ENVIRONMENTAL IMPACT ASSESSMENT REPORT (EIA) OF M/S NISAR SYNTHETIC LIMITED

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Proponent:

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EXECUTIVE SUMMARY

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EXECUTIVE SUMMARY

Introduction

1. **Brief Description of the company**: Nisar Synthetic Limited is a Public Limited Company (Unlisted) incorporated with a vision to excel in the manufacturing of synthetic materials. The company is part of a diversified group, including Nimir Chemical Pakistan Limited, Nisar Spinning (Pvt.) Limited, Pakistan Vinyl Industries, and SA Trading. With its registered office located at 14 block Kashmir Edgerton Road Lahore, the company aims to set new standards in the industry through innovative production techniques.
2. **Experience**: The leadership team of Nisar Synthetic Limited carry extensive experience in the chemical and synthetic materials sector. Headed by CEO Mian Anjum Nisar and Director Tariq Nisar are renowned industrialist of Pakistan supported by CFO Khawaja Shabbar Hasan, the company leverage the expertise of its directors to strategize and execute its ambitious plans.
3. **Nature of business:** Nisar Synthetic Limited focuses on the manufacturing of high-quality synthetic materials, targeting domestic and international markets. Its operations encompass all aspects of production, from research and development to the delivery of finished goods.
4. **Industry**: Nisar Synthetic Limited operates in the synthetic materials and chemical manufacturing industry, an essential sector that supports multiple downstream industries. The company aims to be a significant player in this space, contributing to the industry's growth and innovation.
5. **The Project:** This executive summary presents an overview of the main findings of the Environmental Impact Assessment (EIA) report for the project that is M/S Nisar Synthetic Limited upon land measuring 75.44 Acre located at Plot No. 26-B to 51-B, Plot No. 26-B to 51-B, Quaid-e-Azam Business Park (QABP), Sheikhupura.
6. **Main Objective:** The main objective for this industry is to manufacture high quality products include Synthetic Leather (PU and PVC base), PU resin system, PU Adhesives, PVC rigid, PVC flooring, PVC adhesive tapes, TPE/EVA/CPE Foam, TPU Films, Fabrics of different types, etc. These products cater various industrial sectors, ranging from sports, pharmaceuticals, automotive construction, consumer goods, etc. to fulfill the demand of local market.

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7. **Scope and Objectives of the EIA:** This report is the environmental impact assessment (EIA) for the M/S Nisar Synthetic Limited and complies with the environmental assessment guidelines and requirements of the Environmental Protection Agency, Punjab. The EIA has been prepared to present the environmental assessment process of the project and ensure that the potential adverse environmental impacts are appropriately mitigated. The scope of work for the preparation of the EIA included, a detailed scoping exercise, study of the relevant baseline information, assessment of environmental impacts of the Project and its ancillary activities, assessment of the cumulative environmental impacts of the project, preparation of mitigation measures with an environmental management plan and an environmental monitoring plan.
8. **Title & Location of the Project:** The title of the project is the M/S Nisar Synthetic Limited located at Plot No. 26-B to 51-B, Quaid-e-Azam Business Park (QABP), Sheikhupura.
9. **Name of the proponent:** The name of the proponent is Tariq Nisar.
10. **Name of the organization preparing the report:** The proponent engaged M & Y Environmental Consultants (Pvt.) Limited for preparing the report.

B Critical Facts

11. **Policy Legal and Administrative Framework:** The Government of Punjab has formulated and proclaimed a comprehensive policy and legal framework for environmental assessment and protection.
12. The main provisions for environmental protection and pollution control in Punjab are proclaimed in the Punjab Environmental Protection Act (PEPA), 1997
13. PEPA provides the framework for protection and conservation of species, wildlife habitats and biodiversity, conservation of renewable resources, establishment of standards for the quality of ambient air, water and land, establishment of Environmental Tribunals, appointment of Environmental Magistrates, and Initial Environmental Examination (IEE) and Environmental Impact Assessment (EIA) approval. This Act has a direct bearing on the proposed M/S Nisar Synthetic Limited as the project requires an Environmental Impacts Assessment (EIA). Further, as PHLCEP is located mainly in the district Sheikhupura, it falls under the jurisdiction of the Punjab Environmental Protection Agency which will be responsible for approval of the EIA of the project.
14. **Project Categorization for Environmental Assessment:** As per Review of Initial Environmental Examination (IEE) and Environmental Impact Assessment (EIA)

Regulations, 2022 the instant project falls in Schedule II Category B. Manufacturing and Processing sub category 2 & 11.

C Description of the Environment

15. **Land use:** The land use in the area was primarily irrigation for production of food crops for domestic consumption but with the passage of time the Punjab Industrial Estates Development and Management Company has converted the same into industrial area to enhance industrial activities in the province.
16. **Soils:** The results of soil analysis reveal that all the soils are loam, silty loam, sandy loam, and loamy sand nature. These soils are medium to loose in texture and have high water percolation rate. The samples exhibit no problem of salinity or sodicity as the pH and salt contents are within safe limits. The soil is deficient in organic matter (OM), Nitrogen (N), Phosphorus (P), and Potassium (K).
17. **Surface Water:** The major surface water resources in the area are, High Level Canal; and, bore system is the source of water for the proposed project.
18. By comparing surface water quality results with the standards set by EPA Punjab, the results of all parameters were found within the required water quality standards.
19. **Groundwater Resources:** Sweet ground water is found in the command area. As the population of the project area continues to grow, it is expected that, in future, the availability of groundwater resources shall continue to decline as further abstractions are made for irrigation and drinking water purposes.
20. **Salinity and Water Logging**: The project area has no water logging and salinity problem and most of the land in the command area is cultivated and fallow land.
21. **Air Quality:** Ambient air monitoring were carried out at seven (07) locations within the project area and NOX, SO2, CO, PM (PM2.5, PM10and TSP, SPM were found to be within the permissible limit.
22. **Noise Level:** The noise level was also analyzed along the pressure pipe and canal at locations close to sensitive receptors, and baseline noise level was within the permissible limit of NEQS and WHO standards.
23. **Protected Sites:** As per assessment during the baseline surveys there are no protected sites and protected forests within or close to the potential impact zone of the Nisar Synthetic Limited.
24. **Tree Removal and Tree Inventory:** No tree is located on the proposed site.
25. **Flora:** There are no tree species in and around the project area. The tree species are common and used as timber and fuelwood in the district.

26. **Wetlands:** There are no wetlands in the project area.
27. **Avifauna:** Fifteen common birds have been reported from the area and migratory birds have been observed in the general area, though no landing zones are found within the project area.
28. **Mammals:** Five species of mammals that were recorded during the field visits are not listed as of concern in IUCN Red List.
29. **Aquatic Fauna:** No fish or fishery activity was observed within or in the near vicinity of the project area.
30. **Archaeology and Cultural Heritage:** Sites of importance in regard to cultural heritage are not reported from the specific area of the project
31. **Population:** According to 2023 Census the population of District Sheikhupura is now estimated at 4,049,418.
32. **Livelihood:** In general, the literacy rate is not very high and most of the people earn their livelihood as tenants on land owned by the Khowaneen (Land-lords). However, large numbers of educated persons are employed inland or abroad and thus are adding to the prosperity of the area by sending their returns to the area.
33. **Education:** There are 41 Girl's primary schools, 52 Boy's primary schools, one Girl's middle school, 4 Boy's middle schools and 5 Girl's high schools. The numbers of male and female teachers are 314 and 180 respectively. For college and higher studies, the students go to Sheikhupura & Lahore.
34. **Literacy Rate:** The literacy ratio for male is 54.0% as against 18.3% for females. The ratio is much higher in urban areas when compared with rural areas both for males and females.
35. **Potential Impacts and Mitigation-** In order to formulate practical safeguards environmental impacts were identified in the EIA process. A summary of the environmental impacts and mitigation measures which are discussed in detail in Chapter 6 of the EIA, are presented below.

(a) **Ambient Air Quality:** Air quality may decrease as a result of the project interventions. Construction machinery, diesel generators and project vehicles will release exhaust emissions containing carbon monoxide (CO), sulfur dioxide (SO2), oxides of nitrogen (NOX), and particulate matter (PM). These emissions can deteriorate the ambient air quality in the project site and along the road leading to it. Furthermore, fuel combustion will release smoke emissions. **Mitigtion:** A mitigation regime containing 11 stipulations is proposed for mitigation of air quality deterioration.

(b) **Noise and Vibration:** Sources of noise during construction will be generators, concrete batching plants etc. Increased noise and vibration levels during construction activities can be a source of nuisance for locals and a source of disturbance to wildlife. **Mitigation:** Although there are no sensitive receptors close to the construction sites, mitigation action has been proposed to monitor and control emanation of high noise.

(c) **Surface water:** Improper disposal of solid waste or washout from concrete batching plants may contaminate the perennial sources of water. Additionally, other impurities such as oil spills from operational equipment may contaminate surrounding surface water including ponds and the nullhas, which may affect aquatic organisms and the surrounding ecosystem. Contaminated surface water also holds potential health hazards if the contaminated water is used for drinking purposes. **Mitigation:** 17 specific measures have been proposed as mitigation.

(d) **Dust Emission:** Concentrations of airborne particulate matter will result from the earthwork, lining of canal, construction of canal road, trench excavation and installation of the pressure pipes. Generation of dust from these activities is likely to be significant given the prevailing wind direction from the north to north-east. **Mitigation:** A series of mitigation measures has been recommended in Chapter 7 to minimize the impact of dust emission.

(e) **Waste Management:** It is expected that large quantities of solid waste including domestic waste, food waste, sewage (waste water), workshop waste, medical waste, packing waste, demolition material (concrete, masonry and steel gates), debris from construction sites (excess aggregate, sand etc.) and excavated material unsuitable for earth fill will be generated during NSL construction. **Mitigation**: Mitigation measures have been proposed considering the relevant guidelines from EPA and location specific considerations.

(f) **Traffic:** The NSL approach routes of the project area. Traffic movement will interrupt the local vehicular and pedestrian traffic disrupting travel to school of children on some routes during specific periods of peak activities. Due to increased use of trucks and other vehicles on the roads in the project area elderly people, women and children will be more exposed to dangerous situations, which may lead to traffic accidents and unrest. **Mitigation:** A traffic management plan to be prepared and implemented by the contractor, inter alia, has been proposed as mitigation.

(g) **Occupational Health and Safety:** The construction activities will involve operations which pose risks to the health and safety of the contractor's staff as well as the surrounding communities. **Mitigation:** Occupational health and safety issues to be included in contraction specifications and other location specific action has been specified as mitigation.

(h) **Induced Economic Development:** It is anticipated that the influx of a migrant workforce will induce a degree of economic development. As a result of the influx of a workforce, there would be a higher demand for locally produced food, goods and services benefiting local farmers, producers, traders including small businesses within Sheikhupura, such as hotels, restaurants, shops, fruit sellers, tea stalls and poultry stalls.

(i) **Employment Generation:** During the peak of works, it is estimated that approximately 500 skilled, semi-skilled and unskilled personnel will be engaged on site. It is anticipated that the project will be able to draw a large part of the unskilled workforce from within the project area. This shall depend in part on the extent to which the contractors will engage external workers. Temporary employment within the area has the potential to contribute to a reduction in local poverty.

(j) **Stakeholder Consultation:** Two rounds of public/stakeholder consultation were carried out during the preparation of the EIA. The consultations assisted in dissemination of project information among the project stakeholders and obtain their feedback with local knowledge on baseline, mitigation measures, and also perception of the PAPs regarding impact significance and their views on project interventions.

E Recommendations

36. **Environmental Management Plan:** The Environmental Management Plan (EMP) for NSL Project has been prepared keeping in view the anticipated environmental impacts during pre-construction, construction and operational stages of the project on the existing environmental conditions including air, soil, water, land, biodiversity and socio economic condition of the project area, and suggests appropriate measures to mitigate the potential adverse impacts and enhance the positive impacts. Mitigation measure implementation would be ensured through the implementation of the Environmental Monitoring Plan included in the EMP.

37. The EMP will be included in the contract under specific conditions making it obligatory for the contractor to carry out the works assigned in the EMP

38. **Grievance Redress Mechanism (GRM):** A GRM has been proposed to receive, evaluate and facilitate the resolution of affected people's concerns, complaints, and grievances. The GRM will provide a time bound and transparent mechanism to voice out and resolve social and environmental concerns linked to the project.

F Conclusion

39. The Environmental Impact Assessment (EIA) contains description of the project, description of the environmental baselines, potential environmental impacts and suggested

mitigation measures. An implementation mechanism for mitigation measures in the form of an Environmental Management Plan is included in the study. While the objectives of this study have been to describe the project and its environmental impact, it also identifies adverse environmental factors associated with the project. Appropriate mitigation measures as explained in the environmental study should reduce, if not eliminate, these impacts so that these are within acceptable limits. It is further concluded that all potential environmental concerns associated with the project have been adequately addressed, and no further study is required in this context. The objective of the preparation of an environmental study is to identify how the environment is impacted and to suggest mitigating measures to reduce if not totally eliminate adverse effects of a project. It is accordingly recommended that Environmental Approval for the project should be issued by the Punjab Environmental Protection Agency subject to payment of the requisite scrutiny fee.

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Chapter 1: Introduction

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CHAPTER I: INTRODUCTION

1.1 PURPOSE OF REPORT AND IDENTIFICATION OF THE PROJECT:

Nisar Synthetic Limited is a proposed industrial development project intended to establish a modern manufacturing facility for the production of synthetic resin and associated chemical products in Punjab, Pakistan. The project is aimed at meeting the growing demand for synthetic resins used as essential raw materials in various industrial sectors, including coatings, paints, adhesives, construction materials, plastics and other downstream manufacturing industries.

The proposed facility will involve the receipt and storage of raw materials, chemical processing and reaction operations, product separation and processing, quality control, packaging and storage of finished products. The project will incorporate appropriate process controls, pollution-control measures, occupational health and safety arrangements, and environmental management practices to minimize potential impacts associated with industrial operations.

In accordance with the applicable environmental legislation and regulatory requirements of the Government of Punjab, an Environmental Impact Assessment (EIA) has been undertaken for the proposed project. The purpose of this EIA is to identify and assess the potential environmental and social impacts associated with the construction and operation of the facility and to recommend appropriate mitigation and management measures.

The EIA study covers the project's potential impacts on air quality, water resources, wastewater generation, soil and groundwater, noise, solid and hazardous waste, occupational health and safety, traffic, ecology and the surrounding community. An Environmental Management Plan (EMP) has also been developed to provide a practical framework for implementing mitigation measures, monitoring environmental performance and ensuring compliance with applicable environmental standards.

Nisar Synthetic Limited is committed to developing and operating the proposed facility in an environmentally responsible manner. The project will therefore adopt cleaner production practices, efficient utilization of resources, proper waste management, emission and effluent control systems, and continuous environmental monitoring to ensure that potential adverse environmental impacts are effectively controlled throughout the project life cycle.

This Report presents the Environmental Impact Assessment (EIA) for the M/S Nisar Synthetic Limited at Plot No. 26-B to 51-B, Quaid-e-Azam Business Park (QABP), Sheikhupura. For this purpose the proponent has decided to engage environmental consultants, M & Y

Environmental Consultants (Pvt.) Limited to conduct Environmental Impact Assessment (EIA) for the construction of project. The purpose of this study is to identify the environmental baseline i.e. physical, biological and socio-economic/cultural conditions and assess all possible impacts arising during the construction and operation phase of the project and to find out appropriate measures for their mitigation, to either eliminate those impacts or to bring them to acceptable level and formulation of Environmental Management Plan (EMP) for implementation of the project in environment friendly manner.

The report is prepared by critical examine of the environmental factors which might be affected due to construction and operation of the project. This EIA provides the basis for a determination of the degree of the environmental impacts of the proposed project. The report provides relevant information, as required under the officially approved format, to help the decision makers i.e. EPA Punjab before issuing for the Environmental Approval. This report intends to provide satisfactory mitigation measures to avoid/eliminate any chance of adverse environmental impact on the socio-cultural, economic and environmental components. This report also intends to fulfill the regulatory requirements set under Punjab Environmental Protection Act, 1997 and its consequent legislative framework for IEE/EIA including the IEE/EIA Regulations 2022 and the guidelines drafted for IEE and EIA under numerous sectorial heads. The entire set of legislative framework requires any new development project to undergo an IEE or EIA based on the categorization of the project under Schedule I and/or Schedule II.

Project Area & Total Cost of Project

Project Area	The total area of the project is 75.44Acres.
Total Cost	Total cost for proposed project is 800 million approximately.

1.2 IDENTIFICATION OF PROPONENT

Name:	Tariq Nisar
Designation:	Director
Address of project site:	Plot No. 26-B to 51-B, Quaid-e-Azam Business Park (QABP), Sheikhupura
Proponent Address:	ATS House. 3-KM, Raiwind Road, Lahore

1.3 ENVIRONMENTAL CONSULTANT

An Environmental Impact Assessment (EIA) study report has been prepared to identify and predict the significant environmental impacts due to project along with Environmental Impact Assessment followed by delineation of appropriate Environmental Management Plan are included in the EIA report. Management of M/S Nisar Synthetic Limited has decided to conduct EIA report for the project through Environmental consultant, namely **M & Y Environmental Consultants (Pvt.) Limited,** 3rd Floor Khan Arcade Mouj Darya road, Lahore.

1.4 NATURE AND SIZE OF PROJECT

The aim was to produce glass vials and ampoules for pharmaceutical industry in a modern and scientific manner so that the age old prescriptions and remedies, reach the customer in a ready to use form, without in any way affecting their efficacy and natural qualities.

Mr. Tariq Nisar, owner/Director of M/S Nisar Synthetic Limited intended to start construction and operation of proposed project at Plot No. 26-B to 51-B, Quaid-e-Azam Business Park (QABP), Sheikhupura. The cost of project is approximately 800 million on 75.44 Acres. The main objective of this project is to manufacture to manufacture high quality products include Synthetic Leather (PU and PVC base), PU resin system, PU Adhesives, PVC rigid, PVC flooring, PVC adhesive tapes, TPE/EVA/CPE Foam, TPU Films, Fabrics of different types, etc. They are designed to ensure product integrity, prevent contamination, and facilitate safe administration.

1.5 LOCATION OF THE PROJECT

The M/S Nisar Synthetic Limited is to be located Plot No. 26-B to 51-B, Quaid-e-Azam Business Park (QABP), Sheikhupura. Based on the current land use of the proposed project, the said project is not located in an ecologically sensitive area.

1.6 COMPONENTS OF THE EIA REPORT

This EIA Report presents the screening of potential environmental impacts of the project and discusses the necessary mitigation measures to eliminate or reduce the negative impacts to an acceptable level. It also describes the institutional requirements and provides an Environmental Monitoring Plan (EMP).

EIA report comprises of following chapters.

Chapter 1: **Introduction:** A description of the project including the need for the project and how the project will be undertaken.

Chapter 2: Project Description, Full description of the relevant parts of the project implementation schedules, site plans and summary of project inputs and outputs.

Chapter 3: Statutory Requirement & Standards, A description of the pertinent national legislation, regulations and policies that are relevant and applicable to the project and a demonstration of how the project conforms to these aspects.

Chapter 4: Description of the Environment, Information about the existing baseline environmental conditions of the site.

Chapter 5: Stakeholder Consultation, For the project surrounding people were visited to come to know about the project. This was the study actually to come to know how much people are willing for this project.

Chapter 6: Potential Environmental Impacts and Mitigation. An assessment of the potential impacts during both construction and operational stages of the project as well as identification of the potential mitigation measures to prevent or reduce significant negative impacts during both construction and operation stages of the project

Chapter 7: Environmental Management Plan: Recommendations made and the final conclusion of the EIA report.

Chapter 8: Conclusion and Recommendations, This chapter includes of summery overall project description and suggestions after incorporating the managing plans.

