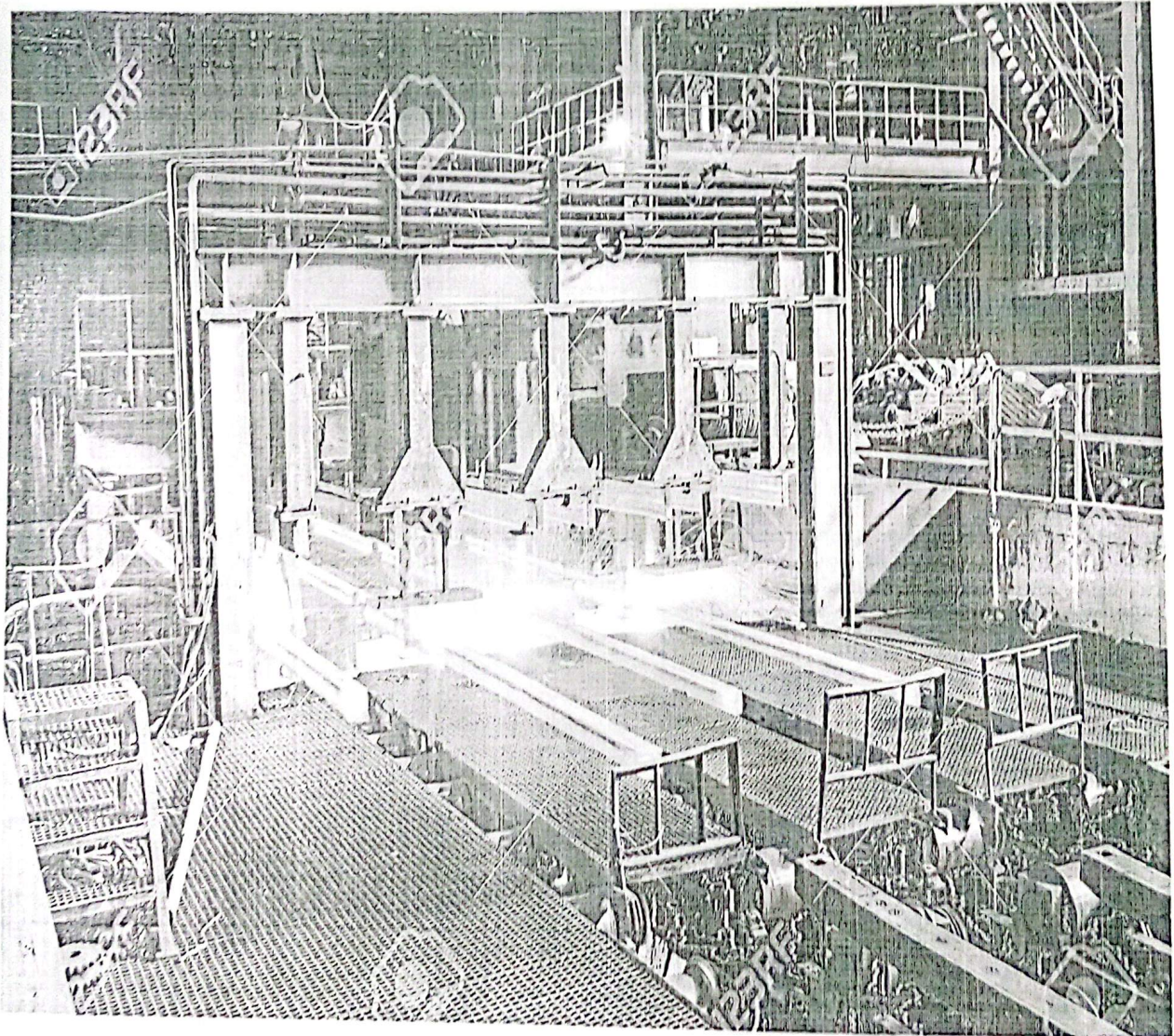


# EIA 2023

## EXTENSION OF ESTABLISHMENT OF STEEL MILLS BY SPECIALISTS GROUP INC. LIMITED, DISTRICT KASUR.



Mr. Hasan Ali Barq  
(Proponent)  
Specialists Group Inc. Limited, Kasur

### LIST OF ABBREVIATIONS

|                     |                                              |
|---------------------|----------------------------------------------|
| °C                  | Degree Celsius                               |
| dB(A)               | A weighted decibel scale                     |
| EIA                 | Environmental Impact Assessment              |
| EMMP                | Environmental Management and Monitoring Plan |
| EMP                 | Environmental Management Plan                |
| EPA                 | Environmental Protection Agency              |
| EPD                 | Environmental Protection Department          |
| EPO                 | Environmental Protection Ordinance           |
| IEE                 | Initial Environmental Examination            |
| m <sup>3</sup> /day | Cubic meter per day                          |
| SGIL                | Specialists Group Inc. Limited               |
| NEQS                | National Environmental Quality Standards     |
| NOC                 | No Objection Certificate                     |
| PEPA,<br>1997       | Pakistan Environmental Protection Act, 1997  |
| PKR                 | Pakistani Rupees                             |
| PM                  | Particulate Matter                           |



## **EXECUTIVE SUMMARY**

**Title of Project:** Establishment of Steel Mills by Specialists Group Inc. Limited.

**Location of Project:** Khara Link Road of Main Ferozepur Road, near PSO Pump, Kasur

**Proponent Name:** Mr. Hasan Ali Barq

**Proponent Address:** House No. 118, Block A, Garden Town, Mohulla Garden, Lahore

### **Introduction**

This executive summary of Environmental Impact Assessment (EIA) Report presents a detailed account of foreseeable environmental and social impacts likely to emanate from the project namely Establishment of Steel Mills of M/s Specialists Group Inc. Limited (SGIL), located at Khara Link Road of Main Ferozepur Road, near PSO Pump, Kasur. The proposed project involves the melting of steel scrap in the steel melting Electric Inductions Melting furnaces to cast the required billet on the Continuous Caster Machines (CCM) than charge directly to the rolling mills in roll able temperature and the required length to be produced structure section. The production capacity of this proposed project is 20,000 ton/ annum. The report describes the various actual and potential environmental impacts pertaining to both phases of the project, i.e. construction phase and the operation phase with reference to their extent and magnitude. The main objective of this industry is to provide customers with high quality alternative through continuous product development, improvement and technology acquisitions. Environmental Impact Assessment (EIA) studies of the project have been conducted in accordance with the Punjab Environmental Protection (Amendment) Act 2012 and IEE/EIA Regulations 2000 (Section 12).

### **Screening**

The project falls in Schedule II *Category J (2) i.e., Any other project likely to cause an adverse environmental effect*, described in detail in **chapter 1 of this EIA report**. The process for conducting an environmental assessment and the results of EIA are described in this document.

### **Project Objectives**

The objectives of the project are:

- To enhance the production of the steel structure to fulfill the market demands.
- To meet the expectations of customers by providing them with high quality, reliable and durable steel products, through product research, business process and information system improvement and up-gradation of technology
- To create new employment opportunities as a part of the project activities scope.

### Description of the Project

The project comprised of steel manufacturing using induction melting furnace, casting and re rolling. The proposed project covers an area of 75000 Sqft and open area is 15000 Sqft. It is located at Khara Link Road of Main Ferozepur Road, near PSO Pump, Kasur. Approximately, the production capacity of the project is 20,000 tons/ annum. The project process flow chart is as:

The detailed description of the process is given in **Chapter 2** of this report.

### Salient Features of Project

|                                  |                                                                                                     |
|----------------------------------|-----------------------------------------------------------------------------------------------------|
| Proponent Name                   | Mr. Hasan Ali Barq                                                                                  |
| Project Title                    | Establishment of Steel Mills by Specialists Group Inc. Limited.                                     |
| Project Location and Coordinates | Khara Link Road of Main Ferozepur Road, near PSO Pump, Kasur.<br>31°10'52" North and 74°26'16" East |
| Area of Land                     | Cover area 75000 Sft and open area 15000 Sft                                                        |
| Nature of The Land               | Industrial in nature                                                                                |
| Cost of the Project              | 50.0 Million                                                                                        |
| Raw Materials                    | Steel Scarp                                                                                         |
| Finished Products                | Structure section                                                                                   |
| Capacity                         | 20,000 tons ton/ annum                                                                              |
| Power Source                     | WAPDA along with Generators using natural gas fuel.                                                 |
| Source of water                  | Ground water                                                                                        |

### Stake Holder Consultation

The consultation was carried out in two stages for the project. In the first stage, a reconnaissance survey was conducted whereby all stakeholders that either reside or work in the project vicinity were identified in reference to the project location. Relevant public service institutions directly involved in service provision in the area were also identified. Based on these surveys and consultations, an overview of the residential, commercial/ industrial and institutional stakeholders related to the project was recorded and analyzed, details are given **Chapter 4** of this report.

### Major Anticipated Impacts and Recommended Mitigation Measures

Environmental impact evaluation actually grows out of scoping and baseline study of the project. In principle, EIA assigns various quantified values to different levels of all the impacts affecting



the project. This step is generally considered as the most technical in nature and therefore is the most difficult and controversial part of the EIA. Impacts anticipated during **Construction** may include noise, air emissions, water conservation and pollution, soil contamination (physical), community, workers' safety and employment conflicts (socio-economic). Detailed of the anticipated impacts and their mitigation measures have been included in **Chapter 5** of the EIA report.

Briefly, since the project is located in an industrial area, there is negligible effect on the community. Construction related noise will be mitigated by regular servicing and tuning of the source machinery. Dust (the only significant air emission) emission will chiefly be controlled by water suppression and covering the material storage and transportation. There is no surface water reservoir nearby, so, there is no risk of surface water pollution. Fencing site boundaries, security at the gates, use of adequate PPEs and careful work following SOPs will assure the safety of the workers and the community in the neighborhood. The proponent shall ensure that contractor will hire local labor for construction jobs to avoid employment conflicts.

The air emissions mainly consist of particulate matter and dust generated during operational phase of the project that will be mitigated by installing bag house filter with high efficiency to control air emissions problem. The operating furnace, air blast and truck used for transportation/movement of raw material and final products will be the main source of noise generated. All these activities will be carried out inside the sheds and maintenance program for equipment will be routinely followed to control noise problems. The workers will be provided with PPE's like ear plugs, masks and heat resistance cloths to ensure their safety and protection.

House cleaning operations in closed processing halls with adequate ventilation and use of dust masks by workers and visitors will solve these issues. An adequate Energy Management Plan will be in place; focusing on the target of zero energy wastage and the use of renewable energy resources. An Emergency Response Plan will also be in place and the workers will be trained and guided about it. Safety training will also be held from time to time to guide workers about safety risks and how to deal effectively with them and regarding SOPs of all jobs. The brief description of the impacts and their mitigation measures during construction and operational phase are given below in tabulated form and discussed in detailed in **chapter 5** of this EIA report.



## Impact Assessment and Their Mitigation Measures during Construction Phase

| Environmental Concern | Potential Source/ Risk                                                                                                                                                       | Severity of Impact | Proposed Mitigation Measures                                                                                                                                                                                                                                                                                                     |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>A. Physical</b>    |                                                                                                                                                                              |                    |                                                                                                                                                                                                                                                                                                                                  |
| <b>Air emissions</b>  | Vehicular emissions; diesel emissions from equipment and generators. It includes: carbon monoxide, methane, particulates, fugitive dust                                      | -2t                | <ul style="list-style-type: none"> <li>The transporting vehicles and generators will be maintained on the regular basis</li> <li>The drilling equipment and another machine will be maintained and serviced on regular basis.</li> <li>Good quality (low-sulphur) fuel will be used for vehicle and machinery</li> </ul>         |
|                       | Dust emission                                                                                                                                                                | -2t                | <ul style="list-style-type: none"> <li>Dust emission from aggregate storage stockpiles will be reduced by covering the piles, for example with a tarpaulin or thick plastic sheet</li> </ul>                                                                                                                                     |
| <b>Noise</b>          | Noise from generators, machines during development activities will create noise                                                                                              | -2t                | <ul style="list-style-type: none"> <li>Use good quality machines equipped with silencers</li> <li>Machines and vehicles should be properly tuned on monthly basis</li> <li>The silencers will be installed on the generators to reduce the noise emissions</li> <li>Place generators in separate rooms to avoid noise</li> </ul> |
| <b>Solid waste</b>    | Construction material waste and domestic waste will be generated domestic waste includes food waste, paper and packaging material                                            | -2t                | <ul style="list-style-type: none"> <li>Construction material waste will be reused for road construction etc</li> <li>For the collection of the solid waste at site, bins will be installed</li> <li>The installed bins will be covered in order to reduce the chances of the disease vector production</li> </ul>                |
| <b>Waste water</b>    | During the site construction phase, oil spills may contaminate the site and wastewater generation from on-site municipal activities which may damage the groundwater quality | -2t                | <ul style="list-style-type: none"> <li>Sewage wastewater treatment system such as septic tanks will be constructed on-site for the disposal of wastewater.</li> </ul>                                                                                                                                                            |



|                                                                                                                                                        |                                                                                                         |     |                                                                                                                                                                                                                                                                                                                         |
|--------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|-----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                        |                                                                                                         |     | <ul style="list-style-type: none"> <li>The workers are properly trained to manage the spillage problem, the spilled area should be properly cleaned and marked.</li> <li>As the water table is below 200ft, so no contaminants like heavy metals can seep into ground water and damage the quality of water.</li> </ul> |
| • Ecological                                                                                                                                           |                                                                                                         |     |                                                                                                                                                                                                                                                                                                                         |
| Flora                                                                                                                                                  | No Removal of vegetation and tree cuttings, as the proposed project site is within the premises of SGIL | NA  | <ul style="list-style-type: none"> <li>No mitigation required.</li> </ul>                                                                                                                                                                                                                                               |
| Fauna                                                                                                                                                  | No fauna disturbed, as the proposed project site is within the premises of SGIL                         | NA  | <ul style="list-style-type: none"> <li>No mitigation required.</li> </ul>                                                                                                                                                                                                                                               |
| • Socio- Economic                                                                                                                                      |                                                                                                         |     |                                                                                                                                                                                                                                                                                                                         |
| Employment opportunity                                                                                                                                 | Provide employment to local workers                                                                     | +2p | <ul style="list-style-type: none"> <li>Improves the living style of the local community</li> </ul>                                                                                                                                                                                                                      |
| Accessibility                                                                                                                                          | Roads will be developed in the area                                                                     | +3p | <ul style="list-style-type: none"> <li>Improve the infrastructure of the area</li> </ul>                                                                                                                                                                                                                                |
| Land Resources                                                                                                                                         | Local resources will be explored due to project                                                         | +3p | <ul style="list-style-type: none"> <li>Improves the local resources of the area</li> </ul>                                                                                                                                                                                                                              |
| Health and safety of workers                                                                                                                           | Dust and air emission generated                                                                         | -3t | <ul style="list-style-type: none"> <li>Regular water sprinkling will be done during the whole construction period.</li> <li>The proper ventilation system should be installed to avoid suffocation</li> <li>To prevent other respiratory issues, workers will be properly provided with PPE's.</li> </ul>               |
|                                                                                                                                                        | Fire Fighting and Emergency Response plan                                                               | -2p | <ul style="list-style-type: none"> <li>Workers should be properly trained for any emergency and accident.</li> <li>Firefighting equipment should be placed at appropriate places</li> <li>Monthly fire drilling will be conducted to train the workers</li> </ul>                                                       |
| <i>Legends: 1 = Low; 2 = Medium; 3 = High; 4 = Extremely High; NA = Not Applicable; t = Temporary; p = Permanent; app = Applicable; 0 = Negligible</i> |                                                                                                         |     |                                                                                                                                                                                                                                                                                                                         |

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 Operator: 0x  
 Position: 324926

### Impact Assessment and Their Mitigation Measures during Operational Phase

| Environmental Concern | Potential Source/ Risk                                                                                                                                                                                                                 | Severity of impacts | Proposed Mitigation Measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>A. Physical</b>    |                                                                                                                                                                                                                                        |                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Air Emissions</b>  | Air emissions will be generated during melting the iron scrap by burning impurities i.e. dust, oil and grease. The generated emissions will have a high concentration of PM and dust. These emissions generate a dense cloud of smoke. | -2p                 | <ul style="list-style-type: none"> <li>• Installation of air pollution control equipment i.e. bag house filter to minimize the emissions during the melting of scrap steel.</li> <li>• Dust collection system will be installed to collect the dust particles. The generated particles will be sucked into a fixed hood and with the help of the duct the air will pass through Fan and it will be passed to the bag filters. s</li> <li>• Worker will be properly provided with PPE's.</li> <li>• Good quality (low-sulphur) fuel will be used for vehicle and machinery</li> </ul> |
| <b>Noise</b>          | Noise generated from scarp handling, furnace and reolling process                                                                                                                                                                      | -3p                 | <ul style="list-style-type: none"> <li>• All noisy activities/ process will be carried out in the confined spaces to reduce the noise problems</li> <li>• People working in and around the furnace areas shall be provided with suitable PPE to protect them against noise</li> <li>• Workers who may be exposed to noise levels exceeding occupational standards shall receive regular audiometric testing.</li> <li>• Proper tree plantation will be along the boundary wall of the project</li> </ul>                                                                             |
| <b>Waste water</b>    | During the operational phase, no process wastewater will be generated except for domestic wastewater. Cooling water will be re-circulated.                                                                                             | -2p                 | <ul style="list-style-type: none"> <li>• Domestic wastewater will be treated in the septic tank prior to final disposal to the sewerage line.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                             |



|                           |                                                                                                                                                                                                       |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Solid waste               | No hazardous waste will be generated in the process activity except the dust collected in the dust collectors. In addition, domestic solid waste will be generated.                                   | -2p | <ul style="list-style-type: none"> <li>The slag will be produced as by product which will be sold off or used in earth filling and road construction.</li> <li>For the collection of the solid waste at site, bins will be installed</li> <li>The installed bins will be covered in order to reduce the chances of the disease vector production</li> <li>Recycle able materials will be sorted and sold to the contractor.</li> </ul>                                                                                           |
| <b>B. Ecological</b>      |                                                                                                                                                                                                       |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Flora                     | No Removal of vegetation and tree cutting, as the proposed project site is within the premises of SGIL                                                                                                | NA  | <ul style="list-style-type: none"> <li>No mitigation required.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Fauna                     | No fauna disturbed, as the proposed project site is within the premises of SGIL                                                                                                                       | NA  | <ul style="list-style-type: none"> <li>No mitigation required.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>C. Socio- Economic</b> |                                                                                                                                                                                                       |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Traffic problem           | During the operational phase, vehicles carrying the steel scrap may impact the nearby community by the frequent movement. It may generate fugitive dust emissions, noise and may cause social issues. | -2p | <ul style="list-style-type: none"> <li>Heavy vehicles shall only be to enter and leave the site between during day hours.</li> <li>The need to ensure that noise levels are kept to a minimum especially through the site and into the relevant zone</li> <li>Loads entering or leaving site will be suitably covered to ensure loads are secure</li> <li>strict speed limits should be enforced</li> <li>A complaints register will be kept, complaints will be investigated and, if appropriate, will be acted upon</li> </ul> |
| Health and Safety         | Nosic, Dust and air emission generated during scrap melting.                                                                                                                                          | -2t | <ul style="list-style-type: none"> <li>Workers who may be exposed to noise levels exceeding occupational standards shall receive regular audiometric testing.</li> <li>The effective use of hearing-protection devices shall be ensured.</li> </ul>                                                                                                                                                                                                                                                                              |

|                                                                                                                                                        |                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|--------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                        |                                           | <ul style="list-style-type: none"> <li>• Proper training will be provided to workers entering and working in the confined space of the hazards, protective measures and emergency rescue procedures;</li> <li>• Only authorized persons shall be allowed near furnaces.</li> <li>• People working in and around the furnace areas shall be provided with suitable PPE to protect them against molten metal burns, noise and physical hazards.</li> <li>• Proper radiation shielding may be provided.</li> <li>• Edged parts of rolls shall be securely guarded to prevent severe injuries.</li> </ul> |
|                                                                                                                                                        | Fire Fighting and Emergency Response plan | -2p <ul style="list-style-type: none"> <li>• Workers should be properly trained for fire fighting</li> <li>• Firefighting equipment should be placed at appropriate places</li> <li>• Monthly fire drilling will be conducted to train the workers</li> </ul>                                                                                                                                                                                                                                                                                                                                         |
| <i>Legends: 1 = Low; 2 = Medium; 3 = High; 4 = Extremely High; NA = Not Applicable; t = Temporary; p = Permanent; app = Applicable; 0 = Negligible</i> |                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |



### Environmental Management and Monitoring 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. Preparation of environmental management plan is required for formulation, implementation and monitoring of environmental protection measures during and after commissioning of projects. The plans should indicate the details as to how various measures have been or are proposed to be taken including cost components as may be required. Cost of measures for environmental safeguards should be treated as an integral component of the project cost and environmental aspects should be taken into account at various stages of the projects:

During construction, ambient air quality for dust level, in particular, vehicle and equipment exhaust, noise level (tests), solid waste management and soil contamination, and community and workers' safety (visual) need to be monitored. Monitoring Plan has been included in Chapter-6. During operation, noise level, ambient air quality (tests), solid waste management and community and workers' safety need to be monitored. The plan has been included in **Chapter-6** of this Report.

