1p	<p>The following mitigation measures are suggested that could be applied to reduce the risk of health and safety:</p> <ul style="list-style-type: none"> ❖ The effective use of hearing-protection devices shall be ensured. ❖ Protective measures and emergency rescue procedures should be followed strictly ❖ Only authorized persons shall be allowed in the processing areas. ❖ Adequate PPEs shall be provided to the workers during construction and operation. ❖ First Aid boxes shall be placed at different locations within the unit. ❖ Proper Firefighting and emergency evacuation plans will be developed. ❖ Emergency exits and assembly areas will be clearly marked. ❖ Safety instructions will be displayed at conspicuous locations within the production area. ❖ Training would be provided to workers for safe execution of operations
<p>Legends: 1= Low; 2= Medium; 3= High; 4= Extremely High; NA= Not Applicable; t=Temporary; p= Permanent</p>			

Proposed Monitoring

During establishment & operation, monitoring will be carried out to check compliance of PEQS. Moreover, periodic monitoring should also be carried out regarding ambient air monitoring, noise pollution, wastewater & worker safety. A detailed site monitoring plan has been developed and given in **Chapter-08** of this EIA Report.

CHAPTER 1: SCREENING

Section 12 of Punjab Environmental Protection Act (PEPA), 1997 (Amended 2012) states:

“No proponent of a project shall commence construction or operation unless he has filed with the Government Agency designated by Federal Environmental Protection Agency or Provincial Environmental Protection Agencies, as the case may be, or, where the project is likely to cause an adverse environmental effect an Environmental Impact Assessment (EIA), and has obtained from the Government Agency approval in respect thereof.”

As per Punjab Environmental Protection Act 1997 (amended 2012) and Punjab Environmental Protection (Review of Initial Environmental Examination and Environmental Impact Assessment) Regulations 2022, the project “extension of pharmaceutical unit by **M/S Allmed (Pvt.) Ltd.**” falls under “**Schedule II**” Category **B Clause 2 – Chemical Manufacturing Units including Pharmaceuticals and Cosmetics.**

CHAPTER 2: SCOPING

2.1 Spatial and Temporal Boundaries of Environmental Assessment

The efficient operation of the unit will make sure to not disturb the ecosystem at any level and if there are any impacts, the proper remedial measures will be taken. The employment opportunities for the locals will be increased and so will the GDP of the country. The process itself has low impacts on the environment. The medicinal products manufactured at the proposed unit will not only enhance socioeconomic of the proponent but will also reduce the demand and availability gap of medicines locally and internationally. The Google Earth Map (**Figure 2**) attached shows the aerial distance of project site with nearby facilities like educational institutes, hospitals, residential areas etc. Overall, no significant impacts can be seen over the longer run as proper management plan has been devised and will be implemented to cope up with any adverse effect. The impacts on socio economic factors and environmental parameters will be keenly observed throughout the life of project.

The aim of the project is to improve sustainable availability and access to affordable, quality, safe, efficacious essential medicines.

2.2 Important issues and concern raised during consultation

During consultation it was observed that majority of the respondents were in favor of said project. The other related issues and concerns raised by general public are discussed in detail in **Chapter 9** (Stakeholder Consultation). However, during the social survey following concerns of the local community were noted:

- Nuisance must be controlled at source.
- Latest/State of the art technology must be used.
- Locals should be preferred for the job opportunities.
- Environmental monitoring should be done on regular basis as per SMART Rules.
- Solid waste should be managed effectively by adopting the standard practices of the area.
- Cleanliness of the area should be maintained.
- An effective EMMP should be designed and enforced with true spirit.
- Health and safety of the workers should be ensured.
- Proper disposal of sewage should be ensured
- Operations must be carried out at daytime
- Air emissions must be controlled on site using pollution control equipment

2.3 Significant Impacts and Factors to be Determined

Main impacts and factors to be determined are;

- Occupational Health and safety
- Site Security
- Traffic Management
- Job opportunities for locals
- Energy efficient techniques must be adopted
- Proper site restoration after Establishment
- Tree plantation at designated green areas
- Emergency preparedness

CHAPTER 3: CONSIDERATION OF ALTERNATIVES

3.1 Site Alternatives, their selection and rejection criteria

No site alternative was considered for the aforesaid project construction and operation as the extension will be done within the premises of Allmed (PVT) Ltd. The current location has following features:

- ❖ The project is proposed to be constructed within the premises of Allmed (PVT) Ltd. and approved sundar industrial estate.
- ❖ The site is located at the distance of 1.22 km (aerial distance) from the nearest residential area (Islam Pura).
- ❖ Project area is surrounded by various other industries, MTI Medical (Pvt) Limited, Derma Pride, Pharmasol (Pvt) Limited, Arco Plastics (Pvt) Limited, Simz Pharmaceuticals, Aventek Pharmaceutical (Pvt) Limited, Genetics Pharmaceutical, Next Pharmaceutical, etc.
- ❖ The site is well connected to the other parts of the country through; Mal Talib Road and Sundar Industrial Estate Road.
- ❖ No national park or wildlife habitat falls within 10 km radial distance from proposed project site.
- ❖ The site is not dangerous for public safety.
- ❖ No endangered fauna/flora has been observed near the project site.
- ❖ The proposed site does not fall in any category of protected or environmentally sensitive area.
- ❖ No important religious, archaeological, recreational site declared protected area and human settlement exists within close proximity of the selected site i.e., within 500 m which is considered to be a safe distance.

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

3.2 Design/technology alternatives, their selection and rejection criteria

Extension of pharmaceutical unit will be designed in line with contemporary environmental standards and regulations, while new techniques will be continuously incorporated into the design and technology where applicable.

3.3 Environmental Alternatives, their selection and rejection criteria

The extension of pharmaceutical unit is expected to create low impacts on surrounding air quality as this unit will not emit hazardous air pollutants into the air, however, wastewater generated will be treated using wastewater treatment plant (**Annex-C**) installed at Allmed (PVT) Ltd and discharged into SIE drain. Moreover, plantation will minimize the emissions from vehicles by controlling its spreading in surrounding areas, thereby contributing positively to the regional environment.

The execution of the instant project will minimize the burden on solid waste during operational phase as produced domestic and reusable solid waste will be disposed off as per practices of area while the laboratory waste and rejected waste will be handed over to EPA certified contractors.

3.4 Economic Alternatives, their Selection and Rejection Criteria

Instant project involves up to date equipment and process ensured by management that process will be economically more stable. Moreover, the extension of unit will enhance the

production capacity and types of medicines by Allmed (PVT) Ltd. thereby, reducing the shortage of medicines in the country and increasing revenue of country by exporting the products.

CHAPTER 4: DESCRIPTION OF PROJECT

4.1 General

This section of the study concentrates on details of the project and its salient features; such as; location, site layout, objectives, cost and magnitude of operation and various phases have also been examined as a response to possible environmental concerns.

4.2 Type and Category of Project

Punjab Environmental Protection Act 1997 (amended 2012) and Punjab Environmental Protection (Review of Initial Environmental Examination and Environmental Impact Assessment) Regulations 2022, the project “extension of pharmaceutical unit by M/S Allmed (Pvt.) Ltd.” falls under “**Schedule II**” **Category B, Clause 2** – Chemical Manufacturing Units including Pharmaceuticals and Cosmetics.

4.3 Project Objectives

The overall aim of instant project is:

- ✓ To meet the local and international requirement of medicines.
- ✓ To improve sustainable availability and access to affordable, quality, safe, efficacious essential medicines.
- ✓ Socio-economic uplift of the proponent.
- ✓ To generate foreign revenue.
- ✓ To reduce the import reliance to reduce foreign exchange.
- ✓ To reduce the existing shortage between availability and demand of medicines such as: tablets, syrups, vial and ampoules.
- ✓ To improve the health conditions and standards.
- ✓ Creation of new job opportunities and promoting income prospects for those engaged in the allied activities associated with the operation of the proposed project as indirect objectives of the project.

4.4 Location and Site layout of Project

The location for the construction of the proposed project is Plot # 591, Sundar Industrial Estate, Lahore. The geographical location of the said project is **31°17'33.31” North** and **Latitude 74°9'54.17” East**. The site layout is attached herewith as **Annex-E**. However, the Google Earth Map showing the project location and its distance from nearby sensitive receptors is shown further.

4.5 Site alternatives, their selection and rejection criteria

No site alternative was considered for the aforesaid project construction and operation as the extension will be done within the premises of Allmed (PVT) Ltd. The current location has following features:

- ❖ The project location is within the premises of Allmed (PVT) Ltd. and approved sundar industrial estate.
- ❖ No settlements in close vicinity
- ❖ Project area is surrounded by various other industries.
- ❖ The site is easily accessible through main roads.
- ❖ No ecological sensitive or protected area is found near proposed project site.
- ❖ The site is not dangerous for public safety.

- ❖ No important religious, archaeological, recreational site declared protected area exists within close proximity of the selected site.

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

4.6 Design/technology alternatives, their selection and rejection criteria

Extension of pharmaceutical unit will be designed in line with contemporary environmental standards and regulations, while new techniques will be continuously incorporated into the design and technology where applicable.

4.7 Process, raw material and product alternatives

No major alternatives were considered for the proposed project, as the existing procedures, raw materials, and manufactured products are already aligned with both national and international market demands. The products fully comply with the requirements of the Drug Regulatory Authority of Pakistan (DRAP). This extension is primarily aimed at enhancing the production capacity of Allmed (Pvt.) Ltd., and therefore, the processes and product lines will remain consistent with those of the existing facility. However, to ensure long-term sustainability and competitiveness, modern technologies will be introduced to improve production efficiency, minimize waste generation, and enhance the stability and preservation of pharmaceutical products. The adoption of such measures will not only strengthen compliance with environmental and regulatory standards but also support continuous quality improvement.

4.8 Pictures of project site and surroundings

The surrounding pictures of the project site are shown below in figure 1.



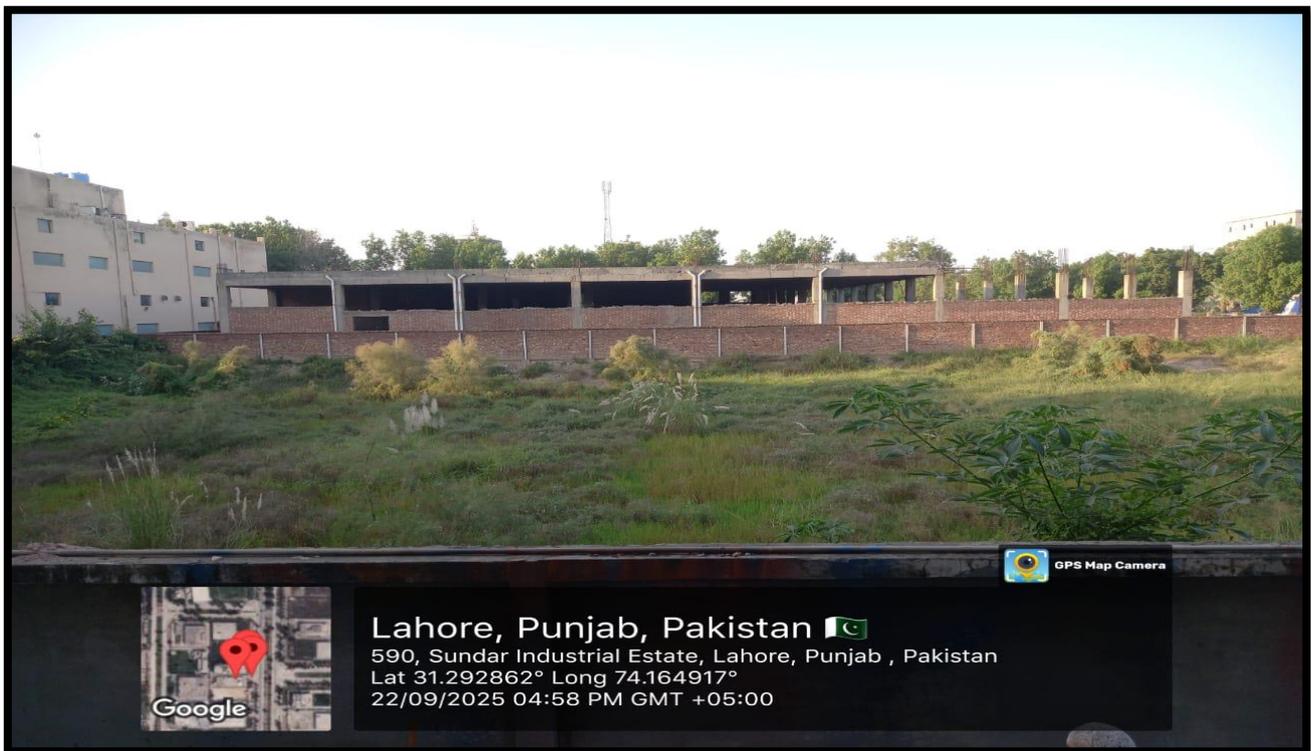


Figure 1. Surrounding pictures of the project site

4.9 Google earth map with coordinates

The google earth map of the aforesaid project along with coordinates is provided in **Figure 2**.