1.7 SCOPING

Scoping is the process of identifying the key environmental issues and is perhaps the most important step in an IEE. It occurred early in the project cycle at the same time as outline planning and pre-feasibility studies. Several groups, particularly decision makers, the local population and the scientific community contributed in helping deliberate the issues which should be considered, and scoping is designed to canvass their views. At this stage the option exists for cancelling or drastically revising the project, equally it may be the end of the IEE process if the impacts be found to be insignificant Once this stage has passed, the opportunity for major changes to the project is restricted.

Scoping for this particular proposal was carried out with two main objectives

- To pinpoint the problems early allowing mitigating design changes to be made before expensive detailed work is carried out.
- To ensure that detailed prediction work is carried out for important issues. So that after identifying the key issues, a full scale IEE is considered and it incorporates terms of reference for further studies.

1.7.1 Methodology

Before the scoping exercise can be fully started, the remit of the study was defined and agreed by the relevant parties depending on the institutional structure. At a minimum, those who contributed to determining the remit included those who decide whether a policy or project is implemented, those carrying out the M & Y Environmental Consultants and those carrying out parallel engineering studies relating to the proposal. Following is the step-wise methodology adopted for the scoping of subject proposal.

- The key interest groups, both government and non-government, were identified they include EPA, Quaid-e-Azam Business Park (QABP), surrounding community and workers & management of adjacent industries
- Since, the people who can be effected by the project need to hear about it as soon as possible, so, scoping session was held inviting the representatives from identified groups and briefing them about the proposal while establishing good lines of communication. Their concerns are discussed in the coming sections.
- The main IEE techniques used in scoping were baseline studies, checklists and matrices These techniques collected and presented knowledge and information in a straightforward way so that logical decisions can be made about which impacts are most significant.
- The concerns of the stakeholders were listened to and noted down. If possible, negative ones were resolved at the spot whereas others area incorporated in the LIA study and decisions are made accordingly

1.7.2 Spatial and Temporal Boundaries of Environmental Assessment

Temporal and spatial boundaries for the effects assessment are defined by the characteristics of the project and the Valued Environmental and Cultural Components (VECC) being assessed These boundaries encompass time periods and areas during and within which the VECCs are likely to interact with or be influenced by the project.

Spatial boundaries vary according to the nature of the VECC but generally are defined in terms of

- A local study area (LSA), where project effects can be predicted with a reasonable degree of accuracy and confidence and impacts are likely to be most concentrated-most of the subject project impacts are local e.g. air emissions, increased noise levels, wastewater and solid waste management etc.
- A regional study area (RSA) where, depending on conditions (e.g. seasonal conditions, habitat use, more intermittent and dispersed project activities) - subject proposal does not impose any regional impacts

  Following table represents the characterization of potential impacts of subject proposal based upon the spatial boundaries;

Characterization of Potential Impacts based upon the spatial boundaries

Sr. No	**Potential Impacts**	**Spatial Boundaries**	
		LSA	**RSA**
1	Air Quality	✓	✓ (If beyond limit)
2	Increased noise Levels	✓	✓
3	Groundwater degradation	✓	✓
4	Surface water deterioration	✓	✓
5	Soil quality	✓	
6	Working Personal's health & Safety	✓	
7	Lowering of groundwater table		✓

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8	Flora & Fauna	✓	✓

Temporal boundaries for project-related effects are defined in terms of the project phases:

- **Baseline**-covers ecological, physical and human-related characteristics of the environment, prior to the initiation of the construction phase;
- **Construction** - includes all activities associated with project construction and before commencement of operational phase such as:
  - ❖ Infrastructure development;
  - ❖ mobilization of equipment and supplies to the site by road and air;
  - ❖ Construction of site facilities including camp, infrastructure, stockpile, waste rock storage dump, water management facilities (diversions, settling ponds, i seepage collectors) etc.
- **Camp Operations** and personal transport during construction;
- **Operations –** includes ongoing industrial processing, effluent disposal, waste management, noise levels, transport of raw materials, end products and personnel;
- **Decommissioning** – includes all activities to decommission industry and remove equipment and materials from the site, re-counter the site and restore drainage patterns to stable long-term conditions, implement the final site reclamation procedures to prevent erosion and restore vegetation cover where feasible;
- **Closure** – refers to conditions that will exist on the site after the site is abandoned and re-vegetation is complete.

Temporal boundaries are also defined for the cumulative effects assessments, spanning baseline to a point in the future, within which project effects on VECCs are predicted to overlap with effects of other projects on activities.

1.8 ISSUES AND CONCERNS RAISED DURING CONSULTATION

The representatives from nearby industries and other local community attended the scoping session. They were briefed about the objective of session, the proposal and its type, applicable regulations and potential environmental and socioeconomic impacts that can be anticipated. Following is a list of concerns raised during the session;

What are checks and balances that exists to make sure mitigation is implemented correctly and how will follow-up happen?

- Will the locals be preferred for every sort of employment-skilled or un-skilled?
- How health & safety of workers will be ensured throughout the construction and operational phase?
- What arrangements will be made for firefighting?
- How water will be conserved?
- How process solid waste and wastewater will be disposed of to not harm the environment?
- How noise levels will not be let increased?

All of these issues were sorted out during the session and recommendations are incorporated in the IEE study. However, most of the concerns were positive as the proposed industry is believed to provide employment to a lot of local people thus contributing to national GDP. Also, it will bring industrial development in the country at the time when it is already trying to cope up with economic challenges.

1.9 SIGNIFICANT IMPACTS & FACTORS TO BE DETERMINED

Substantial impacts that can be caused by the establishment of subject unit were identified and discussed with the key stakeholders. Recommendations for appropriate mitigation measures were also exchanged to be incorporated well in EIA study. Following is a summary of the determined impacts and recommended mitigations for them.

IMPACTS	MITIGATION MEASURES
Owing to construction activities; generation, suspension and deposition of particulate matter, dust, SO2, NO8 and CO emissions can cause health issues to workers	Spray by water trucks to minimize the dust. Maintenance of construction machinery shall be made mandatory. Haul-trucks carrying earth, sand, aggregate and other materials will be kept covered with tarpaulin to reduce dust pollution.

Noise generated during construction and installation of construction machinery can cause interference with speech, hearing impairment, and sleep disturbance	Engines of vehicles visiting project site will be kept properly tuned-up. Temporary noise barriers will be installed. The green zone of plants will also help reduce sound levels.
There will always be the possibility regarding hazard to health and safety of workers to occur during construction phase.	To handle emergency medical situation, first aid facilities will be made readily available at the site and the contractor will ensure availability of transport to handle any emergency condition. Safety equipment such as belts, gloves, masks and helmet will be made mandatory for them. Also, Health & Safety trainings will be conducted time to time.
The construction phase of the project will produce solid waste; disposal of which if not managed properly can have negative impacts on the site and surrounding area	A site waste management plan will be made the responsibility of the contractor. The construction and Demolition (C & D) waste will be properly segregated to encourage recycling of useful waste materials. The involved stakeholders will be trained about the importance and means of waste management and its proper handling.
Lack of proper disposal system of solid waste may lead to different disease	Arrangements will be made for regular garbage collection and removal from the construction site.
Ground water quality can be contaminated when the pollutants, such	Effective management will be ensured during construction activities and any

as diesel and oil, paint, solvents, cleaners and other harmful chemicals, on construction sites soak into the groundwater	sort of accidental spillage will be avoided.
No negative impact on ecological environment will take place on account of cutting of trees in the project area and clearing of vegetation from the site.	Currently there is no flora and fauna are present at project site. Landscaping is deemed to be a powerful mitigation activity with a positive impact. Trees and ornamental plants will be planted along the project boundary to increase the aesthetic value of the site and combat pollution.
A number of categories of employees will be required during the construction phase which will have positive impact on the local community economy and regional unemployment	Socially responsible attitude of the project management towards local people and resources will make project people friendly. Awareness and educational program introduced in the area by project management will reduce the fear among the people regarding non-local people
There will be slight increase in traffic due to transportation of raw material and final product. As a result, concentrations of emissions of flue gases will increase. Also, diesel fired generator may cause emissions	Proper maintenance and tuning of the vehicles will be done by proponent. Proposed site is in the area where there is less load shedding, so, generator only use to handle emergency condition. Generators will be maintained well in time to avoid emission of black smoke. Plantation will be done along the boundary walls will help protecting the environment.

The movement of transportation vehicles and running of generator can cause slight increase in noise levels. Operation of machinery e.g. cutting, and welding of sheets will cause noise emission.	The machinery to be used in the plant is noise-free. However, the vehicles and generator will be kept well maintained and Strict rules will be made by the project administration to control speeds of vehicles. Use of Personal Protective Equipment's will be used to reduce the noise impact on surrounding environment.
There will always be the possibility regarding hazard to health and safety or workers to occur during operational phase of the project.	The workers working near operating machines or high noise zone will be made sure to wear personal protection equipment. Irrelevant workers and visitors shall also be directed to wear personal protective equipment. Noise absorbing paint will be used on indoor walls to minimize its impacts on outer environment. To handle emergency medical situation, first air facilities will be made readily available at the site and the contractor will ensure availability of transport to handle any emergency condition.
The improperly managed solid waste may impact the factory surrounding aesthetically, occupationally as well as from health, safety and environment point of view.	The approved vendors shall collect the solid waste on daily basis. Domestic waste will be handle properly by industrial management.
The wastewater of the proposed unit, if disposed of without any treatment, can	The major usage of water during operational phase if for the domestic use only. There is not any water used in

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cause water pollution and soil contamination if seeped through.	during the process. So, there is no wastewater generated during the process. The domestic wastewater produce will be disposed to internal drain after treated by septic tank.
Operational phase impacts are likely to be restricted to maintenance activities within the Site such as vegetation clearing through brush cutting from the internal road network.	The process of plantation should be kept sustainable throughout project life. Proponent ensure the plantation around the project vicinity and in surrounding of project site.
A number of employees will be required in operational phase and it will have a positive impact on the local economy and regional unemployment.	The management of the project can capitalize positive attitude of people of study area towards this project by offering them maximum employment opportunities. Measurements and steps should be taken to keep undisturbed the privacy of adjoining workplaces.

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Following is the criteria adopted for determining significance of the potential impacts such as acceptability and mitigation measures requirement in relation to Ecological importance, Social importance, and Environmental Standards;

Criteria for Significance of Impacts

Categories	Impact	Characteristics
Nature	Direct	The environmental parameters are directly affected by the project construction or operation.
	Indirect	The environmental factor changes as a result of alteration in another parameter.

Duration of Impact	Short Term	The impacts that last only during the construction of the impact proposed Project e.g., noise from construction activities.
	Medium Term	Lasting for a period of few months to a year; the project before naturally returning to the original condition such as loss of vegetation due to clearing of campsite. Contamination of soil or water by fuels or oil.
	Long Term	Lasting for period much greater than medium term impact before naturally reverting to the original condition such as loss of soil due to erosion.
Geographical Extent	-----	The geographical extent may be local or regional.
Project Phases	-------	Pre-construction Phases (designing), Construction Phases, Operational Phases
Reversibility of Impact	Temporary	The impacts that don't cross ecosystem threshold value of resilience.
	Permanent	The impacts that exceed ecosystem threshold value of resilience
Likelihood of the impact	Likely	Impact will probably occur under most circumstances.
	Unlikely	Impact could occur at some time
	Possibly	Impact may possibly occur at some time
	Rare	Impact may occur but only under exceptional circumstances.
	Major	When an activity causes irreversible damage to a unique Environment Feature; causes a decline in

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Impact Consequence Severity		abundance or change in distribution over more than one generation of an entire population of species of flora or fauna; has long term effects (period of months) on socioeconomic activities of significance on regional level.
	Moderate	When an activity causes long-term (period of years) irreversible damage to a unique Environment Feature; causes a decline in abundance or change in distribution over more than one generation of an entire population of species of flora or fauna; has long term effects (period of months) on socioeconomic activities of significance on regional level.
	Minor	When an activity causes short term irreversible damage to Environment Feature; causes a decline in abundance or change in distribution over more than one generation of an entire population of species of flora or fauna; has short on socioeconomic activities of significance on regional level.
	Negligible	When no measurable damage to physical, socioeconomic, or biological environment above the existing level of public concern; and conformance with legislative of statutory requirement.

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Following table represents the significance of determined impacts based upon above given criterion;

Significance of the Potential Impacts

Category	**Impact Significance**	**Potential Impacts**						
		Air Quality Deterioration	**Increased Noise Levels**	**Lowering of Groundwater Table**	**Surface Water Degradation**	**Soil Quality**	**Health & Safety**	**Flora & Fauna**

Nature	**Direct**		✓	✓	✓		✓	
	Indirect	✓						✓
Duration of Impact	**Short Term**		✓					
	Medium term	✓				✓	✓	✓
	Long Term			✓	✓			
Geographical Extent Project Phases	**Local**	✓	✓		✓	✓	✓	✓
	Regional			✓				
Reversibility of Impact	**Temporary**	✓	✓		✓	✓	✓	✓
	Permanent			✓				
Likelihood of the Impact	**Likely**	✓					✓	
	Unlikely							
	Possibly		✓					✓
	Rare			✓	✓	✓		
Impact Consequence Severity	**Major**			✓	✓	✓		
	Moderate		✓				✓	
	Minor	✓		✓				✓
	Negligible				✓	✓		

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1.10 SCREENING:

As per Review of Initial Environmental Examination (IEE) and Environmental Impact Assessment (EIA) Regulations, 2022 the instant project falls in Schedule II Category B. Manufacturing and Processing sub category 2 & 11.

Chapter 2: Project Description

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CHAPTER 2:

DESCRIPTION OF THE PROJECT

General

This section of the study renders a detailed account of the project and its salient features, such as location and various phases, Inputs and discharges relevant to different phases of the project, such as electricity & materials etc. have also been examined as a response to possible environmental concerns.

2.1 TYPE AND CATEGORY OF PROJECT

As per Review of Initial Environmental Examination (IEE) and Environmental Impact Assessment (EIA) Regulations, 2022 the instant project falls in Schedule II Category B. Manufacturing and Processing sub category 2 & 11.

2.2 OBJECTIVE OF M/S NISAR SYNTHETIC LIMITED

The proposed manufacturing facility is designed to produce polymer-based products including PVC coating leather, PVC rigid film, synthetic leather, PVC film, PVC flooring, adhesive tapes, CPE film, TPU film, TPE/EVA foam sheets, latex coated textiles, PU resin systems, PU adhesive and knitted/woven fabrics. The manufacturing process includes raw material receiving, storage, batching, mixing, compounding, extrusion/coating, curing, quality control, packaging and dispatch.

2.3 ALTERNATIVES CONSIDERATIONS

There is no need to discuss site alternatives due to following reasons;

- The proposed site is located in industrial area especially developed by the Government of the Punjab for different industrial units.
- The industrial area has already been approved by the EPA, Punjab
- The proposed project is not harmful.

2.4 LOCATION PLAN/MAP

Particulars	Details
Location	Plot No. 26-B to 51-B, Quaid-e-Azam Business Park (QABP), Sheikhupura

Tehsil	Sheikhupura
District	Sheikhupura
Archaeological or historical site	No archaeological site was found within 2-3km radius

2.5 LAND USE ON THE SITE

Open land. Site is surrounded by open lands.

2.6 ROAD ACCESS

M-2 Motorway is in easy and close access of the proposed project site.

2.7 VEGETATION FEATURE ON THE SITE

The site is barely having any flora or vegetation on the site. There are no trees inside the site. Near the project location there is no environmental sensitive one, protected area. There is no flora and fauna present in the project location. One of the main significance of non-existence of the flora is that site is located in the industrial cluster.

2.8 COST AND MAGNITUDE OF OPERATION AND ASSOCIATED ACTIVITIES

Cost of the project is approximately 800 million from the construction to the implementation and operational machinery, instruments & equipment is included. Project is environmentally friendly will be erected in a sustainable way to reduce and minimize the harmful impacts generated during the construction and operational phase. Meanwhile the proponent will be responsible for the monitoring of the site during whole construction period. So any adverse distresses should be removed or reduced at the level of PEQs.

2.9 PROPOSED SCHEDULE OF IMPLEMENTATION

Project implementation schedule drive on the basis of calculated quantities of works to be done and duration that is required to design, fabrication, supply and installation of major project components. It is estimated that the completion of construction phase of entire project will be started after getting environmental approval from EPA, Punjab.

Activities involved are:

- Land acquisition
- Lay out plan of project (attached herewith this EIA report)

- Leveling of land
- Construction of M/S Nisar Synthetic Limited

2.10 PROCESS DESCRIPTION

2.10.1 List of Raw Material

The main raw material PVC Resin (Suspension Grade), PVC Resin (Emulsion Grade), Stabilizers, Plasticizers DOP/DOTP/TOTM, Calcium Carbonates, Dyes/Pigments, Acrylic Resin, Blowing Agents, Fabrics: Woven/Knitted/Spun lace and Needle punch & Non-Woven, Additives, PU Resin, DMF, Chlorinated Paraffin. EVA, Low Density Polyethylene (LDPE), Blowing agent for EVA/TPE, Poly-Olifen Elastomer, Phenolic Resin, Zinc Oxide, Calcium Carbonate, Stearic Acid, Dicumyl Peroxide (DCP). Natural Latex, Gelling agent (Sodium Silico-Flouride, Stabilizer (Zinc Oxide), Accelerator (ZDEC, ZMBT), Foaming agent. Thermo polyurethane (TPU), Master batches, Non slip agent, Waxes. MEG, DEG, 1.4 Butane diol, Adipic acid, MDI, Additives, DMP, Solvents. Acrylic Co-polymer, Tackifier Resin, DOP/TATM, Cross linker, Solvent Toulene/Ethyl Acetate, Pressure sensitive adhesive, Chlorinated Polyolefin, etc.

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2.10.2 Raw Material Receiving and Inspection

All incoming raw materials are inspected for quality, quantity, packaging condition and batch identification before acceptance.

2.10.3 Raw Material Storage

Raw materials are stored separately according to compatibility in designated storage areas with proper ventilation and spill control.

a. General Storage Management

The proposed project will establish a properly designed and managed raw material storage system to ensure the safe storage, handling and transfer of all raw materials and chemicals. Storage areas will be designed according to the physical and chemical characteristics of individual materials and relevant Safety Data Sheets (SDS). Materials will be stored in clearly identified and segregated areas, with suitable ventilation, impermeable flooring, fire protection and spill-control arrangements.

b. Storage of PVC Resin, EVA, LDPE, TPU and Other Polymer/Resin Materials

PVC Resin, Acrylic Resin, PU Resin, EVA, LDPE, TPU, Phenolic Resin, Tackifier Resin, Acrylic Co-polymers and other polymeric materials will be stored in covered, dry and well-

ventilated warehouses. Bags, drums and other packages will be placed on suitable pallets or racks and will not be stored directly on the floor. Materials will be protected from excessive heat, moisture and direct sunlight. Storage arrangements will maintain safe aisle widths and stacking heights, and materials will be segregated according to compatibility. Smoking and open flames will be strictly prohibited in storage areas.

c. Storage of Flammable Solvents

Flammable solvents, particularly Toluene and other flammable liquid materials, will be stored in a dedicated flammable-liquid storage area or approved storage facility. The area will be adequately ventilated and isolated from ignition sources. Suitable electrical and fire-safety arrangements will be provided according to the applicable requirements and the properties of the stored chemicals. Drums, IBCs or tanks will be placed on an impermeable surface with suitable secondary containment/bunding to control accidental leakage. Earthing and bonding arrangements will be provided during transfer operations to minimize the risk of static-electricity ignition. No-smoking and no-open-flame signs will be prominently displayed. Appropriate fire-fighting equipment and spill-response materials will be readily accessible.

d. Storage of Plasticizers and Other Liquid Chemicals

Plasticizers such as DOP, DOTP and TOTM, as well as Chlorinated Paraffin and other liquid chemicals, will be stored in compatible, properly labelled containers, drums, IBCs or dedicated tanks as appropriate. Liquid chemical storage areas will have impermeable flooring and secondary containment to prevent accidental releases from reaching soil, storm-water drains or surface water. Containers will be routinely inspected for leakage, damage and deterioration.

e. Storage of Hazardous Chemicals

Chemicals such as MDI, DMF and other hazardous substances will be stored in designated chemical storage areas in accordance with their SDS requirements. Incompatible chemicals will be physically segregated. Containers will remain tightly closed, properly labelled and protected from unsuitable environmental conditions. Access to hazardous chemical stores will be restricted to authorized and trained personnel. Emergency arrangements, including suitable spill kits, emergency eyewash and/or safety shower facilities where required by the chemical hazard, and appropriate personal protective equipment (PPE), will be provided.

f. Storage of Powders, Pigments and Mineral Materials

Calcium Carbonate, Zinc Oxide, pigments and other powdered materials will be stored in enclosed, dry and well-maintained areas. Bags will be kept on pallets and protected from moisture. Good housekeeping practices will be maintained to minimize dust accumulation.