### Conclusion

The EIA Report contains a description of the project, environmental baseline, potential environmental impacts and suggested mitigation measures. An implementation mechanism for mitigation measures in the form of an Environmental Management Plan for both construction and operational phase has also been included in this study. Appropriate mitigation measures as explained in the environmental study shall reduce (if not eliminate) the impacts so that these can be 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. So, the project may be acquired environmental approval for this project.*

### Recommendations

The intensity and severity of impacts occurred due to the steel processing varies with a change in the nature and magnitude of the project as well as depends upon the baseline environmental conditions of the area. The mitigation measures will require constant information flow and consultation with the stakeholders to ensure the least adverse social-economic impact to outweigh the "no project development" scenario.

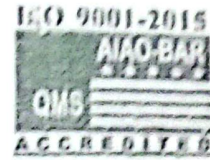
- The adverse environmental impacts can be reduced significantly by adopting best management and monitoring practices as well as by implementation EMP with true spirit.
- Proper PPEs including aprons, rubber gloves, marks, ear plugs and shoes should be provided to workers.

- No compromise on public health and environment should be allowed.
- Waste minimization practices should be introduced to workers by conducting lectures on the spot to aware the workers about the long term benefits of the same in lieu of the surrounding environment.
- A proper tree plantation plan should also be developed in order to make the process environment friendly.
- Small domestic waste storage bins should be placed at different locations for proper collection and disposal of solid waste.
- It is recommended that the Proponent should obtain an Environmental Approval (NOC) from the Punjab-EPA before proceeding further.





Specialists Group Inc. Limited,



VERIFICATION OF THE IEE REPORT

The EIA is conducted and report prepared as per the prevailing Environmental laws which  
s recommended for issuance of Environmental Approval.

It is hereby approved.

Prepared By:

---

Dr. Ambreen Lateef

PhD Env. Sc.

I have reviewed the project EIA report and found the contents to be valid and true to the best of  
my knowledge and belief.



Mr. Hasan Ali Bang  
(Proponent)

Specialists Group Inc. Limited, Kasur

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Postal Address: Suite # 203-4, Saman Arcade, 1-J Gulberg-III, Lahore, Pakistan.  
Ph: +92-42-35865120, 35944676-77 Fax: +92-42-35865120 Email: info@sgi.com.pk Web: www.sgi.com.pk

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*Andrew C.*

*[Signature]*



## CHAPTER I: INTRODUCTION

### 1.1 PURPOSE OF REPORT

The main objectives of this EIA study are:

- To determine and document the state of the environment for establishing a baseline in order to assess the suitability of the project in that area.
- To identify pre-construction, construction and operational activities and assess their impacts on the environment.
- To provide assistance to the proponent for planning, designing and implementing the project in a way that would eliminate or minimize the negative impact on the biophysical and socio-economic environment and maximizing the benefits to all parties in cost effective manner.
- To present the Mitigation and Monitoring Plan for the smooth implementation of suggested mitigation measures and supervise their efficiency and effectiveness.
- To provide an opportunity for public consultation of the project and its impacts on the community and their environment in the context of sustainable development.
- Prepare an EIA Report for submittal to the Environmental Protection Agency, Punjab for according Environmental Approval.

### 1.2 IDENTIFICATION OF PROJECT & PROPONENT

#### 1.2.1 Identification of Project

The proposed project is titled as Establishment of Steel Mills of M/s Specialists Group Inc. Limited. located at Khara Link Road of Main Ferozepur Road, near PSO Pump, Kasur

#### 1.2.2 The Proponent

**Proponent Name:** Mr. Hasan Ali Barq

**Proponent Address:** House No. 118, Block A, Garden Town, Mohulla Garden, Lahore

### 1.3 DETAILS OF CONSULTANT

The Proponent has assigned the task of conducting the EIA study to environmental consultants **Dr. Ambreen Lateef**. The EIA study of the project is conducted according to the prescribed procedures and

*Ambreen*

*Dr. Ambreen Lateef*

guidelines envisaged under the Punjab Environmental Protection Agency (EPA, Punjab) and Punjab Environmental Protection (Amendment) Act, 2012, the EIE / EIA Regulations, 2000 etc. The Team members who conducted the Environmental Impact Assessment is given in the table below;

**Table 1: List of Experts**

| Sr. #                          | Name               | Qualification                        |
|--------------------------------|--------------------|--------------------------------------|
| <b>Team Leader</b>             |                    |                                      |
| 1.                             | Dr. Ambreen Lateef | PhD Environmental Sciences           |
| <b>Environmental Scientist</b> |                    |                                      |
| 2.                             | Asifa Alam         | PhD (Scholar) Environmental Sciences |
| 3.                             | Foqia Khalid       | PhD (Scholar) Environmental Sciences |
| 4.                             | Danial Zaib        | BS Environmental Sciences            |

#### **1.4 NATURE, SIZE AND LOCATION OF PROJECT**

This proposed project is installation of steel furnace for manufacturing of steel products with production capacity of 20,000 tons/ annum. The covered area of project is 75000Sq.ft and open land of 15,000sq.ft. This proposed project is located at Khara Link Road of Main Ferozepur Road, near PSO Pump, Kasur. The coordinates of the site are 31°10'52"N and 74°26'16"E. The project site is well connected to the other parts of the city through a metaled road and near to residential area. The project location is shown in Figure1.

*Signature*

*Signature*



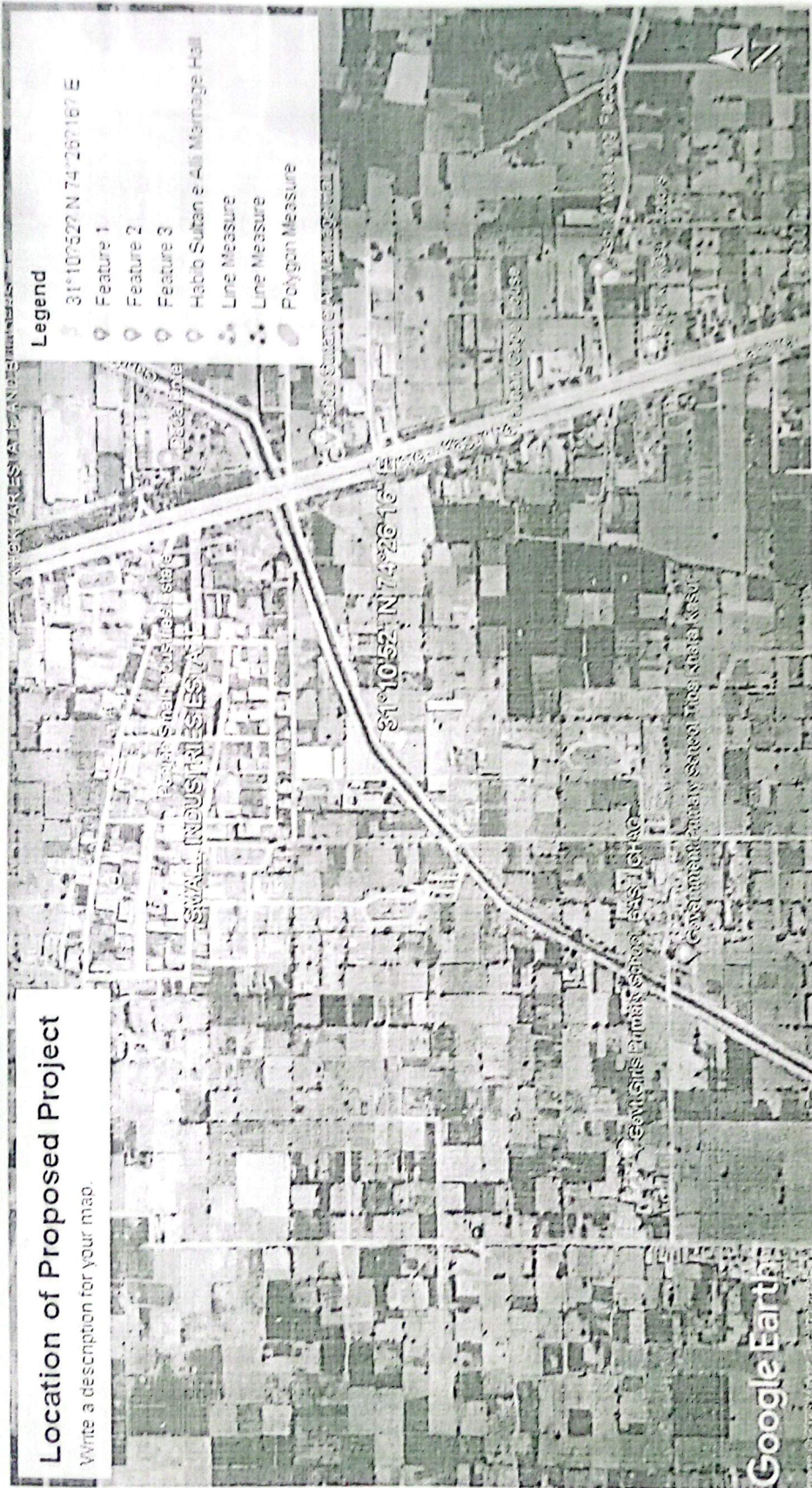


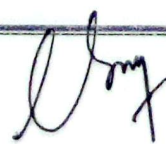
Figure 1: Project Location Map

## 1.5 STRUCTURE OF EIA REPORT

The EIA Report predict the possible impacts on the environment due to the project establishment. This EIA Report also proposes various environmental management measures to mitigate the associated adverse impacts up to the extent practically possible. Details of all background environmental quality, environmental impact/pollutant generating activities, pollution sources, predicted environmental quality and related aspects have been provided. The structure of the EIA Report will be as follow;

- Description of the Project
- Description of Environmental and Social Conditions
- Consultation of Stakeholders
- Assessment of the Anticipated Impacts
- Screening of Environmental Impacts and Mitigation Measures
- Mitigation Measures for Identified Impacts
- Environmental Management and Monitoring Plan (EMMP)
- Recommendations and Conclusions

*Amber*





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**CHAPTER 2: DESCRIPTION OF THE PROJECT**

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**2.1 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.

**2.2 TYPE AND CATEGORY OF PROJECT**

The proposed project is the installation of steel furnace for production of steel namely "Establishment of Steel Mills of M/s Specialists Group Inc. Limited", located at Khara Link Road of Main Ferozepur Road, near PSO Pump, Kasur. The proposed project involves the melting of steel scrap in the steel melting Electric Inductions Melting furnaces to cast the required billet on the Continuous Caster Machines (CCM) than charge directly to the rolling mills in roll able temperature and the required length to be produced structure section. The production capacity of this proposed project is 20,000 ton/ annum. As per Review of Initial Environmental Examination (IEE) and Environmental Impact Assessment (EIA) Regulations, 2000 the project falls in **Schedule II** under **Category J (2) : Any Other Project Likely To Cause An Adverse Environmental Effects.**

**2.3 PROJECT OBJECTIVES**

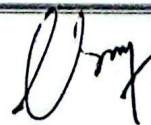
The objectives of the project are:

- To enhance the production of the steel structure to fulfill the market demands.
- To meet the expectations of customers by providing them with high quality, reliable and durable steel products, through product research, business process and information system improvement and up-gradation of technology
- To provide employment opportunities as a part of the project activities scope to local people.

**2.4 ALTERNATIVES****2.4.1 Site Alternative**

The site for proposed extension is located in industrials. This sites for the proposed project is considered because of the following features:

- The proposed project site is under the ownership /possession of the proponent and will be used for installing steel furnaces (induction furnace) for manufacturing of iron and steel products. It has been observed to be almost level in topography, with sparse vegetation located inside the site area.
- The area is in the cluster of industries.



- The site is accessible through Main Lahore Kasur Road, District Kasur, which is very well connected with other parts of the country. The site has availability of infrastructure facilities such as water supply, power, roads, social infrastructure and man-power.
- No national park or wildlife habitat falls within 10 km radial distance from the proposed project site.
- The site is not dangerous for public safety.
- No endangered fauna/flora has been observed near the project site.
- The proposed site does not fall in any category of the protected or environmentally sensitive area.

The location of the project is best suited for proposed project activities. So, no alternative for the site is analyzed. As this project site is under the undisputed ownership of the proponent/company. Therefore, the site is most feasible in the context of the environment as well as in achieving the intended objectives. The selected site also has no ecologically sensitive area and status of current Environment is satisfactory, so, it is best suited for the Proposed Project.

#### 2.4.2 Project Alternatives

The alternative to the proposed project is the import of billets from China and other countries. The steel industry is considered as the backbone of the country. A large portion of the revenue is generated from the steel mills and furnaces. So, the installation of the steel mills and allied industry will help in boosting the industry.

Presently, Pakistan produces around six million metric tons of steel per year. This includes raw products (iron ore and scrap); flat products (sheets and plates, used in the automotive sector); and long products (steel bars, wire rods, rails and structures used in infrastructure development, tubes and pipes). However, per capita, steel consumption in Pakistan is very low at 23.5 kilograms, against 58.6 kilograms in India, as well as the Asian average of 261.3 kilograms and the global average of 216.9 kilograms. It plays a key role in the development of physical infrastructure for boosting economic activities in downstream industries like construction as well as employing well over 150,000 people<sup>1</sup>.

In Pakistan, the pace of industrialization, infrastructure development and urbanization have resulted in higher demand for steel. Growth in the GDP of the country contributes enormously to demand for steel and its related products. Steel products production is an important barometer of national economic activity, higher PSDP (Public Sector Development Program) spending has led to resurgence in domestic steel products demand. On-going public sector projects include new large and small dams, irrigation canals, power plants, highways, rapid transit systems, flyovers, airports, seaports, etc. In addition to

<sup>1</sup> <http://www.pakistaneconomist.com/2018/04/16/key-players-steel-industry-pakistan>



public sector infrastructure projects, there is a lot of privately funded real estate development activity visible in all major cities of the country. 50% demand comes from the private housing and real estate activity, while 40% comes from government infrastructure projects<sup>2</sup>. Also, the per capita consumption in Pakistan has increased many folds in the last decade. In addition, China is assisting Pakistan in the establishment of China – Pakistan Economic Corridor (CPEC) which will include development of energy sector, roads, railway and Special Economic Zones. Infrastructure projects worth \$9.8b are planned to be undertaken under China Pakistan Economic Corridor in which huge amount of steel and its products will be consumed<sup>3</sup>.

### 2.4.3 Technology Alternatives

#### 2.4.3.1 Blast furnace:

The blast furnace is a special type of furnace that is used to make iron from its ore. The dimensions of the blast furnace can be up to 60 meters tall and 15 meters in diameter. It is the biggest chemical reactors and also high ovens. The blast furnace is built of steel case and bricks that are made of magnesia that is very much resistant to heat and it does not melt. The furnace is cooled with water that runs inside the case and bricks. The process of making is simple, from the iron ore that is basically iron oxide. Iron is made from it on the removal of oxygen. A crude iron oxide called pig iron is left over. The reduction is the process of removing oxygen where this process used carbon as this can take the ore to high temperatures.

Ore, lime stone and carbon in the form of coke is put at the top of blast furnace in the form of layers. Special types of nozzles are used which are called tuyers, these put up the air in the furnace that are at the bottom of the furnace and the process is termed as blasting. The bottom portion is filled with liquid pig iron and slag that is called hearth. This content is removed from the bottom and the process is known as skimming. Slag pot is the collector of the liquid slag. Iron can be taken from the hearth by a process called tapping. Pig iron is used in railway wagon applications<sup>4</sup>.

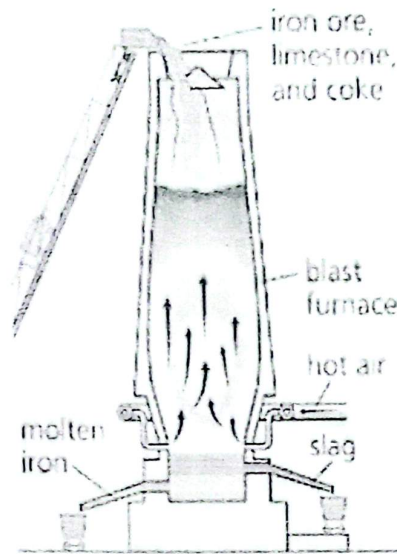
<sup>2</sup> <http://www.pakalumni.com/profiles/blogs/pakistan-is-the-world-s-fastest-growing-steel-producer>

<sup>3</sup> <http://www.riazhaq.com/2018/01/cpec-is-transforming-least-developed.html>

<sup>4</sup> <https://www.britannica.com/technology/blast-furnace>.