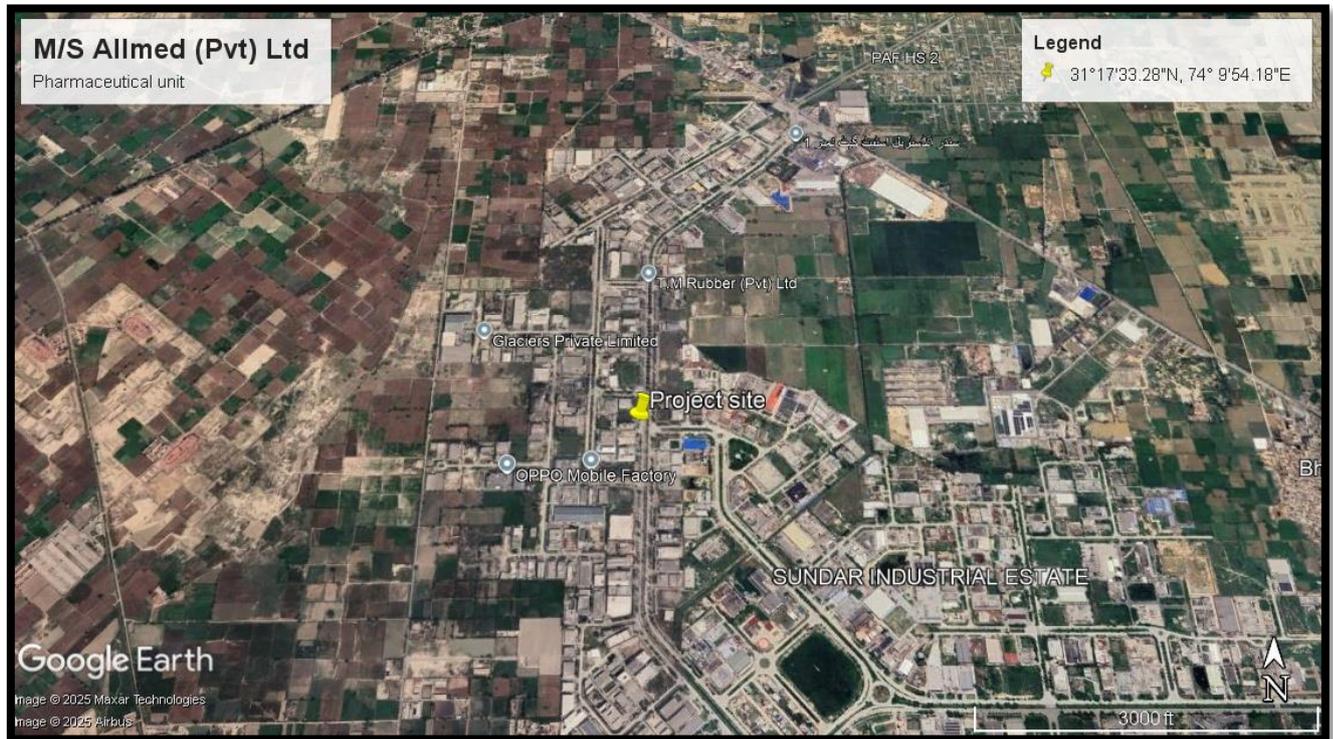


Figure 2. Google earth map of project site with coordinates

4.10 Land use on the site

The project site is an open land within the premises of Allmed (Pvt) Ltd. This site will be used for extension of pharmaceutical unit without harming any fauna and flora as this site is located within an approved Sundar industrial estate (Allotment letter attached as **Annex-B**).

4.11 Road Access

The project site is directly linked with **Sundar Industrial Estate Road** and **Mal Talib Road**. The road network is shown below in **Figure 3** along with the distance from the other minor roads.

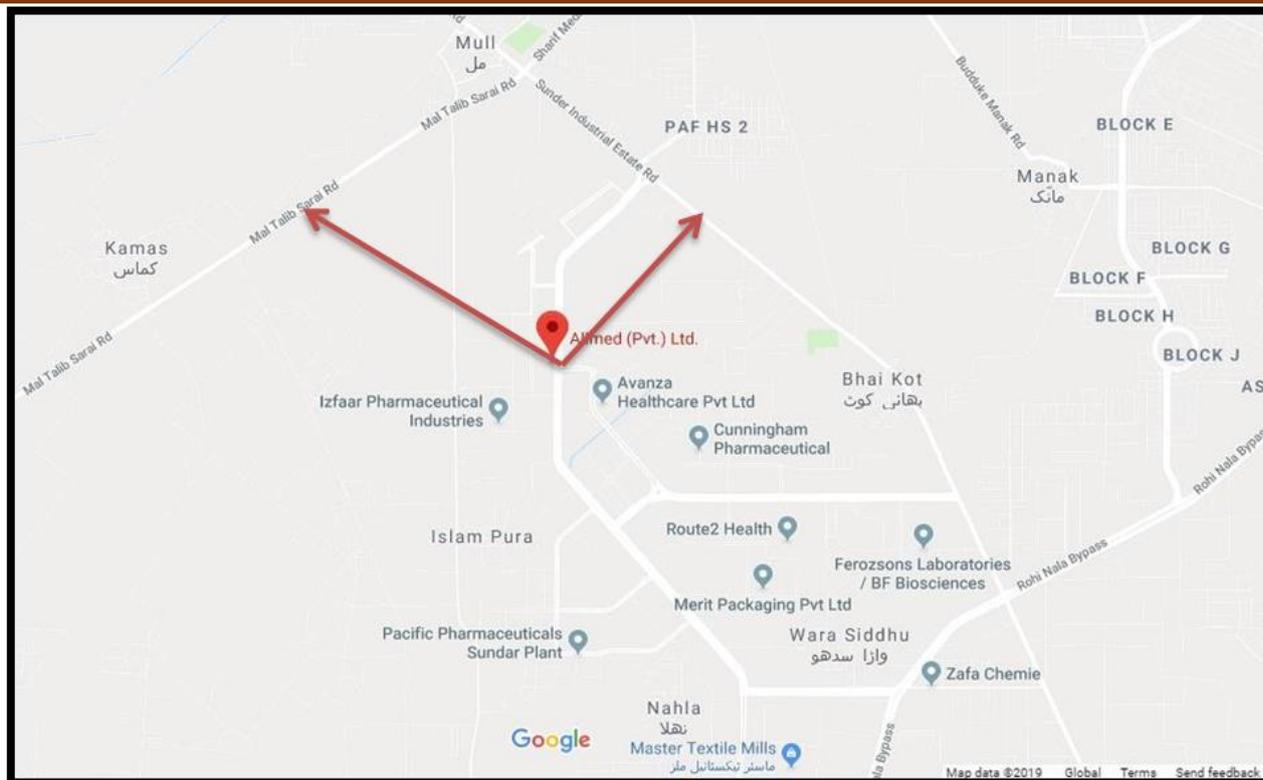


Figure 3. Road access

4.12 Vegetation Features

The site is located in designated and approved industrial estate. In study area following crops; wheat and rice are grown. The vegetative features of the study area includes; safeeda, sheesham, peepal and kikar. However, no tree is present on the site that would be uproot for extension of the aforesaid project.

4.13 Cost and Magnitude of Operation

The cost of the said project is approximately **PKR 500 million** it includes; civil work, purchase & installation of machineries/equipment etc. The magnitude of operation includes:

Table 1. Cost breakdown

Value Capitalized for Extension of Pharmaceutical Unit (PKR)	
Building cost	100 million
Engineering cost	99.2 million
Environmental budget	0.8 million
Purchase of machineries	300 million
Total cost	500 million

4.14 Schedule of Implementation

The tentative schedule for said project implementation is approximately **18 months** and the detail timeline of the construction period is given in **Table 2:**

Table 2. Timeline for Project Development

Sr#	Activities	12 Months			6 Months		
		24W	32W	48W	12W	16W	24W
1	Detailed Designing	█					
2	Mobilization of Contractors		█				
3	Building Construction and Completion			█	█	█	
4	Site Restoration & Rehabilitation					█	
5	Plantation at Site						█
6	Commissioning						█

W=Weeks

4.15 Description of Project

The said project is extension of pharmaceutical unit by **M/S Allmed (Pvt.) Ltd.** having production capacity of **5000 packs/day**. Total area for of the project site is **45,682.94 Sq.Ft** and the cost of the project is **500 million** for instant project.

4.16 Project Process

The first step in manufacturing of medicinal drugs is selection of right and appropriate raw materials for the manufacturing of; tablets, sterile infusion/vial & sterile infusion/ampoules. Raw materials are chosen according to many criteria, including; their human and environmental safety, cost, compatibility with other ingredients and the form & performance characteristics of the finished product. The products to be manufactured (5000 packs/day) in the form of tablets, sterile infusion/vial & sterile infusion/ampoules along with their strengths are attached at **Annex-F** of this EIA Report.

4.17 Manufacturing Process of Tablets and Capsules

For the manufacturing of the medicinal drugs following process will be employed:

a. Raw Material

The raw-materials purchased locally except of Basiliximab and Rituximab (purchased from China) for the manufacturing of the medicinal drugs will be stored at the room temperature of 25°C and it will consist of following:

- ❖ Basiliximab
- ❖ Adalimumab
- ❖ Ocrelizumab
- ❖ Rituximab
- ❖ Infliximab
- ❖ Immune globin intravenous
- ❖ Daclizumab
- ❖ Bevacizumab
- ❖ Enoxaparin
- ❖ Pazopanib
- ❖ Heparin

The quantity of raw-material to be used varies widely depending upon the demand of that specific good.

b. Storage in Quarantine Area

The raw-material received in quarantine area will be tested by checking the quality of material received. The material received in quarantine area will be sent to mixing, drying and sizing unit, from where the material will be issued to authorized persons.

c. Pre-Mixing, Wet & Dry Granulation and Final Mixing

This is divided into three zones; pre-mixing, wet & dry granulation and final mixing. In this step the raw-material in mixing zone will be mixed in required quantity and after mixing it will be dried. After sizing it will be sent to the concerned sections.

d. Bulk Testing

After pre-mixing, wet & dry granulation and final mixing, it is tested in a bulk quantity to ensure the required quality of the batch.

e. Compression and Filling

The material will be sent for compression to manufacture tablets and for the filling of capsules or direct filling of granules will be carried.

f. Release

After testing the quality of finished goods, the goods will be transported to the storage area for release.

g. Labeling and Packing

Before finally releasing the final goods they will be labeled and packed.

h. Storage

Finished goods will be stored in the warehouse.

4.18 Manufacturing of Vial & Ampoules

For the manufacturing of the vials and ampoules following method will be employed:

a. Quarantine

The raw-material received in quarantine area will be tested by checking the quality of material received. The material received in quarantine area will be sent to mixing, drying and sizing unit, from where the material will be issued to authorized persons.

b. Inspection and Testing

After receiving raw-material, it will be tested to ensure the quality of the raw-material.

c. Dispensing

After inspection and testing the raw-material will be dispense for the process of manufacturing.

d. Issue of Vial & Ampoules

Ampoules and vials will be issued for the filling.

e. Washing & Sterilization

Before filling the ampoule and vials will be washed and sterilized.

f. Bulk Manufacturing

Injectable will be manufactured in bulk quantity.

g. Labeling and Packing of Vial & Ampoules

After manufacturing, the vials and ampoules will be labeled and dispatched after packing.

h. Finished Goods Quarantine

The finished goods after production will be stored in the quarantine area.