Handling and transfer operations will be controlled to reduce dust generation, and appropriate respiratory protection will be used where required.

g. Spill Prevention and Secondary Containment

All liquid chemical and solvent storage areas will be provided with suitable secondary containment, such as bund walls, spill pallets or equivalent containment systems, designed according to the storage configuration and applicable requirements. Storage areas will be isolated from uncontrolled storm-water drainage. Spill kits containing suitable absorbent materials and other response equipment will be maintained at strategic locations. Any spill will be immediately contained, collected and managed in accordance with the project's Emergency Response Plan and applicable waste-management requirements.

h. Fire and Emergency Safety

Appropriate fire detection and fire-fighting arrangements will be provided based on the nature and quantity of materials stored. Emergency exits, access routes and safety signage will be maintained unobstructed. Fire extinguishers and other fire-protection systems will be selected according to the hazards identified in the relevant SDS and fire-risk assessment. Emergency contact information and procedures will be displayed at appropriate locations, and personnel involved in chemical handling will receive suitable training and emergency-response drills.

i. Chemical Identification and Inventory Control

All containers will carry clear labels identifying the chemical/material name, relevant hazards and handling precautions. Safety Data Sheets (SDS) will be maintained and made accessible to concerned personnel. A chemical inventory/register will be maintained to record receipt, storage quantity, issue and disposal of chemicals. The project will follow the principle of using older compatible stock first where practicable, while avoiding unnecessary accumulation of hazardous materials.

j. Environmental Protection Measures

The raw material storage system will be operated in a manner that prevents contamination of soil, groundwater and surface water and minimizes risks to workers and surrounding communities. The project will maintain impermeable storage surfaces, proper drainage control, regular inspection of storage containers, preventive maintenance, spill-response arrangements and appropriate waste management. Hazardous and non-hazardous wastes generated from storage and handling activities will be segregated and managed through approved procedures.

2.10.4 Material Preparation and Batching

Before processing, required quantities of raw materials will be issued from the storage areas according to approved product formulations. Solid materials may be weighed manually or through controlled weighing systems, while liquid materials may be transferred through pumps, metering systems or calibrated containers. Accurate weighing and dosing are important for maintaining product specifications and minimizing material wastage. Dust-generating powders will be handled using controlled transfer practices to minimize fugitive emissions.

2.10.5 Mixing and Blending

Depending upon the product, selected resins, polymers, fillers, pigments, plasticizers, stabilizers and other additives will be introduced into suitable mixers or blending equipment. The materials will be mixed under controlled time, speed and temperature conditions to obtain a uniform formulation. For PVC and related formulations, plasticizers, stabilizers, fillers, pigments and other additives may be incorporated according to the required grade. For polymeric and adhesive products, compatible resins, solvents, tackifiers, cross-linking agents and other additives may be blended in closed or controlled mixing systems. Appropriate local exhaust ventilation will be provided where dust or vapour generation is possible.

2.10.6 Reaction / Polymerization and Chemical Processing

Where a product requires chemical reaction or polymerization, the relevant raw materials will be charged into suitable reactors and processed under controlled temperature, pressure, agitation and reaction-time conditions. Depending on the product formulation, catalysts, initiators, cross-linkers or other process additives may be introduced in controlled quantities. Reaction parameters will be monitored by operators and/or automated control systems. Closed processing systems will be preferred to minimize fugitive emissions. Any vapours or process gases generated during reaction will be routed to suitable ventilation, condensation, recovery or treatment systems as applicable**.**

2.10.7 Heating and Temperature Control

Certain formulations require controlled heating to facilitate dissolution, melting, reaction or blending. Heating will be carried out using appropriate process heating systems, with temperature controls designed to prevent overheating and thermal degradation of materials. Temperature monitoring will be maintained throughout the relevant process stages. Where solvents or other volatile materials are present, heating systems will be operated with appropriate fire and vapour-control measures.

2.10.8 Addition of Plasticizers, Stabilizers and Additives

Plasticizers such as DOP, DOTP and TOTM, stabilizers, pigments, fillers, blowing agents, accelerators, cross-linking agents, waxes and other formulation additives will be added according to the specific product recipe. Addition rates will be controlled to achieve the required physical and chemical properties. The addition sequence will be established through the approved manufacturing formulation and will be monitored to prevent over-dosing, incompatibility or excessive material losses.

2.10.9 Cooling and Product Conditioning

Following mixing or reaction, the processed material will be cooled to the temperature required for subsequent handling. Cooling may be achieved through controlled air cooling, water-based cooling systems, jacketed vessels or other appropriate methods depending on the product. Cooling conditions will be controlled to prevent premature solidification, degradation or undesirable changes in product characteristics. Where cooling water is used in indirect heat exchange, the system will preferably be operated as a recirculating system to minimize water consumption and wastewater generation.

2.10.10 Filtration, Separation and Finishing

Where required, the processed material may undergo filtration or other separation operations to remove unwanted particles, agglomerates or impurities. Depending on product characteristics, additional finishing operations such as homogenization, viscosity adjustment, solvent adjustment, grinding, pelletizing, granulation or other conditioning may be carried out. Process residues and spent filter materials will be collected and managed according to their chemical characteristics.

2.10.11 Solvent Handling and Recovery

Products requiring solvent-based formulation may involve solvents such as toluene, ethyl acetate, DMF or other approved solvents. Solvents will be transferred through closed or controlled systems wherever practicable. Process vessels and storage systems will be maintained to minimize vapour losses. Where technically and economically feasible, solvent vapours may be condensed or recovered for reuse. Unrecoverable solvent-containing waste will be collected in sealed, labelled containers and managed through approved hazardous-waste procedures.

2.10.12 Quality Control and Product Testing

Samples will be collected at appropriate stages of production for quality-control testing. Parameters may include viscosity, colour, solids content, density, moisture, particle characteristics, adhesion, mechanical properties and other product-specific specifications. Laboratory testing will be performed using established procedures. Products not meeting the required specifications will be investigated and, where technically feasible, reprocessed or managed as process waste in accordance with the waste-management procedure.

2.10.13 Packaging and Finished Product Storage

After achieving the required product specifications, finished products will be packed in suitable bags, drums, pails, IBCs or other approved packaging. Containers will be properly sealed, labelled and identified with product information and applicable safety precautions. Finished products will be transferred to designated storage areas pending dispatch. Flammable or hazardous finished products will be stored separately and under appropriate fire and chemical-safety controls.

2.10.14 Material Balance and Process Outputs

The principal process inputs will comprise polymeric resins, plasticizers, solvents, fillers, pigments, stabilizers, additives and other formulation chemicals. The principal outputs will comprise finished synthetic resin, polymer, adhesive, elastomer and allied products, depending on the product line. Potential process outputs may also include vapours/VOCs, dust, rejected material, filter residues, empty contaminated containers, spent solvents, wastewater from cleaning or other activities, and general solid waste. Appropriate source-specific controls will be incorporated to minimize these outputs.

2.10.15 Air Emissions and VOC Control

Potential air-emission sources may include raw-material handling, powder transfer, solvent handling, mixing, heating, reaction, drying and filling operations. Particulate emissions from powder handling will be controlled through good housekeeping, enclosed transfer and local exhaust ventilation with suitable filtration where required. VOC emissions from solvent-containing operations will be minimized through closed systems, proper sealing, controlled storage and, where applicable, vapour recovery or treatment systems. Preventive maintenance and regular inspection of pumps, valves, pipelines and storage systems will be implemented to reduce fugitive emissions.

2.10.16 Wastewater Management

Wastewater generation will depend on the final process configuration. Potential sources may include equipment and floor washing, laboratory activities, cooling-system blowdown, domestic sewage and accidental spill-cleaning water. Process wastewater containing chemicals will not be discharged untreated. Separate collection and appropriate treatment will be provided where required. Clean storm water will be kept separate from contaminated drains, and chemical storage areas will be designed to prevent spills from entering the storm-water system.

2.10.17 Solid and Hazardous Waste Management

Solid waste may include packaging materials, rejected batches, off-specification products, filter residues, contaminated absorbents, used containers, sludge and other process residues. Waste will be segregated at source into recyclable, general, non-hazardous and hazardous categories. Hazardous waste will be stored temporarily in a designated, labelled and secured waste-storage area and will be handed over to appropriately authorized waste-management arrangements in accordance with applicable regulatory requirements.

2.10.18 Occupational Health and Safety Measures

Workers involved in manufacturing operations will be provided with appropriate training and personal protective equipment according to the hazards of the materials handled. PPE may include gloves, safety goggles, protective clothing, safety footwear and respiratory protection where required. Safety Data Sheets will be available for hazardous chemicals. Emergency showers/eyewash stations, first-aid arrangements, fire protection, emergency exits, spill kits and appropriate warning signage will be provided in relevant areas. Periodic emergency drills and safety training will be conducted.

2.10.19 Annual Production Capacity

ANNUAL PRODUCTION CAPACITY

Products		UOM	Annual Production Capacities
PVC Coating Leather		Million Linear Mtr	20.0
PVC Rigid Film		M.Ton	7,000
Synthetic Leather	PU	Million Linear Mtr	30.0
	PVC	Million Linear Mtr	20.0
PVC FILM		M.Ton	14,000
PVC Flooring		Million Linear Mtr	15.0
PVC Adhesiye Tape for Electrical and Packing		M.Ton	5,000
CPE Film		M.Ton	5,000
TPE/EVA Foam Sheet/Roll		M.Ton	13,000
TPU Film		M.Ton	3,500
Latex Coated Textile		Million Linear Mtr	3.0
PU Resin System – Shoe Sole/Rigid/Flexible		M.Ton	30,000
PU Resin for Leather/Textiles		M.Ton	12,000
PU Adhesive		M.Ton	5,000
Fabrics – Weft Knitted, Warp Knitted and Woven Fabric		Million Linear Mtr	100.0

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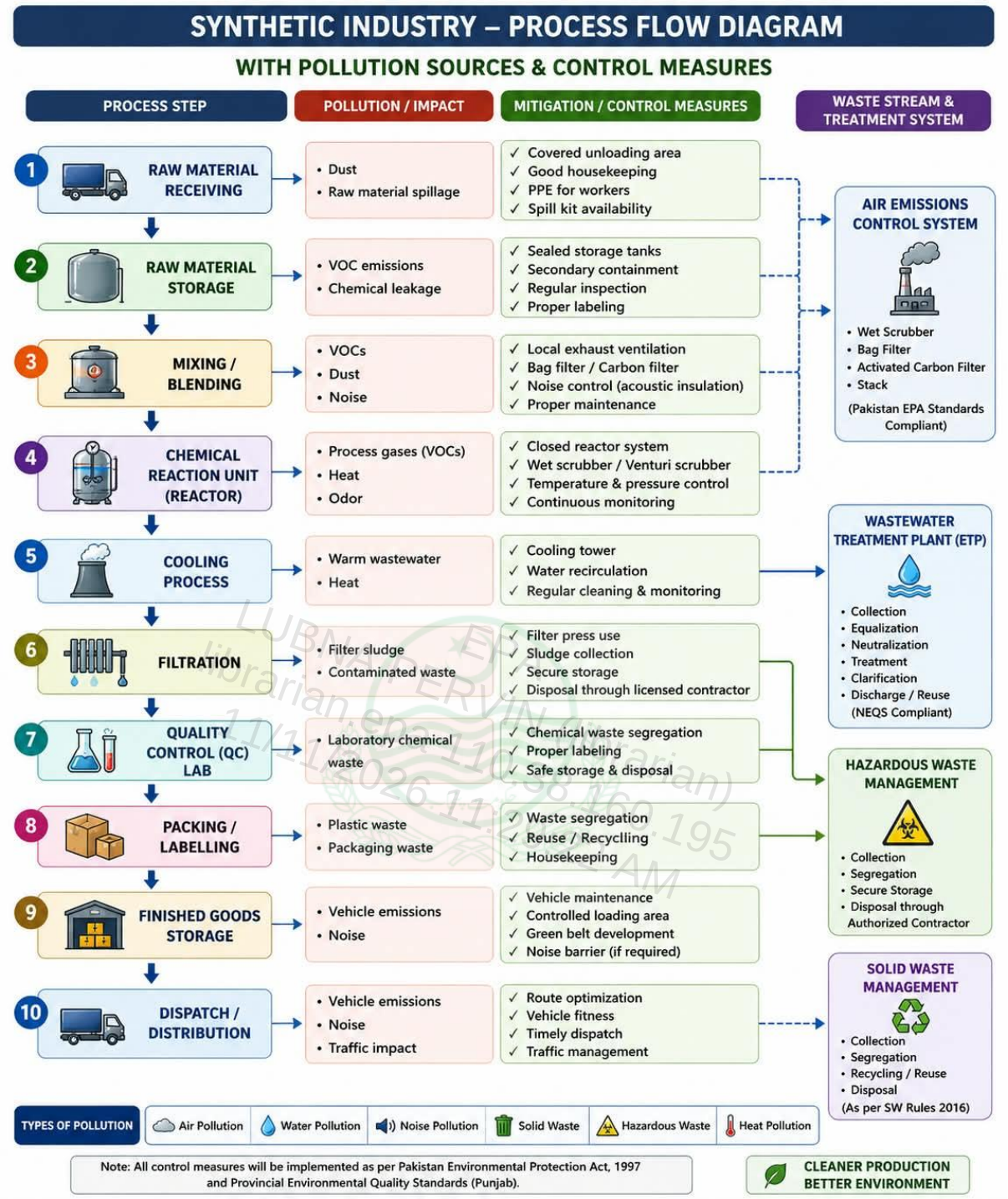
2.10.20 Process Flow Diagram



2.11 LIST OF MACHINERY

The details of Machinery and equipment are attached here with the report as annexure.

2.12 MAN POWER REQUIREMENT

The expected total number of labors/workers required for the construction is 10. Staff members of different categories will be employed at different points in time during construction phase

of the project including professional/technical staff, administrative/managerial and support staff, skilled and unskilled labor. There will be one supervisor and one engineer at the site. In addition, the architect will be the consultant of the project on behalf of the proponent. During operational of the plant about 16 persons in different categories would be required for operation and maintenance purposes.

2.13 WATER REQUIREMENT & WASTEWATER DISPOSAL

Water requirement for proposed industry is 100 m^3 per day. In order to meet the water demand, fresh water from WASA pipelines will be utilized. To mitigate the impact of wastewater and pursue the vision of sustainable consumption, the entire wastewater will be recycled. Hence it will impose no impact on environment while disposal of domestic wastewater, there will be a septic tank. The QABP shall install collective wastewater treatment plant to treat wastewater.

2.14 SOLID WASTE GENERATION

Waste generated during construction would include mostly construction material (mainly steel and wood) empty cement bags, excavated earth and general packaging waste. Waste will be stored within the site until transfer to the waste disposal site. Reusable construction material will be recovered from the waste as much as possible. There will be domestic waste in operational phase. Domestic waste will be comprised on wrappers, plastic bags, ruff papers etc. The quantity of solid waste during construction phase will be around 2-3 kg per day while during operational phase, 5 kg per day weight will be produced which will be removed on daily basis by sanitary workers of that area. During operational phase waste might be of raw material by which final product will be prepared. That material will be sold out in the market.

2.15 ELECTRICITY -

WAPDA will be the only source of electricity for this project.

2.16 STAFFING

The skilled staff members (16 in numbers) will be hired with respect to concerned department, for labor and administrative purpose according to their qualification experience.

2.17 SECURITY AND EMERGENCY EXITS

The lay out is designed keeping view of security and it would be maintained according to policy of the company executing the project. Emergency exit passages is made and maintained. A

proper evacuation plan is formulated to cope with any emergency situation. Assembly points will be set and displayed and proper training will be provided to the workers and staff.

2.18 FIRE FIGHTING SYSTEM

The firefighting system will include water and gas extinguishers. Plant will establish a proper firefighting system. Indoor and outdoor fire hydrants will be installed according to the codes and standards. Fire water storage tank will be constructed at the back side of plant. 5 fire Hydrants will be installed at the boundary walls of plant.

2.19 RESTORATION AND REHABILITATION PLAN:

The process or procedure to return the land at its former state is land rehabilitation. The said project is in the far away where no residential population exists even more the project is not located in any sensitive zone. It is open land which is feasible location for the project. So by considering project from all aspects, it has been concluded that project is environment friendly from all aspects and no need for rehabilitation or restoration.

2.20 RAINWATER HARVESTING SYSTEM (RWHS):

A. Overview & Objectives

To minimize the intake of freshwater and promote sustainable water management, a dedicated Rainwater Harvesting System (RWHS) will be integrated into the facility's design. The primary objective is to collect, store, and recharge/reuse rooftop and surface runoff, significantly reducing reliance on groundwater and municipal supply while mitigating localized stormwater flooding during peak monsoon seasons.

B. System Components & Technical Specifications

- **Catchment Area:** Rooftop of the main manufacturing block, administrative offices, and paved non-hazardous open yard spaces.
- **Conveyance Network:** Heavy-duty PVC/GI downpipes connected to a network of peripheral catchpits and underground storm drains.
- **Pre-filtration & First Flush Unit:** Equipped with an automatic first-flush diverter to bypass initial high-turbidity rainfall containing atmospheric dust and debris, followed by a dual-media gravel-sand filter bed to remove suspended solids.

- **Storage & Underground Reservoir:** A Reinforced Cement Concrete (RCC) underground storage tank sized according to 10-year local peak rainfall intensity data, complete with high-level overflow discharge connected to municipal stormwater drains.
- **Recharge Pits (Groundwater Injection):** Perforated recharge wells with filter media layers (coarse aggregate, gravel, and sand) to facilitate natural aquifer recharge for excess, unstored runoff.

C. Water Utilization Strategy

The harvested rainwater will undergo appropriate filtration/treatment and be deployed across non-potable operational areas:

Application Area	Description & Usage Purpose
Industrial / Process Support	Boiler feed makeup water (following softening treatment) and cooling tower water replenishment.
Landscaping & Greenbelt	Drip irrigation and automatic sprinkler systems for internal greenbelt, lawns, and buffer zones.
Domestic Non-Potable	Toilet flushing, general floor washing, and vehicle/equipment chassis washing.
Firefighting Reserve	Dedicated emergency fire safety water storage supply.

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D. Environmental & Operational Benefits

- **Groundwater Conservation:** Significantly reduces daily abstraction rates from deep tube wells or municipal networks, preserving local hydrogeological balance.
- **Stormwater Peak Mitigation:** Prevents soil erosion and reduces peak runoff loads entering public drainage networks during extreme rainfall events.
- **Energy & Cost Efficiency:** Decreases operational energy consumption and pumping costs related to deep groundwater extraction.

5. Monitoring & Maintenance Protocol

- **Pre-Monsoon Inspection:** Clearing roof gutters, silt traps, downpipes, and catchpits of debris prior to the onset of monsoon season.