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*Figure 2: Schematic Diagram of Blast Furnace*

#### 4.3.2 Open hearth furnace

Open hearth process is also called as Siemens-martin process i.e. steel making technique for most of the applications in the 20th century. This process seeks a means to increase the temperature in a metallurgical furnace that uses the waste heat given out from the furnace that directs the fumes from the furnace through a brick checker work. A brick is heated to a high temperature, and then it is introduced into the furnace. The device is first used to produce steel that is charged with pig iron and wrought iron along with their scrap. In the US and Britain are best suited to the open hearth process.

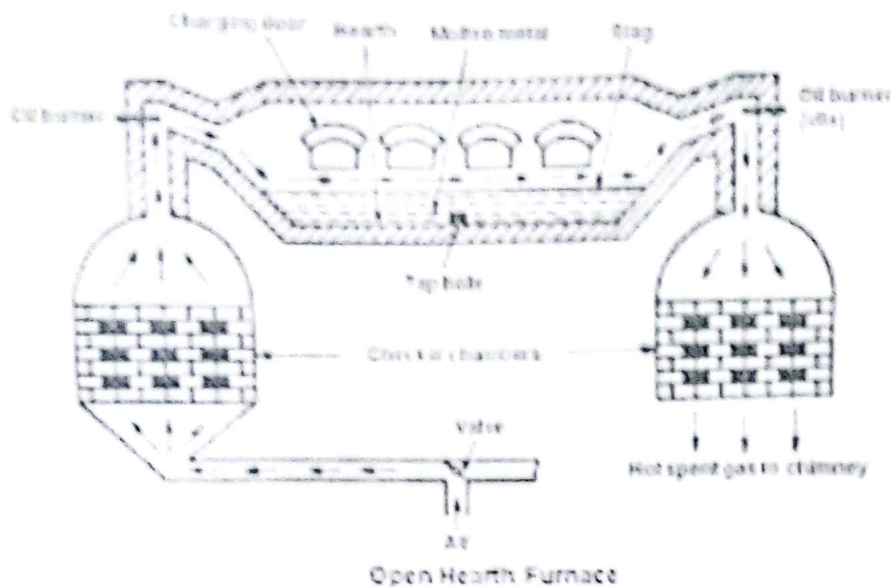
Natural gas or atomized heavy oils are used as fuel. The air and fuel are heated before combustion. The furnace gets charged with blast furnace iron in liquid form, steel scrap that is combined with ore, limestone, dolomite and fluxes. The roofs and body of the furnace is made of highly refractory materials as magnesian bricks. 600 tons is the capacity of the open hearth furnaces that are installed in groups for massive auxiliary equipment, that is needed to charge up the furnaces and to handle the liquid steel that can be employed efficiently. It is most commonly used in industrial applications as electric arc furnace and oxygen process based furnaces<sup>5</sup>.

<sup>5</sup> <https://www.britannica.com/technology/open-hearth-process>

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*Figure 3: Schematic Diagram of Open Heart Furnace*

#### 2.4.3.3 Induction furnace

Induction heating of metal will provide heat required for the electrical furnace. Induction furnace will provide clean, energy efficient and well controlled process of melting when it is compared with other processes. In most of the modern foundries use this type of furnaces instead of cupolas to melt cast iron as the former emits lots of dust along with other pollutants. The capacity ranges from less than one kilogram to hundred tones capacity are used in melting iron, steel, copper and aluminum and other precious metals. As the process does not use combustion, material temperature is not higher than the required to melt it. This processing prevents the loss of valuable alloying elements. The induction furnace lacks in the refining capacity where the charge materials clean the oxidation products and the known composition. The alloying elements may have a chance to lose alloying elements due to oxidation.

The frequency of operation is high and is dependent on the material that is to be melted, furnace capacity required. If the volume of the melts is small then it requires higher frequency. A pre-heated furnace of the melting iron can melt the cold charge by tapping of the readiness within an hour. The power supply range is from 10 KW to 42 KW that melts in size ranges of 20 kg to 65 tonnes of the respective metals.

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The operating induction furnace can be used by the operators to identify the correct operation and its corresponding power level<sup>6</sup>.

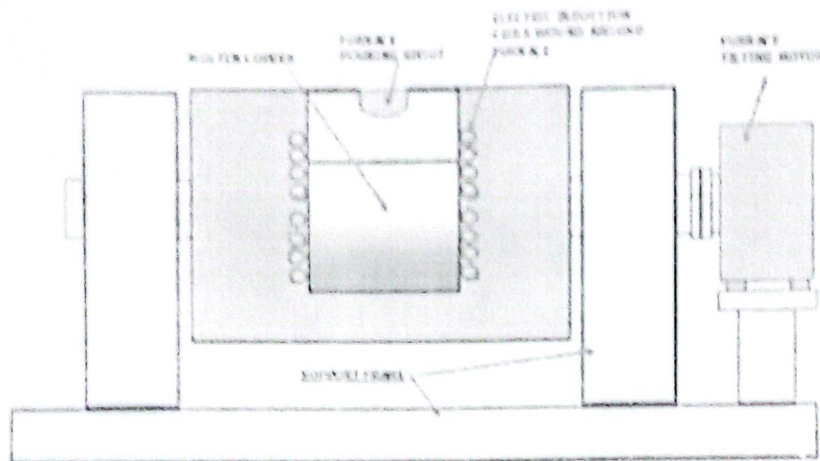


Figure 4: Schematic Diagram of Induction Furnace

#### 2.4.3.4 Electric arc furnace

These furnaces are used to produce special quality steels that are lighter products as reinforcing concretes. Electric Arc Furnace does not use any hot metals as basic oxygen routes. The equipment is charged with a cold material that will generally be steel scrap. Other raw materials include the products from iron ore. Directly reduced irons, iron carbide, pig iron (iron product from a blast furnace) that is casted and is allowed to get cooled are the included products. This process will not be charged directly.

The steel scrap is induced in to the furnace by an overhead crane. Then a lid is used that is swung into position over a furnace. An electric current is passed through the electrodes that are positioned in the lowered that lowers the furnace. Other metals also get added to the steel that provides the required chemical composition. Oxygen is blown to purify the steel and lime in addition to the combined impurities. After sample collection the furnace is tilted to pour the floating slag on the molten steel. The modern furnace can melt up to 150 tons in around 90 minutes<sup>7</sup>.

<sup>6</sup> <https://www.inductothermgroup.com/product/induction-melting-furnaces/>

<sup>7</sup> [https://en.wikipedia.org/wiki/Electric\\_arc\\_furnace](https://en.wikipedia.org/wiki/Electric_arc_furnace)



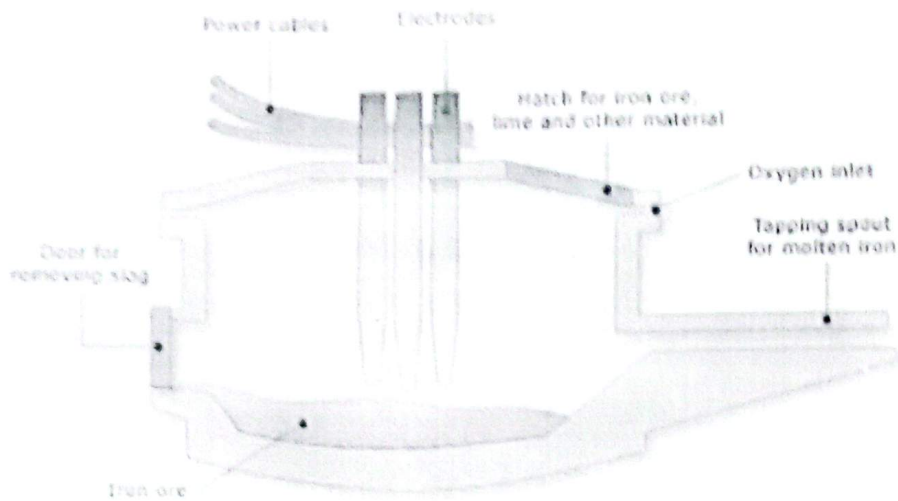


Figure 5: Schematic Diagram of Electric arc Furnace

*Among the described technologies/ furnaces, induction furnace is chosen for the Project based on the following main reasons:*

- Although the induction furnace is also a high-power consumption device, the interference to the grid is much smaller than that of other types
- In respect of the impact on the environment, the noise during the smelting process is low, and the emission of smoke, gas, dust and waste residue is relatively less
- In terms of resource utilization, furnace-mounted materials (including various alloying elements added) have less burning loss and higher yields. The amount of slagging material is much smaller, and no electrodes are used
- In the metallurgical function Because of the electromagnetic stirring effect, the composition of the molten steel is relatively uniform, the temperature of the molten steel is relatively uniform, the temperature control is also more convenient, and there is no problem of carbon addition due to the electrodes. Because there is no high temperature effect of the arc, there is no problem that the nitrogen is dissociated at high temperature and easily absorbed by molten steel
- The investment in equipment is small, and the area occupied by the site is also relatively small

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## 2.5 SITE AND PROJECT LAYOUT MAP

### 2.5.1 Location Map

This proposed project is located at Khara Link Road of Main Ferozepur Road, near PSO Pump, Kasur. The coordinates of the site are 31°10'52"N and 74°26'16"E. The project site is well connected to the other parts of the city through a metaled road and near to residential area. The project location is shown in Figure 6.

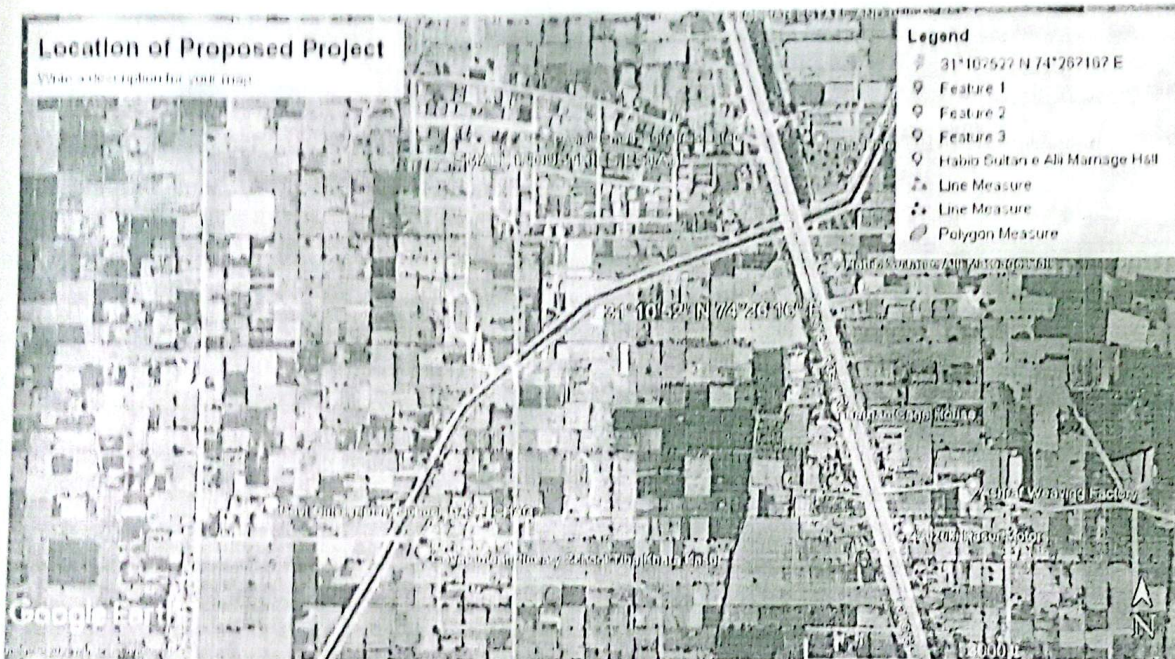


Figure 6: Google View of the Project Site

### 2.5.2 Project Layout Map

The layout map of the proposed project showing each unit and facility provided, is attached in Annex IV at the end of this EIA Report.

## 2.6 LAND OWNERSHIP

The land selected for the proposed project is under the undisputed ownership of the company. The property ownership documents are attached in Annex II.

## 2.7 VEGETATION FEATURES

No vegetation exists on the selected proposed project site. The proponent has planned a proper tree plantation plan to improve the environmental quality of the area.

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## 2.8 LAND USE ON SITE

The land for the proposed project is an open plot. The construction of the project will be started after getting Environmental Approval.

## 2.9 ROAD ACCESS

As the proposed project site is located Lahore Kasur Road so markets and road availability is not an issue.

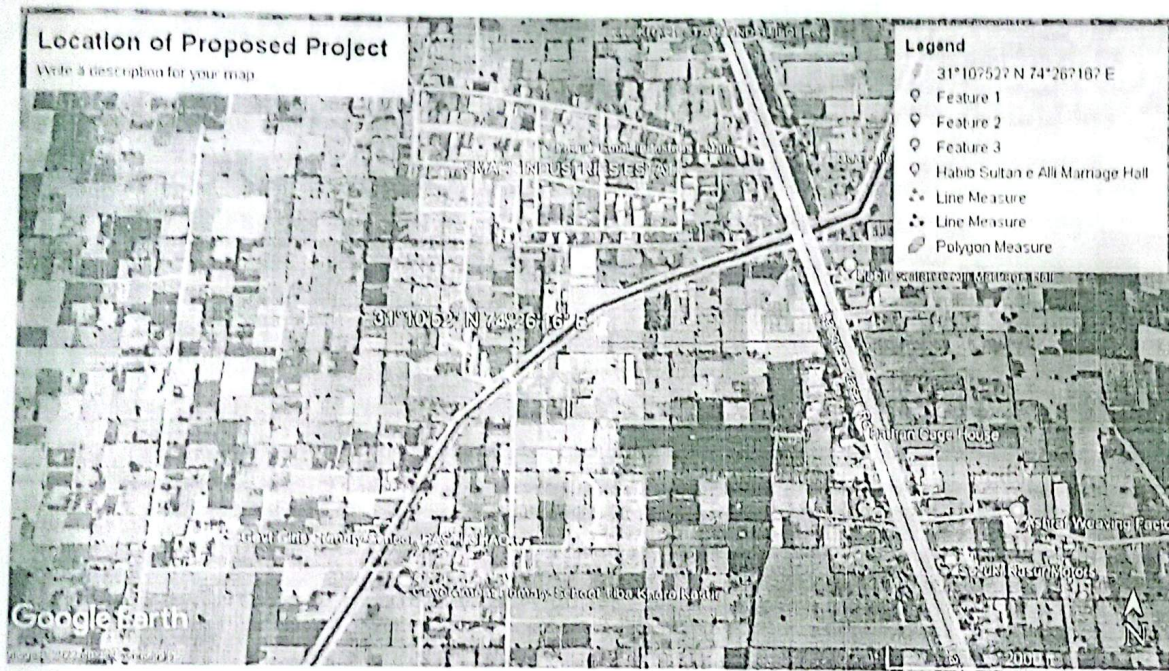


Figure 7: Roads Accessible to Project Site

## 2.10 DESCRIPTION OF PROJECT

The project comprised of steel manufacturing using induction melting furnace, casting and re rolling. The proposed project covers an area of 75000 Sqft and open area is 15000 Sqft. It is located at Khara Link Road of Main Ferozepur Road, near PSO Pump, Kasur. Approximately, the production capacity of the project is 20,000 tons/ annum. The project process flow chart is as:

### 2.10.1 Scarp Collection and Sorting

The steel scrap will be used as basic raw-material in this project. The scarp will be collected and then sorted into components. The homogenized sorted will be send to next step for melting. The scarp may contain impurities like rubber and foam. With the help of the crane, scrap will be transferred into the induction furnace for melting.

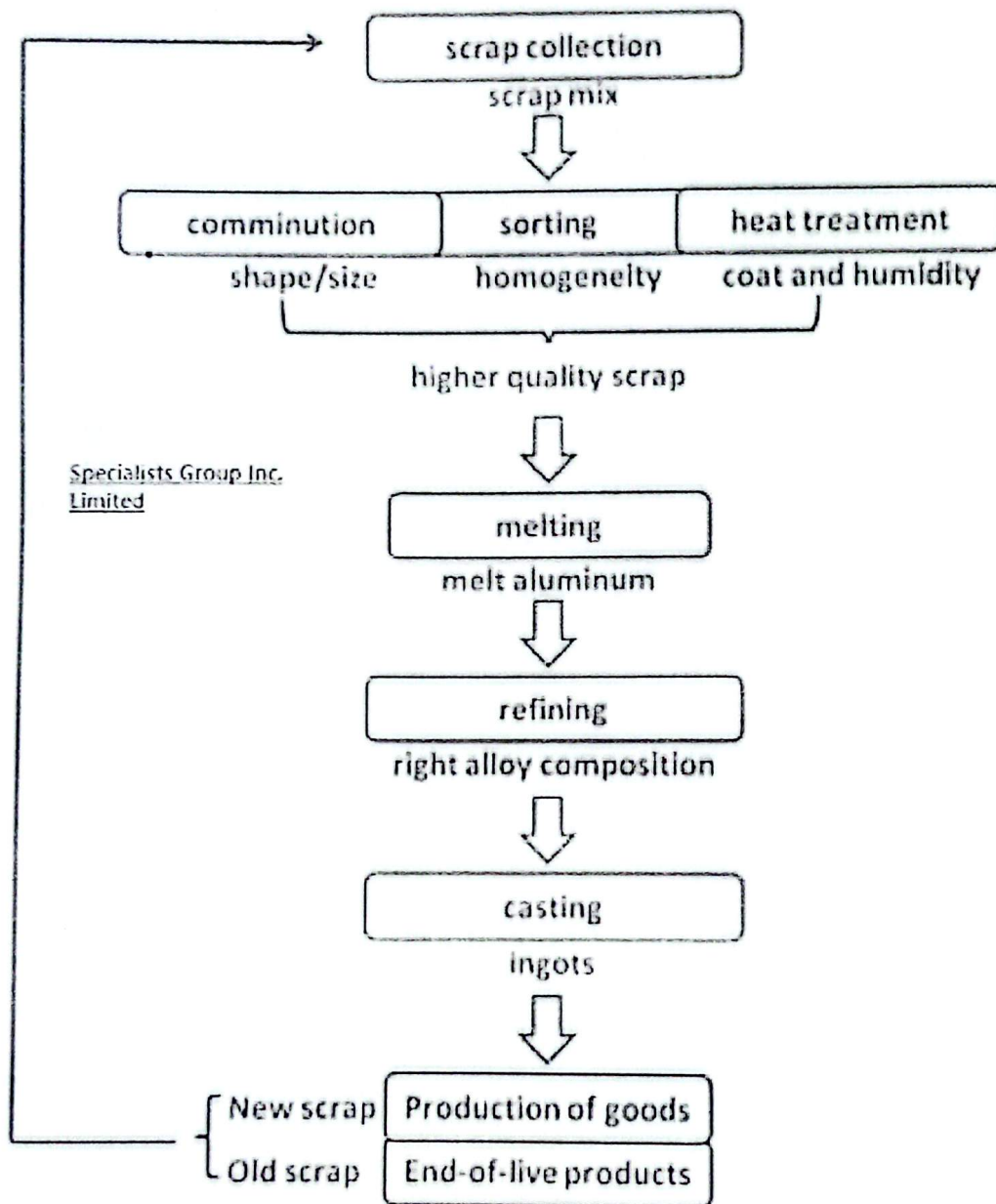


Figure 8: Process Flow chart



### 2.10.2 Melting

The scrap, after sorting is transferred to an induction furnace for melting. The principle of induction melting is that a high voltage electrical source from a primary coil induces a low voltage, high current in the metal or secondary coil. Induction heating is simply a method of transferring heat energy to melt the scrap at 1600 -1700 °C to produce molten metal. There are fewer chemical reactions to manage in induction furnaces, making it easier to achieve melt composition. However, its sensitivity to quality of charge materials when compared to other melting processes restricts the types of scrap that can be melted. The inherent induction stirring provides excellent metal homogeneity. The molten steel is then poured from the electric furnace into a ladle, while at the same time eliminating impurities and making a first time adjustment to the chemical composition by way of adding alloys containing the necessary elements for the optimum quality of the steel.