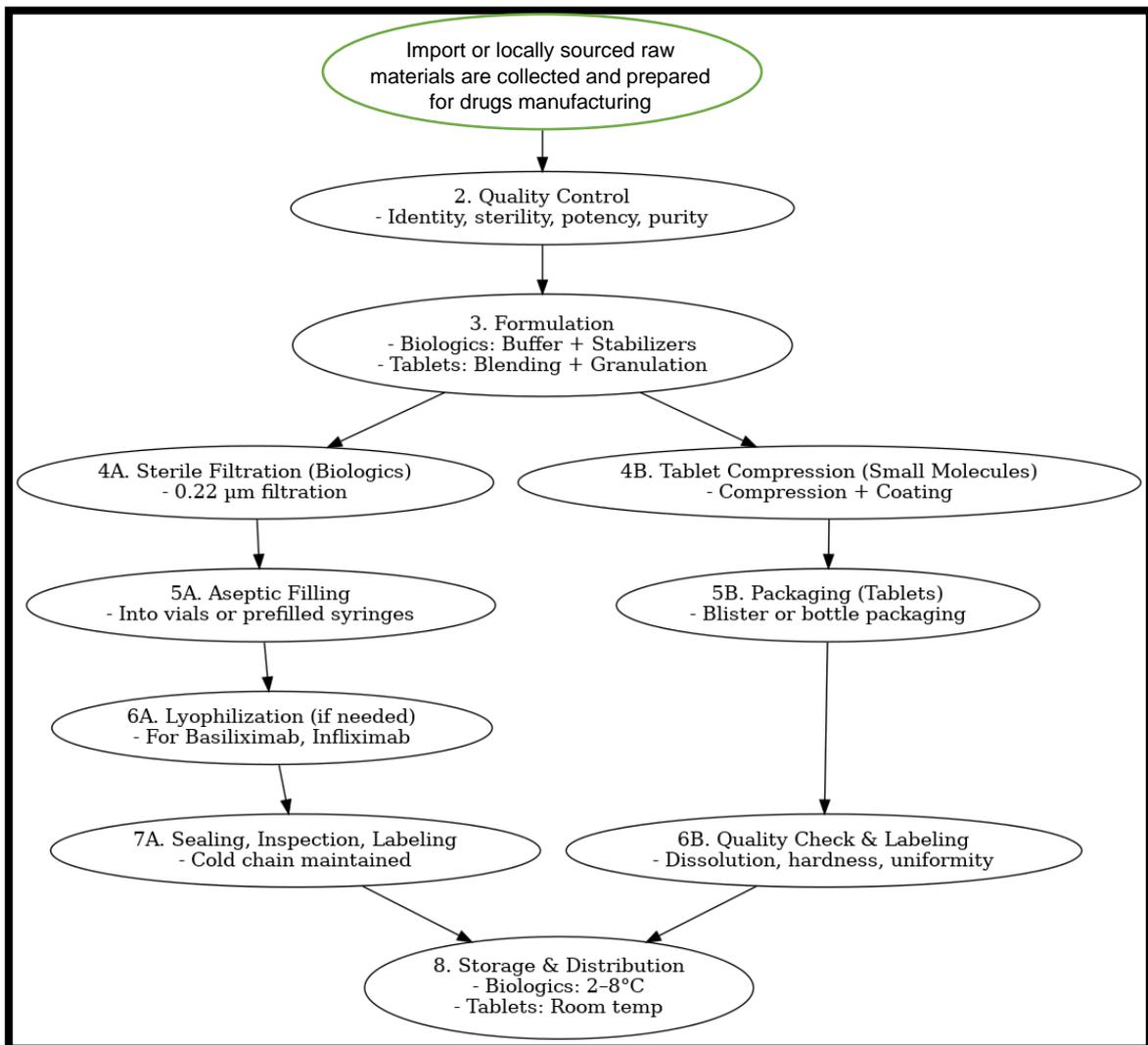


Figure 4. Process Flow Diagram of Pharmaceutical Products Manufacturing

4.19 List of machineries/accessories

Equipment/machinery used in medicinal drugs manufacturing at plant is given in the table below.

Table 3. List of machineries used in pharmaceutical unit

Machinery	Quantity	Machinery	Quantity
Vial washing machine	1	Ampoule washing machine	1
Sterilizing oven	2	Tunnel dryer	1
Vial filling and sealing machine	1	Ampoule filling machine	3
Autoclave	3	Solution holding tanks	2
Mixers	15	Packing belts	6
Filtration tanks	2	Rotary compression machines	4
Storage tans	6	Fluid bed dryer	1
Granulator	4	Blister machine	2
Labelling machine	1	Tray dryer	1
Syrup filling machine and sealing line	1	Polarimeter	2
Air handling unit	25	Steam jacket	1
Laminar flow hood	5	Syrup manufacturing tank	2
Filtration assembly	8	Distillation plant	1
Dehumidifier	4	Dispensing booth	2
Weighing scale	11	HPLC	1
Colloidal mill	1	UV-Vis spectrophotometer	1
Ultrasonic bath	2	Vacuum pump	1
Muffle furnace	1	Centrifuge machine	1
Refrigerator	6	Incubator	2

4.20 Amenities

Following amenities will be used during operation of said project

4.20.1 Electricity/ Power Supply

The main power source would be WAPDA while generator (40 KVA) already installed at plot # 590 would also be used for primary and secondary source of power for operational activities of pharmaceutical unit. Both of these power sources will accommodate energy needs for electric equipment at the unit.

4.20.2 Wastewater Management

Around 25-30 workers will work during the operational phase. The amount of wastewater generated will be **9-18 tons/day** from process, domestic and landscape activities. It is envisaged that the wastewater will be generated from the process activity i.e. chilling,

cleaning of tanks & utensils and testing of the products at various steps. This generated wastewater from the process activity will be treated through wastewater treatment plant (**Annex-C**) to be installed at Allmed (PVT) Ltd. having capacity to treat **500 Litres/hour**. The wastewater will be disposed off in SIE drains.

No other approval from the concerned government department will be required for disposal of generated wastewater as project is located with the designated and approved industrial estate.

4.20.3 Water Consumption

During construction and operational phase groundwater will be consumed that will be supplied through SIE. The operational water requirement of aforesaid project will be approximately **7 tons/day** including process water requirement **300-800 litre/day**, RO consumption **3.3 tons/hour** and domestic water consumption as **2.5-3 tons/day**.

4.20.4 Solid waste

It is envisaged that solid waste produced from the process activities will consist packing waste (paper, PVC and Aluminum), office waste and rejected or hazardous waste. The process waste will be **50 kg/month**. The domestic solid waste will be collected in the bins and it will be disposed off as per practices of area i.e. Sundar Industrial Estate and laboratory waste along with rejected solid waste; finished good and batches will be disposed off through 3rd party contractor for incineration (**Annex-D**).

4.20.5 Air emissions and control measures

No air emissions are expected to produce from the instant project except dust or PM from construction phase. Similarly, during operational phase, no harmful emissions will be produced. However, the exhaust fans will be installed to ventilate air inside the production rooms.

4.20.6 Operational hours of the facility

The operational hours of the facility will be 8 hours a day both during construction and operational phases.

4.20.7 Emergency Response

The proponent and supervisor will chair incident control. In the case of minor emergency, the first aid box will be provided. For incidents and accidents that may take place unexpectedly during project operations no matter how effective, strong and efficient the mitigation measures for all adverse impacts; especially the safety issues may be adopted. These may include; accident and natural disasters.

4.20.8 Health and Safety

The workers designated to relevant tasks will be trained on responding to situations like injuries. The workers would be provided with appropriate gadgets to control such incidents. The warning signs would be employed at the unit to control health and safety related issues. In addition to this, fire fighting equipment including hydrants, pipelines, sprinklers, detectors would be installed at project site to tackle fire incidents.

4.21 Restoration and Rehabilitation Plan

After extension of pharmaceutical unit, the site will be restored by removing unwanted materials. The materials capable of recycling/reuse will be either sold in the market or to be reused for other suitable purposes.

Safety measures as desired under the code of demolition will be adopted to avoid any harm to humans, property around, or the environment in the project area. Generated dust will be minimized by sprinkling water on regular basis. The plantation would be done after the construction to restore the area and control air emissions/odor from the project site.

4.22 Green or sustainable features planned

i. Tree plantation plan

As part of green and sustainable measures, Allmed (pvt) Ltd. will plant trees at designated green spaces within its premises and along the boundary wall of the unit. Further, Allmed would also conduct tree plantation as advised by EPA in Lahore district. Landscape of the area will be enhanced by planting native and ornamental plants after the construction of the unit.

ii. Rainwater harvesting plan

The rainwater will be effectively stored in tank measuring 160 Sq.Ft. built onsite by Allmed (Pvt) Ltd. The stored water will be used for emergency water supply, domestic usage or for horticulture purposes. This measure will reduce the burden on natural resource by effectively using rain water.

CHAPTER 5: DESCRIPTION OF ENVIRONMENT

This section describes the baseline conditions, which shows the clear-cut picture of existing environmental resources; physical, ecological and socio-economic environment of the Project Area. Information on these aspects has been derived from field visits to the project area as well as information obtained through visits to the Government departments and other relevant agencies. The primary data was collected by surveying the project area and its nearby vicinity. The secondary data regarding physical parameters (topography, geology, seismology, hydrology and climatology) was obtained by visiting relevant departments and their official websites. The biological parameters (flora and fauna) were also studied in the project area. The vegetation of project area was studied by preparing a floristic list based on visual observation. The species were recorded with reference to their historical existence in the project area.

Information on wildlife fauna species (mammals, amphibians, reptiles, birds, etc.) in the assessment area was compiled based on opportunistic observation, gathering the existing information and consultation with local experts, community members and government departments. The socio-economic aspects were studied and analyzed by conducting detailed socio-economic surveys.

5.1 Baseline Physical Environment

In this section, physical resources such as; topography, soil, climate, surface as well as ground water resources and its quality, ambient air quality and geology of not only the project site but also the city as a whole to assess whether the project under assessment can or does have any impacts on any of these parameters. The description of physical environment of the project site is present in the following sub sections

5.1.1 Topography & Geology

The said project is located in the southwest of Lahore city the capital of Punjab, Pakistan which is situated on the alluvial plains of the Ravi River, at an average elevation of 217 meters (712 feet) above sea level. The city's topography is predominantly flat, with gentle undulations shaped by centuries of river activity and human development. The region has low-lying areas, especially in the east and south, which are susceptible to waterlogging and flooding during monsoons. Geologically, Lahore is part of the Indo-Gangetic Plain, characterized by quaternary alluvial deposits from the Ravi and other Himalayan rivers. The soil primarily consists of silt, clay, and sand, making it fertile but also prone to subsidence and erosion in areas with high groundwater extraction. Beneath the alluvial deposits, Pleistocene sediments rest on the Siwalik formations, composed of sandstone and claystone

5.1.2 Seismicity

According to Seismic Zoning of Pakistan, the project area falls under Seismic Zone 2B which is classified as having moderate seismicity, meaning the area experiences infrequent, low to moderate earthquakes. The seismic zoning of Pakistan is given below in Figure:

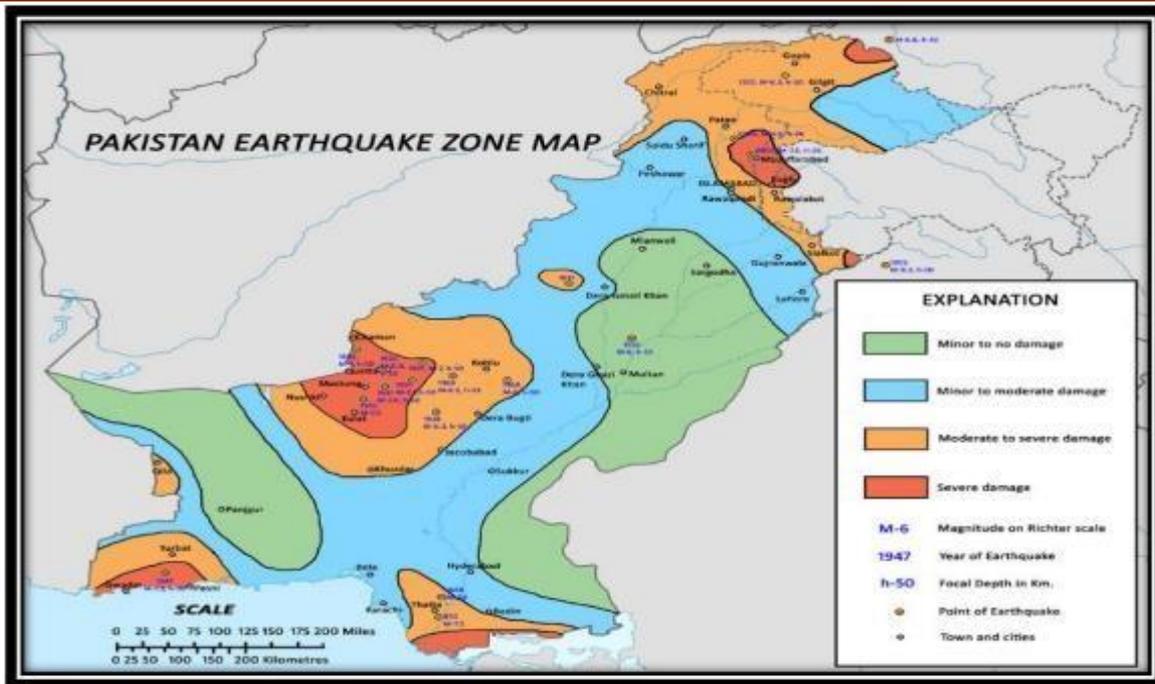
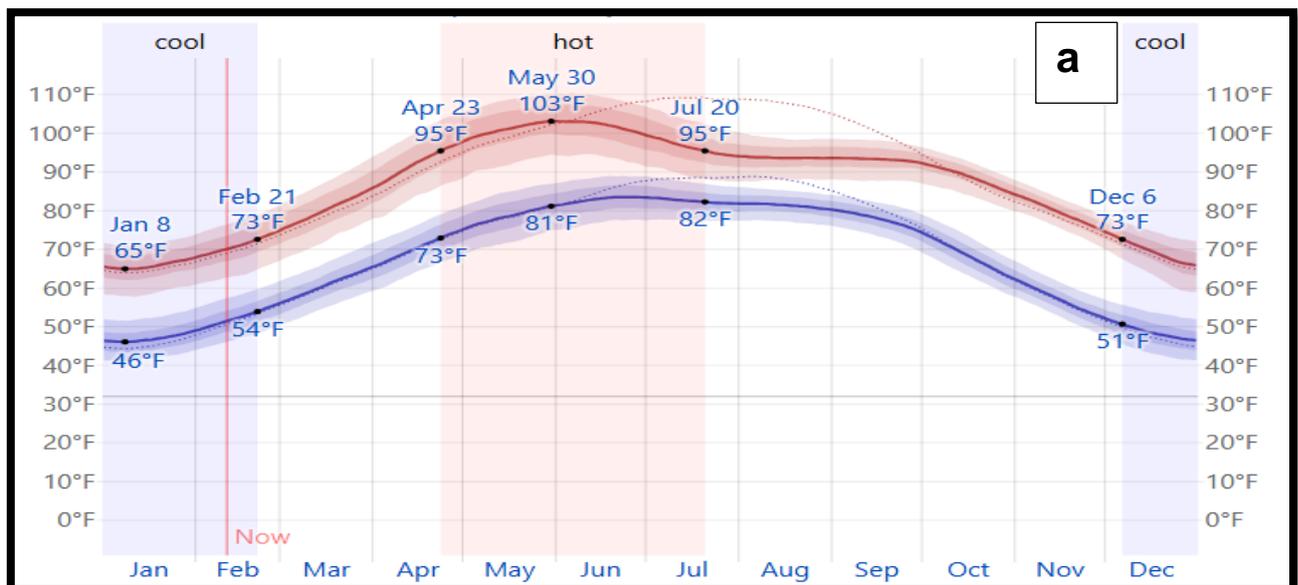


Figure 5. Seismic zoning of Pakistan

5.1.3 Climate

The said project is located in Lahore district which features a five-season, semi-arid climate: foggy winter (Nov15 – Feb 15) with few western disturbances causing rain; pleasant spring (Feb 15 - Apr 15); summer (Apr – Jun) with dust, rain storms and heat wave periods; rainy monsoon (Jul - Sep 16); and dry autumn (Sep 16 - Nov 14). The hottest month is June, where average highs routinely exceed 40°C (104°F). The wettest month is July, with heavy rainfalls and evening thunderstorms with the possibility of cloudbursts. The coolest month is January with dense fog. The city’s highest maximum temperature was 48.3°C (118.9°F) recorded on May 30, 1944 while 48°C (118°F) was recorded on June 09, 2007. The lowest temperature recorded in Lahore is –1°C, recorded on 13 January 1967¹



¹ https://lahoredivision.punjab.gov.pk/division_climate

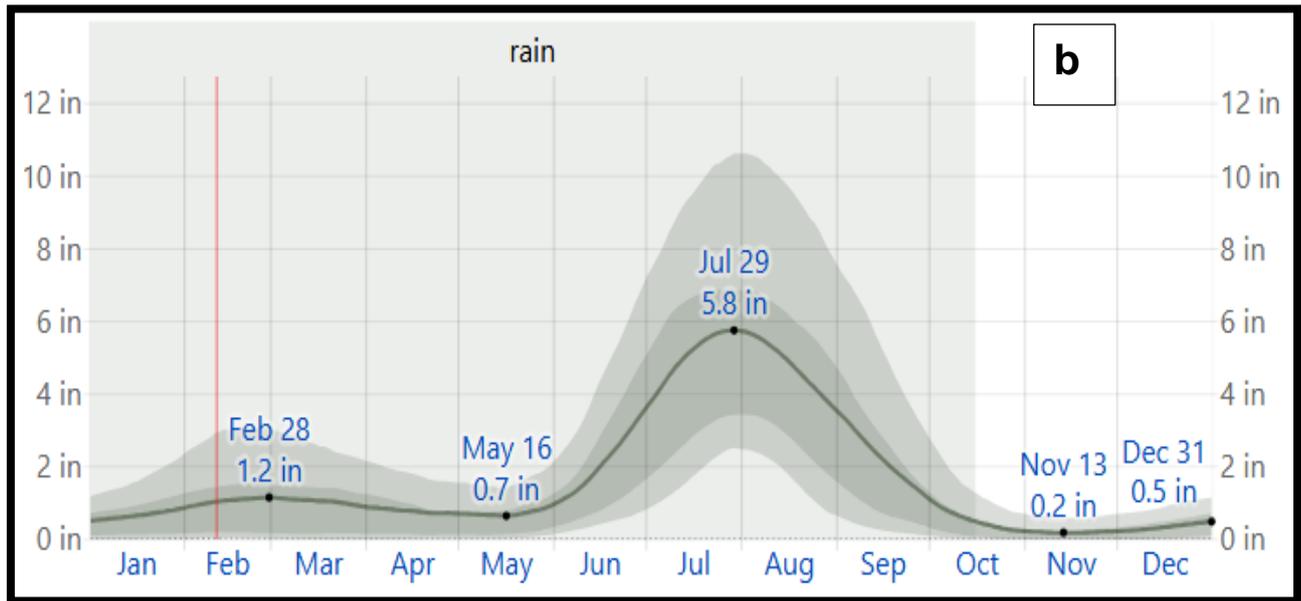


Figure 6. Average temperature (a) and rainfall (b) in the project area

5.1.4 Ambient Air Quality

The primary air pollutants are; carbon monoxide (CO), oxides of nitrogen (NOx), sulfur dioxide (SO₂), and particulate matter (PM). In order to determine the air quality of the area, environmental monitoring was carried out by Welcos being EPA certified Laboratory and having the requisite sampling device and expertise for collection of samples. To determine the air quality of the area ambient air monitoring was carried out and following results were obtained:

Table 4. Air Quality Monitoring Results

S#	Monitoring Source	CO	NO	NO ₂	SO ₂	O ₃	PM _{2.5}	PM ₁₀
		mg/m ³	µg/m ³					
PEQs		5	40	80	120	130	35	150
1	Centre of site	1.24	12.32	21.61	27.03	16.23	24	85

5.1.5 Ambient Noise

Noise level measurements had been carried out within the selected site. This analysis showed that values are much below the limit prescribed under the Punjab Environmental Quality Standards (PEQS). Monitoring reports are attached as **Annex-G**.

Table 5. Ambient Noise Monitoring Results

S. No.	Monitoring source	Unit	PEQs	D.Time	N. Time
1	Centre of site	dB (A) Leq	55 (Night time) 65 (Day time)	58	50

5.1.6 Groundwater Quality

Groundwater quality results of project area are given below:

Table 6. Ground water Analysis Results

Sr. No.	Parameter	Method	Unit	Result	PEQS
1	pH	SMWW 4500 HB	--	7.3	6.5-8.5
2	Total Dissolved Solids (TDS)	SMWW 2540 C	mg/l	371	1000
3	Chloride	SMWW 4500- Cl ⁻ B	mg/l	<0.01	250
4	Fluoride	SMWW 4500-F ⁻ D	mg/l	<0.01	1.5
5	Taste	SMWW 2160 C	Object. /unobj.	Non-objectionable	Unobj.
6	Odour	SMWW 2150 B	Object. /unobj.	Non-objectionable	Unobj.
7	Colour	SMWW 2120 C	TCU	<1.0	15
8	Nitrate (as NO ₃ ⁻)	SMWW 4500-NO ₃ ⁻ D	mg/l	0.3	50
9	Nitrite (as NO ₂ ⁻)	SMWW 4500-NO ₂ ⁻ B	mg/l	<0.1	3
10	Lead	SMWW -3114 B	mg/l	ND	0.05
11	Total Hardness as CaCO ₃	SMWW 2340 C	mg/l	245	500
12	Turbidity	SMWW 2130 B	NTU	0	5
13	Zinc	SMWW 3113 B	mg/l	<0.01	5
14	Aluminum	SMWW 3111 B	mg/l	<0.0028	0.2
15	Chromium	SMWW 3113 B	mg/l	<0.0008	0.050
16	Cadmium	SMWW 3113 B	mg/l	<0.0045	0.01
17	Copper	SMWW 3111 B	mg/l	<0.0054	2
18	Boron	SMWW 3113-B	mg/l	<0.013	0.300
19	Barium	SMWW 3113 B	mg/l	<0.0016	0.700
20	Antimony	SMWW 3114 B	mg/l	<0.008	0.020
21	Arsenic	SMWW 3114 B	mg/l	<0.031	0.050
22	Cyanide	SMWW 4500-CN ⁻ F	mg/l	<0.01	0.05
23	Mercury	SMWW 3114 B	mg/l	ND	0.001
24	Nickel	SMWW 3113 B	mg/l	<0.0033	0.020
25	Residual Chlorine	SMWW 4500-Cl B	mg/l	<0.028	0.2 – 0.5
26	Manganese	APHA 3111 B	mg/l	<0.1	0.5

27	Selenium	APHA 3111SeB	mg/l	ND	0.01 (P)
28	Total coliforms	APHA 9222B	CFU/100ml	Absent	0/100ml
29	Faecal coliforms	APHA 9222D	CFU/100ml	Absent	0/100ml

5.2 Baseline Biological Environment

There is no significant forest area is located around the project site or in nearby areas. The region is primarily characterized by industrial area and scattered agricultural land, and is part of the alluvial plains of the Ravi River. While there are small patches of trees or shrubbery along roads for agroforestry purposes. The popular trees grown in the area are Kau, Phalai, Kikar and Sheesham. In sub-sections below biological features are discussed below:

5.2.1 Flora

During the extension of pharmaceutical unit, no important biological feature will be damaged or disturbed. Flora of the Lahore district has been greatly modified by human agency, amongst trees the most important are Kikar (*Acacia arbica*), Shisham or Tahli (*Dalbergia sissoo*), Phulahi (*Acacia modesta*) and Nim (*Melia indica*). Piple (*Ficus religiosa*) and Bohar (*Ficus indica*) are planted for shade.

5.2.2 Fauna

During site visit near site no such fauna was noticed that could be impacted due to construction of aforementioned project. However, near project site dogs, cats, cows, sparrows, and crows were seen.

5.2.3 Archaeological Sites or Wetlands

It is envisaged that no building of archaeological, cultural and historical importance will be damaged at the time of extension of pharmaceutical unit. Moreover, there is no wetland or surface water body reported to be affected due to the construction of the aforesaid project.

5.2.4 Endangered Species

There is no floral or faunal species inhabiting the project area that are included in the Red Data Book of IUCN. The populations of birds are reported to be reduced over time due to excessive pesticide sprays in agricultural crops and loss of habitat.

5.3 Baseline Socio-Economic Environment

Socio-economic environment is represented by the human and economic development and quality of life values. For the study of socio-economic environment of the project area, field surveys were conducted and interviews were held with the various stakeholders. The socioeconomic conditions of the project area are as follow:

5.3.1 Nearby Residences

The instant project is located at a safe distance of **1.22 km, 1.34 km, 2.06 km, 2.11 km and 2.73 km** to nearby residential areas known as **Islam Pura, Manak, Mull, Bhai Kot and Kamas**, respectively.

