

**Environmental Impact Assessment (EIA)
M/S Ruby Foam Industries (Pvt.) Ltd.**

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EXECUTIVE SUMMARY

Title & Location of the project

Subject project for which this Initial Environmental Examination study has been conducted is proposed for Establishment of Foam Manufacturing and Rebounding Unit by M/S Ruby Foam Industries Industries Private Limited Located at Daska Road, (Motra) Sialkot Tehsil Daska District Sialkot. The overall cost of the project will be Rs.440 million (approximately).

The proposed project falls under Schedule II, Category B, Clause 21 under Punjab Environmental Protection (Review of EIA/IEE) Regulations, 2022. TORs of the study under clause 5 (f) of policy and procedure for the filing, review, and approval of environmental assessment are attached as **Annexure-A** with this EIA report.

Location

Subject proposed project is located at Daska Road, (Motra) Sialkot Tehsil Daska, District Sialkot Pakistan having coordinates: 32°22'01.9"N+74°24'32.0"E

Front..... Road

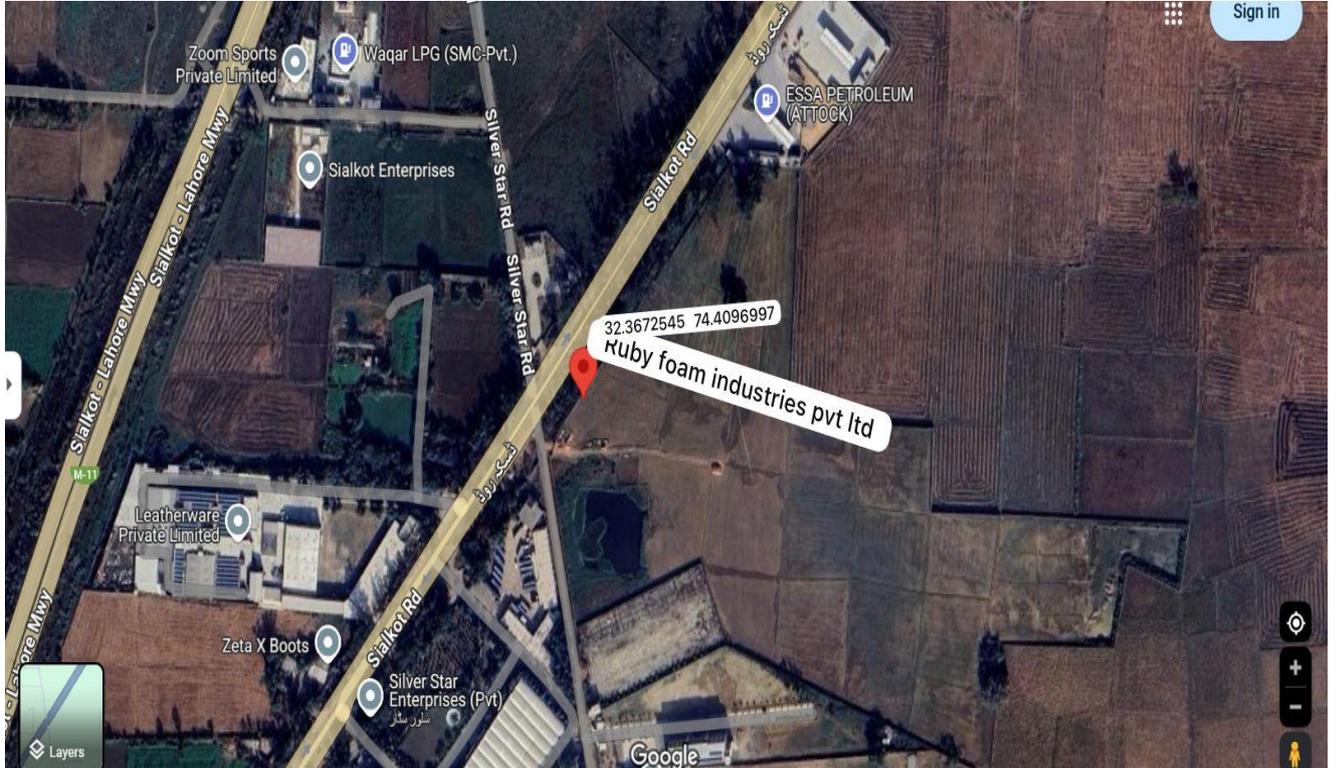
Back..... Open Plot

Left..... Open Plot

Right..... Open Plot

Google map of site proposed for the construction of the subject project

Google map of site: For further details, layout map of the project is attached as **Annexure-B** with the report



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Name of the proponent:

| | |
|------------------|--|
| Proponent | <i>Mr.Usman Rashid Sheikh S/O Mr.Abdul Rashid Sheikh</i> |
|------------------|--|

For further details CNIC of the proponent and other relevant documents are attached as **Annexure-C** with this report.

Name of organization preparing the report:

Lead Envir Safety Servies (Pvt.) Ltd, as independent consultants, has been appointed by the proponent to conduct Initial Environmental Examination (EIA) report.

For detail company profile see the Chapter # 1 “Introduction”

A brief outline of the proposal

| | |
|---------------------------------|--|
| Name of the project: | Establish a Foam Manufacturing and rebounding unit by M/S Ruby Foam Industries Pvt. Ltd |
| Location of the project: | Located at Daska Road (Motra) Sialkot |
| Nature of Project: | Nature of the project is proposed and construction will be started after getting the environmental approval. |
| Cost of the project: | Overall cost of the project will be approx. Rs. 440 million. |
| Area of Project: | 46 Kanals |
| Project process: | Process will include the manufacturing of Foam by raw material and the rebounding of foam by waste trims |
| Raw materials | Polyol, TDI (Toluene Diisocyanate) and other Additives and Foam Trims |
| Power Requirement: | 5000KVA |
| Labor/ Workforce: | During construction: 50-80 During Operation: 60-85 |
| Water Requirement: | During Construction: approximately 5,000 gallon per day for constructional and domestic uses. During Operation: The project is not likely to generate any kind of Wastewater. The cutting /crushing of foam waste and thereafter Foam Manufacturing and re-bonding does not involve use of water and generation of waste water There will be only domestic waste water |
| Solid waste: | During Construction: 75-80 kg/day construction and domestic waste |

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| | |
|--|--|
| | During operation: 11,000 kg/day domestic and project related waste |
|--|--|

The major impacts

In order to identify all the activities associated with the project during construction and operation phase with potential to cause adverse environmental impacts and harm a thorough review has been conducted. Project will not have any significant adverse impacts on the nearby community and on environment. Overall the project will have positive impacts on the local population and country as a whole.

Table: Summary of Environmental and social impacts of the project during the construction phase and mitigation measures suggested:

| Potential Impact | Criteria for determining Significance | Key Mitigation Measures |
|---|--|---|
| <p>Dust Emissions—Particulate matter emitted during construction activities and gaseous emissions from site generators and transportation vehicles can result in deterioration of ambient air quality in the vicinity of the project site, and be a nuisance to the surrounding workers.</p> | <p>An increase in visible dust beyond the boundaries of the construction site; or Concentration of PM₁₀ in excess of 150 µg/m³ PEQS for Ambient Air.</p> | <p>Sprinkling of water on unsealed surfaces is recommended Vehicle speed restrictions should be applied in the project area; Raw materials should be transported in covered trucks. Ensuring that no stockpile is within 250 m of the community.</p> |
| <p>Construction Noise- Disturbance to surrounding communities due to operation of construction machinery at the project site.</p> | <p>PEQS for Noise OSHA standards</p> | <p>Noise monitoring has been conducted at the project site before starting the construction activity. Reduce noise at source; Take noise levels in consideration during detailed design and construction planning; Reduce traffic noise.</p> |
| <p>Solid waste Management— Improper waste management may generate health and aesthetic issues</p> | <p>Generation of excessive waste; Recyclable waste and reusable waste is discarded; Improper disposal.</p> | <p>Development of a waste management plan; Constructional waste should be utilized for road filling and maintenance. Domestic waste should be disposed of properly, handed over to contractors, placed in bins.</p> |

| | | |
|---|--|--|
| <p>Vegetation Loss/ Soil erosion—Loss of vegetation as a result of land clearance for the construction purposes</p> | <p>Unnecessary or excessive removal of trees and shrubs.</p> | <p>Preparation of a Reinstatement Plan; Minimization of the felling of trees and clearing of vegetation; and avoidance of the use of fuel wood</p> |
| <p>Water Resources— The extraction of water for the project construction activities can affect the groundwater availability for the project area communities</p> | <p>Water extracted for the project can directly affected the ability of the community to meet their water needs</p> | <p>No impact on the community groundwater needs is envisaged as a result of the project.</p> |
| <p>Soil Contamination—Oil can contaminate the soil</p> | <p>Presence of visible amount of hydrocarbon in soil</p> | <p>Provision of spill prevention and control kits; Use of impermeable surfaces in workshops, and storage areas</p> |
| <p>Socioeconomic Issues Workers Safety— Safety hazards associated with the construction activity, particularly with the increase in traffic at the project site.</p> | <p>No specific guidelines exist. A significant impact will be interpreted if there are complaints from the community or the occurrence of any injury or loss</p> | <p>Speed limit of 10 km/h will be maintained on the access road; Traffic controller will be stationed on the access road; night driving will be kept to a minimum</p> |
| <p>Project and Community Interface—Inter-cultural differences between the project staff from other areas and the local community</p> | <p>No community complaints</p> | <p>Training of the non-local project staff on local culture and norms; Avoidance of unnecessary interaction of local population with the non-local project staff</p> |

Table: Summary of Environmental impacts of the project during the operation phase and their mitigation measures:

| Potential Impact | Criteria for determining Significance | Key Mitigation Measures |
|---|--|---|
| Machinery Noise- Working of machinery can be a nuisance for the workers in the working area. | OSHA Standards | PPEs i.e. ear muffs should be provided to workers in case of high noise. |
| Health & Safety Issues- Health and Safety issues e.g. Cuts and Injuries may be caused during the machinery handling. | OSHA Standards | Proper training of the staff should be conducted to avoid the accidents. First aid measures should be provided at the workplace. |
| Solid waste management- Improper solid waste management may cause health problems and aesthetic issues | Exposure to potentially hazardous waste; Generation of excessive waste; Recyclable waste and reusable waste is discarded; Improper disposal. | Waste bins should be placed at suitable places. Domestic and process related waste should be handed over to contractors. |
| Groundwater —The increased withdrawal of groundwater for the project will affect the groundwater resources of the project area | Water extracted for the project can directly affected the ability of the community to meet their water needs | No impact on the community groundwater needs is envisaged as a result of the project. |

Proposed Environmental Monitoring

To oversee the environmental performance of the project through its lifecycle enforcing the PEQS an Environmental Monitoring Program should be formulated which ensures effective surveillance of the environmental parameters at various stages of the project development and compliances with PEQS and legal obligations. Monitoring for following Environmental Parameters is recommended:

- **Ambient Air**

Monitoring for ambient air should be conducted on regular basis during construction and operation phases of the project and report should be submitted to EPA Punjab.