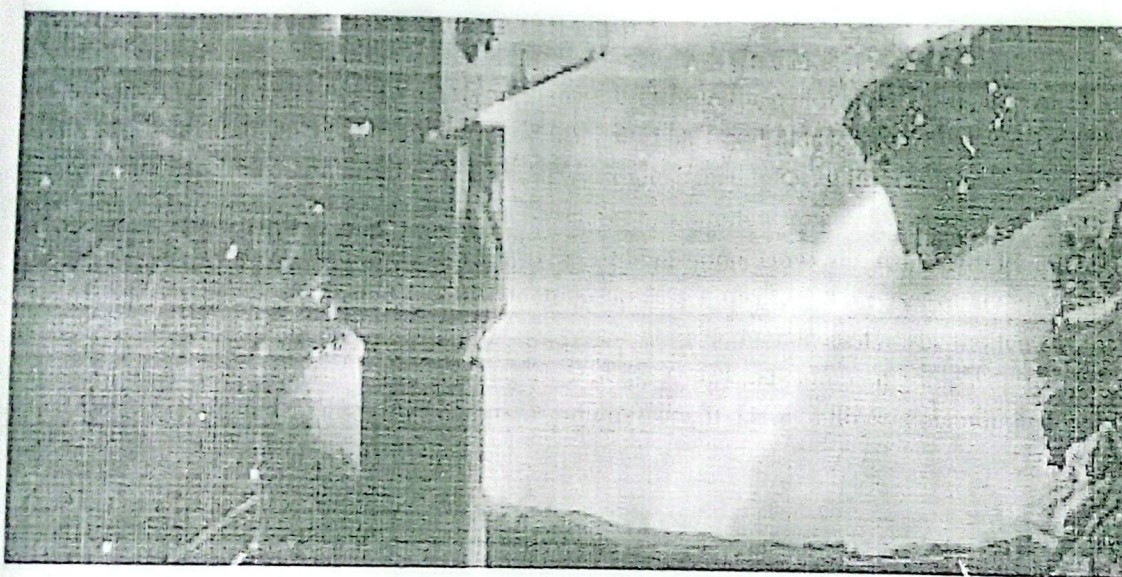


Figure 9: Melting Of Steel Scrap in Induction Furnace

### 2.10.3 Refining

In pursuit of making the finest grade of steel, refining process is carried out through LRF (ladle refining furnace). The molten material is refined in a manner unique to SGIL through alloy addition and nitrogen purging process. Further alloys such as Manganese, Nickel, Chrome, Vanadium, Molybdenum etc. are added to make special steel, spring steel, auto motive steel, stainless steel and low alloy steel (as per market demand). The two elements that can be mostly responsible for affecting the characteristics and properties of the steel, carbon and sulphur, are controlled additionally by LECO combustion apparatus.

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The chemical composition of the steel is analyzed by emission spectrometry and complete adjustment of the temperature and chemical analysis is carried out in the ladle furnace, together with the total elimination of impurities (non-metallic inclusions and sulphur) by injection of argon, via the bottom of the ladle. Then Transfer Ladle filled with molten steel is lifted with an overhead crane and transferred to Continuous casting Machine (CCM).

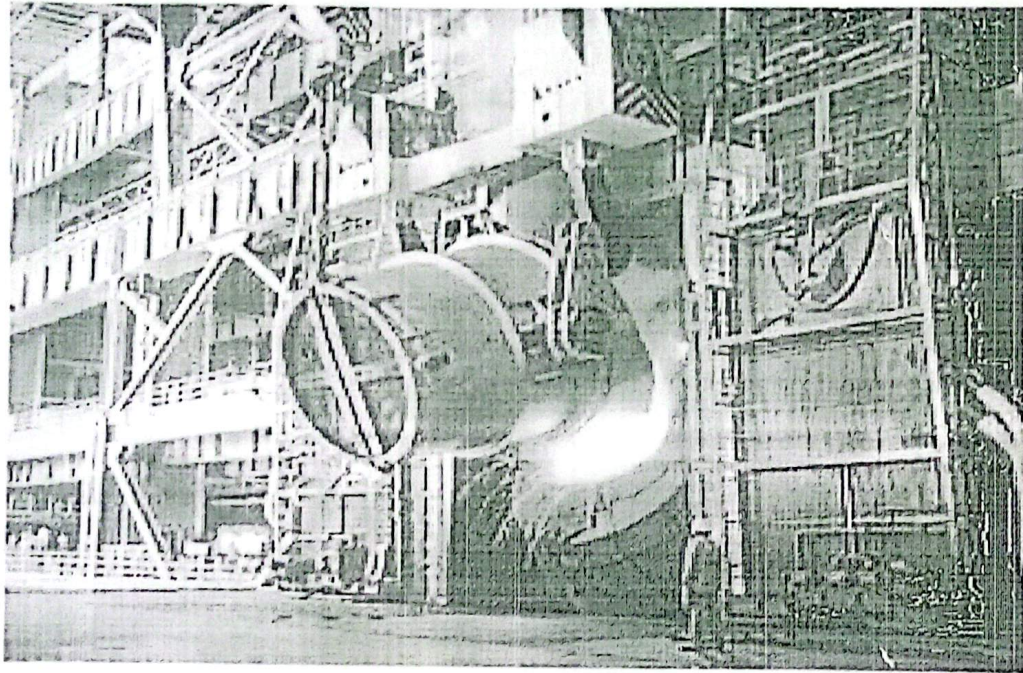


Figure 10: Molten Steel Transfer to Ladle Filled

#### 2.10.4 Casting

SGIL's range of casting facilities provides the optimum metallurgical process route for demanding steel types. Billet, the raw material of constructional steel is produced in appropriate quantities for hot and thermodynamic rolling during continuous casting. Highly specialized three strands continuous caster engineered and supplied by Concast is used by SGIL for the production billets of steel in a highly synergized manner. The liquid steel is discharged into a distributor unit. This unit has several holes at the bottom through which the liquid steel can flow into various casting lines or moulds where the solidification of the steel takes place and semi-products (billets) are obtained. Later a cooling system is applied, first by the way of cold water jets and then by air. The billet is cut to the desired lengths using blowtorches which move with the billet during the cut.

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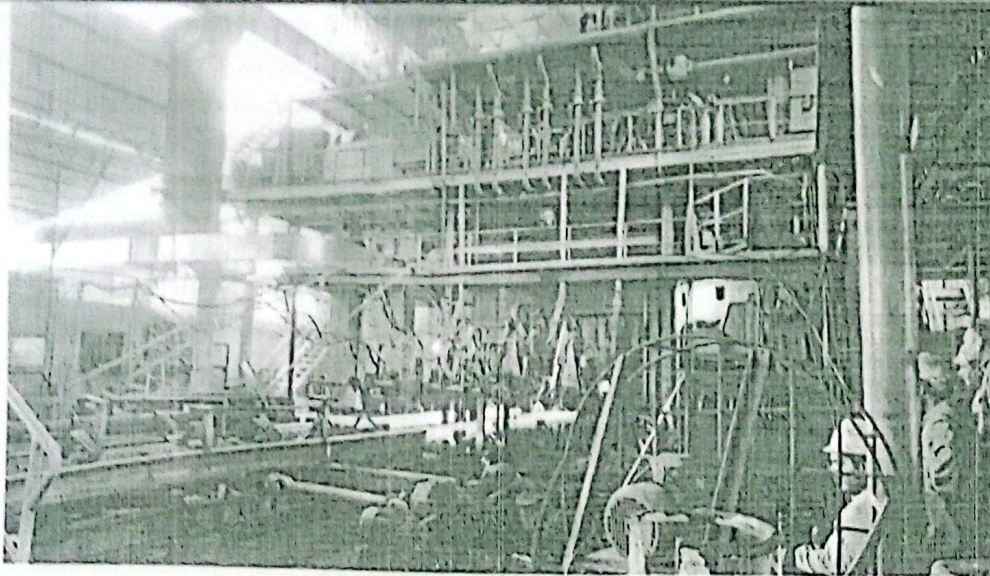


Figure 11: Cooling of Billets Done With Cool Water Jets and Air Blows

#### 2.10.5 Final Product and Storage

The final products are structure section. These products after quality inspection, are packed and transferred to customers by trucks.

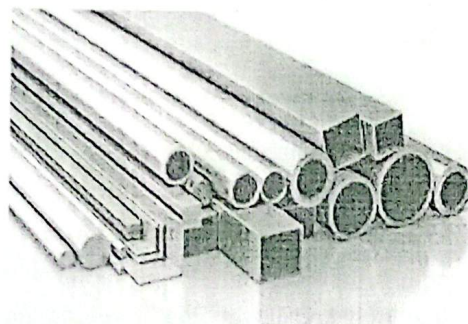


Figure 12: Final Product of Steel Process

### 2.11 SUPPLIES

#### 2.11.1.1 Water Supply

The water consumption for construction purposes of steel furnace will be  $10\text{m}^3/\text{day}$ . The source will be ground water extracted from depth of 120 feet.

The water required during operational phase will be 50m<sup>3</sup>/day. The water will be used only for cooling purposes in closed loop systems. The quality of water required is low Total Dissolved Solids (TDS). Raw water is processed through a Reverse Osmosis plant in order to reduce the TDS content. Water loss occurs through cooling towers and cooling losses in the rolling mill. The cooling of hot rolling stands is required to ensure that the rollers do not distort. Water is lost to atmosphere in the form of vapour. No water makes contact with product or slag. ✓

#### 2.11.1.2 Electricity

Steel making is an energy intensive process requiring high temperatures to produce, melt and to roll steel. The proposed installation of induction furnace is powered by electrical energy.

#### 2.11.1.3 Manpower

About 20-30 workers will be hired for construction phase and 20-50 workers will be hired for operation phase. The staff will be hired with respect to concerned department according to their qualification.

The profile of these workers will be as follows:

- Operating staff
- Maintenance staff, including craftsmen, with skills in one or more area (e.g. electrical, mechanical and instrumentation)
- Clerical and administrative staff.
- Locally based staff as guard and for catering and cleaning.

The SGIL is so concerned about the health and safety of their employees and developed.

#### 2.11.1.4 Construction Materials and other supplies

Main construction material to be used during the construction activities will include paving stones, cement and cement blocks, crush, gravel, steel and sand. The materials will be transported by trucks to the project site, where they will be stored until moved to different locations as and when required. Paints, glass, wood, tiles, aluminium, PVC/GI pipes, concrete/cement pipes, electric cables, marble etc, will also be used during the different phases of the construction activities.

### 2.12 MANAGEMENT PLAN DURING OPERATIONAL PHASE

#### 2.12.1 AIR EMISSIONS

Air emissions will be generated while burning the scrap to convert it into billets. The generated emissions will have high concentration of the particulate matter (PM). To deal with the pollution generated from the process activity dust collection system will be installed. Bag house filter will be installed for air pollution control with efficiency of 95%, specification is attached as Annexure VII. The generated smoke will be sucked into fixed hood and with the help of duct the air will pass through fan and it will



be passed to the bag filters. The collected dust is a saleable commodity which will be collected and sold locally.

The workers dealing with the process activities will be provided with face masks, safety shoes, insulating gloves and heat resistance suits and all other necessary PPEs. To reduce the public nuisance indigenous trees will be planted around the boundary to reduce air pollution.

#### 2.12.2 NOISE

The noise generated during operational phase from the furnace, rerolling bar mills and other activates.

#### 2.12.3 SOLID WASTE GENERATION

Solid waste generated includes slag, refractory waste, metallurgical wastes (baghouse dust) and mill scale. Wastes will be re-used on-site or sold to recyclers, recovery operations and re-users in the road filling and metallurgical industry. Domestic solid waste will be generated from the proposed project. The amount of the solid waste generated will be quite low. Solid waste collection receptacles will be placed as designated places. Solid waste will be collected on daily basis and be disposed off as per area's management practices. Regular training will be given to the workers dealing with the solid waste management it will include identification, segregation and management of waste.

#### 2.12.4 WASTEWATER MANAGEMENT

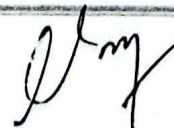
In the proposed project, the wastewater will be generated from municipal activities during operational phase. Around 20- 50 workers will be hired. The amount of the wastewater generated will be about 5.6m<sup>3</sup>/day. This wastewater will be treated in septic tank and dispose off in the sewerage line of the area.

#### 2.12.5 EVACUATION PLAN

The layout is designed in view of security and it would be maintained according to policy of the company executing the project. Emergency exit passages are established and maintained. A proper evacuation plan is formulated to cope with any emergency situation. Assembly points are set and proper training is provided to the workers and staff. The emergency response procedure is attached in Annexure VIII.

#### 2.12.6 FIREFIGHTING PLAN

The firefighting system will include CO<sub>2</sub> and dry chemical powder fire extinguishers. Plant will establish a proper firefighting system. Indoor and outdoor fire hydrants and fire monitor will be installed according to the codes and standards. Diesel storage tank area will be provided with foam devices / extinguishers. Sand buckets, foam sprays etc. will always remain in ready state. The emergency exist routes and assembly points are mentioned layout map as attached in Annexure VIII.



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### 2.13 COST AND MAGNITUDE OF OPERATION

Raw material, purchasing of fuel, Operation and maintenance of the machinery, generator and other complex machinery are the costly activities involved in the operation phase of the project. Equipment safety will be assured if these operations are carefully managed. However, budget will be allocated for purchase and maintenance of standardized PPEs for workers and for waste management and environmental enhancement as given in Table 2. Despite these costs, this project was found to be financially feasible in the feasibility report.

**Table 2: Cost of the Project**

| Components                               | Cost (Millions) |
|------------------------------------------|-----------------|
| Land Cost                                | 15.3            |
| Equipment/Machinery                      | 32              |
| Civil works( construction, installation) | 0.7             |
| Landscaping/Green belt Development       | 1.0             |
| Fire Fighting Arrangements               | 0.3             |
| Solid waste Management                   | 0.2             |
| Health and Safety Training               | 0.5             |
| <b>Total</b>                             | <b>50</b>       |

### 2.14 SCHEDULE OF IMPLEMENTATION

The proponent intends to complete construction and installation of steel furnace and re-rolling mills for the proposed project in a period of one year after obtaining Environmental Approval from EPA Punjab.

**Table 3: Timeline for Project Development**

| Sr. # | Activities                  | 3 Months |    |    | 3 Months |    |    | 3 Months |    |    | 3 Months |    |    |
|-------|-----------------------------|----------|----|----|----------|----|----|----------|----|----|----------|----|----|
|       |                             | 4W       | 4W | 4W | 4W       | 4W | 4W | 4W       | 4W | 4W | 4W       | 4W | 4W |
| 1     | Detailed Designing          |          |    |    |          |    |    |          |    |    |          |    |    |
| 2     | Mobilization of Contractors |          |    |    |          |    |    |          |    |    |          |    |    |
| 3     | Lean Development Period     |          |    |    |          |    |    |          |    |    |          |    |    |
| 4     | Peak installation Period    |          |    |    |          |    |    |          |    |    |          |    |    |
| 5     | Plantation at Site          |          |    |    |          |    |    |          |    |    |          |    |    |
| 6     | Commissioning               |          |    |    |          |    |    |          |    |    |          |    | *  |

W= Weeks

### **2.15 RELOCATION & REHABILITATION PLAN**

No human population resides within proposed project area as it is an industrial cluster. Significant structure such as cultural, religious, archaeological, recreational or any other are not present on the land selected for the project requiring dismantling or relocation. No flora or fauna; especially belonging to endangered species is found within a safe distance from the site which is to be removed or moved to some other part. Hence, no relocation and resettlement is required.

### **2.16 GOVERNMENT APPROVAL**

The proponent will apply for other government approvals, after obtaining Environmental Approval from EPA Punjab.

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## CHAPTER 3: BASELINE DATA & ENVIRONMENTAL PROFILE

### 3.1 GENERAL

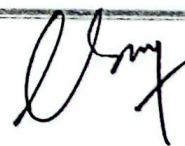
This section covenants with the prevailing environmental conditions of the project area. Information that has been collected from different sources, including public literature, reports of other studies conducted in this area, knowledge with the proponent and the concerned government departments and the first-hand surveys and field measurements has been presented in this section. This chapter of Environmental Impact Assessment (EIA) encompasses all the important aspects of local environment; such as biological resources, socioeconomic development and quality of living values. A Social survey in the Project Area was also carried out through consultation with the various communities. Local residents living in the Project Area were interviewed to obtain their feedback regarding the construction of the Project and its impacts on their daily life/future in the short and long term.

### 3.2 PHYSICAL ENVIRONMENT

This part examines the physical resources such as topography, soil, climate, surface and ground water resources and quality, ambient air quality and geology of not only the Project site but also the city as a whole to assess whether the project under assessment can or does have any impacts on any of these parameters. The description of physical environment of Kasur city and the project site is presented in the following sub sections.