- **Filter Maintenance:** Routine monthly backwashing and scheduled replacement of filter media layers in the pre-treatment unit.
- **Water Quality Testing:** Quarterly sampling and laboratory analysis (testing pH, TDS, Turbidity, Heavy Metals, and Microbiological parameters) to ensure safety for non-potable reuse.

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Chapter 3: Policy, Legislation, Legal and Administrative Framework

CHAPTER 3:
STATUTORY REQUIREMENTS

3.1 General

Sustainable development and green economy is a concept that has emerged over the past decades to describe a new framework aimed at economic and social development while maintaining the long term integrity of the ecological system and environmental resources. The principal of sustainable development is in the process of being incorporated into the national policy and legislation through various statutory instruments. This chapter describes the current legal responsibilities of the proponent in context of environmental and sustainable development, and the institutions that exist in the country that may influence the environmental management of the project.

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

3.2 Existing Legislation and Legal Framework

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

3.3 Institutional Setup

3.3.1 Environmental Protection Councils

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

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

3.3.2 Environmental Protection Agencies

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

3.3.3 Environment Protection Department, Punjab

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

3.3.4 Relevant Legal / Institutional Framework

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

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

Under the PEP Act, it is mandatory to carry out IEE or EIA for all development projects. The Pak EPA has also framed guidelines for environmental assessment of projects in various developmental sectors, According to PEPA 1997; the Punjab Environmental Quality Standards (PEQS) were established for effluents discharges and gaseous emissions of various Municipal and Industrial sources. The latest revision of PEQS as carried out in year 2016.

Provincial Environmental Protection Departments are also working on the formulation and enforcement of environmental statutes and by-laws. The Pak EPA has issued several policies guidelines and adopted measures for streamlining the environmental assessment. Though, the need for environmental screening and assessment has received some weight during the recent

past, strict implementation of the NEQS is still a dream to be realized. The applicable laws for the environmental study of the Project are briefly described below:

3.4 Pakistan Environmental Protection Order (PEPO) 1983

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

3.5 Punjab Environmental Protection (Amendment) Act 2012

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

As per definition given in the Punjab Environmental Protection (Amendment) Act 2012, Initial Environmental Examination (IEE) means an environmental study comprising collection of data, prediction of qualitative and quantitative impacts, comparison of alternatives, evaluation of preventive, mitigation, and compensatory measures, formulation of environmental management & training plans & monitoring arrangements, and framing of recommendations and such other components as may be prescribed. The provision of Section 12 has been incorporated “as it is” in the new Punjab Environmental Protection (Amendment) Act, 2012.

3.6 National Environmental Policy 2005

Government of Pakistan has notified National Environmental Policy 2005, for different projects/aspects in which guidelines/priorities have been given to undertake/commence the projects having significant environmental impacts.

The National Environmental Policy (2005) provides a framework for addressing the environmental issues (particularly pollution of fresh water bodies and coastal waters, air pollution, lack of proper waste management, deforestation, loss of bio diversity, desertification etc.) confronting Pakistan. It recognizes the goals and objectives of the Pakistan National Conservation Strategy (PNCS, 1992), National Environmental Action Plans, and other existing environment related national policies, strategies, and action plans. It also provides broad guidelines to the Federal Government, Provincial Governments, federally administrated

territories and local governments to address their environmental concerns and to ensure effective management of their environmental resources.

3.7 Review of IEE / EIA Regulations 2022

The Pak EPA has issued Review of the Initial Environmental Examination and Environmental Impact Assessment Regulations 2022, to review the Initial Environmental Examination (IEE) / Environment Impact Assessment (EIA) reports. Categorization of the projects for IEE and EIA is one of the main components of the Regulations. Projects have been classified on the basis of expected degree of adverse environmental impacts. Projects type listed in Schedule I are designated as potentially less adverse effect, schedule I projects require an IEE and projects given in schedule II require EIA to be conducted.

Salient features of the Regulations are listed below:

- Categories of project requiring IEE and EIA are issued through two schedules attached with the regulations.
- A fee depending on the cost of the project has been imposed for the review of IEE and EIA.
- The submittal is to be accompanied by an application in prescribed format included as Schedule IV of the Regulation.
- The EPA is required to issue conformation of compliance within 15 days of receipt of request and complete documentation.
- The IEE / EIA approval for construction of the project will be valid for three years from date of accord.

3.8 Guidelines for the Preparation of IEE/EIA Reports

The Pak EPA has also framed Guidelines for the Preparation of IEE / EIA of projects in various developmental sectors.

3.9 The Punjab Local Government Ordinance, 2001

Schedules 4 and 8 of this Ordinance pertain to environmental pollution. There are not withstanding any specific provisions, every local government may perform functions conferred by or under the Punjab Local Government Ordinance, 2001, and in performance of such functions may exercise such powers, which are necessary and appropriate. Under the ordinance, the local councils are authorized to restrict projects causing pollution to air, water or land. They may also initiate schemes for improving the environment.

3.10 Pakistan Penal Code, 1860

This defines the penalties for violations concerning pollution of air, water bodies and land. Sections 272 and 273 of this Act deal with the adulteration of food or drink. Noise pollution has been covered in section 268, which defines and recognizes noise as a public nuisance. "A person is guilty of a public nuisance who does any act or is guilty of an illegal omission which causes any common injury, danger of annoyance to the public or the people in general who dwell or occupy property in the vicinity, or which must necessarily cause injury, obstruction, danger or annoyance to persons who may have occasion to use any public right".

3.11 The Land Acquisition Act, 1894

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

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

3.12 Factories Act, 1934

The clauses relevant to the project are those that concern the health, safety, and welfare of workers, disposal of solid waste and effluent and damage to private and public property. The Factories Act also provides regulations for handling and disposal of toxic and hazardous materials. Given that construction activity is classified as ‘industry’, these regulations will be applicable to the project contractors.

3.13 Labor Laws

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

Chapter 4: Description of the Environment

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CHAPTER 4: DESCRIPTION OF THE ENVIRONMENT

4.1 GENERAL

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

4.2 PHYSICAL ENVIRONMENT

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

4.2.1 Geological Formation

The soil of the Sheikhupura belongs to the typical alluvium of the Indo-Gangetic plains. The majority of the soils are loamy or sandy loam consisting of soil crust of different depths. Hardly any profile characteristics are observed; soluble soils are present in considerable amounts. The lower layer consists of kankar nodules. The soils have generally an alkaline reaction and are adequately supplied by phosphorus and potash, but are deficient in organic matter and nitrogen.

Geologically the alluvium is divided into khaddar, i.e., the newer alluvium of sandy generally light colored and of less concretionary composition; and Bhangar, i.e., the older alluvium of the more clayey composition, generally of dark appearance and full of kankar.

The soil differs in consistency from drift sand to loam and from fin silt to stiff clay. A few occasional pebble beds are also present. Layers of kankar in the Indo-Gangetic alluvium of the district are also observed.

4.2.2 Climate

The Climate of Sheikhupura is tropical. It is very healthy and salubrious. Except of few months of summer, Sheikhupura is a suitable place to live. The people of Sheikhupura have to experience extremes of temperature. The summers are really hot and the winters are very cold. There are three main seasons in Sheikhupura, namely, summer, winter and rainy season. During the summers Sheikhupura experiences heat waves.

Table 4.1: Seasons in Sheikhupura

Weather	Months
Autumn	1 Oct – 15 Nov
Winter	15 Nov – 15 Feb
Spring	15 Feb – 1 Apr
Summer	1 Apr – 30 Sep
Monsoon	July – Sep

4.2.3 Temperature

Sheikhupura weather is hot and humid. The city experiences an extreme climate during the months of May, June and July, when the city witnesses summer season. The temperature in Sheikhupura ranges between 40°C to 45°C, during the summer months. Sheikhupura experiences winters during the months of December, January and February. The temperature during this season varies between 5°C to 8°C. Given below are the maximum and minimum temperatures of Sheikhupura throughout the year:

4.2.4 Rainfall

Sheikhupura has a distinct rainy season, during which the weather is very humid. The rainiest months of the year are July and August, with June and September also gets some rain. During the rest of the year, barely any rain falls in Sheikhupura.

4.2.5 Topography

The city of Sheikhupura is bound by Sheikhupura district in the west and by Wagah on the east, while on south it is surrounded by the Kasur district. On the northern side, it is watered by the Ravi River. The city occupies around 404 square kilometers of land and is still expanding.

4.2.6 Wind Direction

The Sheikhupura region experiences westerly and north westerly winds during the winter and spring seasons, known usually as the dry stable times of year and southerly and south easterly winds during summer and monsoons. Wind speeds are low during winter picking up during spring season and peaking during the summer months.

4.2.7 Ambient Air Quality

Atmospheric pollution particularly in urban area has a strong impact upon daily life. Its economic growth and rising energy consumption are causing the increase in air pollution. The main sources of the air pollution are motor vehicles and industrial activities. SO2, NO2, CO2, CO, O3 and Particulate Matter (PM) are investigated as the pollution indicators.

The overall air quality in the study area is of moderate nature. Dust particles along with oxides of Nitrogen, Sulphur and Carbon are the major causes of air pollution in the ambient air quality.

It was however observed during the visit that environment of the project area is clean as the area is far away from the city center. Results of tests conducted to assess ambient air quality of the project area are given in annexure of the report.

4.2.8 Water Resources

- **Surface Water**

There is no fresh surface water resource like canal or ponds, near the project area.

- **Ground Water**

The city of Sheikhupura is underlain by the deep permeable aquifer formed within the alluvial plain of the Ravi River, which is the part of Greater Indus Plain.

Groundwater is the principal source of municipal water supply in Sheikhupura. This is also the case in the immediate vicinity of the site. The City's drinking water is obtained from groundwater aquifer by means of tube wells located throughout the area. Groundwater is pumped from 400-800 feet and is generally good for direct consumption. About 83% of the city's population is consuming groundwater for drinking purposes. Results conducted to assess the groundwater quality in the area in context of six parameters of concern for drinking water have been annexed with this report.

4.2.9 Drinking Water Quality

WASA (Water and Sanitation Agency Sheikhupura) is providing drinking water to the residents of Sheikhupura. WASA claims the quality of water conform to the Drinking Water Standards.

The increase in population will have direct impact on the water sector for meeting the domestic, industrial and agricultural needs. Pakistan has now essentially exhausted its available water resources and is on the verge of becoming a water deficit country. The quality of water supplies

in many cities of Pakistan is deteriorating fast. Over pumping of groundwater due to extended drought has affected the water quality adversely.

4.2.10 Noise Level

Sheikhupura city of Pakistan has population around ten million. There are many a large, medium and small industries which are still working within city premises. Industrial activity and vehicular emissions are causing excessive noise in the city.

The affluent areas of Sheikhupura are quieter than rest of the city; the noise level in these areas is still far higher than the standards set by the World Health Organization and the Pak-EPA. Noise pollution in the city is on the rise with most residents complaining that the noise is becoming a public nuisance.

4.3 ECOLOGICAL ENVIRONMENT

Sheikhupura is enriched with the presence of natural flora and fauna, although with the growing population and development activities, the presence of the same has been somewhat affected. There are no significant or well-shaped trees and shrubs on the project site as the site is located in plane land within the premises of unit.

4.3.1 Flora

Trees, also called the 'lungs' of the earth, are important for the restoration of the eco-system. People can benefit immensely from their survival and existence. Trees have also been a source of medicine for thousands of years and a refuge for various species of birds. Several species of the trees in Sheikhupura are being used in medicine and provide excess raw material for Indian ayurvedics. Trees such as Neem, Bhaira, Harrar, Dhair and Moosri have great medicinal value and can be grown easily in the city.

No trees are found in the vicinity of the project area. Therefore there is no adverse impact on the flora**.** There is no Reserve Forest in the 5 km radius. No threatened or endangered species and no medicinal plants are present in the project area.

Table 4.2 Inventory of Flora of Sheikhupura

S.no	Common Name	Scientifc Name
1	Indian Lilac	*Azadirachtaindica*L.
2	Chinese date	*Ziziphusmauritiana*Lamk

3	Yellow	*Terminalia chebula* Retz.
4	Temple plant	*Crataevaadansonii* DC.
5	Bombax	*Bombaxceiba* Linn.
6	Bistula	*Cassia fistula* Linn.
7	India laburnum	*Acacia nilotica* (Linn.)Delile.
8	Indian banyan	*Ficusbenghalensis* Linn.
9	Buddha tree	*Ficusreligiosa* Linn.
10	Benzoil tree	*Moringaoleifera*Lam.
11	Devil tree	*Alstoniascholaris*(L.) R.Br.
12	Rosewood	*Dalbergiasissoo*Roxb.
13	Mango	*Mangiferaindica* L.
14	Spanish cherry	*Mimusopselengi* L.
15	Jujube	*Ziziphuszizyphus*Mill.

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4.3.2 Fauna

With an increase in the rate of urbanization, the ecology of Sheikhupura has been considerably affected and population of birds in Sheikhupura has reduced to just 85 including the resident and migratory ones.

Some birds and few animals like Buffaloes, cows, goats, donkeys, hen, rats, cats, dogs are present in the vicinity. Some reptiles like lizards are also present. The only amphibian seen the project area is frog. No threatened or endangered species are found in the project site. Similarly no wildlife is present.

Table 4.3 Inventory of Fauna of Sheikhupura

S.no	Common Name	Scientific Name

1	Intermediate Egret	*Egretta intermedia*
2	Indian-Pond Heron	*Ardeolagrayii*
3	Red-Wattled Lapwing	*Hoplopterusindicus*
4	Common Sandpiper	*Actitishypoleucos*
5	White Wagtail	*Motacilla alba*
6	Yellow Wagtail	*Motacillaflava*
7	Red-vented Bulbul	*Pycnonotuscafer*
8	House Sparrow	*Passer domesticus*
9	Common Myna	*Acridotherestristis*
10	Bank Myna	*Acridotheresginginianus*
11	Pied Myna	*Sturnus contra*
12	House Crow	*Corvussplendens*
13	Nectariniaasiatica	*Purple sunbird*
14	Black Drongo	*Dicrurusmacrocersusvieillot*
15	Black kite	*Milvus migransmigrans*
16	Blue rocky pigeon	*Columba livia*
17	Little brown dove	*Streptopeliasenegalensis*
18	White-breasted Kingfisher	*Halcyon smyrnensis*
19	Little Green Bee eater	*Meropsorientalis*
20	Golden-backed woodpecker	*Dinopiumbenghalense*
21	Hoopoe	*Upopaepops*

22	Pheasant-tailed jacana	*Hydrophasianuschirurgus*

4.4 SOCIO ECONOMIC ASSESSMENT

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

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

The objectives of the given study are outlined as follow:

- To carry out the assessment of social impact.
- Acquire socioeconomic data to evaluate and identify the project interventions.
- Assess needs of community related environmental concerns.
- To assess adverse and beneficial socioeconomic and health impacts of the activity.
- To suggest remedial measures and solutions to improve socio economic conditions.
- To analyze socio economic conditions of community, with special
- reference to environment and conservation of natural resources

4.4.1 Study Population

The target population was comprised of workers around the project site which were of Sheikhupura District. Therefore, approximately a total of 10 workers of different socio-economic conditions were surveyed. Data collection tool was questionnaire; it was a 10- items based semi structured questionnaire.

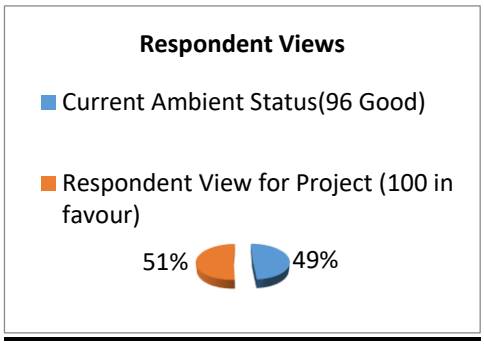
4.4.2 Description of Tables:

Sr. #	Variables	Frequency	Percent (%)
1	Name & Address	-	-
2	Date	-	-
3	Address & CNIC	-	-
4	Age	89 (above 30 years)	89%
5	Education	93 (under metric)	92.8
6	Occupation	96 (Private jobs)	95.9
7	Marital Status	99 (married)	99
8	If married then no. of children	87 (> 4)	86.7
9	Total Family members	90 (< 5)	90
11	No. of earning members in family	88 (< 3)	88
12	Total income	97 (> 25 PKR)	96.3
13	Source of income	99 (Private jobs)	99

In the following table, only frequency and percentage has been measured (by SPSS) of those parameters which are probably present in maximum quantity.

Table 4.4: Socioeconomic Questionnaire

Respondent View about Project



4.5 DEMOGRAPHIC PROFILE OF SHEIKHUPURA

Sheikhupura comprises a large number of Pakistanis along with some foreign nationals. Demography of Sheikhupura is spread over an area of 1,014 square kilometers. Average household size in 1998 was recorded as 7.12. In 1998, the total number of male population was estimated to be 48 % and female population to be 52 %.According to the 1998 census, Sheikhupura's population was nearly 6.8 million. Mid-2006 government estimates put the population at somewhere around 10 million, which makes it the second largest city in Pakistan, after Karachi It is considered to be one of the 30 largest cities of the world.. The second largest city in the country was ranked the second most literate district in Punjab with a literacy rate of 64.7 percent.Urdu, which is the official language of Sheikhupura, is mostly used in the city. However, the people in Sheikhupura also use other languages like English, Punjabi and Pashto. It is noteworthy that Pakistan is an Aslamic country, where the majority of the population is Muslim. Sheikhupura, being a city in Pakistan, could not be an exception to this. As a result, 96% of the total population in Sheikhupura is Muslim. Other religions in the city accounting for the rest 4% are Christianity, Hinduism and Sikhism.

4.6 HEALTH FACILITIES

The city of Sheikhupura in Punjab Province of Pakistan is served by a number of private and government hospitals offering world class medical facilities. The rural and urban areas are served by various other medical centers and dispensaries offering modern medical facilities. The hospitals, dispensaries and medical centers in Sheikhupura aim to provide the citizens best medical facilities and prevention from contagious and other harmful diseases**.** There is no health facility or any dispensary near the project area.

4.7 EDUCATIONAL FACILITIES

Sheikhupura is known as Pakistan's education capital, with more colleges and universities than any other city in the country. Sheikhupura is Pakistan’s largest producer of professionals in the fields of science, technology, IT, engineering, medicine, nuclear sciences, pharmacology, telecommunication, biotechnology and microelectronics. The current literacy rate of Sheikhupura is 64%. No educational facility is present in the vicinity of the project area.

4.8 TRANSPORTATION AND COMMUNICATION

Sheikhupura is one of the most accessible cities of Pakistan and the only unique city of Pakistan where you can find Public and private Transport, 24 hrs a day and 7 days in a week.

Public transport is always available in the project area. To fulfill the remaining needs of transport there are thousands of rickshaws and taxis which run on compressed natural gas to reduce pollution in the city and of course about 75 percent of the residents have their own conveyances.

4.9 INDUSTRIAL ACTIVITIES

Sheikhupura trade and industries thrives on certain large-scale industries such as steel, textile, carpet and IT industries. Sheikhupura is known as the industrial belt of Pakistan contributing the largest share in the GDP of the country. The city is home to 20% of Pakistan's industrial producers; manufactures include textiles, rubber, iron, and steel. Handicrafts, especially gold and silver work, also flourish.

The proposed project area is also present in a plain area and is surrounded by mostly industries and little agricultural land.

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4.10 WATER SUPPLY

At the project site, the water requirement will be fulfilled by the ground water.

4.11 TELEPHONE FACILITIES

Landline and Cellular telephone facilities are not present in the project area.