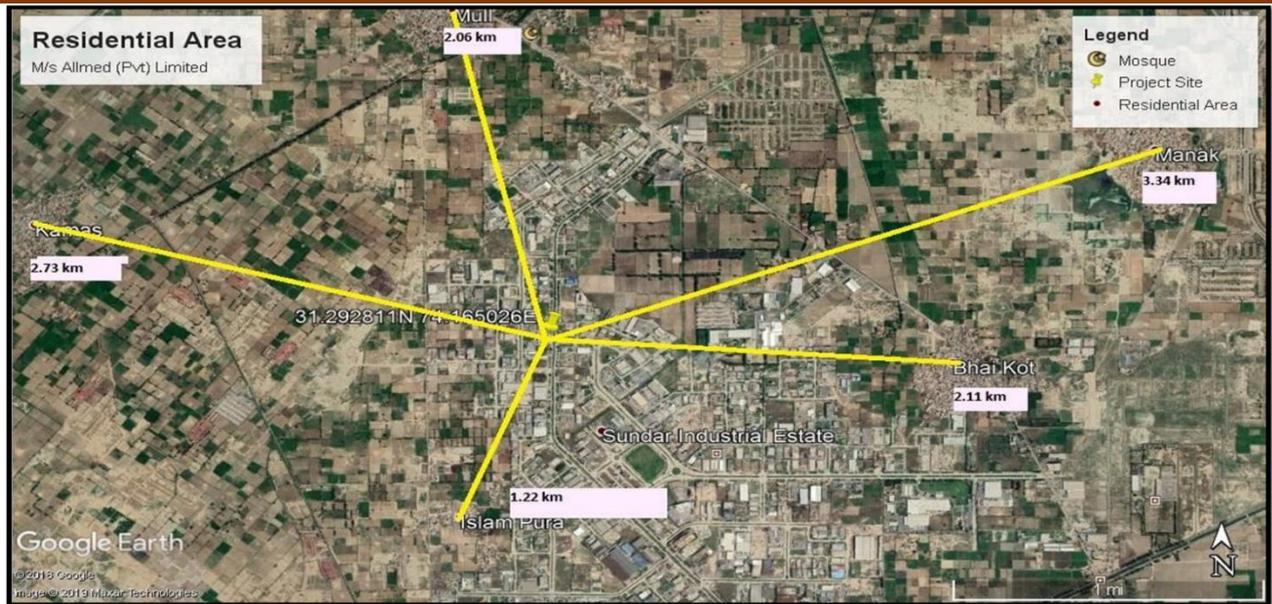


Figure 7. Nearby residential areas

5.3.2 Industry/businesses

Since the instant project will be constructed within an industrial estate, many industrial units are present nearby as shown in the figure.

- Simz pharmaceuticals located at a distance of **0.12 Km**
- Medisave pharmaceuticals located at a distance of **0.1 Km**
- MTI medical pvt located at a distance of **0.1 Km**
- Daneen Pharma pvt ltd at a distance of **0.1 Km**

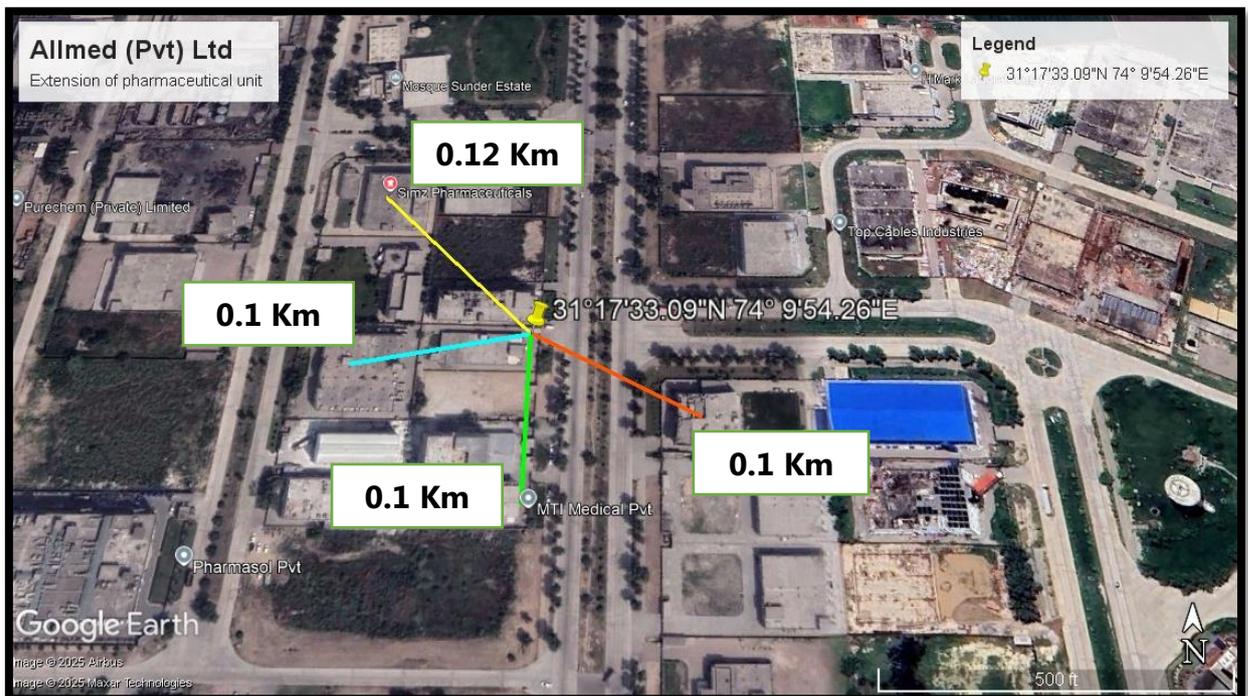


Figure 8. Nearby businesses of the project area

5.3.3 Health Facilities

Healthcare services are provided to the citizens by both public and private sector hospitals. The nearest hospital are shown in below image and mentioned below.

- Rahim buksh medical centre and hospital located at a distance of **1.7 Km**
- Huma asad hospital at a distance of **1.82 Km**
- EPI centre Govt, Mal dispensary at a distance of **1.96 Km**

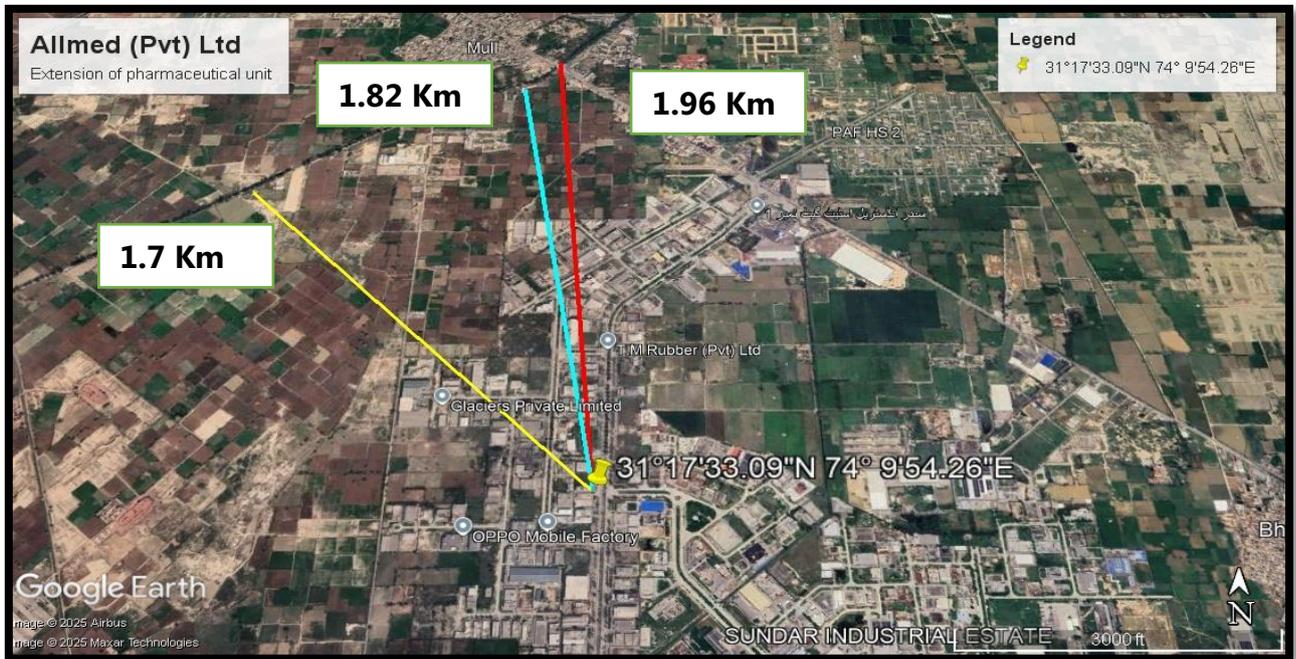


Figure 9. Hospitals near project area

5.3.4 Educational Facilities

Education up to higher secondary is present in project area. The educational institutes located nearby are:

- Shahbaz public model school mall located at a distance of **1.66 Km**
- College of international skill development sundar campus at a distance of **1.97 Km**
- Govt. middle school kamas at a distance of **3 Km**
- Govt boys schools wara Baloch at a distance of **2.47 Km**

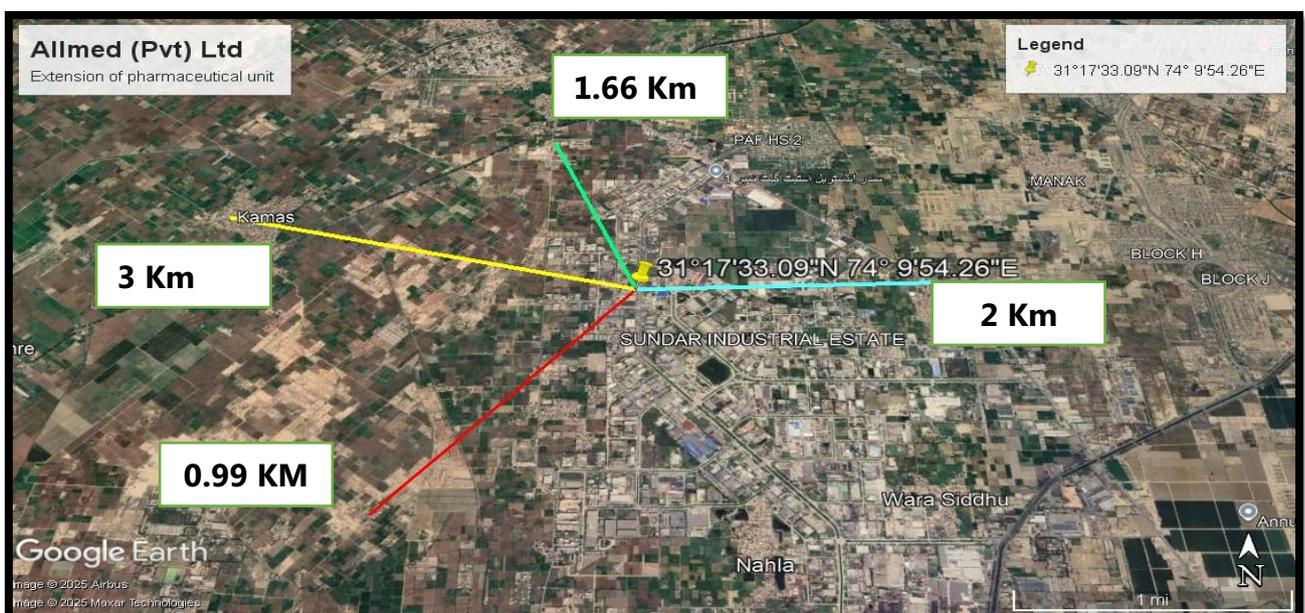


Figure 10. Educational institutes present near project area

5.4 Lab Reports of Environmental Analysis

Testing of different parameters was carried out from EPA certified laboratory i.e. Welcos to check the quality of different environmental parameters. The copy of the lab reports of these parameters (ambient air analysis, ground water quality analysis and noise) are attached herewith as **Annex-G**

5.5 Suitability of the Site

The project site is open space located in industrial cum agricultural area and away from the residential communities. The site does not fall in environmental sensitive area and all commodities are at a suitable distance from project site as they will not be impacted by the extension of pharmaceutical unit and its operational activities even locals will get benefits and job opportunities. No replacement, relocation and rehabilitation are required for the development of proposed project.