#### 3.2.1 Topography

Kasur District lies between River Satluj which flows along its boundaries with India and River Ravi which flow its boundary with Kasur District. The districts may be divided into two parts, a low lying or riverine area along the two bordering rivers and upland, away from the rivers. The riverine area is generally inundates during monsoon season. The water level in this area is higher than in the upland. The soil of the district is sandy. The upland is flat plains sloping from North-West to South-West. The general height of the area is from 150 to 200 meters above the sea level. The land of the project area is plain and highly fertile i.e. consists of sand silt and clay in equal ratios. The irrigation in most of the areas is through the canal system as well as by using water pumps. The proposed project area is located at Mauza Harihar, Tehsil & District Kasur. The pictorial view of the topography of the project area is shown in the pictures attached below;



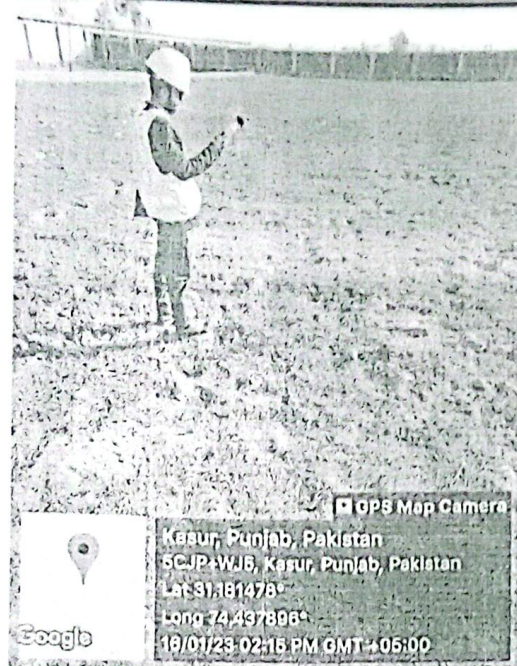


Figure 13: View of Project Site

### 3.2.2 Geography and Geology

The District Kasur is bounded by the Ravi River in the North-West and River Sutlej in the South-East whereas, the old course of Beas River bifurcates the district into two equal parts locally known as Hither and Uthar or Mithan Majh. Both of the areas have a height differential of approximately 5.5 meters. The natural surface elevation of the district is 198 meters above the sea level, having a general slope from North-East to South-West whereas, the East and West ends of the district comprise the flood plains of the rivers Satluj and Ravi, characterized by breaching of looping river Channels braided around meander bars.

Kasur District is attached with Lahore from east, attached with Nankana Sahib from North, attached with Faisalabad from West and attached with Okara and India from South. The geographical coordinates of the City are  $31^{\circ} 7'3.40''$  north and  $74^{\circ}26'59.82''$  east whereas, the coordinates of the project site are  $31^{\circ}10'52''$ N,  $74^{\circ}26'16''$ E.

### 3.2.3 Seismic Map

A seismic hazard analysis is based on both the geological and seismological history of the region, including recent and historical seismicity (earthquake catalogue), supplemented with available palaeo-seismological information.

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Pakistan is an earthquake prone country. A number of earthquakes have hit Pakistan resulting in losses of life and property. Pakistan Meteorological Department (PMD) presently has a network of eleven seismic stations. By using recorded data the seismicity and zoning maps of Pakistan have been developed by PMD.

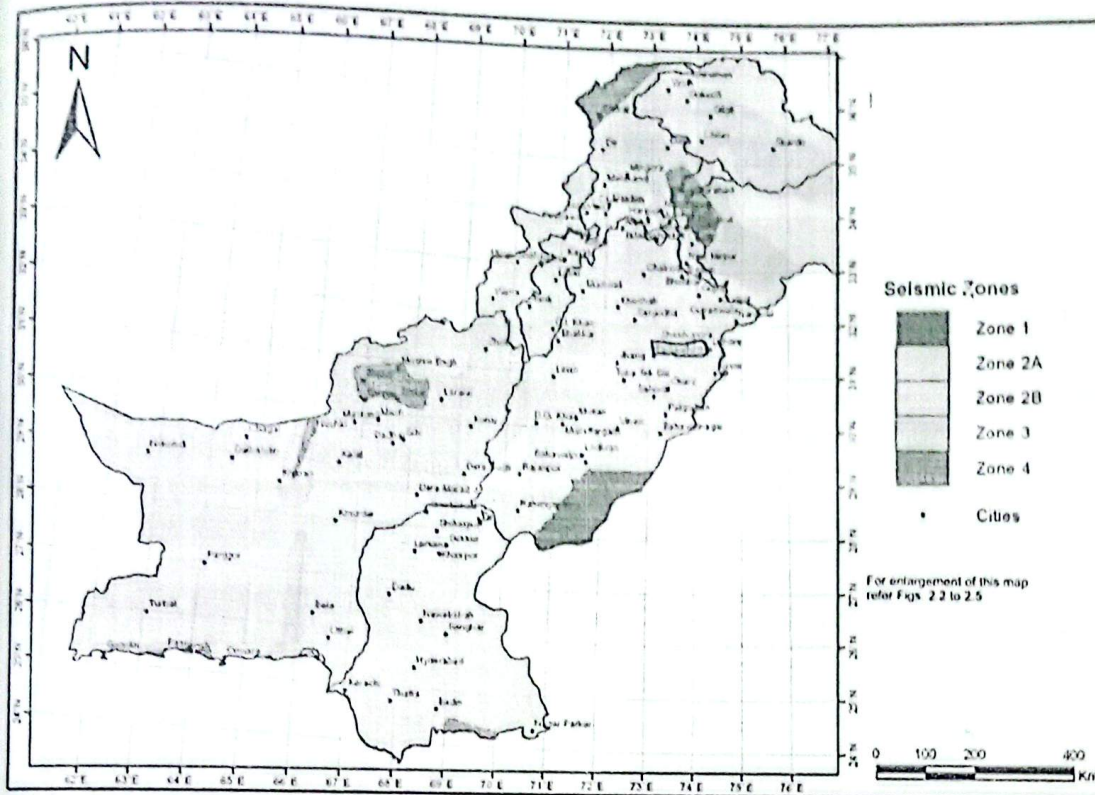


Figure 14: Seismic Zoning of the Area

Seismic Zoning Map of Pakistan showing Proposed Project site area is presented as Figure, indicating zones according to the Building Code of Pakistan - 2007. The project site falls in Seismic Zone 2A/minor to moderate damage zone according to the Seismic Zoning Map of Pakistan

### 3.2.4 Climate

The climate of District Kasur is very hot and dry in summer and cool in winter. The hottest months are April to September. The maximum and minimum temperatures are 46°C and 28°C respectively. The coldest months are December to February. During this period the temperature fluctuates between 16°C and 6°C as shown below. Temperature at the project site was 28°C.

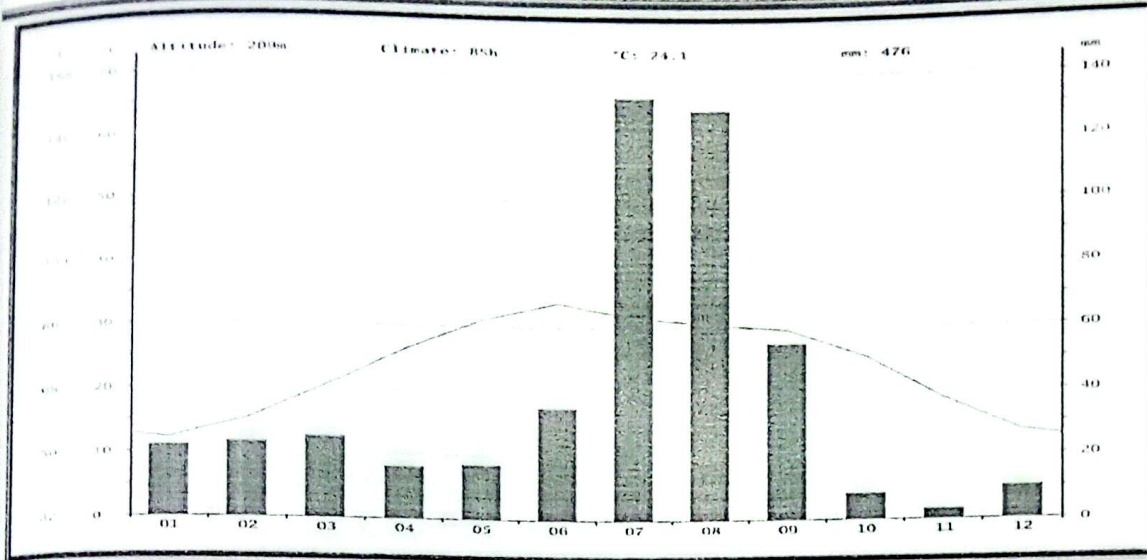


Figure 15: Annual Mean Temperature

Rainy weather alternates with oppressive weather. The rainfall is 500 mm per annum. In the recent year, the maximum average precipitation occurred in September and it was around 50-100mm.

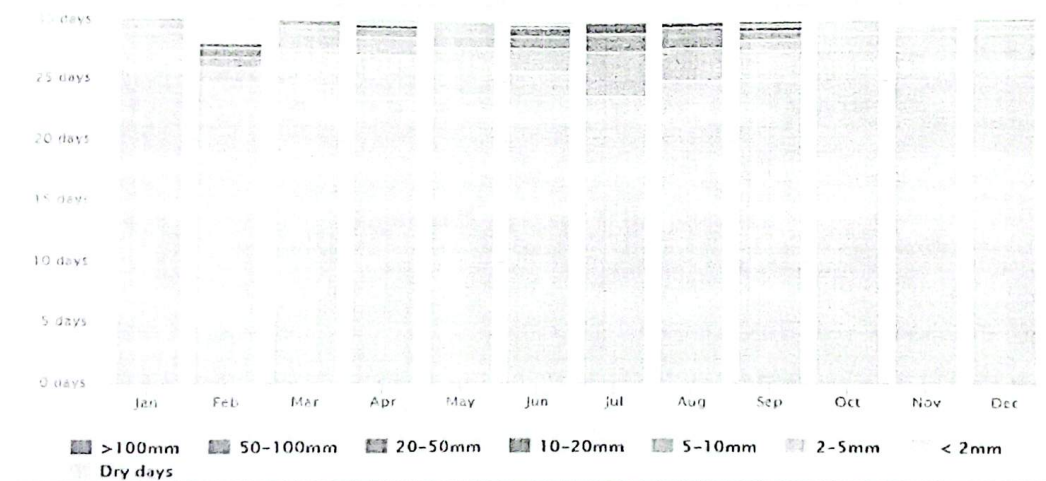


Figure 16: Average Annual Precipitation

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The average daily wind speed was highest in July which was 38 km/h. In recent years, the maximum sustained wind speed has reached 38 km/h. The diagram shows how many days within one month can be expected to reach certain wind speeds. Monsoons create steady strong winds on the Tibetan Plateau from December to April, but calm winds from June to October.

The wind speed directly affects the dispersion and transport of plume. So, the greater is the wind speed, the greater will be the dispersion and the distance at which plume strikes the ground and the lesser will be the pollution concentration.

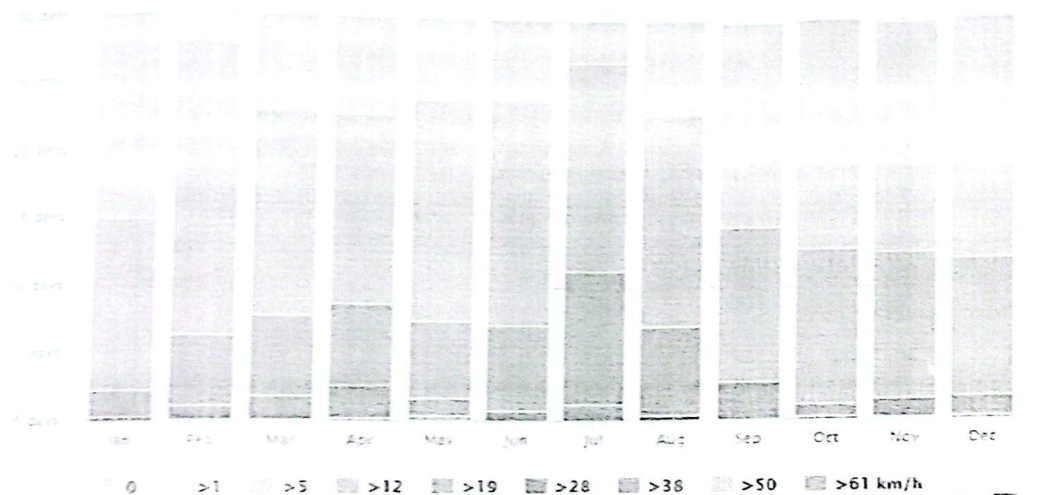


Figure 17: Average Wind Speed

### Ecological Resources

istrict Kasur is not rich with biological and ecological resources. However, the flora and fauna of the district includes; shrubs, herbs, mammals, birds, reptiles, amphibians and insects are found. They are discussed in detail below:

#### 1 Aquatic Flora and Fauna

There is a canal present in the study area which is being used for the irrigation purpose is Upper Chanab Canal. No aquatic life is reported in Upper Chanab Canal that can be at the verge of damage and disturbance. Moreover, no aquatic ecosystem (i.e., stream, river or pond) observed within or around the

study area, which omits the possibility of any kind of aquatic species that may be harmed due to the establishment of steel manufacturing unit.

### 3.3.2 Flora

The project is located in sparsely populated rural area which has a variety of the trees. For the construction of this project few trees of different species will be removed. The dominant tree species on project area include; Eucalyptus, Neem, and Kikar. The nomenclature including common, English, local and botanical names of the flora found in the study area are presented in Table 4:

Table 4: Inventory of the Trees Present in Kasur District

| S# | Common Name | Scientific Name            |
|----|-------------|----------------------------|
| 1  | Neem        | <i>Azadirachta indica</i>  |
| 2  | Kikar       | <i>Vachellia nilotica</i>  |
| 3  | Safeda      | <i>Eucalyptus globulus</i> |

### 3.3 Fauna

For study of fauna in the project area, field guides and books were consulted. On the other hand field observations were conducted along with the interviews of local community members about the fauna of the area.

The equipment used in field included cameras, binoculars and GPS device (wherever required). It is important to note that there is a number of factors which can change the findings of such survey. It may be pointed out that the pattern of seasonal migration of small birds varies depending upon each species. A fresh water aquatic body is located near proposed project site. During the construction activity in project area, no important biological feature will be damaged or disturbed.

The fauna commonly found in District Kasur includes; Hares, Falcon, Eagle, Quail, Starling, Jungle Geon, Russian Sparrow, Doves, King Fisher, Parrot, Crow and Local Sparrow. Commonly found mammals in the area include; dogs, cats, horses, house-rats, squirrels, porcupines and bats. However, all Indian Mongoose and Indian Palm Squirrel are also found in the District Kasur<sup>9</sup>.

<sup>9</sup> <https://en.wikipedia.org/wiki/Kasur>



Table 5: Mammals in the Study Area

| S# | Common Name           | Scientific Name            |
|----|-----------------------|----------------------------|
| 1  | Rat                   | <i>Rattus</i>              |
| 2  | Bat                   | <i>Chiroptera</i>          |
| 3  | Small Indian Mongoose | <i>Herpestes javanicus</i> |
| 4  | Indian Palm Squirrel  | <i>Funambulus palmarum</i> |
| 5  | Porcupines            | <i>Erethizon dorsatum</i>  |
| 6  | Squirrels             | <i>Sciuridae</i>           |

The commonly found birds species include; House Sparrow, Crow and some of them are mentioned below with scientific names:

Table 6: Birds in the Study Area

| S# | Common Name   | Scientific Name                |
|----|---------------|--------------------------------|
| 1  | House Sparrow | <i>Passer domesticus</i>       |
| 2  | House Crow    | <i>Corvus splendens</i>        |
| 3  | Pigeon        | <i>Columbidae</i>              |
| 4  | Bulbul        | <i>Pycnonotidae</i>            |
| 5  | Teetar        | <i>Francolinus francolinus</i> |
| 6  | Parrot        | <i>Psittaci forms</i>          |
| 7  | Titodi        | <i>Vanellus indicus</i>        |

In District Kasur reptiles such as Snakes (Cobra and Kraits), Spiny Tailed Lizard and Fringed Toed Lizard are common in the tract, but cases of snake bites are very rare, as these reptiles have been either killed by expanding urbanization or they have moved away.

Table 7: Reptiles in the Study Area

| S# | Common Name          | Scientific Name                 |
|----|----------------------|---------------------------------|
| 1  | Snake                | <i>Serpentes</i>                |
| 2  | Spiny Tailed Lizard  | <i>Uromastix hardwickii</i>     |
| 3  | Fingered Toed Lizard | <i>Acanthodactylus cantoris</i> |
| 4  | Earthworm            | <i>Lumbricina</i>               |

The amphibians commonly seen around the project area, especially during the rainy season includes;

Table 8: Amphibians in the Study Area

| S# | Common Name       | Scientific Name        |
|----|-------------------|------------------------|
| 1  | Common Frog       | <i>Rana temporaria</i> |
| 2  | Indus Valley Toad | <i>Bufo indicus</i>    |

A large number of insects are present due to open fields in the project site. Few of these insects are known to cause diseases in local population. Following is a list of commonly observed insects at the site:

Table 9: Insects in Study Area

| S# | Common Name  | Scientific Name                   |
|----|--------------|-----------------------------------|
| 1  | Black Ants   | <i>Paratrechina lignicolumnis</i> |
| 2  | Dragon Fly   | <i>Dragon Fly</i>                 |
| 3  | House Flies  | <i>Musca domestica</i>            |
| 4  | Bitter Flies | <i>Parnassius sylvia</i>          |
| 5  | Honey Bees   | <i>Apis mellifera</i>             |
| 6  | Wasps        | <i>Vespa velutina</i>             |
| 7  | Grasshopper  | <i>Melanoplus differentialis</i>  |
| 8  | Mosquito     | <i>Anopheles sp.</i>              |

No endangered species are found at the site. The area has not been identified as ecologically sensitive area by wildlife department.

#### 4 Environmental Monitoring Through Laboratory

Laboratory analysis for environmental monitoring establishment steel processing unit is done in order to check the baseline conditions and pollution load. In this connection EPA certified laboratory, was engaged to carry out environmental monitoring of wind speed, air quality, drinking water quality, noise level and particulate matter concentration in the project area.

The laboratory report of ambient air quality, ambient noise and surface water analysis results is annexed at Annexure-IX of this EIA Report and the detail information related to the testing is given below:-



### 3.4.1 Sampling Sites

Following localities were identified to collect samples of water, noise and air for testing according to the testing guidelines of Punjab-EPA as shown in Figure 18. It also defines number of samples as well as the number of sites from where samples were collected.

Table 10: Sampling Sites Details

| Sr# | Particulars        | Details                                     |
|-----|--------------------|---------------------------------------------|
| 1   | Number of Samples  | Three (03)                                  |
| 2   | Kind of Monitoring | Ambient Noise, Ambient Air and Ground Water |
| 3   | Sampling Sites     | One (01)                                    |

### 3.4.2 Ambient Air Quality

The primary source of air pollution at the project sites is the vehicular emissions, industries and the key pollutants likely to be found at project proposed locations are Carbon Monoxide (CO), Oxides of Nitrogen (NO<sub>x</sub>), Sulphur Dioxide (SO<sub>x</sub>), and Particulate Matter (PM). In order to determine the air quality of the area, Laboratory had the requisite air sampling device and expertise for collection of sample as given in below figure 18.