- **Noise**

Regular monitoring for noise level should be maintained periodically during construction and operation phases of the project and report should be submitted to EPA Punjab.

- **Water quality**

Regular monitoring of water quality should be conducted on regular basis during construction and operation phases of the project and report should be submitted to EPA Punjab.

Recommendation: Environmental Monitoring data log book should be maintained by the project proponent.

Proposed Environmental Monitoring Program:

| Sr. No. | Parameters | Monitoring Schedules During Construction | Monitoring Schedules During Operation | Monitoring Duration |
|----------------|--|---|--|----------------------------|
| 1 | Stack Emission Analysis | Quarterly | Quarterly | As per PEQ's |
| 1 | Ambient Air Monitoring (NO _x , CO ₂ , SO ₂ , PM ₁₀) | Quarterly | Quarterly | As per PEQ's |
| 2 | Noise Level | Quarterly | Quarterly | As per PEQ's |

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|---|------------------------|-----------|-----------|--|
| 4 | Drinking water quality | Quarterly | Quarterly | Some parameters on site Others in lab |
| 5 | Waste Water | Quarterly | Quarterly | Some Parameters on Site Others in Lab |

CHAPTER # 1

1. INTRODUCTION

This Section of the report provides an overview of the rationale of the Project, objective of project, requirement of the project, purpose of the report and approach adopted to conduct the Environmental Impact Assessment (EIA)

1.1. Purpose of the report

Environmental Impact Assessment (EIA) report is being submitted to the Environmental Protection Agency (EPA), Government of the Punjab, Lahore for the compliance of Section 12 of Punjab Environment Protection Act-1997 (Amended 2012) for obtaining No Objection Certificate (NOC) before starting the construction activity at the project site. The other relevant regulations and guidelines considered while preparing this EIA report include:

- Policy and procedures for filing, review and approval of environmental assessments.
- Guidelines for the preparation and review of environmental reports.
- Guidelines for public participation.
- Guidelines for sensitive and critical areas.
- Detailed sectoral guidelines

Various aspects like environmental, social, physical and other aspects of the project both during construction and its regular occupancy are highlighted in this EIA report. Measures necessary to be adopted to mitigate any environmental impacts on any part of the environment around are also described. All the important information is also provided as described under the format used to help decision makers, EPA Punjab in the present case, before issuing the desired Environmental Approval.

1.1.1 Identification of the project and proponent

The proposed project falls under Schedule II, Category B, Clause 21 under Punjab Environmental Protection (Review of EIA/IEE) Regulations, 2022.

Proponent:

| | |
|--------------------|--|
| Proponent | <i>Mr. Usman Rashid sheikh S/O Abdul Rashid Sheikh</i> |
| <i>CNIC #</i> | 34603-2207696-3 |
| <i>Resident of</i> | Ruby Cottage Haider Road, House # 121-A-1 Sialkot Cant., Tehsil and District Sialkot |

For further details CNIC of the proponent and other relevant documents are attached as **Annexure-C** with this report.

1.2. Details of Consultant

Lead Enviro safety Services Pvt Ltd. is an independent company, who conducts IEE, EIA, EMP and other environmental investigations through its panel of environmental consultants, public participation practitioners and experienced environmental managers. The company has its own recommended instruments to check the baseline environmental data/PEQS and lab analysis facility for water, waste water priority parameters.

The current study was carried out by the following professionals:

| Sr. No. | Designation | Name/Qualification | Experience |
|----------------|---|--|--|
| 1) | Chief Environmentalist/ Lead Environmental Professional | Dr Mujahid Farid PhD Scholar Environmental Sciences | 10 Years' Experience as Environmental Professional |
| 2) | Senior Environmental/ Environmental Professional | Muhammad Shahzad Environmental Sciences | 6 Years' Experience as Environmental Professional |
| 3) | Environmental professional | Nayab Komal M.phil Environmental Sciences | 4 Years' Experience as Environmental Professional |
| 4) | Environmental professional | Shoaib Ahmed | 7years Experience as Environmental Professional |

1.3. Brief description of Nature, Size and Location of Project

Subject project for which this Initial Environmental Examination study has been conducted is proposed for Establishment of Foam Manufacturing and Rebounding Unit by M/S Ruby Foam Industries Industries Private Limited Located at Daska Road, (Motra) Sialkot Tehsil Daska District Sialkot. Detail of Layout Map and Google map is attached as Annexure. The overall cost of the project will be Rs.440 million (approximately).

| | |
|---------------------------------|---|
| Name of the project: | Establishment of Foam Manufacturing and Rebounding Unit by M/S Ruby Foam Industries Industries Private Limited Located at Daska Road, (Motra) Sialkot Tehsil Daska District Sialkot |
| Location of the project: | Daska Road, Tehsil Daska, District Sialkot |
| Nature of Project: | Nature of the project is proposed and construction will be started after getting the environmental approval. |
| Cost of the project: | Overall cost of the project will be approx. Rs. 440 million. |
| Project process: | Process will include Foam Manufacturing and Rebounding of Pu Trims |
| Raw materials | Polyol, TDI (Toluene Diisocyanate) and other Additives and Foam Trims |
| Power Requirement: | 5000KVA |
| Labor/ Workforce: | During construction: 50-60 During Operation: 60-65 |
| Water Requirement: | During Construction: approximately 5,000 gallon per day for constructional and domestic uses. During Operation: maximum 33,000 gallons/d for domestic |
| Solid waste: | During Construction: 75-80 kg/day construction and domestic waste. During operation: only domestic waste because minimum water will use for reaction |

1.4. Location

Subject proposed project is located at Daska Road, (Motra) Tehsil Daska, District Sialkot Pakistan having coordinates: 32°22'01.9"N+74°24'32.0"E

Front..... Road

Back..... Open Plot

Left..... open Plot

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Right..... Open Plot

For further details, layout map of the project is attached as **Annexure-B** with the report and Google earth map is attached as **Annexure-B**.

1.5. Screening

The proposed project falls under Schedule II, Category B, Clause 21 under Punjab Environmental Protection (Review of EIA/IEE) Regulations,2022.

CHAPTER # 2

2. DESCRIPTION OF THE PROJECT

2.1. Type and Category of the Project:

Subject project for which this Initial Environmental Examination study has been conducted is proposed for construction of Stitching unit (cut to pack) under the name of M/S Ruby Foam Industries Private Limited Awan Located at Daska Road Sialkot, Motra Tehsil Daska, District Sialkot. Detail of layout is attached as annexure. The overall cost of the project will be Rs.440 million (approximately).

The proposed project falls under Schedule II, Category B, Clause 21 under Punjab Environmental Protection (Review of EIA/IEE) Regulations, 2022. TORs of the study under clause 5 (f) of policy and procedure for the filing, review, and approval of environmental assessment are attached as **Annexure-A** with this EIA report.

2.2. Objectives of the Project

Objectives of the construction of the subject project are:

- To meet the increasing market demands of Foam.
- To enhance the business of the proponent.
- Contribution to the national economy.
- Compensate to help poverty by providing employment.

2.3. Alternative Considerations and Reasons for their Rejection:

2.3.1. Location alternatives:

To fulfill the commercial aspects of the project under reference of this EIA Report, it is to be sited at a place where commercial processing activity is either already going on or there are bright prospects of the same. The current project is proposed for construction of Foam Manufacturing and Rebounding unit, it must also meet the legal requirements of the Punjab Environmental Protection Act, 1997 (Amended 2012). Availability of land at the best convenient place is equally important among other considerations for the site selection. Availability of access roads, communication facilities, electricity, basic infrastructure, sewerage etc. is yet the other necessary requirements.

Obviously, environmentally sound, neat and clean environment are the other considerations for site selection. The project will also facilitate the people of the area with increasing the opportunity of employment, and other related facilities.

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Keeping these requirements and their feasibility and other basic infrastructural requirements, the selected site is ideally suited for Construction of the subject Apparel manufacturing unit.

2.4. Location and site layout of the project:

Subject proposed project is located at Daska Road Sialkot, Tehsil Daska, District Sialkot Pakistan having coordinates:

Front..... Road

Back..... Open Plot

Left..... open plot

Right..... open Plot

For further details, layout map of the project is attached as **Annexure-B** with the report. and Google earth map is attached as **Annexure-B**.



Fig: Google map of site proposed for the construction of subject project

2.5. Land Use on site

Site proposed for the construction of the subject project is an empty plot and it is the property of the proponent, reserved by the proponent for the construction of the subject project.