4.12 QUALITY OF LIFE VALUES

No residential area is present near the project site; therefore, individuals and workers from neighboring areas were interviewed. The individual assessed from the neighboring communities of the project area were involved in small businesses and private jobs in nearby industries. Most of the people hesitated telling their incomes; however, incomes average in the range of 20000 to as much as 100000 PKR; enough to meet their basic needs. They avail all the basic facilities of healthy living and enjoy human rights and civic liberties.

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

4.13 LAB REPORTS

The baseline validated reports of certified laboratory regarding ambient air, water and noise is attached herewith.

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Chapter 5: Stakeholder Consultation

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CHAPTER V:
STAKEHOLDERS CONSULTATION

5.1 General

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

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

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5.2 Objectives of Consultation

Public consultation plays a vital role in studying the effects of the project on the stakeholders and in the successful implementation and execution of the project. Public involvement is a compulsory feature of environmental assessment, which leads to better and more acceptable decision-making. The objective of the consultation with stakeholders is to help verify the environmental and social issues that have been presumed to arise and to identify those which are not known or are unique to the operation of the project.

The important general objectives of the consultation process are:

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

5.3 Methodology

The EIA Team carried out public consultations at various locations within and around the project site. The stakeholder's consultation during this phase of the work targeted the project area, administrative and private offices etc. near the project area:

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

5.4 Categories of Stakeholders Consulted

The stakeholders contacted during the survey belonged to different categories of people as shown in the Table 5.1.

Table 5.1: Categories of Stakeholders Interviewed in the Project Area

Sr. No.	Stakeholder Category
1	Neighbor workers
2	Project workers
3	Potential Distributors

5.5 Issues Discussed

Following issues were discussed during the stakeholder consultation:

- Overall activities of the project operational phase
- Possible impacts on natural vegetation, land and properties
- Possible mitigation measures
- Benefits or implications of the project specifically for the local people

5.6 Findings of the Overall Discussion

- After making complete feasibility the site is being used for industrial activities.

- It enhance the socioeconomic conditions/values of the area
- Project increases revenue generation for the Government
- It create employment opportunities
- Local people should be given preference for employment in the project

Since the project is planned to be established in an industrial estate. Majority of people favored the project in a sense that the project overcomes the increasing needs of injections.

5.7 Socioeconomic Trends around the M/S Nisar Synthetic Limited

Socioeconomic status (SES) is an economic and sociological combined total measure of a person's work and of an individual's or family's economic and social position in relation to others, based on income, education, and occupation.

This chapter includes the information that how the present study has been conducted and what are the results of this socioeconomic survey in the surrounding areas of M/S Nisar Synthetic Limited, Sheikhupura.

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5.7.1 Study Population

The target population was comprised of nearby industries workers around the project site of M/S Nisar Synthetic Limited, Sheikhupura.

5.7.2 Study Size

Therefore, approximately a total of 20 households of different socio-economic conditions were surveyed and their heads of households were our main respondents.

5.7.3 Study Instrument

Data collection tool was questionnaire; it was a 19- items based semi structured questionnaire.

5.8 Sampling Procedure for Questionnaire

5.8.1 Procedure

Before filling the questionnaire respondents were fully assured that their data will not be disclosed. They were told about the purpose of study. They were also told if they have any problem to understand the questions in questionnaire can ask**.**

5.8.2 Statistics Measures

After preparing the questionnaire, field surveys were conducted at 23-07-2019. The data selected from questionnaire was analyzed by using SPSS version 16. The data collected with the help of questionnaire was analyzed in SPSS to get the descriptions of current study. A part of questionnaire has been adopted from SF-36, a standard question to evaluate physic-social-health status.

5.8.3 Study Areas

Somehow at surrounding and nearer industries at Small Industrial Estate was visited for socio-economic aspects. Details of these sites are discussed below. These areas were surveyed by team of M & Y Environmental Consultants (Pvt.) Limited as per requirement of socioeconomic survey for Environmental Impact Assessment Report of M/S Nisar Synthetic Limited.

5.8.4 Description of Tables:

In the following table, only frequency and percentage has been measured (by SPSS) of those parameters which are probably present in maximum quantity.

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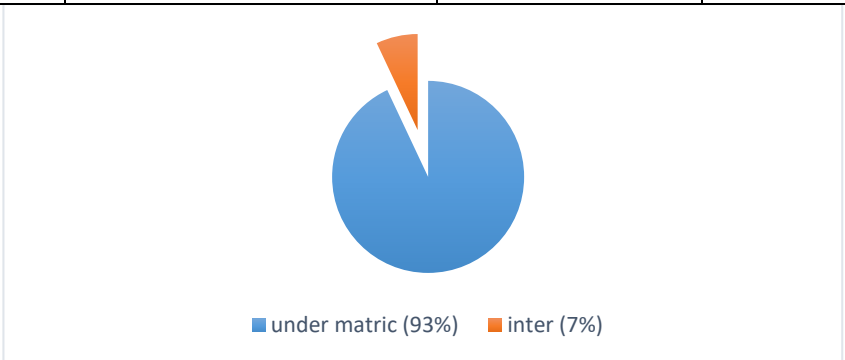
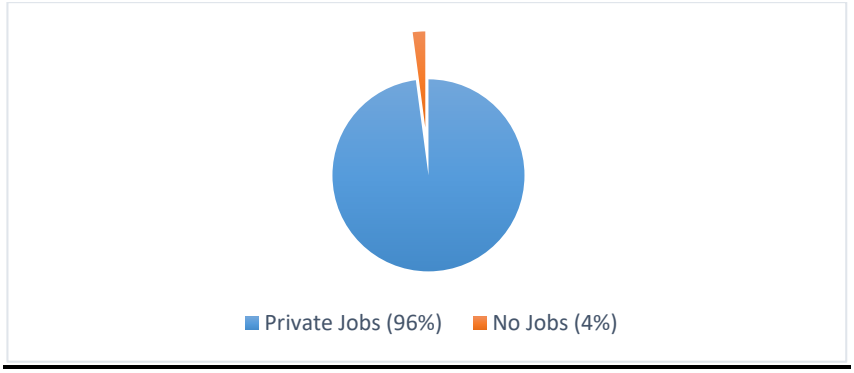
Table 5.1 Socioeconomic Questionnaire

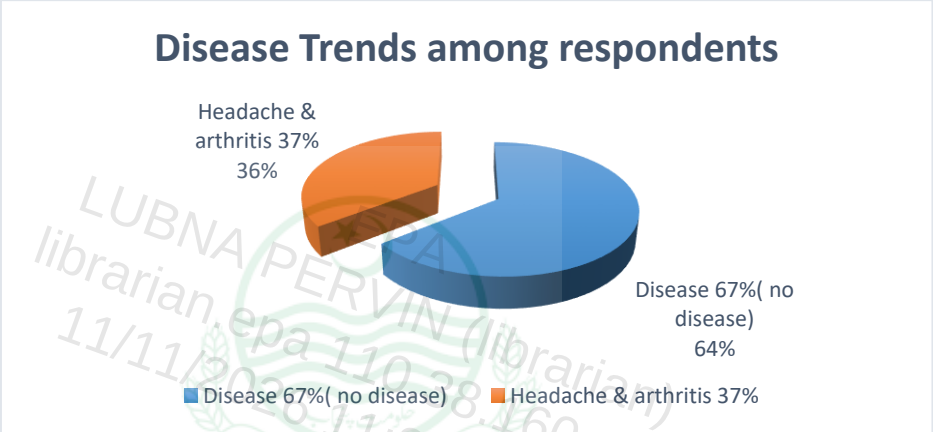
Sr. #	Variables	Frequency	Percent (%)
1	Name & Address	-	-
2	Date	-	-
3	Address & CNIC	-	-
4	Age	89 (above 30 years)	89%
5	Education	93 (under matric)	92.4
6	Occupation	96 (Private jobs)	95.1
7	Marital Status	99 (married)	99
8	If married then no. of children	87 (> 4)	86.2
9	Total Family members	90 (< 5)	90
10	Religion	97 (Islam)	96.2
11	No. of earning members in family	88 (< 3)	88
12	Total income	97 (> 25 PKR)	96.2
13	Source of income	99 (Private jobs)	99
14	Experience of Diseases	67 (no disease)	67
15	If Yes, then nature of disease	37	



5.1 Graphical Presentation of Education around the Project Site



5.2 Trends of jobs around the project site



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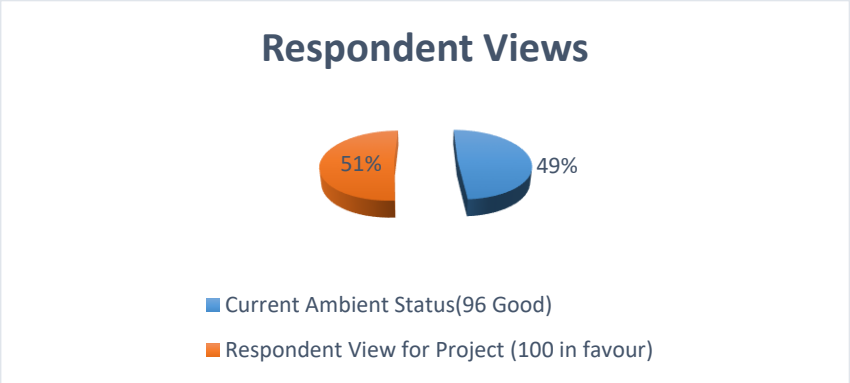
5.3 Health Status of Respondents



5.4 Respondent View about Project

5.9 Stakeholder Concerns and Recommendations

The finding of the community consultation has been addressed in various sections of EIA. Mitigation plan has been incorporated into EMP. The summary of consultation with various stakeholders is given below:

5.9.1 Project Approval

The community consultations demonstrated that goodwill towards the project proponent indeed exists. Approval for project activities by communities was evident. The consultations were considered a good gesture and were appreciated; especially by men and women. The poverty level is such that communities are looking forward to any project proponent to improve their financial well-being to a great extent. Benefit from the project should be distributed judiciously and equitably among the primary stakeholders in the project area, and the proponent will continue to ensure that this principle is followed in this project and community development program.

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5.9.2 Local Employment

Communities in the project area emphasized that local inhabitants should be given priority when employing people for related works and activities according to their skills.

5.9.3 Compensation

Compensation shall be paid for any damage if it is there. The compensation process should be transparent.

5.10 Proponent's Environment Management Team

Discussed in detail at Chapter 7-page No. 84 onward.

5.11 The responsible authority

The Nisar Synthetic Limited is incorporated company under Companies laws, therefore under Section 18 of Punjab Environmental Protection Act, 1997 the responsible authority is CEO i.e. Muhammad Ayub Mushtaq.

5.12 Other departments and agencies

The proposed project has been discussed in length with the concerned department and the unit is going to be install in the approved industrial area.

5.13 Environmental practitioners and experts

The proposed project has been discussed with environmental practitioners and experts i.e. Raja Khalid Advocate High Court, Rae Hussain Shahzad Khan Advocate High Court, Dr. Saeed Ahmed Barvi, Abdullah MSC Environmental Science, Zohaib Hassan BSC Environmental Science, etc. All the environmental practitioners and experts has given positive remarks regarding the proposed project. All the environmental practitioner and experts has shown great concern regarding control of Air pollution emitted from the boiler and especially waste water during operational activity of the proposed project.

5.14 Affected and wider community

M & Y Environmental Consultants visited the project site and got opinion of people residing near the proposed site. M & Y EC asked different questions relating to the proposed project with the help of questionnaire which is attached with this EIA Report.

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Chapter 6: Potential Environmental Impacts and Mitigation Measures

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CHAPTER VI:
SCREENING OF POTENTIAL ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

6.1 General

The potential environmental impacts related to the project have been studied in context of operational stages of the Project. Environmental protection measures are recommended to eliminate adverse impacts on environment or to reduce them to an acceptable level within the prevailing legislative and regulatory framework, although running plant is already working in environment friendly conditions. These Impacts are evaluated on the basis of magnitude, immediacy and sustainability. A careful consideration of project aspect, their potential environmental impacts and mitigation measures are proposed in this chapter. Evaluation criteria are as follow:

- Magnitude: Type of impact (direct, indirect, and cumulative)
- Immediacy: Temporal extent (during construction, after construction)
  Spatial extent (local, widespread)
- Sustainability and Reversibility: Mitigability (fully, partially)
  Monitoring (fully, partially)

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6.2 Environmental Problems Due to Project Location

As the project is going to be installed at approved industrial are therefore there is no need to discuss this section at length.

6.3 Environmental Problems Due to Project Design

Environmental issues may also arise during project design phase which may cause potential threats to the overall project life is not considered timely. The potential problems associated with project design phase are identified in the **table 6.2** hereunder:

Table 6.2: Environmental Problems/Mitigation Measures Due to Project Design

	POTENTIAL IMPACTS	MITIGATION MEASURES
1.	**Increased Energy Consumption**	
	The design of building plays a vital role in determining the energy demand.	Design of the building and its related infrastructure is managed in such a way to

	Unplanned design may lead to overall rise in energy demand.	utilize maximum energy from the sun. For the consumption of the energy WAPDA supply will be utilized.
2.	**Traffic Congestion**	
	Unplanned traffic management and traffic infrastructure development may lead to traffic related issues such as accidents and traffic congestion.	The project has included traffic management as integral part of its overall design. The project construction activities are planned within the boundary walls. Transportation of heavy construction materials will be done during less traffic hours. Transportation and storage of material during construction is easy at the project site because of the availability of the land that will have no impact on the road traffic. Mainly the movement of the vehicles will be done during the less traffic hour's congestion.
3.	**Fire Exits /Emergency Evacuation Plan**	
	Emergency evacuation plans is necessary. Fire issues due to electric short circuit, gas leakages etc.	The project proposes Emergency Evacuation Plans in events of fire hazards. Quality of electric wiring work and gas pipe-lines will be ensured through installation of good quality wiring during construction and proper monitoring during operational phase. The site will be equipped with proper fire-fighting materials to ensure increased safety.
4.	**Accessibility to Public Utility / Services**	
	Inaccessibility to public utilities will render the project uninhabitable.	Resolving the issues of accessibility to public utilities / services will be resolved

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		through proper design planning of infrastructure.
5.	**Careful Planning of Greenbelts/Horticulture Plan**	
	Unavailability of greenbelts would create aesthetic nuisance.	The design of proposed project involve establishment of green belts and develop aesthetically crafted lawns around the project building to increase its aesthetic value. As the project site is surrounded by industrial estate and front of the project is main road. The project plan includes more area for the management of lawn and tree plantation inside the boundary walls as well as other attractive species to increase the aesthetic beauty of project site.
6	**Underground Sewer /Drinking Water Lines**	
	Wires and pipelines lay open and above surface may consequently give rise to leakages, contamination and short circuits in the lines.	There will be no any such issue at the M/S Nisar Synthetic Limited because water will be gained from ground. As per requirement water will be utilized from ground water.

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6.4 Environmental Problems Associated with Project Construction Stage

Table 6.3 provides a detailed overview of the environmental aspects and subsequent environmental impacts that may arise during project construction phase. Appropriate mitigation measures are also proposed for the remedy of any such potential impacts.

Table 6.3: Environmental Impacts/Mitigation Measures during Construction Phase

	POTENTIAL IMPACTS	MITIGATION MEASURES

1.	**Loss of Vegetation Cover / Biodiversity**	
	Construction activity will involve excavation and removal of top soil. This may also lead to clearing of land for construction purpose which ultimately would mean that the respective area will be cleared of any sort of flora/fauna.	The proposed site has been selected after careful consideration of the land use, presence of biodiversity and other environmental parameters. Currently, there are no trees on the said location rather it is industrial estate. But to ensure aesthetic value, the proponent will plant trees once the construction phase is complete.
2.	**Gaseous Emissions**	
	Gaseous emissions including SOx, NOx, CO_2, lead and CO during construction phase. These gases are ozone depleting reagents. Besides, they also pose threat to human health.	EURO II quality fuel shall be used in the vehicles. Vehicles, machineries with good conditions which fall on the quality standards shall be used to control the exhaust emission. At the site there will be no any activity to create gaseous emissions.
3.	**Dust Emissions**	
	Generation of dust and particulate matters is an issue that could arise due to construction activities.	The construction materials e.g. soil, clay would be covered appropriately. Instead of open and dry dumping, sprinkling of water in a quantity that reduces the chances of dust generation would be done. The workers would be provided safety gloves, masks and ear plugs and wherever necessary goggles to avoid health complications. PPEs will be provided and ensured the safety of workers.
4.	**Noise Generation**	
	Noise emissions due to transportation, movement of heavy materials, excavation,	The working hours shall be limited to 08 in the morning till 05 in the evening to avoid noise during night shift. Vehicle

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	may create health nuisance for the workers and local community.	maintenance would be ensured so that emissions of any sort, be it gaseous emissions of noise generation, would be controlled. The workers will be provided with ear plugs and other personal safety equipment to avoid invoking of any health issues.
6.	**Wastewater Generation**	
	Unplanned wastewater disposal may contaminate the surface water channels, surface soil and depending upon the quantity of wastewater generated, it has a potential to contaminate the ground water aquifers.	Wastewater generation during construction phase shall be reused again for material making for construction phase and sprinkling of dust on soil. For domestic wastewater septic tank will be constructed.
7.	**Accidental Spills**	
	Accidental spills of oil, fuel and lubricants can cause surface water contamination and surface soil contamination. It may also lead to fire hazards depending upon the quantity and nature of spills.	Accidental spills shall be avoided by following safe transportation rules which means that the loading and unloading of fuel, oil and any chemicals shall be carried carefully and under skilled supervision of the site in-charge at designated desks. The areas for storage of fuel shall be paved to avoid ground water contamination and/or soil contamination. No fire/ignitable materials shall be taken near and/or close to the fuels/oil to avoid fire incidents.
8.	**Equipment Breakdown / Accidents**	
	Accidents and/or emergency breakdown of the equipment/machineries/vehicles	This situation can be avoided by regular maintenance of the vehicles for quality assurance. Besides, equipment will be

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	involved may create environmental, health and safety hazards.	checked prior to operation to avoid accidents and human health danger due to such accidents.
9.	**Soil Erosion**	
	Loss of vegetation cover and trees may lead to soil erosion hence resulting in dust emission and loss of fertile land cover.	The construction activities shall be planned in a way that reduces the chances of vegetation cover loss and its consequent soil erosion issues. Soil erosions are due to wind and water. The proposed project is planned for construction during the coming months after Environmental Approval, during this time period, the probability of soil erosion due to natural factor will be negligible to none.
10.	**Social Impacts**	
	Problems regarding privacy of local community may arise due to invasion of construction workers.	Improper social behaviors e.g. staring and teasing shall be discouraged and any such incident will be reported to the site in-charge, proponents directly. Workers will be hired from the local community to avoid social issues.
11	**Training and Awareness**	
	Unskilled workers may create issues in attaining the overall health environment and safety policy.	Regular onsite and offsite training of the workers shall be conducted. Impromptu meetings and discussions with the site in-charge and daily wages workers will be done to resolve any issues that may create health safety and environmental problems during construction phase.

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6.5 Environmental Problems Associated with Project Operations

Table 6.4 provides a detailed overview of the environmental aspects and subsequent environmental impacts that may arise during project operational phase. Appropriate mitigation measures are also proposed for the remedy of any such potential impacts.