Figure 18: Environmental Monitoring of Proposed Project Site

### 3.4.3 Noise

Noise is described as an unwanted sound emitted from un-avoidable sources of anthropogenic activities. Daily based natural induced sources of noise are rare to none but human induced noise sources are plenty and un-avoidable. Physically, there is no distinction between sound and noise. Sound is a sensory perception and the complex pattern of sound waves is labeled noise, music, speech, low altitude acro plane flying etc. Environmental noise is a common cause of hearing loss of people indulged in industrial activities. Noise pollution in the city is on the rise with most residents complaining that the noise is becoming a public nuisance.

### 3.4.4 Water Resource

The main source of the water consumption is the ground water which is being pumped from 200-520 ft and its being used in the study area for domestic purposes. To check the quality of the water in the area, ground water was collected and analyzed. The ground water was collected from bore hole adjacent to the project area.

## 3.5 Socio-Economic Resources

This section provides collective information about the existing socio-economic and environmental condition of the project area within the Area of Influence (AOI). The different types of socio-economic aspects were covered such as demographic profile, occupation, education and health facilities. This data helped in identifying major interventions for the development of Environmental Management Plan (EMP). The study also helped to assess the positive or adverse impacts on local community.

This topic provides an overview of the baseline information relating to the socio-economic environment of the project area and the AOI. The socio-economic study gives information about the demographic profile, occupation, education and health facilities in the project area.

### 3.5.1 Demographic Information of Study Area

The demographic features include the information on population, family system and size, occupation, income and other social amnities available, etc. During the survey of project area, socioenvironmental team member has visited nearby residential area.

The establishment scrap melting unit will be located in the industrial zone. However, residential community is present at a safe distance from project site. The project site is 240 m away from residential community. The total population, of village is approximately 4520 having ratio of 44% males and 56% females.

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### 3.5.2 Village Profile

The village profile reflects the basic socio-economic conditions of local people. These parameters indicate the needs of society while planning the the aforesaid project. The village profile has been obtained by meeting with community representatives who are well aware about their surroundings. The consultant, with his team, visited project area and study area in order to identify the socio-economic and environmental aspects of project. The following information about the Fazal Town Village is obtained by surveying the community.

Table 11: Study Area

| S# | Socio-Economic Indicators        | Naqeeb Abad                                                                                         |
|----|----------------------------------|-----------------------------------------------------------------------------------------------------|
| 1  | Language Spoken                  | Punjabi, Urdu                                                                                       |
| 2  | Distance from Project Area       | 240 m                                                                                               |
| 3  | Accessibility of Road            | Kaccha Road                                                                                         |
| 4  | Transport                        | Public and Private Transport                                                                        |
| 6  | Population                       | 4520                                                                                                |
| 7  | Livelihood                       | Agricultural, Livestock and Labor                                                                   |
| 8  | Houses                           | 645                                                                                                 |
| 9  | Educational Facilities           | Primary School, Secondary School and Govt. & Private College                                        |
| 10 | Institutional Facilities         | Mosque                                                                                              |
| 11 | Civil Facilities Available       | Electricity, Water Supply and Graveyard                                                             |
| 12 | Source of Water                  | Groundwater                                                                                         |
| 13 | Common Diseases                  | Fever, Hepatitis, Common Cold, TB, Typhoid, Diarrhea and Malaria                                    |
| 14 | Historical Place                 | NIL                                                                                                 |
| 15 | Grain and Livestock Markets      | NIL                                                                                                 |
| 16 | Cottage Industry                 | NIL                                                                                                 |
| 17 | Types of Trees                   | Neem, Kikkar and Eucalyptus                                                                         |
| 18 | Disaster Management              | NIL                                                                                                 |
| 19 | Major problems of the Study Area | Safe Drinking Water, Sanitation and Sewerage System, Roads Access, Educational and Medical Problems |

### 3.5.3 Residential Areas

As the project site is located in industrial zone, however, small villages are located around project site.

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Following residential areas are located near proposed project site as shown in Figure 19.



Figure 19: Nearby Residential Areas

### 3.5.4 Industries

Proposed project site is located on main Lahore-Kasur Road. Few of the industries present around project site are located on Google map in Figure-20.

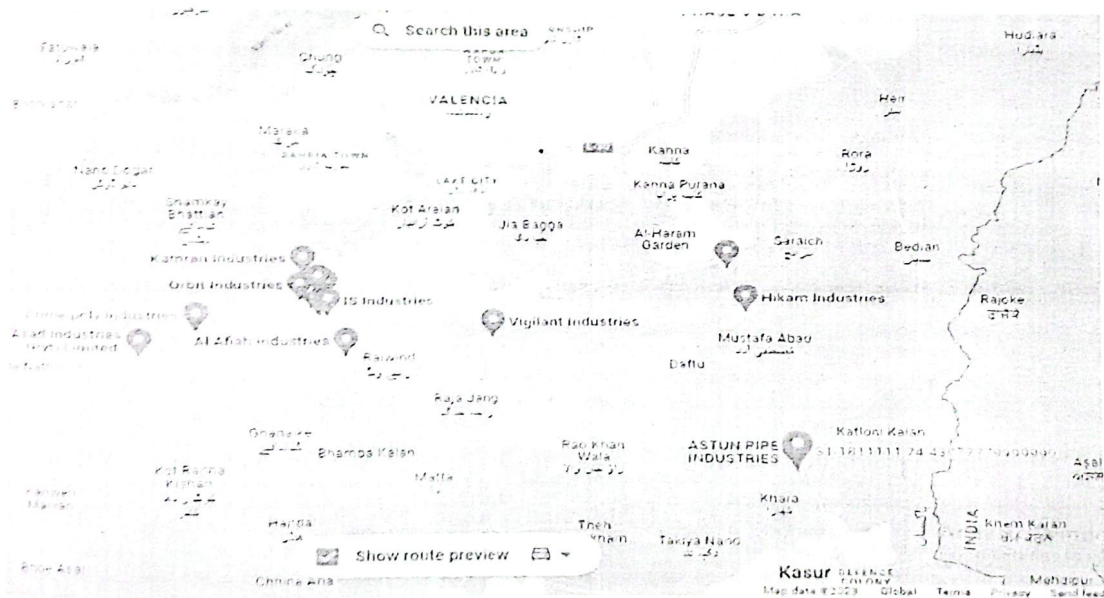


Figure 20: Industries located near Project Site



### 3.5.5 Social and Public Amenities Available

The social and public amenities present in the area are given below:

#### a. Physical structures

The people in the study area are deprived of basic facilities like health, proper sewerage and sanitation facility, medical facilities, provision of safe drinking water, etc.

#### b. Religious Structure

There is a mosque located at 0.9km from the project area. There is no shrine, structure or any other religious infrastructure present in the proposed project site that could be damaged and dislocated due to the proposed project establishment.

#### c. Protected Structures

There is no protected site, structure or any other social infrastructure present in the proposed project site.

#### d. Cultural Heritage and Community Structure

As stated earlier that the project area has no population and physical structure that may be damaged due to the establishment scrap melting unit. The team also visited the study area but did not find any cultural heritage and community structure within the study area that could be impacted due to the proposed project.

### 3.6 Quality of Life Values

Socio-Economic Questionnaire and Environmental Checklist were used as survey tools by the The survey team to collect desired information. Graphical representation of results of Socio-Economic Survey is given below:

#### 3.6.1 Occupation of Respondents

Majority of the respondents (38%) attached with agriculture, 20% belongs to the labor class, 15% have their own business, 13% daily wagers, 7% shopkeepers and remaining 7% are private employees. During survey, efforts were made to interact with people representing all walks of life. The detailed graphic representation of occupational status is given below:

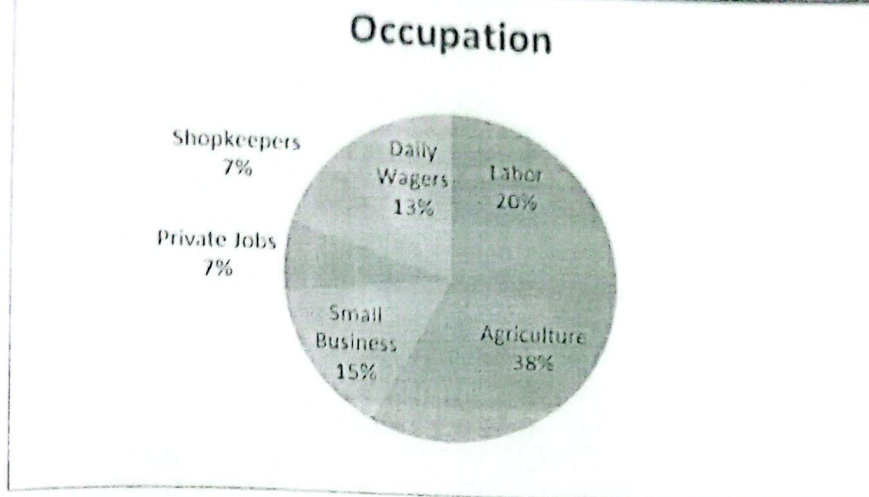


Figure 21: Occupation of Respondents

#### Personal Income

on the sample survey results, as the figure shows that nobody was earning less than 20,000 tons, 69% of respondents fall within the income range of 20,000 tons – 25,000, 23% respondents earn – 40,000 while only 8% of the respondents earn within the range of 40,001 – 45,000.

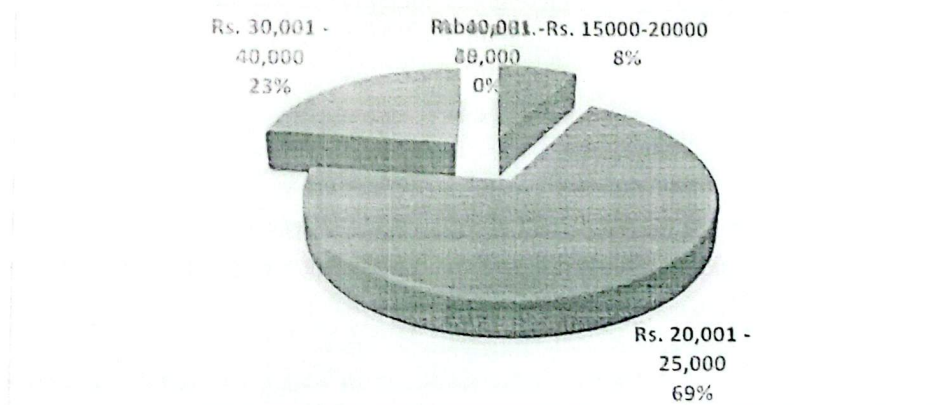


Figure 22: Personal Income

#### Educational Institutes

one government school about 350 m away from project site in Javed Nager i.e. Govt. Arif School.

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### Facilities Available

Facilities available at the houses, shops and factories are depicted here. It shows that electricity, water, telecommunication, sewerage, gas supply and every other routine facility is available in study

### Literacy Rate

Survey results, it was found that 14% of the studied population was illiterate, 36% was up to primary level, 43% studied up to middle level and only 7% of the respondents studied up to higher secondary level.

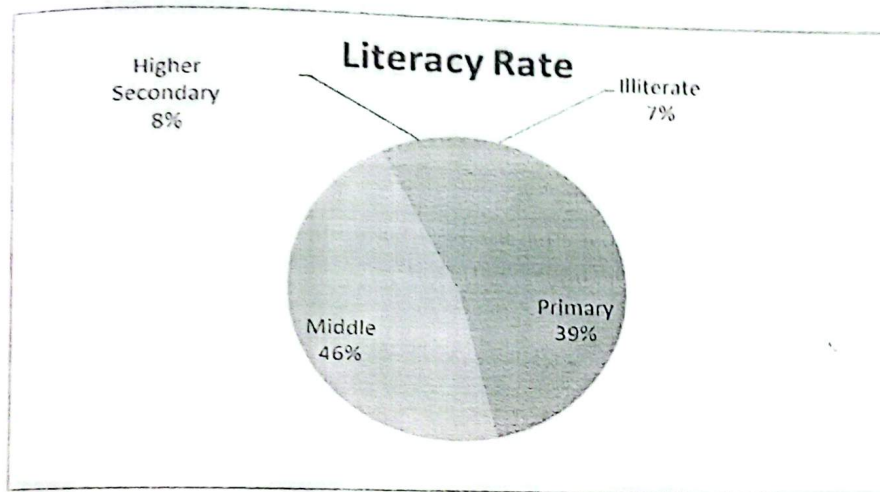


Figure 23: Literacy Rate

### Common Diseases

According to the survey the common diseases recorded in the project area were, Diabetes, Fever, Hypertension, stomach problems, Malaria, Typhoid, Nephritis and Diarrhea<sup>10</sup>.

### Cultivated Crops

Crops that are being cultivated in the study area include; Rice, Wheat, Sugarcane, Onion, and Potatoes as well as fodder crops. The area is famous for best Basmati rice production in the

### Livestock

In the study area have common livestock which include; Cows, Buffalos, Sheep, Goats and Hens. However, there is no proper cattle or poultry farm observed within the study area.

Source: Climate Change Working Papers No. 9, 2017.

Baseline Data & Environmental Profile

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Religious, Archaeological and Historical Sites

The following proposed buildings are in historic, religious or archaeological settings and are proposed within the site. There are no major concerns or archaeological features of such that they are of value within the site and the project.

REPORTS OF ENVIRONMENTAL AND SOCIAL IMPACT

The following parameters were used to assess the quality of different environmental parameters. The report is the left column of these parameters (quality of analysis, water quality, air quality, etc.).

Dr. J. J. J.



## CHAPTER 4: STAKEHOLDER CONSULTATION

### 1. GENERAL

Stakeholder's consultancy refers to a process through which the public/stakeholders can influence decisions and share control over development proposals which may affect them. In a participation exercise, the shared analysis, agenda setting and decision making are normally reached through consensus on the main issues between the public and the proponent. The Punjab Protection Act 1997 (Amended 2012) makes the participation of the local communities mandatory in the planning and design of a development project. United Nations Conference on Environment and Development (UNCED) in 1992 endorsed the process of stakeholders' participation and consultation as one of the key documents of the Conference-Agenda 21. It is obligatory not only to satisfy the legal requirements of the EIA process in Pakistan but also to improve and enhance the social and environmental design of the Project.

### 1.2 OBJECTIVE OF THE STAKEHOLDER CONSULTATION

The aims and objectives of public involvement and consultation of this project include:

- To provide information related to Project activities to stakeholders.
- Allowing the public to express their views on the scope and content of EIA (and the proposed development action).
- Obtaining local and traditional knowledge (corrective and creative) before decision-making.
- To seek for the participation of all interested parties and to identify stakeholders' interests and issues.
- Ensuring that important impacts are not overlooked.
- Reducing conflict through the early identification of contentious issues.
- Influencing project design in a positive manner.

### 4.3 METHODOLOGY

The methodology adopted for the purpose of socio-economic and health assessment was based on general observation, interviews, questionnaires and recording of various parameters for the baseline information. Stakeholders were selected randomly for this process. Secondary data includes mode of transportation, education level and facilities, health facilities, water and sanitation facilities etc. Views of the people about the proposed project were collected by interviewing them using a semi structured questionnaire.

### 4.4 CLASSIFICATION OF STAKEHOLDERS

Primary stakeholders were consulted during informal and formal meetings held in the project area. The consultation process was carried out in Urdu and native language. During these meetings, a simple, non-technical, description of the project was given, with the overview of the project's likely human and environmental impacts. This was followed by an open discussion allowing participants to voice their

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concerns and opinion. In addition to providing communities with information on the project, their feedback was documented during the primary stakeholder consultation. The issues and the suggestions raised were recorded in field notes for analysis and interpretation.

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

Secondary stakeholder consultations were more formal as they involved government representatives and local welfare organization, NGOs consulted during face to face meetings and through telephonic conversations. They were briefed in the EIA process about the potential negative and positive impacts of the project on the area's environment and communities.

It is important not to raise community expectation unnecessarily or unrealistically during the stakeholder consultation meetings in order to avoid undue conflicts with tribal leaders or local administrators. The issues recorded in the consultation were examined, validated, and addressed in EIA report.

#### 4.5 STAKEHOLDER CONSULTATION TECHNIQUES

In recognition of diversity of views within any community, it is very important to obtain a clear understanding of the different stakeholders' views and concerns regarding the project and to analyze their capacity and willingness to be involved in some or all of the project and its planning process. It is important to be aware of how different power relations can distort the participation. It is also important to know that how community skills, resources and knowledge can be applied to improve the project implementation. All of this can be achieved by careful use of various tools of stakeholder consultation. Therefore the following participatory techniques were employed during stakeholders' consultation:

- Informal meeting with the communities in neighborhood areas; men and elders attended these meetings.
- Focus group with women participants in surrounding areas.

#### 4.6 STAKEHOLDERS CONSULTED

In consultation process for EIA, the following stakeholders were consulted.

- Local communities, men, women and elders attended the meetings
- Local Government representatives

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## Consultant with Government Official

Following officers of government departments were consulted by the socio-environmental team of the consultants and concerned details about the project were noted down through personal interviews, group meetings, etc., in their offices, for instance, see Table 12.