2.6. Road Access

Daska Road is the access road of the project.

2.7. Vegetation features of the project

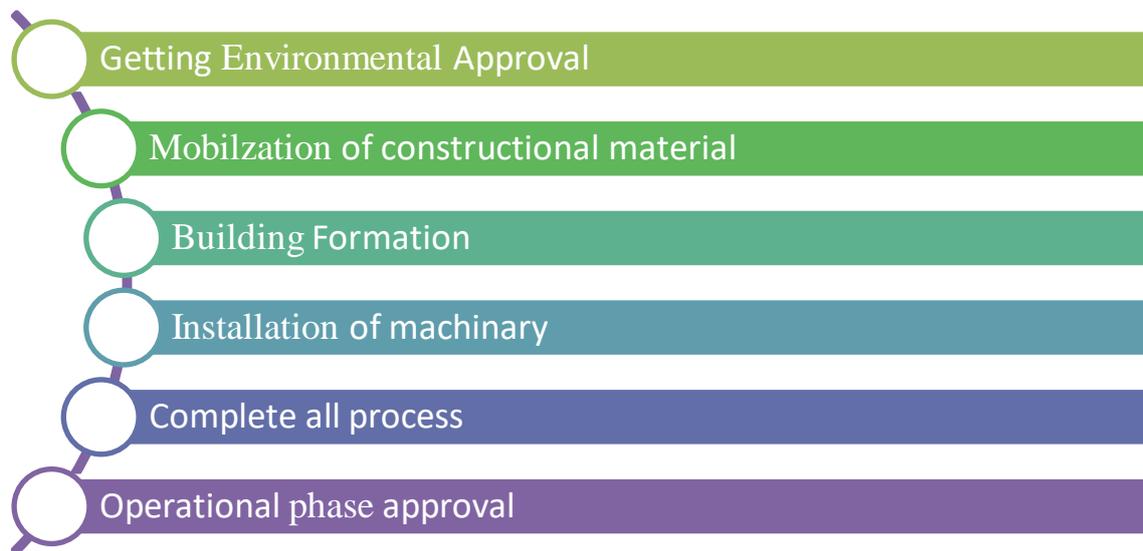
Land proposed for the subject project is clear and free of dense vegetation, only shrubs like few and scattered amount of vegetation will help to avoid land clearing at the project site.

2.8. Cost and magnitude of the operation

Project site is located at Daska Road Sialkot. Detail of layout is attached as annexure. The overall cost of the project will be Rs.440 million (approximately).

2.9. Schedule of Implementation

Detailed feasibility studies and designing of the project have been completed. Necessary legal, administrative and financial formalities are being finalized. The project is expected to be completed within 6-12 months from the date of environmental approval. Subsequently the operational and maintenance aspects of the project will be undertaken by the proponent.



2.10. Description of the project:

Subject project for which this Environmental Impact Assessment study has been conducted is proposed construction of Foam Manufacturing unit under the name of M/S Ruby Foam Industries Pvt Ltd located at Daska Road Sialkot, (Motra) Tehsil Daska, District Sialkot.

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The foam manufacturing process varies depending on the type of foam being produced (e.g., polyurethane, polystyrene, polyethylene, melamine, metal, etc. Different type of chemicals mixed and heated at specific Temperature Then The mixture is poured into molds to create specific shapes and placed for cooling after that different bread form is made and then sprayed on it after that mattresses manufactured according to dynasty, in rebounding process Pu Trims crushed in crushing machine and then goes rebounding machines after that it will go for dynasty and requirements

| | |
|--------------------------------------|---|
| Name of the project: | Establish a single- story factory building of M/S Ruby Foam Industries Private Limited |
| Location of the project: | Daska Road Sialkot (Motra), Tehsil Daska, District Sialkot. |
| Nature of Project: | Nature of the project is proposed and construction will be started after getting the environmental approval. |
| Cost of the project: | Overall cost of the project will be approx. Rs. 440 million. |
| Project process: | Process will include foam Manufacturing and Rebounding. |
| Labor/ Workforce: | During construction: 50-80 During Operation: 60-85 |
| Quantity of waste water : | During Construction: approximately 5,000 gallon per day for constructional and domestic uses. During Operation: In foam manufacturing and rebounding process there will be no waste water Very low quantity of water will required for reaction |
| Quantity of Gaseous Emissions | The project will generate minimum level of foam dust when there is cutting /crushing of foam waste. And in the process of spraying fume hood will be placed For the boiler, pollution control technique e.g Scrubber or cyclone will be installed |
| Solid waste: | During Construction: 75-80 kg/day construction and domestic waste. During operation: 11,000 kg/day domestic and project related waste. |

2.11. ACTIVITIES OF THE PROJECT

2.12. Machinery

List of machinery is attached as **Annexure-E**.

2.12.1. Raw Materials Purchase & Storage

Raw material for foam Manufacturing will include polyurethane, polystyrene, polyethylene and other raw materials e.g additives required for the production will be obtained through the Suppliers in the local market.

Raw Material for Rebounding includes Pu Trims

2.12.2. Chemical Reaction

A chemical reaction occurs between the polyol and isocyanate, producing polyurethane.

2.12.3. Molding

- **Molded Foam:** The mixture is poured into molds to create specific shapes (e.g., car seats, mattresses).
- **Slabstock (Free-rise) Foam:** The mixture is poured onto a moving conveyor belt to form large blocks, later cut to size.

2.12.4. Curing

The foam is allowed to cure (harden and stabilize), typically taking several minutes to hours depending on the type and size

2.12.5. Cutting and Shape

Before Cured foam blocks are cut using:

- Horizontal or vertical saws
- CNC cutters for precision shapes

2.12.6. Post Treatment

- **Flame retardant spraying**
- **Compression packaging**

2.12.7. Export

The packed goods are then prepared for export. This involves arranging the logistics, completing necessary documentation, and ensuring the products are shipped to international markets as per the delivery schedule. Packing

All cutting materials will be packed in the specified cartons through different processes such as taping, labeling, tagging etc. Process flow diagram is also attached as Annexure-F.

Water requirements:

During Construction: approximately 5,000 gallon per day for constructional and domestic uses.

During Operation: maximum 33,000 gallons/d for domestic. Ground water will be used as a source of water to fulfill the water requirements during the construction and operation phases of the project.

2.13. Waste water treatment:

60-70% of the used water for domestic purposes will be the waste water which will be produced during the operation phase of the project. The generated wastewater will be treated in treatment facility (Sheikh of sialkot) Agreement attached with report. Water after treatment will be disposed of in the nearby drain.

2.14. Solid waste:

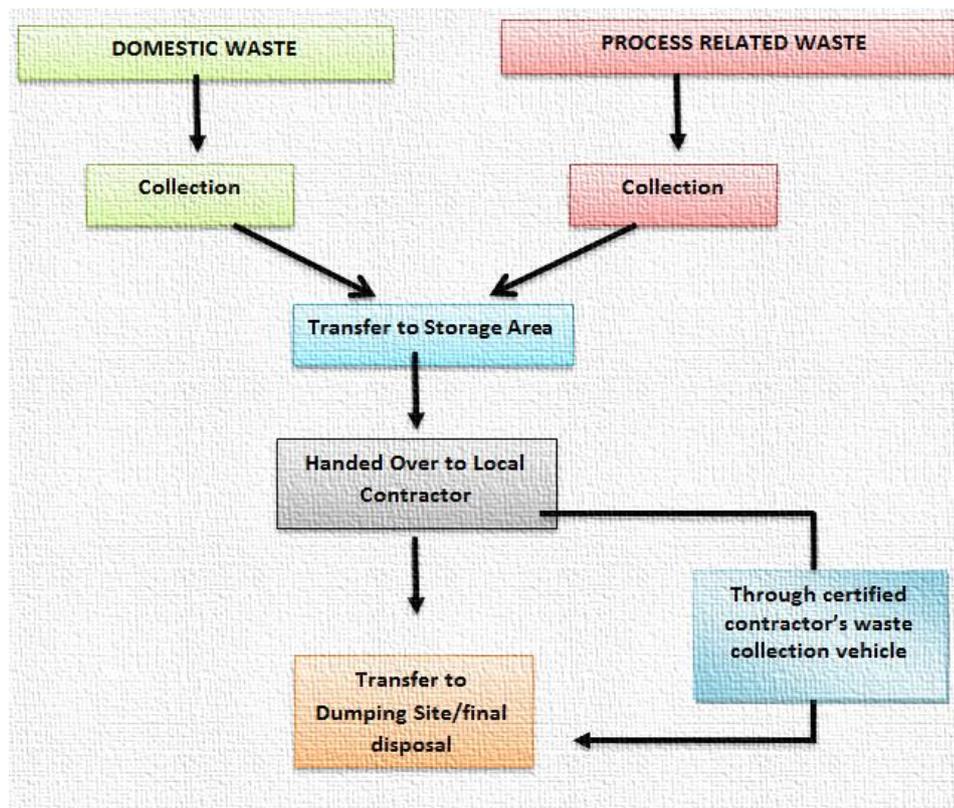
During the construction phase of the project, 75 kg/day construction and domestic waste will be produced. Constructional waste will be recycled during the constructional activities for road filling and maintenance purposes. According to an estimate, 11.000 kg/day domestic and project related solid waste will be produced during the operation phase of the project (based on solid waste generation rates of 0.45 kg/capita/day urban waste generation). Project related waste will include threads, which will be handed over to the certified contractors.

2.14.1. Solid waste management system/practices

The Solid waste will be managed in proper way by following operations:

1. Placement of separate waste bins for domestic and project related waste in all working halls and designated points.
2. Collection of waste from all the working halls at one designated point by the sanitary workers on daily basis.
3. Collected waste will be handed over to the solid waste contractors for its final disposal, from this point.