Table 6.4: Environmental Impacts/Mitigation Measures during Operational phase

	POTENTIAL IMPACTS	MITIGATION MEASURES
1.	**Solid Waste Management**	
	Improper and unplanned solid waste dumping can cause environment, health and safety issues. It also can potentially deteriorate the living quality of the residents besides reducing the aesthetic quality of the entire housing scheme.	Solid waste generation from project process will be disposed of properly. A solid waste management division will be formulated to deal with the proper disposal of solid waste, supervised by HSE Manager, SW Manager, and other related personnel. There is very little solid waste generated from the proposed and the management shall try re-cycle all the material to keep environment neat and clean. To keep the plant site neat and tidy, a contract is awarded to a contractor who employs a work force of 5 sweepers to do the needful.
2.	**Wastewater Disposal**	
	Wastewater generated due to domestic/process activities result in the spread of vector borne diseases like dengue, malaria, as well as spread the nuisance of foul smell.	Wastewater generates from the M/S Nisar Synthetic Limited after the process will be completely utilized in the process and recycled. To get rid from domestic wastewater there is

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		proper septic tank system which link to wastewater drain of QABP.
3.	**Energy Conservation**	
	Excessive use of energy exerts more pressure on the already dwindling energy resources of the city/country.	The workers/employees are encouraged to follow energy conservation strategies during operational phase. Machineries and equipment are kept in good maintained shape to avoid extra fuel consumption.
4.	**Noise Generation**	
	Noise emissions due to traffic and any activities create issues to the residents.	Any activity that leads to noise pollution is restricted. The noise pollution of operation during manufacturing process remains within the premises of plant. The noise level of grid also does not exceed from the PEQS. Moreover plant exists in the industrial estate where there is no population within the radius of 2km.
5.	**Emergency/Fire Hazards**	
	Emergencies e.g. fire incidents may lead to environmental, health and safety issues to the local residents.	Emergency exits in every department and certain points of plant are installed. Firefighting equipment are provided and adequate trainings are also provided to tackle any situation of fire hazards. Call points at suitable locations are also mentioned.
7.	**Training of Staff**	

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	Unskilled persons are not able to tackle environmental, health and safety related situations which may further aggravate any such issues and cause loss of human life and property.	Regular training of the staff is conducted. Proper monitoring and reporting mechanism is developed where the team is responsible to communicate/report any illegal or hazardous situation to the team leader.
8.	**Groundwater Consumption**	
	The groundwater is used for domestic use as well as use during process of cooling during manufacturing of gray cement. Water storage is required for emergency response in case of a fire. Prolonged water consumption may in the long run lower/deplete the underground water table. This is a permanent and moderate negative impact.	Tap water is being used for the sake of operation as well as for domestic use. An effective 'Water Conservation Plan' is developed and for domestic purpose as well as for process; Following operational measures are adopted for water conservation: • It should be ensured that all faucets, circulating pumps etc. do not leak and are in good repair; • Any leaking or dripping faucet, pump or toilet report immediately; • All the utility bills are kept in a safe place to track the consumption of water; and • Purchase and use of water-saving equipment also practice; • An effective residents' training program is implemented about water conservation.
9.	**Social Impacts**	

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	Problems regarding privacy of local community may arise due to invasion of outside population.	Though the chance of any improper social conduct are negligible due to the fact that the project is within the industrial area. However, having a proactive approach, improper social behaviors e.g. staring and teasing is discouraged and any such incident report directly to the site in-charge. Workers have hired from the local community to avoid social issues.
10	**Transportation**	
	Transportation of raw material for safety stuff manufacturing to and from the project site creates a probability of accidental spills and fire.	Transportation vehicles keep maintain in good conditions to avoid the chances of accidents. There is a proper mechanical department where maintenance of machinery and vehicles are monitored regularly.

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The impact associated and their risk score was calculated for each impact type to get an overall probability of severe impact that the project might cause during any stage of its existence. The stages have been categorized according to the guidelines and the Risk Analysis Matrix method has been employed to obtain the overall impact in terms of probability, likelihood, severity and overall magnitude of impact.

Impacts	**Design Of Project**				
	Probability	**Frequency**	**Severity**	**Risk Score**	**Risk Level**
Change in land use pattern	6	10	1	60	
Pressure on resources	3	6	3	54	

Natural hazards	0.1	0.5	7	0.35	
Displacement of local community	0.1	0.5	7	0.35	
Disruption to accessibility and infrastructure	3	1	3	9	
Disturbance to sensitive areas	0.1	0.5	10	0.5	
	Project Location				
Disturbance to energy consumption patterns	1	6	1	6	
Traffic congestion	3	0.5	1	1.5	
Emergencies and hazards	3	0.5	15	22.5	
Disruption to utilities/services	3	1	1	3	
Disruption to green belts	3	1	1	3	
Damage to underground water/sewer lines	3	1	1	3	

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6.4 Potential Environmental Enhancement Measures

In order to enhance the environment, the following measures are adopted:

1. Trees are planted within the premises to beauty the surrounding area.
2. A special budget of 0.1 million PKR will be designated for the environmental improvement of the environment on annual basis. The administration is responsible for spending of this budget. The team leader prepares the inventory of environmental improvement activities and communicates it with the rest of the team for implementation.

6.5 Occupancy

Adequate number of staff (approximately 15-16) are employed to maintain various facilities including manufacturing of glass vials and ampoules related to environment

and resource conservation e.g. water supply, electricity and other wastewater management, security, parks and vegetation maintenance, repair and associated infrastructures etc. some employees to be engaged for the maintenance and repair are also reside within the project.

6.6 Additional Considerations

It is very importance to plan a project after evaluating its cumulative socio-environment and cultural impacts. The project is a unique venture in the identified locality as it will address the environmental, social and safety issues through its already established norms of operating within the area. The project is planned after keeping all the parameters of environment, health and safety for site identification, design and operational phase. That's why the cumulative impacts of the project are negligible.

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Chapter 7: Environmental Management & Monitoring Plan

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CHAPTER VII:

ENVIRONMENTAL MANAGEMENT AND MONITORING PLAN

7.0 Background:

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

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Table 7.1: Users of EMMP

Sr. #	EMMP Elements	End Users
1	Background	All stakeholders – internal and external Community groups Approval or consent authority e.g. EPA Punjab
2	Environmental Management	The management and supervisory staff of M/S Nisar Synthetic Limited EPA Punjab
3	Implementation	The management and supervisory staff of M/S Nisar Synthetic Limited Community groups,

		EPA Punjab
4	Monitor and review	The management and supervisory staff of M/S Nisar Synthetic Limited and EPA Punjab

7.1 EMMP Context:

Being an environment conscious and law abiding entity, M/S Nisar Synthetic Limited has decided to identify, develop and implement an EMMP that identifies the environmental aspects of their project besides providing them a guideline to tackle any environmental issues that may arise in the future. Under the Punjab Environmental Protection Act, 1997, conducting an IEE/EIA prior to commencement of a project is obligatory. This is further reinforced through the IEE/EIA Rules 2022. A more elaborated guideline for Environmental Report Writing further provides a step by step procedure for drafting of an IEE/EIA report. An Environmental Management and Monitoring Plan have been made a compulsory part of the IEE/EIA report under the same guidelines. It is for this reason that M/S Nisar Synthetic Limited has planned to meet pre-requisite of the Environmental Approval by drafting a meticulously planned EMMP.

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7.2 EMMP Objective:

The objectives underlying the EMMP of M/S Nisar Synthetic Limited are:

1. To provide guideline to the management and supervisory staff for conducting their activities in an environmentally responsible manner
2. To mitigate potential risks during operational phase of the project
3. To coordinate with the responsible approval authorities regarding the environmental efforts
4. To identify roles and responsibilities for the implementation of EMMP
5. To meet the regulatory obligation put forth by Punjab Environmental Protection Act, 1997 (Amended 2012)

7.3 Environmental Policy

M/S Nisar Synthetic Limited strives for environmental reverence which is why it has devised its environmental policy stating vision of the company towards environmental conservation. Our policy is:

1. to provide a quality product yet sustainable and environmental friendly working condition to its employees
2. conserve natural resources through adopting less waste policy
3. energy conservation through promoting environment friendly plant designs
4. to provide trainings to all employees to meet our environmental objectives

Management Approach:

The overall responsibility for compliance with the environmental management plan rests with the project proponent.

Institutional Responsibilities:

Following functionaries are involved in the implementation of EMP.

1. Project Proponent
2. HSE/ Project Manager
3. In-Charge Administration
4. Supervisor of Project
5. Environmental Engineer

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7.4` Environmental Management and Monitoring Plan Structure and Responsibility

Table 7.2: Roles and Responsibilities

Sr. #	Positions	Significance	Stage	Environmental Responsibilities
1	Proponent / Owner	Critical	Operations	• Oversee Environmental Policy and EMMP • Serve as primary contact to the regulatory authorities • Commit resources to achieve environmental objectives
2	All Employees	Critical	Operation	• Attend training and understand their roles in the implementation of EMMP • Understand the Environmental Policy / Objectives and act accordingly • Participate in the review of EMMP

				• Coordinate with the responsible authorities within the project to report any noncompliance to their Environmental Policy
3	Operational Supervisor	Critical	Operational	• Understand the environmental policy of the project • Operate in accordance with the environmental policy • Ensure reducing solid waste generation • Reduce water and energy wastage • Ensure all machineries /equipment are in good conditions • Ensure health and safety of the workers during construction phase • Ensure safe transportation of good/materials to and from the project site
4	Maintenance Manager	Critical	Operation	• Understand the environmental policy of the project • Operate in accordance with the environmental policy • Ensure reducing the chances of increased solid waste • Reduce water and energy wastage • Ensure all machineries /equipment are in good conditions • Ensure health and safety of the workers during operational phase • Provides health, safety and environmental awareness trainings to the staff

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5	Administrative Person Deal with Environment Issues	Critical	Operational	• Understand the environmental policy of the project • Operate in accordance with the environmental policy • Ensure reducing the chances of increased solid waste • Reduce water and energy wastage • Ensure all machineries /equipment are in good conditions • Ensure health and safety of workers during operational phase • Receive health, safety and environmental awareness trainings • Prepare and maintain accidents/environmental risk records • Timely coordination with the responsible authority

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7.5 Environmental Management Plan for M/S Nisar Synthetic Limited

M/S Nisar Synthetic Limited believe in sustainable resource management which is why it has developed a comprehensive Environmental Management and Monitoring Plan for its construction and operational phase.

Table 7.3: Environmental Management Plan

Sr. #	Environmental Element	Mitigation Measures to be taken during	
		Construction Phase	**Operational Phase**
1	Sewage	There will be no wastewater during construction phase. Wastewater of construction will be reused in construction	There would be wastewater of domestic nature and of cleaning activities. Domestic wastewater will be managed by constructing septic tank in the project area and the same

		practices like making construction material or sprinkling on dust etc. There would be no such wastewater except domestic wastewater because workers can use surrounding washrooms but septic tank will be installed at the site for labors	will be treated in the wastewater treatment of QABP. The process wastewater will be recycled and use in the process as water will be treated. Maximum water be again utilized and wastage of water will be discouraged.
2	Civil water supply	It shall be ensured that no activity tempers with the civil water supply system in the area, if any.	Civil water will be utilized in the process during operation which will be fulfil by the local water supply in the industrial estate.
3	Solid waste	Solid waste from construction phase will be reused in construction making material. Domestic solid waste will be dump at that point from where sanitary workers will collect it.	During operational phase, domestic solid waste will be collected by the sanitary workers which will be hired by the authorities. Other process waste which include remaining of raw materials. The waste will be collected with careful consideration by keeping in the mind the security of the worker and surrounding. Collected waste will be sale out in the local market. The sanitary workers will collect the waste according to their guidelines and will be transported the subject vendors place with all safety measures during transportation.
5	Noise	In order to avoid the nuisance of noise the project maintenance manager shall ensure the all vehicles,	All the machines will be under covered area where noise cannot reach outside. These

		equipment, machineries used during construction phase are in good working condition. The working hours of the project construction activities shall be limited to day time only i.e. 08 in the morning till 05 in the evening.	machines did not create any kind of noise to disturb.
7	Traffic related problems	Traffic management will be done to avoid traffic stampede/congestion. Parking on the main roads and/or blocking public accessibility will be discouraged.	Enough space for car parking will be provided to avoid random vehicle parking on roads.
8	Floor sweepings	Floor sweepings will be disposed into the municipal bins allocated along the proposed project site.	Floor sweepings will be collected in bags and disposed of with solid waste which will be ultimately collected by sanitary workers of this area.
9	Trash burning	No trash burning will be allowed in or outside the buildings.	Trash burning will be discouraged within the premises of the project.
10	Dust	The construction materials with potential to create dust issues will be kept under cover.	The proposed project is planned in such a way to minimize generation of dust. Green belts will be watered to avoid the issues of desertification and soil erosion.

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		Sprinkling of water will be conducted to avoid dust generation.	
11	Environment quality enhancement measures		Environment quality enhancement measures like flower pots, green belts, planting of trees will be provided around the plant. Vegetation on the green belts and decoration lights will be installed to improve the aesthetic quality of industry. The proponent also intends to plants trees within the area to give the area a natural look.
12	Staff for environmental management plan	Special staff will be recruited to implement this Environmental Management Plan on regular basis.	Special staff will be recruited to implement this Environmental Management Plan on regular basis. Administration will be responsible for establishment of successful implementation of EMMP.
13	Air Emissions	Air emissions of boiler	The boiler shall be equipped with cyclone system and scrubber to cope with air pollution.

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7.6 Environmental Monitoring Plan

Environmental monitoring is being followed and will be strictly undertaken in accordance with the requirements of the environmental authority (EPA, Punjab) to ensure compliance to the Punjab Environmental Quality Standards (PEQS) as and when required. Proponent has decided to spend 0.1 million PKR annually for sake of Environmental Budget.

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

7.7 Institutional Arrangement

Administration under the supervision of the maintenance manager provides report directly to the proponent. The administration consists of skilled personnel with expertise in health,

environment and safety issues. Roles and responsibilities for the implementation of EMMP are further explained earlier under the head Roles and Responsibilities.

7.7.1 Reporting

The proponent aims to provide timely, relevant and appropriately presented information to the concerned government authorities, local community surrounding the proposed project site on the environmental, health and safety performance of the project. The commitment would be met by record keeping and presenting it to the concerned authorities as and when required.

7.7.2 Staff Training

Staff training is important parameter that needs to be fulfilled adequately in order to ensure the successful implementation of environmental objectives. Keeping this fact under consideration, M/S Nisar Synthetic Limited ensures that the employees, contractors and workers receive appropriate environmental awareness training. Staff training is being conducted on regular basis and it will be obtained through a variety of methods including training sessions, formal/informal meetings and discussion and formal presentations. Environmental awareness training would take place at various stages of the persons concerned with the proposed project. This would occur at the induction of any new employee/contractor/workers and will be made a regular on-site feature. Records of training content and attendance will be maintained.

M/S Nisar Synthetic Limited require the persons involved during construction and operational phase to be aware of following responsibilities and equipment, maintenance detail:

1. Their roles and responsibilities (including environmental incident reporting)
2. The environmental impacts (potential and actual) of their activities during operation
3. Natural hazards such as earth quake and floods etc.
4. The potential consequence of poor environmental performance
5. Site emergency plans and their execution procedures

Table 7.4: Persons involved during constructional and operational phase to be aware of following responsibilities and equipment, maintenance detail:

#	Description	Responsibility	Who will be involved	Outcomes

1	Air Quality	Administration	All employees	• Better understanding of the health impacts associated with air pollution • Develop a monitoring and reporting system for air pollution • Third party involvement especially EPA approved labs will be decided under potentially harmful circumstances
2	SWM	Administration	Staff	• The staff will be trained to follow the principles of keep the environment neat and clean • Improved understating regarding health impacts associated with unplanned waste management • A monitoring and reporting system that would enable the supervisor to keep control of all unnecessary scattering
3	Wastewater	Administration	Employees but specific attention to the staff	• Wastewater regarding domestic waste is managed properly by the septic tanks. • There is no wastewater during operation except that water which use for sake of cooling purpose. This water after 3 to 4 days discharged and use for cleaning purpose or for plantation.

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4	Noise	Administration	All employee	• Monitoring and reporting system for noise related issues if detected • Appropriate measures would be identified and implemented • Guidance to the employee on adopting good practices for noise and any other practice that otherwise could lead to environmental nuisance.
5	Firefighting	Administration	All employee	• Improved understanding of keeping a tab on all potential threats that could lead to fire hazards • Understanding on how to use the firefighting equipment • Understanding regarding emergency exits and use of fire point
6	Landscaping	Administration	Staff	• Improved efforts for maintaining the green belts and tree plantations
7	Accidental Spills	Administration	All staff	• Improved understanding regarding how to react during minor and major spills according to the measures identified

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7.8 Environmental Audits and Reviews

M/S Nisar Synthetic Limited will ensure conducting environmental audits to assess compliance with the conditions set under the environmental legislation and those mentioned by the EPA, Punjab during grant of Environmental Approvals. The objective of the environmental audit and review is to monitor and report both compliance and non-compliance with the statutes, EMMP and the conditions set under Environmental Approval. This would be done for the construction & operational phase of the proposed project under the supervision of the administration.

7.9 Public Consultation

Social survey was held with the surroundings from the project area. They were of the view that the project has opportunities for surrounding people as well as will bring new income opportunities for the surrounding community ultimately helping in the reduction of poverty in the area to a greater extent. A sample of the questionnaire used for public consultation is attached along as **Annexure.**

Emphasis was placed on community awareness and perception about the proposed project. This was an important component of the entire study as social assessments are complementary part of environmental assessment. By and large, the people of the project area are well aware of the project and can well anticipate the activities that would entail once the project enters its operational phase. All of the respondents who participated in the public consultation process welcomed the project considering it beneficial both economically and socially. According to their point of views, the project boost to their income by providing small income generating opportunities. People foresee this project as a positive precursor that would give rise to employment opportunities and small vendor's activities. No opposition from the public was confronted for the project.

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7.10 Compensation in Money Terms

The project is lies within the industrial area and there is no population in the radius of 2 kilo meter. There is no cutting of flora and no harm to fauna by this project. There is no any structure or residence which is going to be damaged by project so there is no need for money compensation. Project is environment friendly.

7.11 Replacement, Relocation and Rehabilitation

Project plant is installed among the leases where there is neither any population nor any structure. So there is no need for replacement, relocation and rehabilitation of project. The construction & operation of M/S Nisar Synthetic Limited is environment friendly and sound. .

Elements of Occupational Health and Safety Management System (OHMS)

For an effective OHMS, the management of the project leads towards implementation the following elements:

- Formulation of OHS Policy
- Identification of risks, hazards and countermeasures
- Adoption of OHS Targets based on OHS Policy
- Incorporation of opinions of stakeholders in OHS Plan

- Implementation and operation of OHS plan
- Establishing an organizational documentation
- Routine inspection and improvements system audits
- Revision of OSHMS

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Chapter 8: Conclusion & Recommendations

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CHAPTER VIII:

CONCLUSIONS AND RECOMMENDATIONS

M/S Nisar Synthetic Limited located at Plot No. 26-B to 51-B, Quaid-e-Azam Business Park (QABP), Sheikhupura. The project falls under Schedule-II (List of projects requiring an EIA). The project requires an Environmental Impact Assessment (EIA). In order to ensure compliance with the lawful provision of section 12 of PEPA 1997 (Amended 2012) read with IEE/EIA Regulations 2022, the Environmental Impact Assessment Report has been prepared and is being filed to the Environmental Protection Agency, Lahore for issuance of environmental approval.

Accordingly, this EIA report describes social, environmental, physical and other relevant aspects of the project during operational stage and at its regular occupancy. The report also specifies necessary measures to be adopted for mitigation of environmental impact on the environment. It also provides information as desired under the format used for the preparation of this EIA Report.

The project envisages at operational phase having two types of leases that are clay quarry and limestone quarry. These are actually raw materials while final product is gray cement. The mines are excavated by the method of slice by slice cutting. These slices are carrying on for process by dumpers which are working efficiently. Workings on the mines are carrying on according to guidelines of mines and mineral department. Basically these mines are far away from the population so the negligible dust become dilute in air at unpredicted limit.