Table 12: Stakeholder consultation with Government Departments

| Sl. No                                                | Name                | Designation and Department       | Concerns/Remarks                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-------------------------------------------------------|---------------------|----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Environmental Protection Department</b>            |                     |                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 1.                                                    | Mr. Muhammad Qaiser | Inspector Environment- EPA Kasur | <p>Following comments are summarized to control the air pollution generation during operational phase of the steel mills:</p> <ul style="list-style-type: none"> <li>• An efficient ESP plant is recommenced to control the air emissions</li> <li>• It should be ensured that the pollution abatement technique</li> <li>• Chemical storage and handling should be carried out in the effective manner</li> <li>• Solid waste should be managed effectively. It should be sold to the certified contractor</li> <li>• Wastewater should be treated effectively before disposing off in the drain</li> </ul> |
| 2.                                                    | Mr. Muhammad Ashraf | Inspector Environment- EPA Kasur | <p>The proposed project area is industrial in nature. Following mitigation measures should be adopted:</p> <ul style="list-style-type: none"> <li>• Tree plantation in designated green zones should be carried out</li> <li>• Proper disposal of the solid waste</li> <li>• HSE management measures should be adopted and implemented effectively.</li> </ul>                                                                                                                                                                                                                                               |
| <b>Irrigation Department-Rechna Drainage division</b> |                     |                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 4.                                                    | Imdad Hussain       | Senior Sub Engineer              | <p>Following measures should be adopted: construction, installation and operation, international standards of HSE should be followed</p> <ul style="list-style-type: none"> <li>• Effluent should be treated before final disposal</li> <li>• Water conservation activities should be carried out</li> </ul>                                                                                                                                                                                                                                                                                                 |

|                                 |                        |                                                                                                                                                                                                                                                                           |
|---------------------------------|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Rana Iqbal                      | Head Clerk             | Following measures should be adopted:<br>Prior to starting the operation the proponent should get NOC from the concerned department<br>Wastewater treatment plant should be installed.<br>Air pollution abatement technology should be installed to control air pollution |
| Social Welfare and Bait ul Maal |                        |                                                                                                                                                                                                                                                                           |
| Malik M. Yasin                  | Social Welfare Officer | Collaboration with the department should be carried out for the welfare of the general public and labors<br>Funds can be given to the needy for their rehabilitation.                                                                                                     |

## 2 Consultation with Local Community

Local people of the project area consulted and their views were recorded in form of survey forms presented in table below:

**Table 13: Stakeholder consultation with Local Community**

| Name           | CNIC            | Occupation of Participant | Concerns/ Comments                                               |
|----------------|-----------------|---------------------------|------------------------------------------------------------------|
| Ashraf Masch   | 35201-8899698-1 | Job                       | Job opportunity will arise                                       |
| Khalid Khokar  | 35201-9139232-1 | Businessman               | Pollution load, odor related issues will arise.                  |
| Hameed Masch   | 35102-1003616-9 | Shop keeper               | No perspective                                                   |
| Ali Zaib       | 35401-4252256-8 | Job                       | Foreign revenue will generate                                    |
| Irfan Ahmed    | 35201-6165519-3 | School teacher            | Pollution load of area may increase                              |
| Muhammad Aslam | 35404-1751725-1 | Job                       | Employment opportunity may increase for local people             |
| Jahanzaib      | 33402-242256-8  | Job                       | Wastewater from the unit may pollute the surrounding environment |



|                  |                 |             |                                                                          |
|------------------|-----------------|-------------|--------------------------------------------------------------------------|
| Muhammad Zam     | 35404-6292151-5 | Businessman | Economic conditions of the community will improve due to job opportunity |
| Zaher Ahmed      | 38401-2858401-6 | Businessman | Foreign Revenue Generation                                               |
| Amar Ahmed       | 38401-2151601-5 | Job         | No perspective                                                           |
| Muhammad Shahbaz | 35401-9155326-3 | Job         | Jobs and economic uplift                                                 |
| Younas Naseer    | 35404-1553821-5 | Shop keeper | Foreign revenue will generate                                            |

### STAKEHOLDER CONCERNS AND RECOMMENDATIONS

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

#### 7.1 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 nature and were appreciated; especially by men and women. The poverty level is such that communities 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 community development program.

#### 7.2 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.

#### Compensation

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

#### Interaction with Local Community

Local work force coming in the project area who will not be aware of the local customs and norms may result in conflicts with the local community; keeping in mind the sensitive law and order situation and culture of area.

#### Resettlement/ Relocation

Proposed site is located within industrial area and the land is owned by proponent. No human habitation resides within project area. No structure of any significance (cultural, religious,

ecological, recreational or any other) stands on the land selected for the project. No flora or fauna, previously belonging to endangered species is found within a safe distance from the site which is to be removed or moved to some other part. Hence, no relocation and resettlement is required. Socio-economic forms are attached as Annexure-XIV with EIA report.

### Project Response

respondents were in favor of the proposed project as it will raise the employment opportunities for the unskilled and unskilled labor. 98% favored the construction of the project keeping in view its importance.

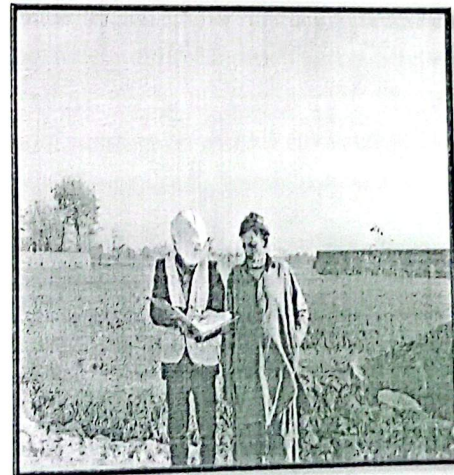
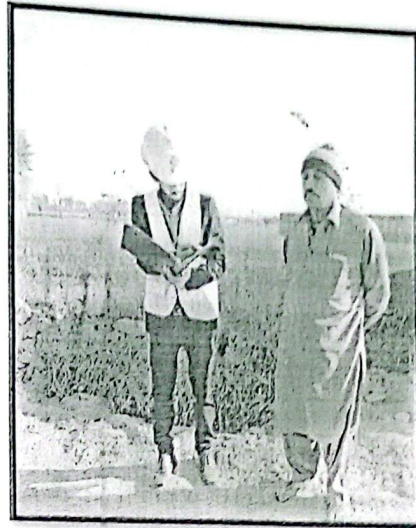
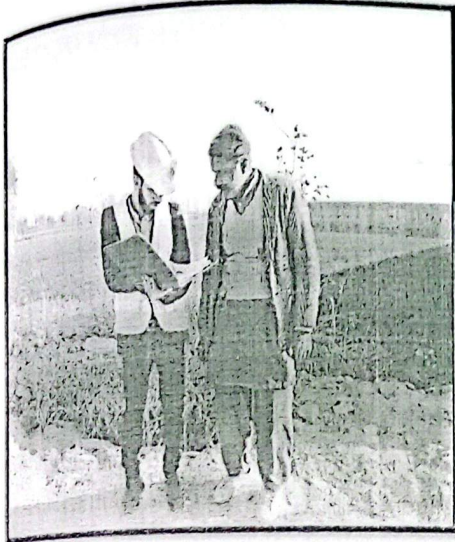


Figure 24: Consultation with Local Community

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## CHAPTER 5: POTENTIAL ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

### GENERAL

This section discusses the project's potential environmental impact on the area's geomorphology, soil, resources, air, biological resources and socioeconomic condition and, where applicable, identifies mitigation measures that will reduce, if not eliminate, its adverse impact. The assessment carried out in this section is based on potential impacts on overall environmental receptors within the project area.

### OBJECTIVES

The objective of screening is identification of the adverse as well as beneficial impacts and then ranking the effect of adverse impacts up to acceptable limits or within PEQS. Following are the objectives of screening out all significant environmental and social impacts:

- To find different alternatives and ways of carrying out the project activities which may cause adverse impacts
  - To enhance the Environmental and Social benefits of project
  - To avoid, minimize and remediate adverse impacts
  - To ensure that residual adverse impacts are kept within acceptable limits
- The sub-sections below the impacts assessment methodology for the installation of steel furnace of the project at Lahore Kasur Road Kasur Road, Kasur has been defined. It includes the magnitude, the nature of the impact and the nature of the anticipated impact.

### METHODOLOGY

This section discusses the project's potential environmental impact on the area's geomorphology, soil, resources, air resource, biological resources and socioeconomic condition and, where applicable, identifies mitigation measures that will reduce, if not eliminate, its adverse impact. The assessment carried out in the sub-sections below is based on potential impacts on overall environmental receptors within the project area. Impacts are evaluated on the basis of magnitude, immediacy and sustainability. The criteria are as follows:

#### Magnitude

The magnitude of the impacts associated with the proposed project include the type of impact, project location and the extent of impact on the immediate environment and social structure. It could be direct, indirect or cumulative.

#### Immediacy

The timing of the impact focus on the following parameters:

Temporal Extent (during construction and operation)

Environmental Management and Monitoring Plan

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Spatial Extent (local or widespread)

Sustainability and Reversibility

Ability and reversibility of the impact focused on the following parameters;

Mitigability (Fully/Partially)

Monitoring (Fully/Partially)

### Purpose of Mitigation Measure

The basic purpose of mitigation measures is to reduce the impacts of the establishment of proposed project on the socio-environment up to the maximum possible extent. The mitigation measures are based on the following parameters;

### What is the problem?

The proposed project is the Establishment of Steel Mills of M/s Specialists Group Inc. Limited. The proposed project is located inside the premises of SGIL. In addition, to the noise and fugitive emissions during the development phase solid waste also requires proper management. The major impact associated with the operation of unit includes air emissions from melting of steel furnace and the management of the solid waste.

### When problem will occur and when it should be addressed?

Impacts from the proposed project will occur during the construction and operation due to the civil works involved. These issues included; noise generation, fugitive dust emissions, solid waste management, wastewater disposal, top-soil removal, Health and Safety issues and change in the physical features of the area. These all problems should be addressed on-site where they are being generated, to avoid the residual or adverse impacts.

### Where problem should be addressed?

Problem will be generated from site development and operation of the unit. So, it should be addressed on source i.e. at site within the same timeframe.

### How the problem should be addressed?

Mitigation measures will be provided according to the nature of the impacts/problems. The main focus of mitigation in the EIA process as Avoidance, Minimization and Compensation. Avoidance aims at avoiding the adverse impacts as far as possible by use of preventive measures or by not carrying out the proposed action. Minimization aims at reducing adverse impacts by scaling down the magnitude of the impact, or employing technology that reduces the factors generating the undesirable environmental impact, while compensation aims at remedying unavoidable residual adverse impacts. Compensation is a desirable approach and should only be considered after the other elements have been completed.

*Antony C.*

*[Signature]*



## Ways of Achieving Mitigation Measures?

Following ways will be adopted to reduce the impacts of the scrap melting:

### Changing in Planning Design

The proposed design is developed considering environmental risk and hazards. The plan includes development away from hazard-prone areas, such as floodplains, to avoid putting people and property at risk. Moreover, there is no endangered and threatened species present in the project area. Any human settlement or infra-structure will not be dislocated or dismantled due to the proposed project development. Hence, there is no need to change the design of project.

### Improved Management and Monitoring Practices

Anticipated impacts had been reduced significantly by adopting better management activities, as it can be carried out for betterment of the society. While environmental monitoring will be conducted on regular basis to keep the sources of the air pollution, wastewater generation, noise and public services in-check. Following practices that need to be adopted to reduce the impact significantly:

### Compensation in Money Terms

There is no protected or environmentally sensitive area present within 10.0 km vicinity of the project site. The project site is located inside an industrial zone. Hence, no compensation in monetary terms will be required. However, proper tree plantation will be done as environmental improvement measures.

### Replacement/Relocation/Rehabilitation

The proposed project is located in Khurrianwala industrial estate; no human population or preserved natural resource is present which could be impacted due to the commencement of the proposed project. Hence, replacement, relocation and rehabilitation will not be required for the commencement of the aforesaid project.

## IMPACT ANALYSIS/PREDICTION

Impact or effect can be described as the change in an environmental parameter, which results from a particular activity or intervention. The change is the difference between the environmental parameter before the project compared to that without the project. It is predicted or measured over a specified period within a defined area.

Characteristics of environmental impacts vary. Typical parameters to be taken into account in impact prediction and decision-making include:

- Nature (positive, negative, direct, indirect, cumulative);
- magnitude (severe, moderate, low);
- extent/location (area/volume covered, distribution);

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- timing (during Construction, operation, decommissioning, immediate, delayed, rate of change);
- duration (short term, long term, intermittent, continuous);
- reversibility/irreversibility;

Method used for identification of potential impacts is Matrix. The anticipated environmental impacts and magnitude of this proposed project is given below in Table 14.

*Amir*

*[Signature]*



| PHASE I          |                                         | Pre-Construction                                   |                          | Construction        |                 |             |           |                      |                             |                    |                           |                           |                       |                                |                    |                      |                      |                         |                           |            |         |                      |              |   |
|------------------|-----------------------------------------|----------------------------------------------------|--------------------------|---------------------|-----------------|-------------|-----------|----------------------|-----------------------------|--------------------|---------------------------|---------------------------|-----------------------|--------------------------------|--------------------|----------------------|----------------------|-------------------------|---------------------------|------------|---------|----------------------|--------------|---|
| Land Acquisition |                                         | Spills and Leakage of hazardous materials in water | Pollutants released into | Particulates matter | Emission of GHG | noise level | Vibration | Effect on vegetation | Effect on Agricultural land | Effect on wetlands | Reduction of Biodiversity | Change in living standard | Psychological Problem | Availability of new facilities | Traffic Congestion | Impairment of health | Worker safety issues | Community safety issues | Occupational diseases due | Employment | Economy | Visual/scenic beauty | Odor Problem |   |
|                  |                                         | NA                                                 | A                        | N                   | A               | N           | A         | N                    | A                           | O                  | O                         | O                         | O                     | LB                             | N                  | A                    | N                    | A                       | N                         | A          | N       | A                    | O            | O |
|                  | Instrument installation                 | LA                                                 | O                        | O                   | O               | L           | A         | L                    | A                           | O                  | O                         | O                         | O                     | L                              | A                  | L                    | A                    | O                       | O                         | L          | MB      | MB                   | O            | O |
|                  | Storage of construction material        | O                                                  | O                        | M                   | O               | O           | O         | O                    | O                           | O                  | O                         | O                         | O                     | L                              | A                  | L                    | A                    | O                       | O                         | L          | HB      | MB                   | O            | O |
|                  | Transportation of construction material | LA                                                 | O                        | L                   | A               | L           | A         | L                    | O                           | O                  | O                         | O                         | L                     | A                              | O                  | O                    | L                    | A                       | L                         | HB         | MB      | O                    | O            |   |

2. covered

LA-1000

$V_{\text{LA}} = \text{Median value}$

100



## Impacts Associated with Project Location

The proposed project will have both socio-economic and environmental implications as discussed in the sections below.

### Location

The proposed project site is located within the premises of SGIL, not located in environmentally sensitive area. No human settlements exist on project site that would be impacted from the commencement of the proposed project. There is no heritage building, social structure, grassland or preserved area in the project vicinity that could be damaged, dislocated or dismantled due to the project activity in the proposed area. Hence, the impact of location is considered to be in-significant as the project site is away from the residential area, Shrine (not reported in the study area) and no protected area is reported in 10 km vicinity. The project will be constructed in the industrial area.

### Mitigation Measures

It is envisaged that no mitigation measures will be required as the proposed project will not have any adverse impacts on its surroundings, as proposed furnaces will be installed within the premises of existing plant of SGIL, district Kasur.

### Land Use

The proposed site is under the ownership of proponent and located at Khara Link Road of Main Bypass Road, near PSO Pump, Kasur. The area is industrial in nature. So, there is no settlement, water body, grassland or preserved area in the proximity of the project area that could be damaged or dismantled.

### Mitigation

The following mitigation measures will be adopted to reduce the land use impact:

It is suggested that a green area will be defined and thick trees plantation will be carried out along the boundaries of the project area to decrease the rate of soil erosion. Preferably trees and other vegetation will be planted extensively to enhance the aesthetic outlook of the area but it will also absorb pollution from the atmosphere.

### Loss of Vegetation

The proposed project site is located within the premises of the existing plant, so no loss of vegetation is expected due to project activities. The proposed project site is open area adjacent to the existing steel

### Conclusion

The following mitigation measures will be adopted:

The tree will be planted on the designated area inside the project.

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Biodiversity at the site will be maintained by transplanting or culturing endangered or threatened plants found in District Kasur  
Native tree plantation will be promoted extensively

#### Shifting of Utilities

There will not be any shifting of existing utilities such as water supply pipelines, sewers, electrical lines, etc. to the proposed project.

#### Impact on Archaeological/Cultural Property

In the project influence area there are no significant archaeological properties, hence no impact is anticipated.

*It is concluded in view of these reasons that the selected site is best suited for the project, and will not have any adverse impact or threat on any component of the environment.*

#### Impacts Associated With Design Phase

The proposed project can have impacts on the environment if it is not prepared accordingly. It is necessary to consider a sustainable project approach. Sustainability is an important issue to consider not only due to environmental concerns but also due to economic and social matters, promoting overall quality and economic advantages.

#### Measures

The design process should be carried out in recognition of identified hazards and risks assessment. Accepted design solutions should focus on maximum possible opportunity for risk reduction.

Carry out engineering surveys including environmental surveys depending on the level of complexity and potential hazards of the planned facilities in the area of construction. Integrate within the existing environmental infrastructure at site to facilitate sharing of services and amenities (e.g. power, water, solid refuse collection and roads), safety arrangements and waste management systems among others. This has already been catered as per the designs provided.

Minimize risks to health and impacts to external environment. Suitable anti-pollution facilities (such as waste containment and organized removals, waste water purification) should be part of the design.

#### Impacts Associated with Construction Phase

Impacts are anticipated to occur and affect the nearby communities due to the establishment of a fish and meat processing unit:

#### Impact of Dust and Exhaust Emissions

The area is expected to deteriorate locally due to mainly fugitive dust emission and exhaust emission which will have short-term but moderate impacts on local environment. Soil erosion may occur.



in small areas and they may be prone to open space for wind to pick up dust particles. Air pollutants such as NOx, SOx and CO emissions may be generated from the working of the construction machinery which includes; Hauling vehicles, loaders, trucks, mixers, etc. This machinery will generate dust, noise and other potential pollutants in the air. This impact is considered to be negative of minor magnitude. The effect due to construction is however, of temporary nature and will have no permanent effect on environment.

Mitigation control measures are important in the project area; as the area is semi-arid having dry soil conditions it is vulnerable to spread by high winds. Following mitigation measures will be adopted to mitigate anticipated impact:

- Ensure that the trucks carrying the raw-material should be covered by tarpaulin to reduce fugitive dust emissions
  - Water spraying/sprinkling should be done on the regular basis
  - Ensure that all equipment and vehicles, used during the construction phase, are properly tuned and maintained in good working condition, in order to minimize the exhaust emissions and it will be regulated by the concerned authority
  - Ensure that dust emission generated due to vehicular movement is minimized by restricted speed limit and vehicular movement impacts which will be minimized through good traffic management at site
  - Ensure that dust emission during the construction phase will be minimized by implementing best management practices
- In order to reduce the fugitive dust emissions, avoid excavation activities during the windy days

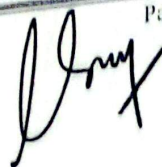
#### Soil Erosion

During the construction activities the chances of soil erosion and contamination may be increased. Soil erosion from the construction activities will deteriorate the soil quality. There are low chances of land contamination due to release/spill of lubricants, oil, and other materials during the construction period. Erosion may also result from movement of heavy vehicle such excavators, trucks and pick-ups. The impact will be short term, localized and can be controlled through immediate appropriate management and mitigation measures. This impact is considered negative of minor magnitude. Hence, the impact is insignificant.

mitigation measures

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

Removal of shrubs and bushes should be avoided to the extent possible.