2.14.2. Flow chart of solid waste management plan:



2.15. Plantation

Area for plantation will be reserved within the premises of the project and plantation will be done within, outside and at the boundary wall of the unit.

2.15.1. Parking Area

Parking area will be made available within the unit for cars, motorcycles, trucks etc.

2.15.2. Fire Protection System

An addressable fire protection system with detection and alarm annunciation and other installations etc. would be provided to protect against any fire hazards. Fire buckets and fire extinguishers will be installed at all sensitive places within the unit.

2.15.3. Emergency Exits:

Emergency exit points will be made available for easy evacuation in case of any emergency.

2.15.4. Personal protective equipment:

Workers will be provided with Gloves, Masks & other personal protective equipment during the working hours to ensure personnel health & safety. Implementation of PPEs will be ensured by the proponent for the proposed project also.

2.15.5. Power sources and transmission:

The power requirements will be fulfilled by WAPDA. However, a diesel fired stand by generator (if needed) will also be used for emergency situations only. Two boilers will be installed to meet energy Requirement

- Technogen Steam Generator 60-G Heater 24 KW (Electric)
- Technogen Steam Generator 10-G Electric Fully Automatic

2.16. Available Facilities

Available facilities at the proposed project site include:

- Electric supply from WAPDA
- Solid Management (SWM), Water supply, sewerage disposal and drainage systems
- Line and cellular telephone facilities

2.17. Restoration / Rehabilitation Plan

All possible precautions will be taken to prevent an untoward incident in terms of life and property losses. The demolition materials will possibly be reused and recycled. All excavated surfaces will be termite proofed.

One completion of the project, the debris will be removed from the site in order to maintain aesthetics of the project. All measures will be undertaken for ensuring occupational safety, security and clean environment in the project area. Ornamental trees and flower plants will be planted on inside peripheral of the unit premises to restore the land.

2.18. Government approvals required by the project:

All the approvals will be obtained by the project proponent and will be submitted to EPA at the time of operation.

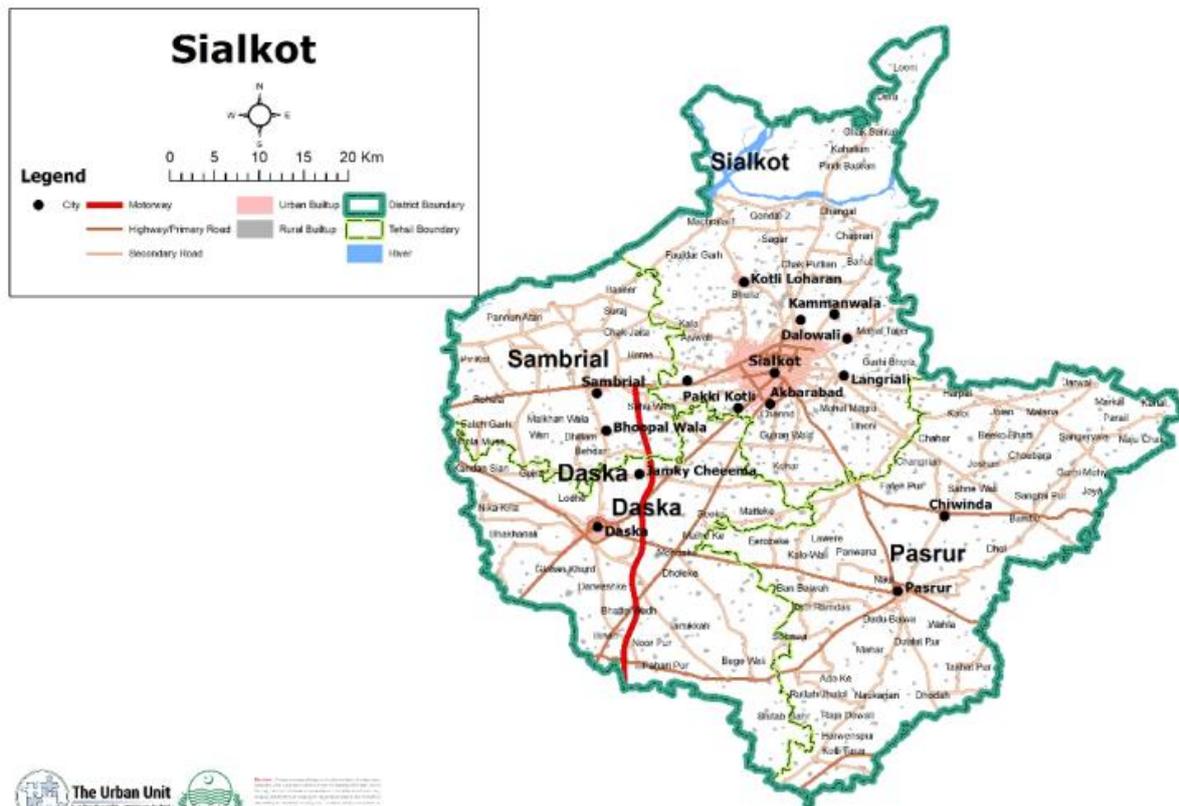
CHAPTER # 3

3. DESCRIPTION OF ENVIRONMENT

This section describes the baseline conditions, which cover the existing Physical, ecological and socio-economic environment of the project as well as study area. Data was collected by reviewing secondary data and field survey.

3.1 Physical Environment/ Resources

District Sialkot is the 9th largest district of Pakistan and encompasses over an area of 745,269 Acres (3,016 km²)¹ with population of about 3.9 million.² Whereas, Sialkot city is the 13th largest city in the Punjab. Presently, about 0.7 million are in Municipal Corporation



Sialkot. By addition of new UCs, the present population will become 0.72 million. Sialkot District is bounded on the north-east by the Jammu & Kashmir state, on the north-west by rivers of Ravi and Chenab, which separate it from the Gujrat District, on the west and southeast by Gujranwala and Narowal District respectively. It is an irregular tract occupying the sub-mountainous portion of Rachna. It is divided in four sub-divisions i.e. Sialkot, Daska, Pasrur and Sambrial. The district is a plain, sloping down from the uplands at the base of the Himalayas to the level country in the south. It is one of the few cities of Pakistan where dry

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port was established in 1984 and export processing zone (EPZ) was developed in 1995. Sialkot has 8,100 industrial units which make it 4th largest manufacturing hub. Sialkot is the 2nd largest surgical instrument manufacturing city in the world. It is 3rd largest sports manufacturer in the world and ranks 1st in Asia. Sialkot is the sole city in Pakistan in which private airport was developed having the longest runway.

The district Sialkot is bounded on the North by Indian held Jammu & Kashmir, on the North West by District Gujrat, on the South West by the District Gujranwala, on the West East by District Sheikhpura and Narowal. In the south east “Nullah Daik” separates District Narowal from District Sialkot and enters Lahore. In west there is a vast plane area which is very fertile. The soil at the surroundings of “Nullah Daik” and river “Chenab” is very fertile. There are two canals in the district namely; Upper Chenab and Marala Ravi Link. These canals were derived from River Chenab and Marala Head Works in years 1937 and 1955.

3.1.1 Climate

Climate has humid, subtropical climate with four seasons. The highest day temperature is recorded in the months of May and June. The post-monsoon season from Mid-September to End-October remains hot during the daytime, but nights are cooler with low humidity. In the winter from mid-November to March, days are mild to warm, with occasionally heavy rainfalls occurring. Most precipitation falls in July, August and September with an accumulative average annual rainfall of 772mm.

| | Jan | Feb | March | April | May | June | July | Aug | Sep | Oct | Nov | Dec |
|-----------------------------|------|------|-------|-------|------|------|------|------|------|------|------|------|
| Avg Temperature (°C) | 12.1 | 14.8 | 20.1 | 25.8 | 31 | 33.6 | 30.9 | 29.5 | 29 | 25.1 | 18.5 | 13.3 |
| Min Temperature (°C) | 5.7 | 8.1 | 13.3 | 18.4 | 23.1 | 26.6 | 26.2 | 25.3 | 23.6 | 17.8 | 10.5 | 6.1 |
| Max Temperature (°C) | 18.5 | 21.6 | 26.9 | 33.2 | 38.9 | 40.7 | 35.6 | 33.8 | 34.4 | 32.4 | 26.5 | 20.5 |
| Precipitation/Rainfall (mm) | 46 | 40 | 41 | 20 | 16 | 61 | 134 | 252 | 114 | 18 | 8 | 22 |

The monsoon seasonal flooding in Sialkot occurs when the rivers running through the city and surrounding areas overflow due to extreme and unusual volumes of rain in the upstream, mountainous regions of Kashmir. 160. The impact of this flooding in Sialkot is probably exacerbated by the fact that an increasing proportion of the city area in recent years has been covered by impenetrable surface materials such as asphalt and concrete, thus reducing the absorption capacity of the city soil compared with earlier. More importantly, flooding events are exacerbated by drains and natural water courses and ponds being blocked by irregularly

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dumped solid waste. Sialkot has no separate storm water system. The drains along main roads are designed for storm water but actually carry both storm and waste water, and are also used for irregular disposal of solid waste.