CHAPTER 6: IMPACT ASSESSMENT

This section discusses the potential environmental impact of instant project, methodologies for impact identifications and characteristics of impacts including nature, magnitude, extent, location, timing, duration, reversibility and risk. The assessment carried out in this Section is based on potential impacts on overall environmental receptors within the project area.

6.1 Methodologies for Impact Identification

During construction, adverse environmental & social impacts depend on the resources and receptors involved along with other parameters such as; geographical scope (magnitude and extent), temporal scope (duration) and reversibility. But for construction of instant project it has been anticipated that this project will have beneficial social impacts, it will bridge the gap between supply & demand, employment opportunity will be increased for which locals will be preferred and socio-economic uplift of the proponent. Having identified and characterized the potential significant impacts during design, construction/ installation and operation phase of project an Environmental Impact Severity Matrix & checklist to summarize all the identified impacts as mentioned below in tables.

Table 7. Impact Significance Criteria

Impact	Criteria
No Impact	When the said activity will have no impact
Long Term	When the impact is of high intensity with high spread and high duration or of high intensity with medium spread and medium duration
Moderate Term	When the impact is of moderate intensity with high spread and high duration or of high intensity with low/ moderate spread and low duration
Short Term	When the impact is of low intensity but with moderate spread and moderate duration or of moderate intensity
Insignificant	When the impact is of low intensity, low spread and low duration
Adverse	When the impact is of large intensity, spread easily and long-term
Beneficial	When the impacts are positive and improve the environmental conditions

Table 8. Impact Matrix Checklist for Construction Phase

Environmental Sensitivities	Intensity of Impact						Impact Nature				Impact Significance		
	Low Intensity	Moderate Intensity	High Intensity	Local	Moderate	Regional	Beneficial	Adverse	Insignificant	No Impact	Short Term	Moderate	Long Term
Physical Parameters													
Air Quality		✓		✓									
Noise		✓		✓									
Water Quality		✓		✓									
Biological Parameters													
Land Environment	✓												
Flora	✓												
Fauna	✓												
Physical Parameters													
Local Economy	✓				✓								
Social Impacts	✓				✓								
Health & Safety	✓			✓									

Table 9. Impact Matrix Checklist for Operational Phase

Environmental Sensitivities	Intensity of Impact						Impact Nature				Impact Significance		
	Low Intensity	Moderate Intensity	High Intensity	Local	Moderate	Regional	Beneficial	Adverse	Insignificant	No Impact	Short Term	Moderate	Long Term
Physical Parameters													
Noise		✓		✓									
Water Quality		✓			✓								
Air Emissions	✓			✓									
Biological Parameters													
Land	✓			✓									
Flora	✓			✓									
Fauna	✓			✓									
Physical Parameters													
Local Economy		✓			✓								
Social Impacts		✓			✓								
Health & Safety		✓		✓									

6.2 Characteristics of Impacts

The impact characteristics are identified to screen out potentially insignificant environmental and social impacts from potentially significant adverse environmental and social impacts during planning & designing, construction/ installation and operational phases of the project. The



objective of impact screening process is to assess the significance of issues related to the air, water, noise, soil, transportation, civil work, communication, the hazards and external constraints. The beneficial and adverse impacts of project during planning & designing, construction/ installation and operational phases are identified based on their duration, location, frequency, extent, significance and reversibility. The impact of each activity on various environmental parameters is given below:

Table 10. Impacts Characteristics

Sr.#	Environmental Component	Impact Characteristics												
		Duration		Location		Frequency		Extent		Significance			Reversibility	
		Long	Short	Direct	Indirect	Cont.	Intermittent	Wide	Local	Large	Moderate	Minor	Rev.	Irrev.
Beneficial Impacts														
1	Employment Opportunity	☐		☐		☐			☐		☐		☐	
2	Solid Waste Management	☐		☐		☐			☐		☐		☐	
3	Land Value	☐			☐	☐			☐			☐		☐
4	Tree Plantation	☐		☐		☐			☐		☐			☐
Adverse Impacts														
1	Solid Waste	●		●			●		●		●		●	
2	Health and Safety	●		●		●			●			●	●	
3	Physical Hazards		●	●			●		●		●			●
4	Security Risks		●	●			●		●			●	●	
5	Wastewater	●		●		●			●		●		●	
6	Air Emissions		●	●		●			●			●	●	

CHAPTER 7: SCREENING POTENTIAL ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

This Chapter identifies the potential impacts (positive and adverse) on the physical, biological and socio-economic environment of project area due to instant project. It also identifies measures that will help to mitigate the adverse environmental and social impacts and it will enhance positive impacts of the project. Impacts are assessed by analyzing their magnitude and sensitivity, which is a legal requirement.

7.1 Project Location

The instant project is extension of pharmaceutical unit by M/S Allmed (Pvt) Ltd. There is no human settlement, heritage building, social structure, grassland or preserved area in the project vicinity that could be damaged, dislocated or dismantled due to the project activity in said area.

Nature of Impact

The nature of the impact will be low, short-term and hence in-significant.

Mitigation Measures

No mitigation measure will be adopted as the selected site is within the premises of M/S Allmed (PVT) Ltd.

7.2 Design

The said project is extension of pharmaceutical unit by M/S Allmed (Pvt) Ltd with production capacity of 5000 packs/day. However, in designing phase a management system should be devised & implemented to control the anticipated environmental impacts. The design of the instant project will adhere to all standard technical requirements in order to avoid adverse impacts on socio-environmental aspect.

Nature of Impact

The nature of impact will be direct, low, short-term and hence in-significant.

Mitigation Measures

Following mitigation measures will be adopted while designing the foresaid project:

- All the generated waste will be handled properly.
- The process employed for instant project is simple & environmentally friendly.
- The project is design to minimize pollution load.
- On-site training safety training will be given to the workers.
- Fire-fighting equipment will be installed at sensitive places near the project site.

7.3 Construction Phase

During the extension of pharmaceutical unit, civil structure work and installation of equipment will be done. It would bring in immediate but short-term changes on various components of environment near the project site. This section explains how aforesaid project will affect different environmental aspects and its mitigation measures to manage the impact. The anticipated impacts will be temporary and localized in nature. Even though, the measures are proposed to minimize such impacts.

7.3.1 Soil Contamination

During construction, the chances of soil erosion and contamination are less, as no major constructional activities will be involved in said project. There are low chances of land contamination due to release/spill of lubricants, oil and other materials as no major construction is involved. The impact will be short term, localized and can be controlled through immediate appropriate management and mitigation measures. This impact is considered negative of minor magnitude. Hence, the impact is in-significant.

Nature of Impact

The nature of said impact will be direct, low and hence in-significant.

Mitigations

Following mitigation measures will be adopted to protect the soil from erosion and contamination:

- Spill prevention and response plan for storage, usage and transfer of fuel should be prepared (if used on site) and implemented.
- Workers should be trained on spill prevention and response plan (if needed).
- Maintenance of vehicles as well as equipment will be carried out at designated areas within the facility.
- Any hard surface or tarpaulin should be spread on area to prevent soil contamination.
- Regular inspections should be carried out to detect leakages in construction vehicles and equipment.
- Machinery involved should be maintained properly to avoid leakages.
- The proponent will be required to instruct and train their workforce in storage and handling of materials that can potentially cause soil contamination.
- Solid waste generated during construction of the unit will be properly and safely disposed of as per practice of area.

7.3.2 Air Emissions

The main source of air emission during said phase is dust. It will be generated due to movement of equipment at the site during constructional activities. Dust emissions are expected to result in increased particulate matter thus affecting baseline air quality, primarily in working area for a short duration.

Nature of Impact

The nature of proposed impact will be low, short-term and hence in-significant.

Mitigations

Following mitigation measures will be adopted:

- In order to reduce concentration of suspended dust particles & transport roads will be sprinkled with water on the regular basis.
- Construction/ Installation activities causing dust should not be carried out on excessively windy days.
- Workers will be provided with masks for protection against the inhalation of dust and they should be trained for its use.
- Strict speed limit for the vehicle carrying the raw-material should be imposed.
- Emission of exhaust gases from vehicles used for construction should be controlled.

7.3.3 Impact on Water Environment

The construction will consume water for structure building and for domestic purposes. The overall impact on water environment due to aforesaid project activities are considered short-term and in-significant.

Nature of Impact

The nature of said impact will be direct, low, short-term and hence in-significant.

Mitigations

Following mitigation measures will be adopted:

- Water conservation techniques should be adopted to conserve water.
- Labor should be trained to conserve the water.

7.3.4 Impact on Flora & Fauna

No impact on the flora and fauna is being envisaged as said project is located within sundar industrial estate. No additional disturbance is being envisaged for implementation of said project.

Nature of Impact

The nature of said impact will be in-significant.

Mitigations

Following mitigation measures will be adopted:

- After the completion of installation phase trees will be planted in the designated green areas.
- For the management of landscape, local and native trees will be planted.
- Trees will be planted along the project area boundary.
- Unnecessary up-rooting of the trees and plants must be avoided.

7.3.5 Impact on Noise Environment

The noise produced during establishing of the unit may not have significant impact on the existing ambient noise levels as all sensitive receptors are located at adequate distance. The major installation work will be carried out during the day hours only. The construction/Installation equipment may generate high noise which can affect the personnel operating the machines. Use of proper personnel protective equipment will mitigate any adverse impact of noise on the working population.

Nature of Impact

The nature of proposed impact will be in-significant.

Mitigations

Following mitigation measures will be adopted:

- Selection of up to date and well-maintained equipment with reduced noise levels ensured by suitable in-built damping techniques or with appropriate muffling devices.
- Limiting noisy activities to the day hours, wherever possible.
- Providing the construction workers with suitable hearing protection like; ear cap, or earmuffs and training them how to use effectively.
- Use of low noise machinery, or machinery with noise shielding and absorption are the mitigation measures suggested for said project.

7.3.6 Socio-Economic Impacts

In project area, no significant changes are envisaged in traditional life style and occupation of local people residing in the nearby communities as it is being established at adequate distance from various sensitive receptors. The local people are rather benefited due to the provision of job opportunities. No impact is envisaged due to influx of workers as local will be preferred and hired for working. Social issues may arise which will cause minor negative impact on the social life style of people. Moreover, health and safety related issues may arise during the construction / Installation activities. These impacts are in-significant can be further reduced significantly by adopting best management practices.

Nature of Impact

The nature of said impact will be in-significant.

Mitigation Measures

Following mitigation measures will be adopted to reduce the socio-economic impact on the community:

- Good relations with local communities will be promoted by encouraging Contractor to provide opportunities for skilled and un-skilled employment to the locals as well as on-job training.
- The contractor should prefer hiring local labor from adjacent community;
- The contractor will keep the copy of National Identity Card (CNIC) of his employees and will warn the workers not to involve in any anti-social activities otherwise they may face dire consequences.
- At the time of hiring, the Contractor has to ensure that workers should be of good repute.
- First aid kits having all the necessary first aid stuff will be available at site.
- Routine medical check-ups of all the field staff including unskilled labor needs to be conducted by qualified physician and surgeon.
- Training of workers should be carried out for operating various constructional/ Installation machinery, safety procedures should be adopted, environmental awareness should be carried out, equip all workers with safety boots, helmets, gloves, protective masks and monitoring of their proper and sustained usage will be carried out. In case of accidents, contractor will provide free medical treatment to the community.
- The Contractor will be responsible for sensitivity towards the local customs and traditions.

7.4 Operational Phase

The following section describes the potential impacts which are associated with the operation of above stated project.

7.4.1 Noise

Noise pollution is not expected to occur beyond PEQS during the operational phase. Moreover, this will have no significant impact since the nearby residential areas are found at the safe distance as shown in the Google Earth Maps attached in **Section 1.5** and **Section 5.5**.

Nature of impact

The nature of said impact will be in-significant.

Mitigations

In general, the following methods will be adopted to control the noise pollution from the unit:

- Personal protective equipment like; ear plugs and ear muffs should be provided to employees working in the noise prone areas.
- Time to time tuning and maintenance of machineries should be done.
- Ambient noise levels as mentioned in PEQS will be complied.
- Monitoring of the ambient noise level will be carried out on regular basis.
- A greenbelt will be developed all around the plant which will be act as noise barrier.

7.4.2 Ambient Air Quality

During operational phase of instant project, no emissions would be released from pharmaceutical unit.

Nature of impact

The nature of said impact will be in-significant.

Mitigations

Following mitigation measure will be adopted to keep the ambient air quality of the area intact.

- Company owned vehicles will be maintained on regular basis in order to avoid air emissions.
- Monitoring of the ambient air quality will be carried out on regular basis.
- For the particles emitting during processing, filters will be installed at exhaust points to capture these particles.