However, the environmental aspects and impacts associated with manufacturing of gray cement considered. All infrastructure e.g., road, sewerage, water supply, electric supply, gas etc. already exist in the project area. The project is an environmental friendly site. Septic tanks are provided in the site premises for the treatment of domestic wastewater. Total solid waste generated from the project plant comprise mainly of paper, plastics organic matter and food waste. The project has its own administration set up for environmental monitoring and maintenance of site during operational stage. In order to handle fire hazards, fire hydrants and sprinklers are provided at many locations within the premises. The baseline study has been conducted reviewing the available literature. The overall impact of the project can be considered positive.

For the effective implementation and management of the mitigation measures, an outline Environmental Management and Monitoring Plan (EMMP) has been developed.

M/S Nisar Synthetic Limited is also based on the principles of sustainable development.

8.1 CONCLUSION

In view of the above it has been concluded that proposed project namely M/S Nisar Synthetic Limited is environmental friendly and sound practice. It is therefore requested to issue the environmental approval under section 12 of PEPA 1997 (Amended 2012) for the project that is M/S Nisar Synthetic Limited.

8.2 RECOMMENDATIONS

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

- The present EIA Report of M/S Nisar Synthetic Limited meets the administrative and legal framework of the EPA Punjab.
- Implementation of EMP must be given top priority.
- During construction phase Create environmental awareness amongst the workers by training.
- Provide guidance to workers on use of PPEs and also make it compulsory for them to use PPEs during construction.
- Installation of fire extinguishers in the premises.
- Use of equipment with low operating noise levels within PEQS limits and regular monitoring of machines used during construction phase.

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Annexure I: Property Documents

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FOR EPA NOC

PUNJAB INDUSTRIAL ESTATES
DEVELOPMENT AND MANAGEMENT COMPANY
A Company setup under Section 42 of the Companies Ordinance, 1984 (now Companies Act, 2017)

PIE/NSL/QABP/0969
26th May 2025

Mr. Mian Anjum Nisar
Chief Executive Officer
M/s. Nisar Synthetic Limited
6th Floor, Office No. 2, Shaheen Complex
Egerton Road, Lahore.

Subject: **ALLOTMENT OF INDUSTRIAL LAND MEASURING 72.23 ACRES IN QUAID-E-AZAM BUSINESS PARK, SEZ SHEIKHUPURA TO M/S. NISAR SYNTHETIC LIMITED (NSL)**

Dear Sir:

Kindly refer to our earlier letter vide letter no. PIE/NSL/QABP/0721 dated 17th April 2025 bearing above subject, attached herewith as Annex-I.

In continuation of the letter, please find attached payment plan for your earmarked plots as per agreed terms and conditions (Annex-II).

It is to apprise that, plots in Special Economic Zones are available on first come first serve basis and we have temporarily marked these plots for your company. However, we would like to inform you that, in line with "first come, first served" policy, we are unable to hold these plots for extended periods without any formal commitment.

We kindly request that, you proceed with the necessary steps if you wish to secure the earmarked plots till *30th May 2025*. In the absence of further action from your side, the plot will be released and made available to other interested parties, since, we are holding these plots for your company for more than six to eight months.

Should you require any assistance or further clarification, please do not hesitate to contact us.

Thank you for your understanding.

(AMINA FAISAL)
G. M. (Business Development)

Copy to:
- PS to CEO, PIEDMC

Head Office: Commercial Area (North) Sundar Industrial Estate, Sundar Raiwind Road, Lahore.
Tel: 042-35297203-6, Fax: 042-35297207, UAN: +92-42-111-743-743
Website: www.pie.com.pk E.Mail: info@pie.com.pk
An Approved Non Profit Organisation U/S 2(36) of Income Tax Ordinance 2001

afaq ISO 9001 Quality ISO 9001:2015

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PUNJAB INDUSTRIAL ESTATES
DEVELOPMENT AND MANAGEMENT COMPANY
A Company setup under Section 42 of the Companies Ordinance, 1984 (now Companies Act, 2017)

PIE/NSL/QABP/1913
7th October 2025

Mr. Mian Anjum Nisar
Chief Executive Officer
M/s. Nisar Synthetic Limited
6th Floor, Office No. 2, Shaheen Complex
Egerton Road, Lahore.

Subject: **ALLOTMENT OF ADDITIONAL INDUSTRIAL LAND MEASURING 3.21 ACRES IN QUAID-E-AZAM BUSINESS PARK, SEZ SHEIKHUPURA TO M/S. NISAR SYNTHETIC LIMITED (NSL)**

Dear Sir,

Kindly refer to your letter dated 29th September 2025 on subject matter.

In continuation of the letter, please find attached payment plan for your additional land requirement of 3.21 acres as per agreed terms and conditions (Annex-I).

Further, you are requested to complete you SEZ Zone Enterprise Application incorporating additional area of 3.21 acres in your construction drawings and projections so that your case can be processed for approval of SEZ Committee.

Should you require any assistance or further clarification, please do not hesitate to contact us.

(AMINA FAISAL)
G. M. (Business Development)

Copy to:
- PS to CEO, PIEDMC

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Head Office: Commercial Area (North) Sundar Industrial Estate, Sundar Raiwind Road, Lahore.
Tel: 042-35297203-6, Fax: 042-35297207, UAN: +92-42-111-743-743
Website: www.pie.com.pk E.Mail: info@pie.com.pk
An Approved Non Profit Organisation U/S 2(36) of Income Tax Ordinance 2001

afaq ISO 9001 Quality ISO 9001:2015

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Annexure II: Terms of Reference

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TERMS OF REFERENCE

Scope of Work for Consultant

Activities of the consultant will strictly follow the Guidelines given in PEPA, Act 1997. An extract is narrated below:

- Complete baseline information about the environmental, social, and ecological characteristics of the project area will be collected via field surveys by keeping in view the following but not limited to location; water bodies, villages/towns/sensitive areas; accessibility, security, vegetation, flora, fauna, physical structures, livelihood, social amenities and Physical Cultural Resources (PCR's).
- Relevant information will also be collected on potential impacts of the project and the characteristics of temporary and permanent impacts.
- Various stakeholder consultations will be conducted as part of IEE study. The details of consultations including venue, date, participants, feedback, their concerns/views, etc. will be recorded and reported.
- The specific and effective mitigation measures will be suggested to minimize the adverse socio-environmental impacts and related mitigation costs.
- An Environmental Management and Monitoring Plan (EMMP) will also be developed to be implemented by the relevant authorities during the pre-construction, construction and operational phases.
- Environmental Testing / Sampling by EPA Approved Laboratory.
- Timely preparation and submission of all deliverables.
- After the completion of a comprehensive EIA report, the Proponent will also be assisted by the Consultants to receive Environmental Approval from Environmental Protection Authority (EPA), subject to the agreement of the Proponent.

PROPONENT SIGNATURE

Nisar Synthetic Limited Lahore

CONSULTANT SIGNATURE

M & Y Environmental Consultants (Pvt.) Ltd.

Key Deliverables

- Submission of 5 hard copies and 02 soft copies of EIA Report to EPA Punjab, Lahore. EIA Report will be accompanied by:
- An Application Form set out in Schedule IV of Review of EIA/ IEE Regulations, 2022
- An Undertaking as per Schedule VII of Review of EIA/ IEE Regulations, 2022 Review Fee shall be paid online
- Replies of Queries raised by EPA if they require some additional information

Responsibilities of Client

- Responsible to pay all the dues of the consultant as per the agreed terms and conditions
- According to regulation 7 of the Review of EIA/ IEE, 2022, proponent will pay, at the time of submission of EIA, a non-refundable fee of PKR 30,000/- in form of bank draft to EPA
- M & Y would facilitate client regarding coordination with relevant EPA during processing of Environmental approval/NOC and will answer to all technical queries/ presentations related to EIA report.
- Technical Data regarding project description will be provided by client.
- You are requested to confirm all the necessary arrangements to facilitate our intervention.
- All material developed for the clients including the relevant systematic and methodology have been developed by the Company and are copyrighted by it. Clients shall not copy reproduce or disclose to third parties the data as provided by the Company without its prior written consent.

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PROPONENT SIGNATURE

Nisar Synthetic Limited Lahore

CONSULTANT SIGNATURE

M & Y Environmental Consultants (Pvt.) Ltd.

Annexure III: Glossary

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Glossary

EIA (Environmental Impact Assessment): It is the process of identifying, predicting, evaluating and mitigating of effects of biophysical, social and other relevant proposed projects and physical activities prior to major decisions and commitments being made.

EMP (Environmental Management Plan): An EMP is a site-specific plan developed to ensure that all necessary measures are identified and implemented in order to protect the environment and comply with environmental legislation.

ESIA (Environmental Social Impact Assessment): It is to identify the impacts of the project on social and environmental conditions.

FAUNA: Word used for combination of all the species of animals.

FLORA: Word used for combination of all the species of plants.

IEE (Initial Environment Examination): Initial examination of projects for identification of hazards of project.

NCS (National Conservation Strategy): Three objectives of the National Conservation Strategy (NCS) are: (i) conservation of natural resources; (ii) sustainable development; and (iii) improved efficiency in the use and management of resources.

NOC (No Objection Certificate): It is a kind of clearance issued by EPA necessary for any project to be constructed.

PEPA (Pakistan Environmental Protection Act 1997): An act to provide the protection, conservation, rehabilitation and improvement of environment, for the prevention and control of pollution and promotion of sustainable development.

Topography: Physical features of any area including soil, water and air are called topography.

Annexure IV: List of Abbreviations

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LIST OF ABBREVIATIONS

CO2	Carbon dioxide
°C	Degree Celsius
dB(A)	A weighted decibel scale
EIA	Environmental Impact Assessment
EMMP	Environmental Management and Monitoring Plan
EMP	Environmental Management Plan
Engr.	Engineer
EPA	Environmental Protection Agency
EPD	Environmental Protection Department
EPO	Environmental Protection Ordinance
GEL	Global Environmental Lab
IEE	Initial Environmental Examination
km	Kilometer
Ltd.	Limited
ft2	Square feet
m3/h	Cubic meter per hour
M/S	Masses
NEQS	National Environmental Quality Standards
No.	Number
NOC	No Objection Certificate
PEPC	Pakistan Environmental Protection Council
PEPA, 1997	Pakistan Environmental Protection Act, 1997
PEPA, 2012	Punjab Environmental Protection (Amendment) Act, 2012
PEPO	Pakistan Environmental Protection Ordinance
PKR	Pakistani Rupees
PM	Particulate Matter
PPEs	Personal Protective Equipments

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Annexure V: Sources of Data

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SOURCES OF DATA

- Punjab Environmental Protection (Amendment) Act 2012 (PEPA)
- Guidelines for the preparation and review of Environmental Reports, October 1997
- Review of IEE/ EIA Regulation, 2022
- The 2004 Baseline Survey on Millennium Development Goals in AACs, Pakistan
- World Weather Online.com
- Water and Sanitation Agency (WASA)
- Lyallpur Museum
- RED Data Book of IUCN

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Annexure VI: Emergency Response Plan

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EMERGENCY RESPONSE PLAN

1.1 PURPOSE AND SCOPE OF THE DOCUMENT

The objective of this Medical Emergency Evacuation Plan is to explain the line of action to be followed in case of a medical emergency during project activities and to define the responsibilities of different persons. All the concerned NISAR SYNTHETIC LIMITED employees will act as a team on both the ends i.e. Lahore office and field location. Once issued, the plan will be used as a guideline to deal with all the medical emergencies and will be practiced through drills on monthly basis.

Under no condition the plan should be changed without the information of Management in Lahore, and any change should be followed, in not more than 24 hrs, by the written report of the reason of the change from documented guidelines.

1.2 NISAR SYNTHETIC LIMITED MEDICAL FACILITIES

To cover the medical problems on the field, NISAR SYNTHETIC LIMITED will set a well-managed medical system, with contacts at reliable health facilities to take care of grave medical emergencies. The brief description is as follows:

1.2.1 NISAR SYNTHETIC LIMITED field doctor

NISAR SYNTHETIC LIMITED has employed the services of qualified medical doctor for its project activities in project area. He is responsible for providing the medical coverage for minor health problems on the field. He is also responsible for providing first aid in case of a medical emergency and to giving suggestion to management regarding evacuation of a diseased person in case of medical emergency.

1.2.2 NISAR SYNTHETIC LIMITED field clinic

NISAR SYNTHETIC LIMITED will set a fairly well-equipped clinic on the project for the medical coverage of its field employees. It will contain all the first aid material required to stabilize a casualty in case of serious medical emergency and Most of Life Saving Drugs.

1.3 MEDICAL EMERGENCY AT FIELD LOCATION

There can be situations in which we can come across medical emergencies during our field operations. These emergencies can be:

1.3.1 Medical emergencies for example uncontrolled high-grade fever, severe dehydration, flaring up of gastric ulcer, burns etc.

All such emergencies will be referred to the nearest hospital mentioned in the list of hospitals. And in case of burn victims would be evacuated to nearest hospital in GHQ Sheikhupura.

1.3.2 Surgical emergencies for example acute abdomen, trauma, fractures etc.

All such emergencies will also be referred to the nearest hospital in GHQ Sheikhupura if present and
approved by NISAR SYNTHETIC LIMITED Lahore office.

1.3.3 Insect bites

The field clinic has the capability to treat scorpion and snakebite cases. However, all such cases will be referred to the hospital for treatment on the decision of the onsite doctor. All the daytime or night time snakebite cases will be referred to the nearest hospital in Sheikhupura if present and approved by NISAR SYNTHETIC LIMITED Lahore office. Field doctor will accompany the victim to the hospital and will return after ensuring that the right person has started the proper treatment. Company has a reasonable stock of anti snake venom on the field. Under all conditions these sera will be carried along, due to possibility of non-availability in the hospital. If the snake has been killed, it will be carried along for identification;

1.3.4 Medical Emergencies related to Road Traffic Accidents

All such cases will be referred initially to nearest facility (Annex 6).

1.4 DAYTIME/NIGHTTIME MEDICAL EMERGENCY

Emergencies related to heart problem will later be shifted to Sheikhupura & Lahore for specialized care.

1.5 NISAR SYNTHETIC LIMITED FIELD DOCTOR

NISAR SYNTHETIC LIMITED will designate a qualified medical doctor on production plant. He will be responsible for the quick assessment of the sick or injured person, as per his professional knowledge and the administration of first aid and stabilization of the person, who has been reported sick or injured.

a. IF FIRST AID IS ENOUGH

- Inform the Field In-charge about the incident and the condition of the person.
- Record the incident as a First Aid Case in the record.

b. IF FIRST AID IS NOT ENOUGH

- He will stabilize the victim in the field clinic, or at the site of the incidence (if required).
- Make Primary and Secondary assessment of the person and start the initial treatment. The assessment form is attached with the document as Annex-1 of this chapter. A copy of the form will accompany the patient in case of medical evacuation.
- Pass on the status of the patient to the Field Management. He will assess the need for the possible evacuation of the person and discuss it with the Base Camp field management. The Field Doctor will remain in contact with the field management about the condition of the patient

and the Field Management will further inform the Operation Manager and HSE Manager in Lahore Office about the final plan. He will contact the hospital authorities, as per the advice of the Field Management, and will ensure that adequate arrangements
have been made for safe evacuation.

c. IF DECIDED TO EVACUATE THE PATIENT

1.6 EMERGENCY TEAMS

1.6.1 Emergency Response Team (ERT)

This team shall be established on site and shall have personnel who are experts to deal with the emergencies like firefighting, oil spill control, man lost etc. This team shall include the trained personnel, radio operator, and camp boss.

1.6.2 Incident Management Team (IMT)

This shall be formed at the crew/field level normally headed by the party chief in his absence Party Manager will fulfill his responsibilities. This team shall include Party Chief, Party Manager, HSE Advisor, Chief Geophysicist, Chief Surveyor, Cable Chief, Doctor, and Camp Administrator, security supervisor, vehicle supervisor and other responsible person on crew.

1.6.3 Emergency Management Team (EMT)

This team shall be based in the head-office Lahore. This team shall be formed for managing the incidents/ accidents. Normally it shall be headed by the Operational Manager. The team shall include Operational as team leader, Manager', Manager HR, Manager Finance, Manager Security, Manager Admin & IT. Additionally EMT shall be announced on weekly basis to confirm the member's availability and circulated among the clients and field operations. Any incident! Accident shall be reported to EMT by the IMT. EMT shall decide the seriousness of the incident! Accident and informed the Country manager about the situation, who will decide if a crisis need to be declared.

1.7 RESPONSIBILITIES

1.7.1 Team Leader

Holds the ultimate responsibility of safe and earliest evacuation in case of medical emergency. He will be heading the EMT and will ensure that all the EMT members play their role satisfactorily and in time to proceed with this evacuation without any unnecessary delay.

1.7.2 Operation manager

Operation Manager will ensure that all the necessary support and help is provided for the safe and quick medical evacuation and remain in touch with the field and the city arrangements in this regard.

1.7.4 Manager Administration Lahore office

In coordination with other members of EMT, Manager Administration will support all the facilities required for the evacuation activities towards Lahore, or during overseas evacuation. His support may include coordinating the activities of other EMT members, arranging ambulance at Lahore etc. Field doctor will inform the Field Management about the status of the patient and will discuss the details about this Medivac, so that necessary arrangements for the safe and earliest possible evacuation of the patient can be made.

Measures to be taken for the safe traveling of the patient be decided and documented. As soon as the patient is stabilized, evacuation will be done to the hospital, as decided earlier, using the best available transportation facility. The doctor himself or his nominated medic will travel with the patient, until he is handed over to medical personnel in the recommended health facility.

The names of recommended health facilities are mentioned in Annex-2 of this chapter.

1.8 TRANSPORTATION OF THE PATIENT

A well equipment ambulance will be provided at the project site.

1.9 EMERGENCY TEAMS

1.9.1 Emergency Response Team (ERT)

This team shall be established on site and shall have personnel who are experts to deal with the emergencies like fire-fighting, oil spill control, man lost etc.

This team shall include the trained personnel, radio operator, and camp boss.

1.9.2 Incident Management Team (IMT)

This shall be formed at the crew/field level normally headed by the party chief. In his absence Party Manager will fulfill his responsibilities.

1.9.3 Emergency Management Team (EMT)

This team shall be based in the head-office Lahore. This team shall be formed for managing the incidents/ Accidents. Normally it shall be headed by the Operational Manager. The team shall include Operational Manager as team leader, Manager HSE, Manager HR, Manager Finance, Manager Security, Manager Admin & IT. Additionally EMT shall be announced on weekly basis to confirm the member's availability and circulated among the clients and field operations. Any incidental accident shall be reported to EMT by the IMT. EMT shall decide the seriousness of the incidental accident and informed the Country manager about the situation, who will decide if a crisis need to be declared.

1.10 RESPONSIBILITIES

1.10.1 Team Leader

He will hold the ultimate responsibility of safe and earliest evacuation in case of medical emergency. He will be heading the EMT and will ensure that all the

2. FIRE CONTINGENCY PLAN

Fire is a major hazard in any situation where large number of people work and sleep in a relatively confined area. This Applies equally to a seismic crew and to a town-based operation. Four essential steps in the control of the fire hazards are:

1) Reduction of the Basic Risk by:

- Restricting cigarette smoking
- Upgrading and maintenance of electrical fittings
- Posting warning notices
- Training -both in the use of fire-fighting equipment and in general awareness of the hazards and what to do in the event of fire.

2) Early Detection by:

- Means of smoke alarms
- Personal vigilance

3) Prompt Reaction by:

- Shouting "Fire, Fire, Fire!"
- Sounding the fire alarm
- Evacuating the tents and trailer
- Fighting the fire, if appropriate

4) Immediate Response by:

- Using the nearest suitable fire extinguishers
- Isolating the electrical supply, if appropriate
- Accounting for all personnel (Head count)
- Organizing available personnel to assist with fire-fighting, if appropriate There shall be one Fire Chief, Fire Fighting Team Leader. He will form a Fire Team from available personnel if the fire team member not present. When the Fire Alarm is sounded, the trailers or tents must be evacuated immediately and the occupants must proceed directly to the Muster Point. A head count and search must be carried out as soon as all occupants are out of the trailers or tents.