The Chenab River traverses near to Sialkot, and several canals extend from it. Upper Chenab Canal takes off from the River Chenab at Marala Barrage with full discharge capacity of 16,500 cusecs and passes the Sialkot City near its RD: 81+000 (Sialkot-Wazirabad Road). Sialkot District has experienced notable flood events (exceptionally high flood) in the past few decades. The 1992 flood was the ever highest in the history of Marala Barrage with magnitude of 845,092 cusecs. The classification of Flood Limits in cusecs at U/S of Marala Barrage is as follows;

| Date | Discharge U/S Barrage (cusecs) | Flood Type |
|------------|--------------------------------|------------|
| 19-02-2003 | 316,924 | High |
| 17-08-2004 | 93,150 | Normal |
| 07-07-2005 | 345,479 | High |
| 04-08-2006 | 247,123 | High |
| 13-03-2007 | 257,409 | High |
| 08-08-2008 | 174,977 | Medium |
| 28-07-2009 | 129,963 | Low |
| 06-08-2010 | 314,378 | High |
| 16-09-2011 | 169,055 | Medium |
| 04-08-2012 | 205,914 | High |
| 15-08-2013 | 377,290 | High |

The potential vulnerability threat to existing assets is clear, especially to water supply as a considerable number of tube wells and filtration plants are located in the flood prone areas. Much of the local flooding is caused by a vicious circle of poor drainage and solid waste management leading to even worse drainage and solid waste management issues. A key starting point for introducing strategic resilience building measures is therefore to reduce those human induced factors that add to the flooding, e.g. covering with impenetrable surface materials and drain blocking. In addition, the basic urban service systems that do exist should not be allowed to further deteriorate and lag behind the rapid urban development, which characterizes Sialkot. Urban flood happens because of inadequate storm and sewer system within Sialkot. Fluvial flood from Aik Nullah, Bhed Nullah and Phalku Nullah is a major calamity for Sialkot (DDMA, 2008). Sialkot has uneven land gradient, which results in small catchments and

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localized ponding when flood occurs. Figure IV-4 shows the flood-prone area and the main corresponding floodwater source around the Sialkot urban area. Most central city is under the threat from the heavy storm. Palkhu Nullah causes flood in the northeast, while Bhaid Nullah causes flood in the northwest of the city. The Aik Nullah caused flood in the south and southwest of the city.

3.2 Environmental Landscape:

Unchecked disposal of untreated municipal and industrial wastewater and excessive use of fertilizers and insecticides are the major causes for deteriorating ground water quality in the region. Sialkot, known as a hub of industries is facing severe challenges in maintaining surface and groundwater quality due to rapid industrialization along with urbanization and unsustainable agricultural activities. All the industrial units consume large amount of water which, together with dissolved toxic substances (acids, base or toxic chemical compounds and heavy metals) after processing is discharged into nearby agricultural lands, ponds, open ditches, rivers, streams and open land. Toxic effluents percolate down into the soil resulting in aquifer contamination, polluting potable water supplies. Open unlined drains and dumping sites of urban and industrial waste, agricultural runoff and flooding during monsoon season are other most hazardous polluting source of groundwater contamination. Majority of the urban population relies on dug wells, boreholes, hand pumps and tube wells for drinking water and other purposes. Pollution in the shallow groundwater has critically impact the health of the citizens. Environment and Climate Change Vulnerability Assessment (CRVA) report of Sialkot indicates to drill about 180 meters (600 ft.) to extract clean water. Sialkot district experiencing significant seasonal variation in temperature with mean average temperature is 30.27 o C, it is expected to increase up to 32.06% by 2030 under different climate change scenarios. Similarly, it is expected that annual rain fall may increase upto 9.4% by 2030 in Sialkot. The district has already experienced four major flooding events in the last decade which is exacerbated by the inadequate storm and wastewater infrastructure in the city. There is lack of green spaces in Sialkot and the existing parks are not well maintained.

3.3 Water Resources:

River Chenab is the main nearest source of surface water for Sialkot City. Marala Barrage is the nearest structure to Sialkot on River Chenab. The Barrage is located 23 km towards North East from Sialkot city. It is 16 km from the foothills of Pir Punjab Range where it enters the plain lands near Ahknoor. Upper Chanab Canal (UCC) and Marala Ravi (MR) Link Canal

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take-off from Marala Barrage and cross the Sialkot City from the north-west. Similarly, some natural nullahs are also passing through the Sialkot. The Chenab receives its supply of water from the snow-covered central range of Himalayas as well as from numerous smaller streams from the lower hills. The force of the river throughout its course is considerable. In its left bank upper Marginal Bound and lower marginal bound have been constructed near Head Marala saving vast area of Sialkot Tehsil from flood devastation. The two Tawis, namely Jammu Tawi and Munawar Tawi are small rivers, which originate from Jammu & Kashmir State Territory and enter District Sialkot at its northern tip. These two merges with river Chenab near Marala Barrage. Jammu Tawi is of particular mention, because it cuts off Bajwat area completely from the rest of the Tehsil during the flood season. The surface water facilities (river & canal) appears to be the main source of groundwater recharge in the area. The aquifer underlying Sialkot area is unconfined and comprises sand with clay lenses of varying thicknesses and extension at places, and is the continuity of the aquifer of the Punjab plain. The reported thickness of aquifer around 1300 ft. The aquifer mainly comprises sand with clay lenses of varying thickness and extension at places. Due to un-certainty of flows and huge financial requirement for water storage and treatment, Nullahs are not feasible for water supply. Flows of MR Link are only available in flood season and therefore water requirement can only be fulfilled in flood season. Water from Chenab River can be used directly for Sialkot city from Marala Barrage, in this scenario the carriage cost will be too high. The most feasible source of water may be through Upper Chenab Canal but It may be noted that during canal closure period i.e. in January and sometimes in February, there is no water available from UCC. Similarly, in some months of year the flows in the canal receded to zero which may be due to none availability of waters at head or otherwise shortage in the system. Therefore, it is proposed to rely on ground water.

3.4 Agriculture

The major crops and fruit of district Sialkot are wheat, rice, citrus and guava. Their average annual production over the period 1998-2001 was 453, 242, 6 and 11 thousand Metric Tons, respectively. A variety of vegetables are also grown in the district.

There are 14 flour mills, 57 rice husking units, one sugar mill, one vegetable ghee unit and one fruit juice unit already working in the district. However, there exist good prospects for rice bran oil, rice husk briquettes, maize products, dal mills, etc.

There are number of major factories which are contributing to make the economy stronger.

3.5 Livestock

As per Punjab Development Statistics for the year 2020, the population of cattle, buffaloes, sheep and goats was 195, 471, 42 and 137 thousand heads respectively. For poultry, there were 954 broiler, 134 layer and 9 breeding poultry farms, having a rearing capacity of 11150, 747 and 63 thousand birds respectively. The annual availability of hides and skins is estimated at 536 thousand pieces. In the district of Sialkot there are 92 tanneries, 244 leather garments/products manufacturing units, and more than 900 leather sports goods manufacturing units. There exists a scope for dairy farms, animal/poultry feed and cattle/sheep/goat fattening farms.

3.6 Industry

District Sialkot is traditionally a centre of sports goods, surgical instruments, leather goods/garments, cutlery, and musical instruments industries. There are also various types of plastic- and metal-based industries. In view of the existing industries, there exists a good scope for material testing laboratory, forging, electroplating unit, hospital furniture, disposable syringes, hospital gloves, steel furniture, cast iron pipe, steel pipes/tubes, galvanized iron pipe, industrial gloves, and special thread for sports goods industries. It earns annually 1.2 billion dollars annually and contributes to the national exchequer. There are over 264 tanneries, 244 leather garments/products manufacturing and 900 leather sports good manufacturing units are scattered in and around the city.

3.7 Air Quality:

The project is located in agricultural area of District Sialkot. The major sources of air pollution in the area are vehicular traffic and surrounding factories.

To record the baseline ambient air quality of the project area, three samples were collected at different location to observe the level of CO, SO₂, NO₂ and Particulate Matter (PM10). The results of the samples are within the PEQS limits.

3.8 Noise Level:

Major sources of noise generation are industrial unit and vehicular traffic along the main road. Noise levels were monitored at different location of the project site. The noise levels are falling in the range of 42-72 dB.

3.9 Surface water:

The surface water is of good quality. All the parameters are within the PEQS.

3.10 Ground water:

Underground water is available in large quantity and its quality is very good. The underground water is supplied by pumping system (motor pump, tube well, hand pump) to the residents of the area. The underground water is of good quality and all its parameters being tested are within the WHO guide lines and the water is fit for drinking purposes.

3.11 Demographics:

The population as per the latest census data (2017) of MC Sialkot residing in 24 UC's is 591,668 persons, whereas an additional 121,5422 persons currently reside in the additional five (05) UCs, making a total of 713,210 persons in 29 UCs. Similarly, Sialkot's urban population is expanding rapidly. Its share has raised from 32% of the population in 1998 to 25% today; if current trends of rural to urban migration continue, this share will exceed 50 per cent in 2025. This trend will have additional complexity, as the inability of the city to absorb, comfortably accommodate, and meaningfully employ rural-to-urban migrants exacerbates social/ethnic tensions between 'native' and migrant populations.

Sialkot is one of the important economic centers of Pakistan and famous all over the world for its leather garments, surgical instruments and sports goods export. During last three decades this city made a tremendous progress in the development of small and medium industry, which created a lot of income generating activities and job opportunities in the city which improved the living standard of local people. This situation is favorable to some extent for the urban growth but as trend indicates, this higher population growth rate put the existing municipal system under stress and worsens day by day. Moreover, Sialkot plays an important regional role as an agricultural processing and shipping center, supplier of goods and services to surrounding smaller urbanizing and rural areas, and generates significant employment in surrounding settlements as a result of the contracted work system favored by many of the manufacturers. Sialkot has a very pro-active and entrepreneurial private sector interested in the city, leading its industrial economic base, and ready for more PPP participation to move the city forward. The city has Pakistan's only privately developed and operated international airport which is a strong attraction for its international customers. Road and rail transport connections exist and are in the process of being improved. International competition is increasing as technology slowly replaces the hand labor skills that built Sialkot's position. The city needs to work hard to establish a more competitive environment.