7.4.3 Water Resource and Wastewater Production

Instant project will involve water usage for domestic and operational purposes. The groundwater provided by SIE will accommodate water supply of unit. Similarly, domestic and procedural wastewater will be released from the unit.

Nature of Impact

The nature of the impact will be direct and moderate term.

Mitigation

Following mitigation measures will be adopted to reduce the impacts on water resource

- The generated procedural wastewater will be treated through wastewater treatment plant and the treated water will be discharged in SIE drain.
- For recharging of the groundwater open green spaces will be left within the premises.
- Close the water tap when not in use to conserve the water resource.
- Provision of safe drinking water to the workers will be ensured.
- It will be ensured that no solid waste will be entered in the wastewater.
- Rainwater storage tanks built will reduce the burden on natural resource and using it for emergency, domestic or horticulture purposes.

7.4.4 Solid Waste Management

The domestic solid waste will be generated during project operational activities. The solid waste generated from domestic purposes will be disposed off as per area of practice while laboratory waste and rejected waste will be handed over to EPA certified contractor for incineration.

Nature of Impact

The nature of impact will be direct and long-term.

Mitigation

Following mitigations should be adopted to reduce the issues related to the solid waste:

- Domestic solid waste should be stored in the covered bins in order to avoid the growth of vectors and rodents as well as to control the odor and to reduce public nuisance. It should be collected and disposed of as per area practice.
- Appropriate in-housekeeping, sanitary and solid waste management practices should be adopted.
- Regular visual monitoring will be carried out to ensure good house-keeping practices.
- The non-reusable solid waste generated during construction will be handed over to contractor.

7.4.5 Emergency Response

The proponent and supervisor will chair incident control. In the case of minor emergency, the first aid box will be provided. For incidents and accidents that may take place unexpectedly during project operations no matter how effective, strong and efficient the mitigation measures for all adverse impacts; especially the safety issues may be adopted. These may include; accident and natural disasters.

Nature of Impact

The nature of the said impact will be direct, low, long-term and hence significant.

Mitigation

- Workers should be given adequate training of handling machinery.
- Emergency call service must be made available 24/7.
- Safety and hazards signs will be displayed within the facility to avoid any unfortunate incident.

7.4.6 Occupational Health and Safety Impacts/Hazard Risks

Major occupational hazards associated with pharmaceutical unit operations include fire/physical, electrical, chemical and ergonomic hazard.

Nature of Impact

The nature of the said impact will be direct, long-term and significant.

Mitigation

- PPEs will be provided to workers involved in critical jobs.
- It is recommended that necessary Trainings should be given to the staff regarding job safety aspects and job specific hazards.
- Monitoring and supervision of project activities will also involve assessment of implementation of measures for occupational safety
- Only authorized persons shall be allowed in the processing and chemical storage areas.
- Unloading of raw-material and loads of final products should be controlled, supervised, slow and smooth

7.5 Potential Environmental Enhancement Measures

Following potential environmental enhancement measures will be adopted:

7.5.1 Enhancement in Employment Opportunities

During extension of pharmaceutical unit, the employment opportunity will be enhanced. Workers will be hired from local community, include; skilled and un-skilled workers. During

construction phase, 10-15 workers will be hired and in operational phase approximately 25-30 workers will be employed. It will include technical and non-technical staff. Locals will also have the opportunity to diversify their income by being employed during various project phases. Hence, there will be an increased employment opportunity for the local people which will have a positive impact on the socio-economic status of the area.

7.5.2 Tree Plantation

At the end of construction, landscape of the area will be enhanced by planting native and ornamental plants along the boundary of project site. This will enhance the aesthetic beauty of the area.

CHAPTER 8: ENVIRONMENTAL MANAGEMENT AND MONITORING PLAN

8.1 General

This chapter summarizes the various mitigation measures as outlined previously in this EIA Report that will be implemented during the designing, construction/ Installation operational and decommissioning stages of project. It does not discuss further the mitigation measures which have been adopted within the design and planning of the project, as these are comprehensively covered in previous section of this EIA Report. Outline and key features of the EMMP for operations phase of the aforesaid project is presented in the sub-sections below. As per the environmental legislation in Pakistan, the compliance status of the conditions mentioned in the construction/Installation should be submitted along with other documents to the environmental protection agency to obtain confirmation for compliance and Environmental Approval for project operation. Even after implementation of the suggested mitigation measures, the impact may remain significant, and requires regular environmental monitoring.

8.2 Objectives.

An Environmental Monitoring Plan (EMP) was outlined alongside Environmental Management Plan to ensure all the corrective actions to counter adverse impacts which gives a detailed EMMP. The EMMP will serve as a principal execution module of the project that would not only mitigate adverse environmental impacts during the construction/installation and the operational phase of the project but also ensures that environmental standards and good in-housekeeping are being practiced. Continuous environmental monitoring is exercised to ensure that preventive measures are in place and effective to sustain environmental integrity. The key objectives of EMMP are:

- To outline functions and responsibilities of persons associated with the commencement of the instant project.
- To state and implement standards and guidelines which are required under environmental legislations particular in context to the proposed project commencement.
- To facilitate the implementation of the mitigation measures by providing the technical details of each Project's impact and proposing implementation schedule of the proposed mitigation measures.
- Define a monitoring mechanism and identify monitoring parameters to ensure that all proposed mitigation measures are completely and effectively implemented.
- Identify the resources required to implement the EMMP and outline corresponding financing arrangements.

8.3 Proposed Mitigation Actions and Monitoring Program

It lists all the mitigation measures identified in the EIA and the associated environmental or social aspect in line during construction and operational phase with the administrative framework involving all the responsible implementing authorities who are required to take the planned actions/measures and monitor it accordingly. It enhances project benefits by reducing its impacts and making it environmentally friendly. The environmental management and monitoring plan is given below in Table 11.

Table 11: Environmental Management and Monitoring Plan

Project Activities	Potential Impacts on Environment/ Type of Impact		Mitigation Measures	Monitoring
Permitting and Compliance	As per Law/ Guidelines	<ul style="list-style-type: none"> • Ensure to obtain necessary permits and comply with all rules and regulations. • Obtained permits should be submitted to concerned departments for compliance. 	<ul style="list-style-type: none"> • Environmental Impact Assessment along with Environmental Management and Monitoring Plan is being submitted to EPA Punjab. • Permit from DRAP will be obtained for compliance 	Project proponent
Site Selection	Land Acquirement and Land Use	<ul style="list-style-type: none"> • Selected site should be away from sensitive areas. • Include Buffer Zones and design storage on impervious surface to manage runoff. 	<ul style="list-style-type: none"> • Selected site is present within the premises of Allmed Pvt Ltd. so there will be no such impact on land. • The leftover waste will be removed as soon as possible after the unit is constructed. • Visual monitoring will be carried out to keep in check the in-house keeping practices and other hazards in check. 	Project Proponent
Transportation	Road safety	<ul style="list-style-type: none"> • Use vehicles capable of safely carrying the weight of scrap materials and finished products • Choose routes that avoid residential areas especially for longer distance. • The speed limit must be controlled 	<ul style="list-style-type: none"> • Drivers will be trained on safe transportation. • Load will be covered with tarpaulin sheets to prevent dust. • It will be ensured that vehicles will be in good condition to avoid 	Project Proponent



			any incident during transportation.	
Air Quality	CO ₂ , SO _x , NO _x , PM	<ul style="list-style-type: none"> • Use pollution control equipment • Monitor and limit the pollutants i.e., Sox, NOx, and other particulates. 	<ul style="list-style-type: none"> • Regular maintenance of vehicles will be done during project operational activities. 	Supervisor
Noise Pollution	Noise from machinery and operations	<ul style="list-style-type: none"> • Install noise barriers. • Schedule operations during day-time 	<ul style="list-style-type: none"> • Regular maintenance and lubrication to equipment will be ensured. • Monitoring/ regular noise assessments will be done to ensure levels are within prescribed limits. 	Supervisor
Water Pollution	Risk of contamination	<ul style="list-style-type: none"> • Implement containment structures to capture runoff, especially in areas handling storage and processing. • Use permeable paving, retention ponds and drainage system to manage storm water. 	<ul style="list-style-type: none"> • Procedural wastewater will be treated in wastewater treatment plant while domestic wastewater in septic tanks and the treated water will be released in SIE drain. • Periodic water testing will be done and monitoring reports will be submitted to EPA Punjab. 	Supervisor
Groundwater consumption	Risk of contamination and depletion of reserve	<ul style="list-style-type: none"> • Use drainage system to manage storm water. 	<ul style="list-style-type: none"> • Pressure washers and low flow faucets will be used on site • The workers would be trained to do use water efficiently and conservatively • The rainwater harvesting plan will be installed to conserve water sources 	Supervisor



Solid Waste management	Generation of domestic waste	<ul style="list-style-type: none"> • Schedule removal of Solid waste to avoid contamination of land and degradation of waste • Maintain records of waste generation, storage and disposal for regulatory compliance and tracking. 	<ul style="list-style-type: none"> • Proper solid waste management plan will be formulated which will be followed through-out the project operational activities. • Records of waste generation will be maintained. • Domestic solid waste will be disposed of as per area practice. • Laboratory or rejected waste will be handed over to contractor. 	Supervisor
Health and safety	Health risks from emissions, noise, transportation	<ul style="list-style-type: none"> • Record and address complaints • Provide gloves, goggles, respirators, ear protection and other PPEs. • Install fire extinguishers, sprinklers and emergency exits. • Conduct regular health and safety training • Post safety signs in areas • Encourage reporting of all incidents, near-miss and unsafe conditions. 	<ul style="list-style-type: none"> • Health and safety policy will be formulated which will be followed during the project operational activities. • Emergency kits and exits will be provided in the unit • PPEs will be provided to the workers. • Training will be done and record will be maintained. 	Supervisor
Use of local manpower	Employment Generation	<ul style="list-style-type: none"> • Local people will be hired for less technical work or non-skilled work. • Locals will be preferred and will be involved at various stages of project development. <p>This will improve the socio-economic status of the people directly linked with the project.</p>		Project Proponent



Civil works	Dust, Noise & Vibration, Employment, Health & Safety of Workers	<ul style="list-style-type: none"> • Water sprinkling will be done to reduce dust emissions. • Noise control measures will be implemented. • Safety of the workers should be protected where the physical activity is involved. • PPEs will be provided to the workers and their usage will be ensured. 		Project proponent
Biodiversity	Impact on nearby vegetation	<ul style="list-style-type: none"> • Maintain green buffer ‘ • Landscaping should be done zone 	<ul style="list-style-type: none"> • Plantation will be done around the project area • Biodiversity measures will be taken to prevent the Environment. 	Project proponent

8.4 Schedule for Implementation and Environmental Budget

The establishment of the unit will be done within 12-18 months after getting Environmental Approval/NOC. The total cost of the project is **PKR 500 million approx.** Environmental budget of **PKR 0.8 million** will be allocated to protect the environment which will include; tree plantation, environmental monitoring as per SMART Rules, etc.

8.5 Environmental Management Team

The primary responsibility for implementing different aspects of the EMP within the company lies with the proponent of M/S Allmed (PVT) Ltd.

8.6 Proposed Monitoring program

Environmental monitoring is a vital component of the Environmental Management Plan. It is the mechanism through which the effectiveness of the EMP in protecting the environment is measured. The feedback provided by the environmental monitoring is instrumental in identifying any problem or lapse in the system under implementation and planning corrective actions. For domestic activities already constructed facilities will be used. Solid waste disposal will be according to standard practices of area. It should be noted that it is difficult to outline a formal monitoring protocol for specific environmental parameters and key impacts until detailed project design has been completed. A formal monitoring protocol will be included within the revised EMP once the detailed project design has been completed.

Table 12. Proposed Monitoring Program

Components	Parameter to be Monitored	Measurement	Frequency	Location	Responsibility
Land Resource	Soil quality	Regular visual monitoring and soil analysis	Daily	On-site	Proponent
Noise Levels	Noise level on the site and adjacent area on dB(A) scale	Noise level reading will be measure on regular basis	Regularly	At all noisy locations within the facility	Supervisor
Workers safety	Injuries and accidents	Recording injuries	Daily	On-site	Supervisor
Wastewater	As per SMART Rules	Testing by EPA Certified Lab	Monthly	On-site	Supervisor

Ecological Resource	Flora & Fauna of the area	Observation by conducting surveys	During Baseline Survey, once in a year and after the completion of the Project	Around project site	Proponent
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8.7 Proposed EMP reporting and reviewing procedures

Following protocols will be adopted for reporting & reviewing EMP:

- During extension of pharmaceutical unit, EMMP reporting and reviewing will be done by the contractor/proponent. Regular monitoring will be done and reports will be submitted in EPA, Punjab as per condition of Environmental Approval of construction/Installation phase.
- Monitoring reports will be reviewed by supervisor and proponent of M/S Allmed (PVT) Ltd. and then will be shared with EPA, Punjab.
- Photographic records will also be maintained on regular basis.
- Recorded data will be reviewed by supervisory contractor/proponent so that it can be further improved if required.