2.1 ON DISCOVERING A FIRE

Fire extinguishers, Dry Powder fire extinguishers are located near the door of every trailer,

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tent and on each vehicle. Foam fire extinguishers shall be located near fuel locations. On discovering a fire, you should immediately attempt to fight it with the nearest extinguisher UNLESS:

There is no extinguisher on hand OR

The fire is near the exit to your room OR

There is a noticeable quantity of smoke OR

You are not confident of using the extinguisher OR

The fire is visibly increasing in size. OR

A fuel tank has caught fire (EVACUATE THE AREA)

In which case, GET OUT AT ONCE AND SOUND THE ALARM

All personnel, upon hearing the alarm, proceed to the Muster Point immediately. Anyone near a radio upon hearing the alarm will make a general call announcing "Fire in Camp –Fire in Camp".

If a fire is extinguished, remember that it can re-ignite spontaneously. Do not leave the scene until it is assured that the fire is out and will not re-ignite. Then immediately report the incident to the Party Chief, HSE Adviser or the most senior person in camp.

2.2 ON HEARING THE FIRE ALARM

Everyone is to proceed directly to the Muster Point. A head count will be conducted at the Muster point. Following procedures are designed to insure the safety of Personnel.

- All the fire wardens will check the areas allotted to them. The fire team will approach to the fire scene under the direction of the fire chief.
- The Fire Chief I Fire Team is to proceed directly to the fire and carry out the crew procedure for dealing with the situation.

2.3 FIRE FIGHTING PROCEDURES

These are guidelines only to give a general outline towards getting a fire extinguished should the situation arise. Below assumes that we have a major fire in the camp area. Hopefully before it gets to this situation somebody has been able to put the fire out while it is minor. A fire fighting team will be set up from available personnel. This team will be trained in correct firefighting procedure. Other crew members will also be trained so they maybe coopted onto the team as required. Eventually all crew members should be trained in the use of fire extinguishers and basic fire control.

2.3.1 Protection of personnel -equipment

The prime concern in case of fire is the protection of personnel -equipment is secondary;

The person discovering the fire should raise the alarm, immediately evacuate everyone from the area and notify the fire chief. The "FIRE CHIEF" will be the most experienced in camp and will take complete charge of fire fighting and directing the "FIRE TEAM", The senior member of the kitchen staff will account to the coordinator for their personnel, including the Operational Manager.

At the same time the electrician will cut off the power to the fire location. Power should only be cut to the fire site as power is required for lighting if at night and also to run water pumps, if available. The least people involved the better. All other people are to stay at the muster point. Should they be required they will be directed where to go and what to do.

REMEMBER THAT THIS IS ONLY A GUIDE. NOTHING EVER HAPPENS AS PLANNED.

3. WEATHER CONTINGENCY PLAN

In case of severe weather conditions, the following precautions will be taken:

3.1 FOG

No one shall leave the camp until the PC has assessed the situation and is satisfied that the visibility is such that driving will not be hazardous. All vehicles will travel with headlights on until the fog has completely cleared. Vehicles will travel in convoy if necessary.

3. 2 HEAVY RAIN

Driving in the rain calls for extra care and driving skills. The roads will be slippery, and acceleration and braking must be made gently. Reduce your speed and be aware of other road users. Should the rain be heavy enough to impair your vision, you should pull off the road in a safe location and wait for the weather to pass. Call base camp to inform them of your late arrival and present location.

3.3 SANDSTORM

The sandstorm will be treated as FOG. Visibility will be seriously impaired, and disorientation is a possibility. Take care exiting the vehicle as the strong wind could blow the door out of your grasp. Call base camp to inform them of your late arrival and present location. If contact is not possible, the Man Lost situation may be started under the direction of the PC I APC

3.4 FIELD OPERATIONS

In all severe weather conditions, the senior observer will decide upon the best. course of action for the line crew and trouble shooters. Should the situation dictate, production will be stopped and personnel ordered to take shelter? Department heads will co-ordinate with their field units to decide upon the safest course of action. All vehicles standing by on weather should call base camp and inform them of their status and position.

4. EMERGENCY SPILL PROCEDURE

Stop the flow as soon as possible

Use any safe, practical means at your disposal. Remember to locate and check the operation of all valves daily. Remember that every gallon you keep from leaking is one less to clean up later:

Contain the spill in the smallest possible area

Sound judgment is the key to good containment. Keep in mind that other regulatory agencies have very definite ideas about what you can or cannot do with the natural resources around the fuel site. If you use the material around the spill to create a dike, be sure that it can be restored to its original condition after cleanup is complete.

Report the spill through the proper channels and initiate clean-up procedures

Prompt, accurate reporting is imperative and should be done as soon as possible after discovery of the spill. If the spill is minor and the cleanup is obvious you should go ahead but if a major spill occurs, you should stand by for detailed instructions. Remember that disposal of waste created by cleanup has to be taken care of properly and not left to create another problem. In some cases, this may require evacuation of the waste to a suitable site designated by the authorities. In conclusion, you must do everything possible to prevent a spill but if one does happen you should STOP THE FLOW, CONTAIN THE MATERIAL
and REPORT THE INCIDENT through proper channels, AND CLEAN IT UP.

5. EMERGENT RESPONSE PLAN AGAINST H_2S ACCIDENT

1. Duty of the Emergent Response Board

- To install an emergent response plan against H_2S accident and conduct exercise for H_2S control.
- To closely collaborate with NISAR SYNTHETIC LIMITED contractors.
- To pay close attention to well control.
- To effective measures for evacuation & first aid.

3. Member of the Emergent Response Board for H_2S Accident

- Rig Manager
- Tool Pusher
- Driller
- Mechanist
- Assistant Driller
- Electrician

- HSE Supervisor
- Doctor

4. Preparation prior to entering the formation bearing H_2S

1. To train everyone on well site with practical knowledge on prevention & first aid against H_2S accident.
2. To be familiar to the route of evacuation.
3. To check wind Direction Indicator, fire-fighting equipment's, air-breather.
4. To check the well control equipment's.
5. If possible, agent for H_2S control should be mixed in mud.
6. To drill strictly in accordance with drilling manual.
7. To take exercise against H_2S accidents.

4. Prevention against H_2S Accidents

1. To establish a working mechanism under which two people should be working together. In place that are vulnerable to attacked by H_2S, such as gas shaker, driller operation cabin etc., should practice such working mechanism. To assign a dedicated man to observe all working people for their safety.
2. To install blowing fans at gas shaker and drilling floor.
3. To practice strict duty mechanism under which overflow should timely be noticed. According to the well control requirement preventing H_2S enter into hole, well should timely be shut-in and killed.
4. To enter wind direction indicators at gas shaker drilling floor etc.
5. To furnish H_2S detector.
6. To have $4m^3$ sand in place. To place two-8l, powder extinguishers at gas shaker, two-8l powder extinguishers on drill floor, two-8L powder extinguishers on mud tanks.
7. All installation of cables and appliances on well site should be explosion- proof and meet the safety requirements.
8. According to drilling Manual, adequate High SG mud, weighting agent and de-sulfur agent should be in place.

5. H_2S Alarm

1. To inform all people on well site of encountering H_2S, to perform Emergent Response plan against H_2S Accident.
2. To evacuate in Up-stream of wind.
3. To contact rig manager for further action.

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5.1 Measures for H2S Accident

1. To promptly evacuate people suffering H_2S to safety place in up- stream of wind.
2. To conduct urgent rescue.
3. To inform Doctor.
4. To inform nearest Hospital for treatment.
5. To take further action according to rig manager orders.

5.2 Evacuation Plan

1. To switch on single for emergent evacuation.
2. To inform villagers around well site of evacuation.
3. To take further action according to Supervisor's order.

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Annexure VII: List of Machinery

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Annexure-B
List of Plant and Machinery
Imported Machinery Details

NSL

Sr. No	Name / Type / Make of Machinery	Qty.	HS Code
1	Complete Calendar lines from auto dosing to winder for Flooring	1	8477.8000
1.A	Complete Calendar lines from auto dosing to winder for PVC Soft film	1	8477.8000
1.B	Complete Calendar lines from auto dosing to winder for Rigid Film	1	8477.8000
1.C	Complete Calendar lines from auto dosing to winder for Leather	1	8477.8000
1.D	Complete Calendar lines from auto dosing to winder for Flex	1	8477.8000
2	Foaming machines	2	8477.8000
3	Flooring lamination Machines	2	8477.8000
4	PVC '4' color printing & PVC '4' color for film (1.800mm)	2	8443.1700
5	Printing machine for leather	3	8443.1700
6	Embossing & Lamination machines for PVC	6	8453.8000
7	Slitting & rewinding machine for PVC Rigid	3	8451.8090
8	Laminator 6 layer	1	8477.5900
	ESP PVC leather Coating Line Details:-		
9	ESP PVC Coating '2' + Foaming '2'	4	8451.8010
10	ESP for Calendar	4	8477.8000
11	Paper Inspection machine	4	8451.5000
12	Leather embossing machines	2	8453.8000
13	Leather vacuum embossing (PVC)	1	8453.8000

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Sr. No	Name / Type / Make of Machinery	Qty.	HS Code
100	Air screw compressors	7	8414.8020
101	Air chiller / cooler	4	8418.6990
103	Fork lifter 5MT/1 / 3MT/14	15	8427.2010
104	Stacker Electric	6	8427.1000
105	Chiller PVC Transparent Film, PVC rigid, PU Plant (1 each)	3	8418.6990
106	Heat absorption chillers for panels & main office lab air conditioning	3	8418.6990
107	RO plant for DMF & PU plant	3	8421.2100
108	Cargo lift with spare parts	27	8426.1190
108.A	Hoists with Gantry cranes/bus bar -complete sets	67	8426.1290
109	Solar complete set	8MW	8501.7110
110	SS Pipes for whole of the project	1 lot	7304.1100
110.A	Globe Valve for whole of project	1 lot	8481.3090
111	MS Pipes for whole of the project	1 lot	7306.3090
112	Cables for whole of the project	1 lot	8544.4990
113	Expansion Joints for whole of the project	1 lot	7307.2900
114	Backup generators 7MW	#REF!	8502.2090
114A	Flanges for whole of the project	1 lot	7307.2100
114B	SS Pipes line valves & Fitting for PU plant, PU lab, DMF Plant & Tank yards	1 lot	7304.1100

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Sr. No	Name / Type / Make of Machinery	Qty.	HS Code
Z	- Lab Foaming Line - 1 Unit	1	8477.8000
AA	- Lab Dispersers - 5 Units	5	8479.8290
AB	- Lab Tumbling Dryer - 1 Unit	1	8451.2100
AC	- Lab Printer Lacquering - 2 Units	2	8443.1990
AD	- Lab Oven - 10 Units	10	8417.8000
AE	- Lab Aging Oven MEMMERT - 1 Unit	1	8417.8000
AF	- Moisture Analyzer - 2 Units	2	8419.8990
AG	- Viscosity Meter BroCorrectfield - 2 Units	2	9027.8900
AH	- Gas Chromatography – 2 Units	2	9027.2000
AI	- Shoe Belt Test	1	9031.8000
AJ	- Lab Sole PU Pouring Head	1	9031.8000
AK	- BYK Gardner Test	1	9027.3000
AL	- Shore A, B, C hardness test – 3 unit	3	9024.1000
AM	- Hydro static resistance – 1 unit	1	9024.8000
AN	- Roll lab calendar – 1 unit	1	8477.8000
		Total:	

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Sr. No	Name / Type / Make of Machinery	Qty.	HS Code
G	- Post Production Testing	1	9024.1000
H	- Post Production Testing	1	9024.1000
I	- Taber - 1 Unit	1	9024.8000
J	- QUV Weathering Chamber - 1 Unit	1	9031.8000
K	- Flame Testing - 1 Unit	1	9031.8000
L	- Crocking Test - 1 Unit	1	9024.8000
M	- Color Fastness Test - 1 Unit	1	9024.8000
N	- Bust Resistance - 1 Unit	1	9030.3900
O	- Impact Resistance - 1 Unit	1	9024.8000
P	- Vamp Flex - 1 Unit	1	9024.8000
Q	- Bally Flex - 1 Unit	1	9024.8000
R	- Spectrophotometer Lab Unit	1	9027.3000
S	- Spectrophotometer QC Handheld	1	9027.3000
T	-Grinding Gauge – 2 units	2	9031.8000
U	- Refrectometer – 4 units	4	9027.5000
V	- Analytic Weight Balance 4 digit * 27 No's.s	27	9016.0010
W	- PU Lab Dry Line - 1 Unit	1	8451.8010
X	- PU Lab Wet Line - 1 Unit	1	8451.8010
Y	- Lab Vacuum Head - 1 Unit	1	8453.8000

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Sr. No	Name / Type / Make of Machinery	Qty.	HS Code
114C	Lifting, Handling & Shifting Equipments (Forklift Drum Grab (Single & Double), Hydraulic Drum Handler, Articulated Boom Lift (Diesel)	8	8428.9090
115	Laboratory Equipments:-	Various	
A	- Testing equipment for artificial leather - 20 Nos	20	9031.8000
B	- Testing equipment for PU / Polyols (FTIR)	1	9027.8900
C	- Pilot Plant for PVC Coating	1	8451.8090
D	- Pilot Plant for Mixing Machine	1	8479.8290
E	- Pilot Plant for Printing Machine	1	8443.1700
F	- Complete coal testing laboratory	1	9024.8000

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Sr. No	Name / Type / Make of Machinery	Qty.	HS Code
64	Warper	2	8448.4990
65	Warp beams	480	8448.4990
66	Dying machine - soft flow type	4	8451.4030
68	Dying machine – long tube type	8	8453.8000
69	Weft knit slitter	1	8462.3200
70	Drying range	2	8451.4030
70A	Hydro /Water Extractor Machine	3	8451.8090
71	Raising & Sharing machines	4	8451.8090
72	Stenter machine 2.2m	3	8451.8060
73	Stenter machine 1.8m with adhesive coating	1	8451.8060
74	Fabric Inspection machine roll to roll	3	8451.5000
75	ESP for Stenter	4	8451.8060
76	Sinjing Machine	1	8451.8090
	PU Plant:-		
77	Preparation Blender	1	8479.8290
78	Polyol reactor	3	8479.8290
79	Cooling blender	1	8479.8290
80	Pre-polymer reactor	3	8479.8290
81	Polyol mixing	2	8479.8290

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Sr. No	Name / Type / Make of Machinery	Qty.	HS Code
82	Catalyst preparation	1	8479.8290
83	Melting tank / bath	2	8419.8990
84	Nitrogen generator	1	8405.1000
85	Hot & Cold water loop	3	8419.8990
87	PU Pilot plant 300 L	1	8479.8290
88	PU Pilot plant 25 L	1	8479.8290
89	Pumps for complete circuit of PU plant	1 (Lot)	8413.1910
	PU Rigid:-		
90	Polyester / Polyol reactor	1	8479.8290
91	Cooling blender	2	8479.8290
92	Polyol Mixing Station	1	8477.8000
	PU for Synthetic:-		
93	Polyester / Polyol reactor	1	8479.8290
94	Polyurethane reactors	4	8479.8290
95	Lab reactor of 50 L & 200 L each	2	8479.8290
96	PU adhesive Solvent base plant	2	8479.8290
	Utilities:-		
97	Thermo oil heater (Mechanical Step Grate & Coal Fired)	3	8419.8990
98	Steam boiler 10 MT/10 Bars	1	8402.1190

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Sr. No	Name / Type / Make of Machinery	Qty.	HS Code
34	Winding and Inspection machine	6	8451.5000
35	Continuous thumbing line	1	8477.8000
36	Thumbing machine (Batch type)	2	8477.8000
37	Lamination finishing machine	5	8451.8010
37.A	Vacuum embossing for PU leather	1	8477.8000
37.B	Printing with hanger	1	8443.3990
	PVC Insulation Tape:-		
38	PVC Insulation tape Coating Lines	2	8477.8000
39	Splicing for log roll	4	8465.9600
40	Tape label and wrapping	2	8422.4000
41	Tape bundle making machine	2	8422.4000
42	Complete Carton packing machine	2	8422.4000
43	Paper tube manufacturing machine	1	8441.3000
44	Paper board slitter and re-winder	1	8462.3200
45	Solvent recovery toluene	2	8419.8990
46	2 roll – mill	1	8479.8290
47	Rubber crusher / shredder	1	8479.8290
48	Stirrer for rubber adhesive preparation	4	8479.8290
	CPE Film:-		

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Sr. No	Name / Type / Make of Machinery	Qty.	HS Code
49	Complete CPE film lines with crushers on line	2	8477.8000
50	Complete TPU film lines	2	8477.8000
51	TPU blown film lines	2	8477.8000
52	Printing 3 color TPU machine	1	8443.1990
53	Complete EVA / TPE sheet lines	2	8477.8000
54	Day light press	11	8479.3000
55	Crushers	2	8474.2090
56	2 Roll mixing mill (Big) for recycling	2	8479.8290
57	EVA / TPE joining & rolling	2	8477.8000
58	EVA / TPE splicing & rewinding	2	8477.8000
58.A	EVA / TPE Coating + lamination	2	8477.8000
	Latex coating:-		
59	Latex coating machine	1	8477.8000
60	Foamer machine	2	8479.8290
60.A	Stirrer machine	2	8477.8000
61	Winding & Inspection machine	1	8451.5000
	Textile:-		
62	Circular/Weft knitting machines	50	8447.1200
63	WARP Knitting machines	8	8448.4990

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Sr. No	Name / Type / Make of Machinery	Qty.	HS Code
14	Leather Inspection machines with film wrapping + shrink tunnel	6	8453.1000
15	Mixers & Stirrers 600 L without vacuum	3	8479.8290
16	Mixers & Stirrers 600 L with vacuum	6	8479.8290
17	Mixers & Stirrers 300 L with vacuum	2	8479.8290
18	Triple roll grinder	4	8479.8290
19	Sand mill 30 L	2	8479.8290
20	Sand mill 10 L	1	8479.8290
21	Tank Yard SS Sheet PU plant, Virgin Tanks, DMF Solution Tanks & SS Tanks Calendar Silos	1	7309.0000
22	Wet line for PU leather	2	8451.8010
23	DMF Distillation 4 effect tower	1	8453.1000
24	Dry line for PU leather	2	8451.8090
25	Solvent absorbtion recovery / ESP Tower	3	8453.1000
26	Auto dosing system (wet line)	2	8451.8010
27	Stirrer VFD 600 L with vacuum	4	8479.8290
28	Stirrer VFD 300 L with vacuum	4	8479.8290
29	Stirrer VFD 1000L with vacuum	2	8479.8290
30	Inspection machine for wet base	2	8451.5000
31	Fabric for PU film separation machine	1	8477.4090
33	Sand / Buffering for wet base	1	8453.1000

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Annexure VIII: Estimated Production Capacity

	Products	UOM		Annual Production Capacities
Annual production capacity	PVC Coating Leather	Million Linear Mtr		20.0
	PVC Rigid Film	M.Ton		7,000
	Synthetic Leather	PU	Million Linear Mtr	30.0
		PVC	Million Linear Mtr	20.0
	PVC FILM	M.Ton		14,000
	PVC Flooring	Million Linear Mtr		15.0
	PVC Adhesive Tape for Electrical and Packing	M.Ton		5,000
	CPE Film	M.Ton		5,000
	TPE/EVA Foam Sheet/Roll	M.Ton		13,000
	TPU Film	M.Ton		3,500
	Latex Coated Textile	Million Linear Mtr		3.0
	PU Resin System – Shoe Sole/Rigid/Flexible	M.Ton		30,000
	PU Resin for Leather/Textiles	M.Ton		12,000
	PU Adhesive	M.Ton		5,000
	Fabrics – Weft Knitted, Warp Knitted and Woven Fabric	Million Linear Mtr		100.0

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