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3.12 Ecological Resources

The Bajwat Wildlife Sanctuary in Sialkot protects a complex of natural riverine habitats along the Chenab River and two of its tributaries, extending up to the border with India. Its total area of 5,400 hectares (13,000 acres) provides protection for waterfowl, as well as a variety of mammals including hog deer and nilgai. Scientists have recorded 110 species of birds on the site. The most common are species of the family Motacillidae. The sanctuary is in the Sialkot District.

3.12.1 Flora:

Management has planted various types of plant species at site.

3.12.2 Fauna:

There is no any threatened/ endangered fauna in the subject site area.

3.12.3 Rare or endangered species:

There are no game reserves or protected lands/areas or endangered or rare species either in the area in the range of 5km from the project site

CHAPTER # 4

4. SCREENING OF POTENTIAL ENVIRONMENTAL IMPACTS & THEIR MITIGATION MEASURES

4.1. Environmental Impacts due to project location

Project is present in the industrial area of the District Sialkot. No nearby human settlement exists within the radius of 500 meter. Unit is proposed for construction of Apparel unit; site does not fall in the category of sensitive area and no environmentally sensitive localities exist within radius of study area. The only issue which can arise due to the location of the subject project could be the issue of traffic congestion due to transportation of the construction material at the project site. If the project proponent maintain HSE conditions and comply with the PEQS limits than, there will not be any significant impacts of the project on the environment.

If the mitigation measures are effectively implemented, the residual impact of the Subject project activities on the area's geophysical environment is expected to be insignificant.

Impact significance: Low or may be positive

Nature of impact: Direct

Duration: Long-term

Timing: construction phase

Reversibility: NA

Likelihood: Low (unlikely),

Consequences: Mild or may be positive

4.1.1. Mitigation Measures for location phase impacts

- Project site should have good road infrastructure and efficient road infrastructure already exists there that is used currently to access the site and there is no issue of the road congestion due to the wide, good and paved road named M3 Industrial city road.
- Location can be considered as the positive impacts due to utilization of the product in the same District.
- The project will provide the jobs to the local residents as well as to those from the suburban areas.

4.2. Environmental Impacts due to the project design

Subject project for which this Initial Environmental Examination study has been conducted is proposed construction of Stitching unit under the name of M/S Ruby Foam Industries pvt ltd at Daska Road Sialkot Motra, Tehsil Daska, District Sialkot.

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Firefighting plan, health & safety plan, tree plantation plan, emergency response plan will be incorporated during the design phase of the project. The subject project will consist of;

- Office building
- Manufacturing area where Pu trims will be used for rebounding
- Cutting area
- Packaging area
- Quality Assurance office
- Separate water storage taken for the firefighting and domestic purposes
- Firefighting instrument room
- Parking area

Following are the major Environmental impacts due to the development related to the design:

- Structural stability of the proposed project.
- Soil structure and soil bearing capacity
- Road infrastructure design
- Emergency exit in the proposed project
- Firefighting system
- Rain water harvesting capacity of the drainage system
- Electricity hazards

Impact significance: moderate to high or may be negative

Nature of impact: direct

Duration: Long-term

Timing: Constructional phase & Operation phase

Reversibility: NA

Likelihood: moderate to high

Consequences: moderate to high or may be negative

4.2.1. Mitigation measures and recommendations

Following are the mitigation measures and recommendations to minimize the anticipated impacts:

- Emergency exist points should be marked within the project building.
- Firefighting system should be designed for the emergency situations.
- Electricity system should be design safe and sound.
- Electricity wires should be covered by thick plastic/electricity resistant covers.

4.3. Environmental Impacts during the construction phase

Impacts related to the construction phase of the subject project are discussed below:

- **Grubbing and stripping**

Grubbing and stripping may be a minor and short term impact on the physical environment during the construction phase. It may also be a health and safety hazard for the people at or near the project site.

- **Leveling and compaction of the land**

Leveling and compaction of the land is also a short term and minor impact on the physical environment and it may also be a health and safety hazard for the workers.

- **Demarcation of project building and other facilities**

It may also be a minor impact on the physical environment due to the subject project.

- **Generation of dust during loading and unloading of construction materials**

It is also a minor and short term impact on the physical environment and also for health and safety, which may arise during the construction phase.

- **Generation of noise on account of vehicular use and construction activities**

It is also a minor and short term impact on the physical environment and also for health and safety, which may arise during the construction phase.

- **Gaseous emission due to the vehicles and stand by generator (if any)**

It may also be a minor impact on the physical environment during the construction phase, if vehicles and generators are not properly tuned.

- **Local flooding due to over-use of water and leakage of pipes**

It may be a minor and short-term impact on the physical environment if precautionary measures have not been taken.

- **Safety of construction workers, people in the surroundings and passersby**

Health and safety issues may arise during the construction phase if proper precautionary measures will not be taken.

- **Any outbreak of fire due to electrical and other failures**

This issue may arise due to carelessness or improper management, and it may be a serious hazard which may affect the environment or may also cause the loss of property or life.

- **Solid waste generation due to domestic and construction activities**

Solid waste generation due to domestic and construction activities may be a negative impact on environment if not managed properly.

- **Wastewater generation from the domestic and constructional activities**

Wastewater generation due to domestic and construction activities may be a negative impact on environment if proper wastewater treatment and management system will not be implemented.

- **Ground water quality**

Ground water quality may be affected by the development if proper mitigation measures will not be implemented.

- **Impacts on Fauna and Flora**

Construction will impact the flora/ vegetative cover and fauna present at the project site.

- **Security threat**

Security issue is a major socioeconomic impact which may arise during the construction phase.

- **Impact on land value**

Construction of the subject project may cause positive or negative impact on the land value.

- **Dislocation of the people**

Construction of the subject project may cause the dislocation of the local people if any, which is a negative impact on the socioeconomic environment.

- **Loss of public and private infrastructure**

Construction of the subject project may cause loss of public and private infrastructure if any, which is also a negative impact on the socioeconomic environment.

Impact significance: moderate to high or may be negative

Nature of impact: direct

Duration: Short Term

Timing: Construction phase

Reversibility: NA

Likelihood: moderate

Consequences: moderate

4.3.1. Mitigation Measures and Recommendations

- Precautionary measures should be adopted to save the environment from the impacts of grubbing, stripping, leveling and compaction and health and safety of workers should be ensured during the construction phase.
- Demarcation of the project building and other facilities should be according to the laws and regulations.

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- Sprinkling of water on dusty tracks is recommended to avoid the generation of dust on dusty tracks.
- Vehicles should be properly tuned to reduce the impacts of dust and noise.
- Mitigation measures should be taken to meet the PEQS at the stack of generators.
- Proper mitigation measures should be taken to reduce the noise generation during the construction activities.
- PPEs i.e. ear muffs, helmets and masks etc. should be provided to workers to ensure their health and safety during the construction activities.
- Precautionary measures should be taken to reduce the local flooding due to over-use or leakage of pipes.
- Health and safety of construction workers, people in the surroundings and passersby must be ensured.
- Precautionary measures should be taken to avoid any outbreak of fire due to electrical and other failures.
- Constructional waste should be used for landfilling purposes.
- Domestic solid waste should be kept in dust bins and should be handed over to local contractors.
- Add more vegetation to restore the land by more plantations.
- Essential services like water supply, sewerage disposal and solid waste management must be in working condition.
- Construction timings should be scheduled to cause minimum disturbance to neighbors.
- Because of presence of security guards round the clock the security at the project site will be improved as well as in its vicinity. Impact will be moderate positive.
- Land value in the surrounding area will increase due to completion of the present project. Impact will be moderate positive.
- The project does not involve dislocation of the people. There is no requirement of resettling a single person. Impact is nil.
- No movable or immovable property and infrastructure of public and private sectors will be lost or damaged during construction and operation stages. Impact will be nil.

4.4. Environmental Impacts during Operation Stage

Main environmental issues associated with Project operation are as follows.

- Health and safety issues for workers may arise during the project process e.g. Particulate matter may be generated during the handling of pu trims, which may cause

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the health issues for the workers and noise of machinery can also be a negative impact on the health of workers.

- Waste water due to domestic and process activities.
- Fire due to short circuits and other activities.
- Solid waste generation due to domestic and project related activities.
- Noise pollution from generator and other machinery.
- Health hazards including the electricity hazards.
- Vehicle access is required especially for transportation. The site is well served with the road network. Heavy traffic will be allowed only during night time during operational phase. The traffic issues at any stage of project life cycle will not arise.

Impact significance: moderate to high or may be negative

Nature of impact: direct

Duration: Long-term

Timing: operational phase

Reversibility: NA

Likelihood: moderate to high

Consequences: moderate to high or may be negative

4.4.1. Recommendations

- Safety of workers should be ensured through proper training and PPEs must be ensured during the working hours.
- A well design firefighting system will be constructed to cope with fire situations in the subject project.
- Solid waste bins should be installed at designated processes and Installed Solid waste bins should regularly cleaned and solid waste must be handed over to the EPA Approved contractor.
- Noise levels should not exceed the PEQS.
- Project proponent should submit all the monitoring report in the EPA Punjab Office for the compliance of the PEQS.

4.5. Potential Environmental Enhancement Measures

The proposed project will be installed with all precautionary measures to enhance and safe the environment. Following necessary measures will be adopted during construction and operation:

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- Sprinkling of water will be done on dusty roads and tracks.
- PPEs will be provided during construction activity.
- Constructional waste and domestic solid waste will be disposed-off or utilized properly.
- Local people will be informed in advance when work is about to start in an area.
- Machinery will never be left unattended.
- Efforts should also be made to discuss traffic conditions so that regular traffic is not disturbed. Transporters engaged for the project would be forced to adhere to the load specifications of the access road. No overloading would be allowed in any case.
- Safety signs and boards will be placed during construction.
- Air pollution controlling devices must be installed within the project during operation.
- Machinery will be kept maintained.
- Waste water will be treated through waste treatment facility (septic Tank) that will be installed within the premises of the subject project.
- Proper SOPs will be followed with proper schedule along with the HSE conditions.
- Area will be restored with native plants. A proper tree plantation plan will be formulated to save the environment.
- Solid waste will be handed over to contractors and agreement will be made.
- Noise will be controlled by adopting proper measures.
- PPEs will be provided to workers during working.
- Firefighting equipment's and system will be installed.
- Safety signs will be placed at all locations where required.
- Hygienic conditions will be ensured and proper quality will be maintained by quality control testing.
- First aid facilities will be made available.