8.8 Environmental Training

M/S Allmed (PVT) Ltd. will ensure in-house training for the project staff, labor and the supervisory staff through the provision of one day basic training and one day advanced training, covering environmental and social aspects of the projects in general and implementation requirements will emphasis on the development project in general, on the roles & responsibilities of the staff and the labor while executing the environmental monitoring plan in particular. The training protocols will include the following aspects:

- Procedures for monitoring the air quality parameters and measures to be adopted for avoiding/minimizing air pollution, particularly from the transportation of raw materials/finished products will be given to the contractor/proponent.
- Safety measures against hazards for workforce and the local communities arising from the construction and operational activities.
- Emergency response trainings.
- Fire-fighting trainings and drills.
- Use of safety gadgets by the workforce.

CHAPTER 9: STAKEHOLDER CONSULTATION

9.1 General

Public consultation refers to the process by which the concerns of local affected persons and others who have plausible stake in impacts assessment of the project or activity are ascertained with a view to taking into account all the material concerns in the project or activity design as appropriate. According to the IEE and EIA Review Regulations, 2022 public consultation is mandatory for any socio-environmental study. For this purpose, assessment survey and public consultation sessions held with different stakeholder groups that may be impacted. The consultation process was carried out in accordance with the guidelines laid by EPA, Punjab. The objectives of this process were to:

- Share information with stakeholders on project establishment and operation.
- To assess the impacts on the physical, biological, and socio-economic environment.
- Understand stakeholder concerns regarding various aspects of the project.
- Understand the perceptions, assessment of social impacts and concerns of the communities of the project area.
- Find out the awareness level and situation of acceptability to identify any issues for the implementation of said project.
- To invite people to express their views about the positive/negative impacts on their life styles and environment.

This report includes all the comments, which were taken into account in preparing the definitive development concept for the construction of the said unit. Public consultation performas are attached herewith as **Annex-H**.

9.2 Consultation Mechanism

Primary stakeholders were consulted during informal and formal meetings. The consultation process was carried out in the Urdu language. During these meetings a simple, non-technical, description of the project was given, with an overview of the project's likely human and environmental impact. This was followed by an open discussion allowing participants to voice their concerns and opinions. In addition to providing communities with information on the proposed project, their feedback was documented during the primary stakeholder consultation. The issues and suggestions raised were recorded in field notes for analysis and interpretation.

By reaching out to a wider segment of the population and using various communication tools such as participatory needs assessment, community consultation meetings, focus group discussions, in-depth interviews, and participatory rural appraisal EIA involved the community in active decision-making. This process will continue even after this EIA has been submitted, as well as during future EIA in which similar tools will be used to create consensus among stakeholders on specific environmental and social issues.

Secondary stakeholder consultations were more formal as they involved government representatives and local organizations, consulted during face-to-face meetings. They were briefed on the EIA process, the project design, and the potential negative and positive impact of the project on the area's environment and communities. It was important not to raise community expectations unnecessarily or unrealistically during the stakeholder consultation meetings in order to avoid undue conflict with community's leaders or local administrators. The issues recorded in the consultation process were examined, validated, and addressed in the EIA Report.

This section involves communication of possible impacts and concerns with

- ✓ Proponent
- ✓ The responsible authority
- ✓ Other departments and agencies
- ✓ Environmental Practitioners and experts
- ✓ Affected and wider community

9.3 Proponents Environmental Management Team

Consultation regarding M/S Allmed (Pvt) Ltd. was done with Proponent and supervisor and anticipated impacts were discussed. Concerns of locals, Environmental Practitioners & experts were discussed and asked to consider them while construction of above-said project. Locals will be preferred for employment after providing proper training. Mitigations measures mentioned in EMP will be truly implemented.

9.4 Responsible Authority

Overall responsibility for implementation of EMP will be that of project proponent. A supervisor will be appointed to manage the all-safety related hazards, environmental issues and ensure the compliance of PEQS. Following are the designated roles and responsibilities of employees involved in monitoring and management of the adverse impacts.

Table 13: Roles and Responsibilities

Roles and Responsibilities		
Sr#	Concerned Persons	Duties
1	Project Manager	<p>Following will be the responsibilities of the Project Manager</p> <ul style="list-style-type: none"> • Ensure that the contractor is aware of all specifications, legal constraints, standards and procedures pertaining to project specifically with regards to environment. • Ensure that all stipulations within the EMMP are communicated and adhered to by contractor(s). • Monitor the implementation of EMMP throughout project by means of site inspections and meetings. This will be documented as part of the minutes of the site meeting documents. • Ensuring project execution within defined budget and proposed timeframe. • Conducting regular check of project status and meetings with project team. • Provide support and guidance to team members as and when needed. • Project Manager is expected to continually monitor and improve the overall performance of their operation.
2	Site Engineer	<p>Following will be the responsibilities of the Site Engineer during the construction and operational activities:</p> <ul style="list-style-type: none"> • Be fully conversant with the EIA, EMMP and conditions of its approval. • Be fully conversant with all relevant environmental legislation, policies and procedures and ensure compliance with Punjab Environmental Quality Standards. • Have overall responsibility for the implementation of EMMP. • Conduct audits to ensure compliance to the EMMP. • Liaise with the Project Manager or his delegate, the Environmental Officer and relevant discipline Engineers on matters concerning the environment. • Prevent actions that will harm or may cause harm to the environment and take steps to prevent pollution on the site. • Confirm activities to the demarcated construction site.
		<p>In addition to the health and safety responsibilities held by staff, managers and supervisors must do whatever is reasonably practical to ensure that both the workplace and the work itself are safe. This includes:</p> <ul style="list-style-type: none"> • Ensuring that staff is appropriately trained and supervised. • Identifying, assessing and managing health and safety

3	HSE Manager	<p>risks.</p> <ul style="list-style-type: none"> • Consulting with workers (including staff, affiliates and contractors): <ul style="list-style-type: none"> i. Health and safety risk assessments ii. Decisions are made about the measures to be taken to eliminate or control these risks iii. Health and safety risk assessments • Implementing health and safety risk management programs relevant to their operations, research and consulting functions and work environment. • Reporting (to the Human Resources Unit), investigating and responding to all hazards, accidents, and incidents and taking action to control the risk. • Assisting with the development, implementation and maintenance of a return to work program for injured staff. • Be fully conversant with the EIA, EMMP and conditions of its environmental approval Be fully conversant with all relevant environmental legislation, policies and procedures and ensure its compliance. • Convey the contents of this document to contractor site staff and discuss contents in detail with Project Manager and Contractor. • Undertake regular and comprehensive inspection of site and surrounding areas in order to monitor compliance with the EMMP. • Take appropriate action if the specifications contained in the EMMP are not followed. • Monitor and verify that adverse environmental impacts that are likely to occur should be kept to a minimum level, as far as possible. • Review and approve construction methods, with input from the Site Manager, where necessary. • Ensure that activities on site comply with all relevant environmental legislation. • Compile progress reports on regular basis, with input from the Site Manager, for submission to the Project Manager, including a final audit before starting the operation at site. • Liaise with Site Manager regarding the timely monitoring. • Report any non-compliance or remedial measures that need to be applied. • All environmental problems arising on construction area will be reported to Site Manager by Environmental Manager. • Reports on such problems will be submitted to Project Manager by Site Manager.
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4	Contractors and Service Providers	<ul style="list-style-type: none"> • Environmental management is part of on-site quality management. Under the environmental management plan, the contractor shall propose measures to minimize environmental impacts during construction and submit them to the HSE Officer. • Comply with the environmental managementspecifications. • In case of having impacts on environment, the contractor will refer them to concerned person in time to get instructions and then take next step. Adhering to any instructions issued by the Engineer/Project Manager on the advice of the HSE Manager. • Submitting a report at each site meeting which will document all incidents that have occurred during theperiod before the site meeting. • Maintaining a public complaints register. • Arrange that all his employees and those of his subcontractors receive training before thecommencement of construction.
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9.5 Other departments and agencies

Various departments such as Field Office Environment, Irrigation Department, Planning & Development Department, Labor & Human Resource Department, SIE office and Social Welfare & Bait-ul-Maal had been consulted by the socio-environmental team of the consultants and concerned details about the project were noted down through personal interviews, group meetings, etc., in their offices.

9.6 Environmental Practitioners and experts

Consultation with environmental practitioners and experts was noted and their comments and suggestions were observed and mentioned below.

Table 14: Consultation with Environmental Practitioners and Experts

Sr. No	Name	Qualification	Comments/Suggestions
1.	Fukaiha Falaq	M.Phil Environmental Engineer	She said that: <ul style="list-style-type: none"> • Environmentally friendly operation of said facility should be ensured. Moreover, it will help to comply with PEQS. • Sewage water should be disposed of properly.
2.	Mr. Attiq	BS Environmental Sciences	Following comments/suggests were noted: <ul style="list-style-type: none"> • He said that locals should be preferred for employment opportunity. • In case of outsider's residence must be provided within the facility or in its nearby

			<p>vicinity.</p> <ul style="list-style-type: none"> • Proper mitigation measures must be adopted during construction and operation of said project.
3.	Misbah Amanat	B.S Environmental Engineer	<ul style="list-style-type: none"> • She said that in case of removal of vegetation trees must be planted after construction at designated green areas. • More water conservation strategies must be adopted. • Solid waste must be collected and disposed off properly by using standard practices of the area.
4.	Mehreen Riaz	B.S Environmental Engineer	<ul style="list-style-type: none"> • Proper leveling and commissioning must be done at the end of civil work. • Environmental manager must be hired to ensure the compliance of PEQS. • By installation of said project the impact due to the disposal of wastewater should be adopted as per standard practices of the area

9.7 Affected and Wider Community

Social survey was conducted to consult with local community. Their concerns were noticed and discussed with proponent and their team. Majority was in favor of project their details are given below in table 15.

Table 15: Concerns Noted during Community Survey

Sr.#	Respondents	CNIC/Contact No.	Concerns
i.	Muhammad Azam	35202-1950600-7	<p>During the survey in the study area following concerns of the local community were noted:</p> <ul style="list-style-type: none"> • Air pollution should be controlled effectively • Chemicals should be stored and handled properly only authorized persons should be allowed near the chemical storage area • Locals should be prefer for the job opportunities
ii.	Zeeshan Amjad	35202-0564685-5	
iii.	Tahir Naqash	35201-5625990-7	

iv.	M. Saad Rafique	35202-6793614-7	<ul style="list-style-type: none"> • Wastewater should be treated prior to final disposal in the SIE drain • Cleanliness of the area should be ensured • An effective EMMP should be designed and enforced with true spirit • Health of the workers should be ensured • Plantation should be carried out at extensive scale • Construction activity should be carried out during day hours • Noisy activities should be confined • Workers should be hired from local community • Proper disposal of solid waste should be practiced • Indigenous trees around the facility should be planted to control air pollution • The area will become further industrialized/inhabited which is the need of the hour
v.	Waqar Ali	35202-6535643-7	
vi.	Rizwan Jameel	35202-9164929-9	
vii.	M. Umar Raza	35202-2281069-3	
viii.	M. Aamir	35202-3235457-9	
ix.	M. Tahir Zafar	35202-9884926-3	
x.	Ahmed Khalid	0300-4899364	

CONCLUSION AND RECOMMENDATIONS

The report presents Environmental Impact Assessment (EIA) for the extension of pharmaceutical unit by M/S Allmed (Pvt.) Ltd. EIA of Project is performed according to guidelines of EPA. It includes description of the project, description of the environmental baselines, potential environmental impacts and suggested mitigation measures. An implementation mechanism for mitigation measures in the form of an Environmental Management Plan is included in the study. The performed EIA showed all anticipated impacts (both positive and negative), associated with the project. Appropriate mitigation measures as explained in the environmental study shall reduce, if not eliminate, these impacts so that these are within acceptable limits. Moreover, no deterioration, depletion or exploitation of resources is expected to be caused by this project.

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

It is accordingly recommended that Environmental Approval for the project may be issued by the Punjab Environmental Protection Agency.