4.6. Purpose of Mitigation measures

Purpose of mitigation measures should include:

- What is the problem i.e. in terms of “major environmental impacts” which may arise by the subject project activity?
- When the problem will occur and when it should be addressed?
- Where the problem should be addressed?
- And how the problem should be addressed?

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The major impacts may arise by the subject project, particulate matter, dust, noise, odor and solid waste. Other impacts are of minor importance. These impacts will arise during construction and operation but precautionary measures will be adopted prior to start the activity, during the activity and post activity.

Any impact that would arise due to the subject project activity will be addressed on site. Trainings will be conducted onsite prior to start work while other precautionary measures will also be adopted to make the project safe and environmental friendly.

HSE manager/environmental manager along with site manager will be appointed to assess any impact that could be arisen during both phases. He would be responsible to address the problem and to mitigate it.

4.7. Ways of achieving mitigation measures

By adopting proper mitigation measures, any anticipated major or minor environmental impacts could be controlled or mitigated. The details of impacts and mitigation measures have been discussed in previous chapters.

Management of M/S Ruby Foam Industries Private Limited shall take appropriate measures to provide pollution free and safe environment during the proposed project activity by implementing improved management practices and monitoring techniques suggested in EMP. M/S Ruby Foam Industries Private Limited will adopt such plan that will assure the minimum impact on the environment and health by implementing proper mitigation measures. Design of the project will assure the structure stability and project life in a long run.

M/S Ruby Foam Industries Private Limited will develop Restoration/ reclamation or tree plantation plan to restore the project area. Maximum Plantation will be done with native species within the unit, along the boundary wall and along the roadside if directed by EPA. Also, in-North of main area, horticulture plan will be formulated and area for this will be kept reserved.

CHAPTER # 5

5. ENVIRONMENTAL MANAGEMENT AND MONITORING PROGRAM

5.1. Purpose and Objectives of the EMP:

The primary objectives of the EMP are to:

- Facilitate the implementation of the mitigation measures identified in the EIA.
- Define the responsibilities of the project proponent.
- Define a monitoring mechanism and identify monitoring parameters in order to:
 1. Ensure the complete implementation of all mitigation measures.
 2. Ensure the effectiveness of the mitigation measures.
 3. Provide a mechanism for taking timely action in the face of unanticipated environmental situations
 4. Identify training requirements at various levels.

5.2. Management Approach:

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

A certain degree of redundancy is inevitable across all management levels, but this is in order to ensure that compliance with the environmental management plan is crosschecked.

5.3. Institutional Capacity

Following functionaries will be involved in the implementation of EMP:

- Project Proponent
- HSE/Project Manager
- In-Charge Administration
- Supervisor of project
- Environmental Engineer

5.4. Training Schedules

Training for the management/contractors/engineers and workers on environmental aspects of the project will be arranged. It will be imparted by a team of experienced trainers.

5.5. Training of building contractor

Training of building contractor & workers will be the part of the TORs regarding the construction of the scheme. The provisions given in EIA Report Chapter 4 Screening of Potential Environmental Impacts & Their Mitigation Measures will be followed.

TORs will be including the training and submission of reports in the following area:

1. Handling of Machineries in a safe way
2. Use of PPEs
3. Maintenance of vehicles and submission of Environmental Monitoring Reports
4. Maintenance of Water Consumption records
5. Testing of water and waste water and submission of Environmental Monitoring Reports.
6. Placement of safety signs/boards during construction
7. Sprinkling of water on the roads and dusty tracks
8. Monitoring of generator emissions

Training regarding all other aspects of HSE will be ensured by the contractor during the construction phase.

5.6. Responsibility of EMP

Overall responsibility for implementation of EMP will be that of project proponent. He will appoint a HSE/Project Manager of relevant qualification. HSE/Project Manager will act as Environmental Manager and will manage the all HSE condition at the PEQS.

5.7. Summary of impacts and their mitigation measures

| Serial | Environmental Issues/ Impacts | Mitigation Measures |
|--|--|---|
| PLANNING, SITE SELECTION AND DESIGN STAGE | | |
| 1 | Observance of administrative and legal formalities | It is recommended for obtaining of approval from other relevant departments. |
| 2 | Acquisition of land | The proposed land is the property of the project proponent. |
| 3 | Loss of environmentally sensitive areas | There is not any sensitive area near the project site however the project proponent will achieve the PEQS at the boundary wall of the subject project to avoid the environmental impacts on the nearby industrial unit. |
| 4 | Changes in traffic pattern | There is no need to change the traffic pattern due the development of the subject project because no. of industries have been developed at the same link road only few vehicles will visit the project on daily basis. |
| 5 | Potential conflicts with stakeholders | There is not any conflict at the current stage of the project. Neighboring industries were visited regarding their concerns. They have no objection regarding development of the subject project as per proposed design. |
| 6 | Resettlement issues | No resettlement issues |
| 7 | Project Design | Provision of Emergency Exits, Assembly Points, firefighting arrangements, water storage for firefighting should be incorporated in the design. Installation of Dust/flue gases/odor controlling devices should be incorporated in the design. Project proponent is committed to provide all these provision in the design of the project. |

| SITE DEVELOPMENT STAGE | | |
|-------------------------------|--|---|
| 1 | Erosion due to stripping and site clearance. | Sprinkling of water on road sides or dusty tracks. |
| 2 | Generation of dust | Careful loading and unloading of construction materials is recommended. Sprinkling of water on construction site and surrounding areas is recommended. |
| 3 | Generation of noise | <ul style="list-style-type: none"> • Avoid use of horns at the site. • Do not throw heavy equipment and construction materials in haphazard manner. |
| 4 | Local flooding/ponding | Immediate repair and maintenance of water supply pipes and sewers in case of any defect will be undertaken. |
| 5 | Outbreak of fire | Firefighting equipment must be maintained at the site in good working condition. |
| 6 | Safety | Safety of the workers and others must be ensured. Privacy of the neighbors must not be disturbed. |
| 7 | Labor issues | Employ the local labor as far as possible Wages of the labor should be as per Government policy |
| CONSTRUCTION STAGE | | |
| 1 | Minor erosion of land | <p>There are two types of erosions:</p> <ol style="list-style-type: none"> 1. Wind Erosion 2. Water erosion <ul style="list-style-type: none"> • It is recommended to construct the boundary wall first that will reduce the soil erosion due to wind and chances of water erosion due to water flow from the adjacent will be reduced also. • Clearing of land should be step wise; vegetation should be removed only from the area where main building will be developed. |

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|------------------------|--|---|
| | | <ul style="list-style-type: none"> • Add more vegetation, restore the land by more plantation • Sprinkle water on dusty tracks is recommended |
| 2 | Contamination of land and water | <p>Hazardous substances like oil, fuel, etc. should be kept on concreted surface.</p> <p>Essential services like water supply, sewerage disposal and solid waste management must be in working condition.</p> |
| 3 | Impacts of dust, noise and flue gases on neighbors | <p>Sprinkling of water on dusty tracks is recommended.</p> <p>Avoid use of horns at the site.</p> <p>Do not throw heavy equipment and construction materials in haphazard manner.</p> <p>Proper tunings of vehicles and machinery must be ensured.</p> <p>Schedule construction timings should be implemented for minimum disturbance to neighbors.</p> <p>Continuous Environmental monitoring must be ensured as per proposed monitoring plan.</p> |
| OPERATION STAGE | | |
| 1 | Contamination of land and water sources | <p>Continuous vigilance on maintenance of services.</p> <p>Tarpaulin sheets must be placed to avoid leaching of oil into ground.</p> |
| 2 | Fire breakouts | <p>Training of workers regarding flammable substances will be ensured. SOPs of fire prevention will be adopted like forbidden of smoking, regular testing of electricity infrastructures and regular testing of gas supply system to the industry.</p> <p>Firefighting equipment must be kept in working condition at site.</p> |
| 3 | Safety/security concerns | <p>Safety of the workers and others will be ensured.</p> <p>Privacy of the neighbors will not be disturbed.</p> |

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| 4 | Malfunction of utilities | It is proposed to appoint maintenance engineer with technicians like plumber and electrician for smooth operation of utility services. |
| 5 | Occupational Health, Safety and Environment | <ul style="list-style-type: none"> • Regular medical check-ups must be ensured to improve the working condition and efficiency of workers. • Safety of management, workers and visitors must be ensured. • Observance construction and safety codes must be ensured. • Provision of emergency exits must be ensured. |
| 6 | Production of Solid Waste | <p>Area for solid waste must be reserved within the subject project.</p> <p>The solid waste must be managed on regular basis.</p> <p>The domestic waste will be disposed-off in environment friendly way.</p> |

5.8. Equipment Maintenance Detail

The subject project is the construction of Apparel Division under the name of M/S Ruby Foam Industries Private Limited . The company will maintain the records for Health Safety & Environment and will hire HSE manager to check and deal with the HSE issues. The company shall maintain PPEs, medical facilities, firefighting Equipment's as fire buckets, fire hydrants and fire extinguishers and records for their periodic fillings or replacement. HSE policy is attached as **Annexure-G**. Evacuation Plan is attached as **Annexure-H**.

5.9. Environmental Budget

The cost which is required to effectively implement the mitigation measures is important for the sustainability of the Project in operation stage of the Project.

Company has allocated the Environmental Budget is 2% of capital cost for the Training, maintenance and management of Environment that will include filling and maintenance of equipment's, restoration, plantation, and availability of PPEs, strategic planning to cope with any emergency situation and formulate the disaster management plan to cope with natural disaster. Any equipment or devices failure or replacement will not be included in this budget.

5.10. ENVIRONMENTAL MANAGEMENT PLAN FOR STITCHING UNIT OF M/S RUBY FOAM INDUSTRIES PRIVATE LIMITED

| Serial No. | Environmental Parameter/ Element | Mitigation measure to be taken during construction stage | | |
|------------|-------------------------------------|--|--|--------------------------------|
| | | Construction | Regular operations | Responsibilities |
| 1. | Gaseous/ Dust emissions | 1- Construction materials i.e. sand, clay shall be transported to the project site during night time and will be stored away from the road or foot path. They will be kept under cover to avoid any fugitive dust. | Management will ensure that PPEs i.e. masks will be provided to workers during the working hours. | HSE/Environment Manager |
| | | 2- The site proposed for the construction of Stitching unit is located away from human settlements. | Vehicles to use for the transportation of raw materials at the stitching unit should be properly tuned. | |
| | | 3- All equipment, generators, and vehicles used during the project will be properly tuned and maintained in | One diesel fired generator shall cater for emergency situation only. Their exhaust will be emitted through an adequately Synthetic Leather, TExtiles | |

| | | | | |
|----|-----------------|---|---|--------------------------------|
| | | good working condition in order to minimize exhaust emissions. | fabrics, thread, laminationated stack. It will also be kept in mind that the generators will only function during emergency condition for limited period. | |
| | | 4- All project vehicles will be checked regularly to ensure that engines are in sound working condition and are not emitting smoke. | Monitoring should be conducted on Monthly basis as per EPA PEQS Rules. | |
| 2. | Noise | 1- All activities will be under PEQS level of noise during construction phase. | All activities will be under PEQS level of noise during operation phase. | HSE/Environment Manager |
| | | 2- Ear plugs will be provided & implemented (ensured by the management of Ruby Foam Industries Private Limited | PPEs i.e. ear muffs should be provided to workers in case of high noise. | |
| 3. | Health & safety | 1- Local people will be informed in advance when work is about to start in an area. This may result in people | 1- The EMP guidelines will be followed strictly (committed by the management). | HSE/Environment Manager |

| | | | | |
|--|--|---|---|--|
| | | <p>keeping young children away from work areas.</p> <p>2- Machinery will never be left unattended.</p> <p>3- Safe driving practices will be adopted, particularly while passing through settlements.</p> <p>4- Basic health facilities will be provided to workers.</p> <p>5- PPEs will be provided & implemented.</p> <p>6- Electrical wires, D.Bs will be kept covered to avoid electrical hazards.</p> | <p>2- Training of workers will be conducted regarding health and safety.</p> <p>3- PPEs will be provided and implemented.</p> <p>4- First aid measures will be provided to workers.</p> <p>5- Shift Rotation, proper ventilation will be provided to workers in case of thermal stress.</p> <p>6- Safety signs, safety boards, exit arrows etc. will be placed on site.</p> <p>7- An Assembling point will be kept to gather in case of emergency situation such as fire hazards.</p> <p>8- Floors will be kept clean without slippery to avoid any hazard.</p> | |
|--|--|---|---|--|

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|-----------|---|--|---|--------------------------------|
| | | | <p>9- Firefighting system will be installed to avoid any health hazards.</p> <p>10- Electrical wires, D.Bs will be kept covered to avoid electrical hazards.</p> <p>11- Machinery will never be left in running condition.</p> | |
| 4. | Generation of domestic & project process related solid waste. | 1- Construction Solid waste will be stored in solid waste bins and will be reused for land filling and maintenance purposes and domestic waste will be handed over to the certified contractors. | Domestic, process related solid waste and sludge will be stored in solid waste bins and will be handed over to certified contractors. | HSE/Environment Manager |
| 5. | Waste effluents | Wastewater must be treated | The sewage to be generated shall be treated in current treatment facility of Generation unit & then will be drained out in the nearby drain. | HSE/Environment Manager |

| | | | | |
|----|---|--|--|--------------------------------|
| 6. | Water supply | It shall be ensured that no activity tempers with the water supply system and water availability | It shall be ensured that no activity tempers with the water supply system and water availability | HSE/Environment Manager |
| 7. | Soil erosion | The clearing of vegetation along proposed site will be minimized as far as possible. | Plants will be planted during operation phase of the subject Division. | HSE/Environment Manager |
| 8. | Enhancement of aesthetic beauty of the building and the area. | --- | <p>1- Flower pots containing flowers and plants will be provided in North of the building to add to the improvement of the environment around.</p> <p>2- All other necessary measures will be taken to maintain standards of cleanliness so that the building may add to the scenic/aesthetic beauty of the area around.</p> | HSE/Environment Manager |
| 9. | Staff for catering the Environmental Management Plan | --- | 1- Special staff will be recruited to implement this Environmental Management Plan on regular basis. | HSE/Environment Manager |

CHAPTER # 6 STAKEHOLDERS PARTICIPATION

Social acceptability of the project and the area is a key to success. Consultation with the stakeholders is a tool for managing two-way communication between the project proponent and the affected public. Its goal is to improve decision making and built understanding by actively involving individuals, groups and organizations, which have 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, filed 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, an initial environmental examination 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.

6.1 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 proposed 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 construction of the proposed unit.

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 proposed project;
- Documenting mitigation measures proposed by the stakeholders;

6.2 Methodology of consultation:

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

-
- Selection of the stakeholders for consultation, reconnaissance of the proposed project site and initial discussions with the neighboring factory workers, villagers, shopkeepers, drivers etc.
 - Environmental consultants and social specialists and documenting the opinions of the stakeholders expressed during the meetings etc.

6.2.1 Proponent

Possible impacts and mitigation measures related to the subject project were discussed with the project proponent and management. They assured to take all suggested mitigation measures to control any discrepancy arose by the project and to make the project environmental friendly.

6.2.2 Responsible Authority

Management of M/S Ruby Foam industries pvt ltd is the responsible authority to take all measures prior to start the activity.

6.2.3 Other departments and agencies

For the impact analysis detailed meetings were held with the management of M/S Ruby Foam Industries Private Limited local community, education institutes, health institutes, hospital and NGOs. Issues were discussed that may affect the environment and also the implementation of proposed project. All possible mitigation measures were considered and incorporated in the Environmental Management Plan.

Scoping sessions, focused group discussion and way side consultations were held with the relevant stakeholders in the area. The purpose of such consultations is to obtain the feedback from the relevant persons.

6.2.4 Affected & Wider Community

There is no affected community present in the radius of our study area. PGEE team has consulted with the inhabitants of the different villages. They provided positive remarks regarding the subject project and in the favor of the subject activity for the proposed plant. Stakeholders participation Performa's and socioeconomic questionnaire were get filled by the inhabitants to evaluate the project socio-economic impacts. List of respondents and socioeconomic questionnaires are attached as **Annexure-I** with the report.

6.3 Categories of stakeholders interviewed in the project area:

| Sr. No. | Stakeholder Category |
|---------|------------------------------|
| 1. | Neighboring factory workers. |
| 2. | Nearby residents |
| 3. | Shopkeepers. |
| 4. | Drivers. |

6.4 Issues Discussed:

Following issues were discussed during the stakeholder consultation:

- Overall activities of the project;
- Possible impacts on natural vegetation, air, land and properties;
- Possible mitigation measures;
- Benefits of the project specifically for the local people.

6.5 Findings of the Overall Discussion:

- After the completion of the proposed project the site will be used for industrial activities.
- It will enhance the socio-economic conditions/values of the area.
- Project will increase revenue generation for the Government.
- It will create employment opportunities.
- Local people will be given preference for employment in the proposed project.
- Construction of the proposed project will be completed in the designated timeframe to limit adverse impacts of construction.
- There will be no significant additional load on the existing infrastructure i.e. utilities of water, telephone, electricity etc. due to the development of the proposed project.

Majority of people favored the proposed project in a sense that the construction of the said project will generate employment opportunities for local people and revenue for the

government, will enhance the socioeconomic conditions of the area and automatically will contribute to the national economy of the country.

CHAPTER # 7 CONCLUSION AND RECOMMENDATIONS

Based on the study conducted for Environmental Impact Assessment (EIA) for the subject project, the following conclusions are made:

7.1 CONCLUSIONS

- The EIA study reveals that the project is economically viable, socially acceptable and environment friendly.
- It will generate additional jobs during construction and operation phases.
- The proponent has committed to implement the project in the environment friendly manner.
- M/S Ruby Foam Industries Private Limited intends to register the project with local Government.
- M/S Ruby Foam Industries Private Limited has prepared and implemented very comprehensive Emergency Preparedness and Response Standard Operating Procedures.
- M/S Ruby Foam Industries Private Limited has prepared and implemented very comprehensive Security and Fire Fighting Standards Operating Procedures.

7.2 RECOMMENDATIONS

- In view of the comprehensive screening process and findings of the present study there is no need of conducting further investigations.
- Tree plantation inside the unit and near the unit is recommended.
- The untreated wastewater will not be reused for irrigating the vegetation and lawns.
- High standards of bio-security and safety will be enforced during operation stage. Safety of the workers will be top priority for the management.
- The management of M/S Ruby Foam Industries Private Limited will continue to assist the local communities as a corporate/social responsibility. The present EIA report is enough to meet the administrative and legal framework. Therefore, the environmental approval may be accorded for the present project.