- In case of un-avoidable circumstances, the exposed soil will be re-vegetated quickly and compensatory plantation (five trees for each one removed) will be carried out as soon as possible
- Spill prevention and response plan for storage, usage and transfer of fuel should be prepared (if used on site) and implemented
- Workers should be trained on spill prevention and response plan
- Maintenance and washing of vehicles and equipment should be carried out at designated areas
- Any hard surface or tarpaulin should be spread on area to prevent soil contamination
- Regular inspections should be carried out to detect leakages in construction vehicles and equipment
- Machinery involved should be maintained properly to avoid leakages

### 3 Socioeconomic Impacts

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

#### 4 Mitigation Measures

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

- Good relations with the local communities will be promoted by encouraging Contractor to provide opportunities for skilled and unskilled employment to the locals as well as on-job training.
- In the case of not hiring the locals, Contractor will restrict his permanent staff to mix with the locals to avoid any social problems
- The contractor should prefer hiring local labor from adjacent nearby villages
- The contractor will keep the copy of National Identity Card (CNIC) of his employees and will warn the workers not to involve in any anti-social activities otherwise they may face dire consequences
- At the time of hiring the Contractor has to ensure that the workers should be of good repute.
- First aid kits having all the necessary first aid stuff will be available at the site
- Routine medical check-ups of all the field staff including unskilled labor needs to be conducted.
- Training of workers should be carried out for operating various constructional machinery, safety procedures should be adopted, environmental awareness should be carried out, equip all workers



with safety boots, helmets, gloves, protective masks and monitoring of their proper and sustained usage will be carried out. In case of accidents, contractor will provide free medical treatment to the community.

- The Contractor will be responsible for the sensitivity towards the local customs and traditions.

### IMPACTS ASSOCIATED WITH OPERATIONAL PHASE

Following impacts are envisaged due to the establishment of scrap melting unit:

#### 1.1 Dust Emissions

The main air pollutants associated with plant operations are particulate matter. Significant particulate matter (PM) emissions are generated by the induction furnace during melting of scrap.

#### Mitigations

Following mitigation measures will be adopted to control the air pollution:

- The plant will be equipped with dry scrubber to control gaseous emissions.
- Suction hood along with the bag-filters will be installed to control the air pollution significantly
- Suction-hood system is considered to be 95% effective in collection of dust
- PM will be collected in the bag-house filter and this technology is considered to be 95% effective in controlling the PM emissions.
- Trees will be planted around the project area extensively to contain the air pollutant within premises. It will also be a sound barrier which will reduce air pollution

#### 1.2 Solid waste and Process Waste Products

This proposed project, from melting of the scrap in induction furnace slag will be produced as by product process. The domestic solid waste generation rate is considered to be 0.25kg/person/day. So, it is considered that 37.5kg will be produced on-site in a day. The improper disposal may impose health effects on the workers and the nearby community because the disease vectors will be produced.

#### Nature of Impact

Nature of the proposed impact will be direct, medium, long-term and hence significant.

#### Mitigations

Waste management practices will be adopted which will include:

- The process waste product i.e. slag will be reused in the process and as road filling material
- Waste bins will be placed in the facility at the strategic position for the collection of solid waste
- The installed bins will be covered in order to reduce the chances of the disease vector production

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- Record of all waste generated during the project activity should be maintained on the regular basis. Quantity of the waste disposed, recycled or reuse will be logged on a waste tracking register
- Regular training will be given to the workers dealing with the waste management it will include identification, segregation and management of waste

### 3.3 Water consumption and Wastewater Production

For the proposed project, during operational phase the water will be consumed in the cooling tower. The cooling water will be recycled and reused for the same purpose. While the domestic wastewater generated from offices, kitchen at a rate of 8.4m<sup>3</sup>/day, that will be discharged into sewerage lines of the

### 3.4 Nature of Impact

Nature of the proposed impact will be direct, low, short-term and hence in-significant.

### 3.5 Mitigation Measures

Following mitigation measures will be adopted:

- Domestic wastewater will be treated in septic tank.
- The evaporation loss may be minimized by adopting closed system.
- Freshwater conservation techniques should be adopted to ensure sustainable development.
- It will be ensured that no solid waste will be entered in the wastewater.
- There is no surface water body present in the project proximity that could be impacted.

### 3.6 Occupational Health and Safety

Health and safety impacts include:

- slips, trips and falls on the same level
- falls from height;
- unguarded machinery;
- falling objects;
- working in confined spaces;
- moving machinery, on-site transport, forklifts and cranes;
- contact with hot metal;
- fire and explosion;
- extreme temperatures;
- noise and vibration;
- electrical burns and electric shock;

### 3.7 Nature of Impact

Nature of the proposed impact will be direct, low, long-term and hence significant.

### 4. Environmental Management and Monitoring Plan



Following mitigation measures are suggested that could be applied to reduce the risk of health and

- Floor surfaces shall be maintained regularly, and kept clean and free of oil spills, other slippery fluids or materials and obstructions.
- Workers who may be exposed to noise levels exceeding occupational standards shall receive regular audiometric testing.
- The effective use of hearing-protection devices shall be ensured.
- Proper training will be provided to workers entering and working in the confined space of the hazards, protective measures and emergency rescue procedures;
- Only authorized persons shall be allowed near furnaces.
- People working in and around the furnace areas shall be provided with suitable PPE to protect them against molten metal burns, noise and physical hazards.
- Edged parts of rolls shall be securely guarded to prevent severe injuries.
- Transport routes shall be planned and constructed to minimize the risk of collision and with sufficient safe clearance to allow for aisles and turns, or other types of control area. Where appropriate, maps showing the proposed route should be provided.
- Transport routes shall be clear of obstructions and, where possible, without irregular surfaces.
- Loads should be lowered slowly and smoothly.

#### 5. Socio-Economic Impact

It is envisaged that the local community will be disturbed due to increase in the traffic load. The intensity of the aforesaid project will be quite low. The installation of the aforesaid project will have a beneficial impact such as; increase in employment opportunity, increase of the wages in local area, increase in the generation, provision of social welfare funds of the employees and appreciation of land value.

#### 6. Environmental Impact

The aforesaid impact is considered to be positive and will have a direct, medium, long-term and significant impact.

#### 7. Mitigation Measure

Mitigation measures will be required.

#### Emergency Response

Accidents and accidents may take place unexpectedly during project operations no matter how effective, and efficient the mitigation measures for all adverse impacts; especially the safety issues may be addressed. These may include;

- Fire hazard

**FIRE HAZARD**

operational phase of the project, fire hazard poses a serious threat.

- Fire extinguishers should be properly maintained and checked periodically.
- Adequate fire hydrant system should be installed.
- Flammable materials should be prohibited in the premises.
- Fire alarm systems should be maintained for detection and warning of fire.
- Adequate training of workers on use of firefighting system to deal with the situation.
- Administration of the unit will make a proper evacuation plans for emergency escape from all halls.
- Emergency call service must be made available.
- Firefighting team must remain ready at all times.

**Safety**

Occupational Hazards like physical injuries arising from accidents such as being hit by falling structures, being overrun by heavy equipment and etc. The major safety issues in operational phase

- Electrical hazards
- Machine guarding
- Eye, head and foot protection
- Fire and explosion hazards
- Housekeeping Issues

**Prevention measures**

- Care will be taken to properly ground and insulate all equipment
- Proper machine guarding, which is critical for the prevention of injuries to workers by isolating them from moving machinery, will be provided
- Head, arms and foot PPE's will be provided
- Firefighting equipment will be available and their locations will be clearly marked.
- Exits from work places will be well marked and visible in dim light.
- Fire water will be located throughout the plant in well-marked piping.
- Housekeeping will be frequent and thorough to prevent slips, trips, and falls
- Workers will be told and encouraged to use PPEs as may be standardized
- Workers' awareness and safety wall chart showing safety symbols will be displayed.
- First Aid Box will be kept in easy approach of all in case of any injury or mishap.
- Basic medical and health facilities will be provided to all employees



- Safety and warning devices such as reflectors, lights, etc. shall be installed at designated spots

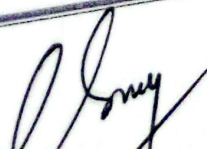
## POTENTIAL ENVIRONMENTAL ENHANCEMENT MEASURES

### 1.1 Tree Plantation

Grass and flowering plants will be planted at designated places. Grasses, median plants and median shrubs will be grown. Aesthetic and beauty plants including roses and jasmine will be planted. Trees height will be between 3-7 ft. Tree plantation will be done in open spaces and along boundary of project site.

### 1.2 Air Pollution Control Technology

To control air pollution issues, bag house filters will be used to control gaseous/ dust emissions.



## CHAPTER 6: ENVIRONMENTAL MANGEMENT AND MONITORING PLANS

### GENERAL

The EIA report contains predictions about the environmental impacts of proposals and recommendations for mitigation and management. The report is essentially a discretionary planning document. Usually, a separate project approval sets the terms and conditions with which the proponent must comply.

An environmental management plan (EMP), also referred to as an impact management plan, is usually prepared as part of EIA reporting. It translates recommended mitigation and monitoring measures into specific actions that will be carried out by the proponent. Depending upon particular requirements, the EMP may be included in, or appended to, the EIA report or may be a separate document. The EMP will be adjusted to the terms and conditions specified in any project approval. It will then form the basis for impact management during project Construction and operation.

The main components of an EMP are described in the table below, which reflects practice at the World Bank. Although there is no standard format, the EMP should contain the following:

- Summary of the potential impacts of the proposal;
- Description of the recommended mitigation measures;
- Statement of their compliance with relevant standards;
- Allocation of resources and responsibilities for plan implementation; and
- Contingency plan when impacts are greater than expected.

### MANAGEMENT RESPONSIBILITIES

Number of parties have responsibilities in relation to the implementation of the EMP. All project staff have responsibility and must adhere to the procedures outlined in the EMP at all times.

Table 15: Institutional Capacity

| Role      | Responsibilities                                                                                                                                                                                                                                                                                                                                                              |
|-----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Proponent | <ul style="list-style-type: none"> <li>» Implementation and monitoring of the EMP.</li> <li>» Provide all supervisory and management staff with an awareness and understanding of their responsibilities under this EMP.</li> <li>» Provide appropriate and adequate resources are allocated to allow for the effective implementation and maintenance of the EMP.</li> </ul> |



Construction Contractor

» Conduct periodic reviews of environmental performance are conducted.

» Report any major environmental incidents that may have a significant impact on the surrounding environment.

» Provide employees and contractors with the relevant environmental instruction in relation to the EMP and awareness and understanding of their obligations and duties.

» Be aware of and understand the contents of and the reason for implementing the elements of the EMP and ensure all personnel including subcontractors adhere to these requirements.

» Provide adequate training in the elements of the EMP to all personnel, including contractors.

» Provide personnel involved in the project, including subcontractors and visitors, with the appropriate environmental training required to provide them with awareness and understanding of their responsibilities under the EMP as well as understanding of the environmental approvals that adhere to the strategies outlined in the EMP.

» Carry out all work in accordance with the procedures outlined in the EMP.

» Make sure that all environmental safeguards and precautions are in place and adhered to at all times at the site and activity.

» Regularly inspect and monitor all activities for adherence to proper environmental safeguards.

» Ensure that all equipment used is properly serviced and that all precautions are in place to prevent the likelihood of an environmental incident occurring.

» Report all environmental incidents to the Superintendent's Representative as soon as practicable, but within 24 hours of them

Occurring.

*Amber*

*[Signature]*

Superintendent's  
Representative

All employees  
subcontractors

and

» Be aware and understand the contents of, and the reason for, implementing the elements of the EMP.

» Exercise environmental due diligence and achieve compliance with the EMP.

» Report all environmental incidents to the Principal as soon as practicable, but within 24 hours of them occurring.

## ENVIRONMENTAL MANAGEMENT AND MONITORING PLAN

all the mitigation measures identified in the EIA and the associated environmental or social aspect, construction and operation phase with the administrative framework involving all the responsible governing authorities required to take the planned actions/measures. It enhances project benefits by its impacts and making it environment-friendly.

### Environmental Management and Monitoring Plan for Construction Phase

tion outlines the aspects that will be covered in the Environmental Management and Monitoring (EMP) for the construction phase of the project, but also to enhance project benefits as well as to standards of good practice to be adopted for all project activities.



| Environmental Concern | Potential Risk                                                                                                    | Source/                                                                   | Proposed Mitigation Measures                                                                                                                                                                                                                                                                                                     | Monitoring Duration | Responsible Management/Supervision |             |
|-----------------------|-------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|------------------------------------|-------------|
|                       |                                                                                                                   |                                                                           |                                                                                                                                                                                                                                                                                                                                  |                     | Implementing body                  | Supervision |
| Air emissions         | Vehicular emissions; equipment and generators. It includes: carbon monoxide, methane, particulates, fugitive dust | diesel from generators.                                                   | <ul style="list-style-type: none"> <li>The transporting vehicles and generators will be maintained on the regular basis</li> <li>The drilling equipment and other machine will be maintained and serviced on regular basis.</li> <li>Good quality (low-sulphur) fuel will be used for vehicle and machinery</li> </ul>           | Monthly monitoring  | Mining Manager/ Contractor         | Proprietor  |
|                       | Dust emission                                                                                                     | Dust emission                                                             | <ul style="list-style-type: none"> <li>Dust emission from aggregate storage stockpiles will be reduced by covering the piles, for example with tarpaulin or thick plastic sheet</li> </ul>                                                                                                                                       |                     |                                    |             |
| Noise                 | Noise from generators, machines during development activities will create noise                                   | from generators, machines during development activities will create noise | <ul style="list-style-type: none"> <li>Use good quality machines equipped with silencers</li> <li>Machines and vehicles should be properly tuned on monthly basis</li> <li>The silencers will be installed on the generators to reduce the noise emissions</li> <li>Place generators in separate rooms to avoid noise</li> </ul> | Weekly basis        | Mining Engineer/ Contractor        | Proprietor  |



| Waste water                                                                                                                                                                 | domestic waste will be generated domestic waste, includes food waste, paper and packaging material | <p>For the collection of the solid waste at site bins will be installed</p> <ul style="list-style-type: none"> <li>The installed bins will be covered in order to reduce the chances of the disease vector production</li> </ul>                                                                                                                                                                                                                     | The workers |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| During the site construction phase oil spills may contaminate the site and wastewater generation from on-site municipal activities which may damage the groundwater quality |                                                                                                    | <ul style="list-style-type: none"> <li>Sewage wastewater treatment system such as septic tanks will be constructed on-site for the disposal of wastewater.</li> <li>The workers are properly trained to manage the spillage problem, the spilled area should be properly cleaned and marked.</li> <li>As the water table is below 200ft, so no contaminants like heavy metals can seep into ground water and damage the quality of water.</li> </ul> |             |

*[Signature]*



|                              |                                                                |                                                                                                                                                                                                                                                                                                                               |
|------------------------------|----------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Health and safety of workers | Source, dust and emission generated during construction phase. | <ul style="list-style-type: none"> <li>PPE's like ear plugs, face masks to prevent health effects or problems. Regular sprinkling of water will be done to control the air emission issues.</li> <li>Construction material will be properly covered with the plastic sheets to reduce PM concentration in the air.</li> </ul> |
|------------------------------|----------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Table 17: Environmental Management and Monitoring Plan during Operational Phase

| Table 17: Environmental Management and Monitoring Plan during Operation |                                                                             |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                     |                              |             |
|-------------------------------------------------------------------------|-----------------------------------------------------------------------------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|------------------------------|-------------|
| Environmental Concern                                                   | Potential Risk                                                              | Source/ | Proposed Mitigation Measures                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Monitoring Duration | Institutional Responsibility |             |
|                                                                         |                                                                             |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                     | Implementing body            | Supervision |
| A. Physical                                                             |                                                                             |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                     |                              |             |
| Air Emissions                                                           | Emissions resulting from melting of scrap in the furnace and from machines. |         | <ul style="list-style-type: none"><li>• Installation of air pollution control equipment i.e. bag house filter to minimize the emissions during melting of scrap steel.</li><li>• It will be Fixed Hood Canopy system and its efficiency will be 95%. The generated particles will be sucked into fixed hood and with the help of the duct the air will pass through fan and it will be passed to the bag filters. The dust will be collected and will be sold to other mills.</li></ul> | Monthly Monitoring  | Manager/ Contractor          | Proponent   |

| Noise       | Noise generated                                                                                                                                                   | All noisy activities/ process will be carried out in the confined spaces to reduce the noise problems                                                                                                                                                                                                                                                                                               | Weekly basis                       | Manager/ Contractor | Propaganda |
|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|---------------------|------------|
|             | Noise generated from scarp handling, furnace and reolling process                                                                                                 | <ul style="list-style-type: none"> <li>People working in and around the furnace areas shall be provided with suitable PPE to protect them against noise</li> <li>Workers who may be exposed to noise levels exceeding occupational standards shall receive regular audiometric testing.</li> <li>Green belts should be planned at the surroundings of the infrastructure, where possible</li> </ul> |                                    |                     |            |
| Solid waste | No hazardous waste will be generated in the process activity except the dust collected in the dust collectors. In addition, domestic solid waste will be generate | <ul style="list-style-type: none"> <li>The slag will be produced as by product which will be sold for reuse.</li> <li>For the collection of the solid waste at site bins will be installed</li> <li>The installed bins will be covered in order to reduce the chances of the disease vector production</li> <li>Recycle able materials will be sorted and sell to the contractor.</li> </ul>        | Visual Monitoring on Regular basis | Manager/ Contractor | Propaganda |





| Health and safety of workers | Will be generated except dust and noise which will be controlled                                                                                                                                | <ul style="list-style-type: none"> <li>There is no surface water found present in the project proximity that could be impacted.</li> <li>Domestic wastewater will be treated in septic tank prior to final disposal to the sewerage line.</li> <li>Heavy vehicles shall only be to enter and leave the site between during day hours.</li> <li>The need to ensure that noise levels are kept to a minimum especially through the site and into the relevant zone.</li> <li>Loads entering or leaving site will be suitably covered to ensure loads are secure.</li> <li>Asset speed limits should be reduced.</li> <li>A compliance register will be kept, compliance will be investigated and, if appropriate, will be acted upon.</li> <li>Workers who may be exposed to noise levels exceeding occupational standards shall receive regular audiometric testing.</li> </ul> | Visual monitoring in regular hours | Managed Construction | Permitted |
|------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|----------------------|-----------|
|                              |                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                    |                      |           |
| Public                       | During operational phase, vehicles causing the shed work that impact the nearby community by the frequent movement. It may penetrate private dust emissions, noise and may cause social issues. | <ul style="list-style-type: none"> <li>During operational phase, vehicles causing the shed work that impact the nearby community by the frequent movement. It may penetrate private dust emissions, noise and may cause social issues.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Visual monitoring in regular hours | Managed Construction | Permitted |
|                              | Private, dust and air emission generated during scrap melting                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                    |                      |           |



## INSTITUTIONAL CAPACITY OF THE INDUSTRY

The organizational structure for the Environment Management Plan is outlined below:

### 6.4.1 Primary Responsibilities

The primary responsibility for implementing EMP within the company lies under the management of Specialists Group Inc. Ltd.

### 6.4.2 Operation Management & Control

Conducting the operational activities in environmentally sound manner will be the responsibility of the concerned Manager; for which he will be trained.

### 6.4.3 Supervision & Monitoring

Senior Supervisor will be responsible for all environmental issues and for the implementation of EMP.

### 6.4.4 Communications and Documentation

An effective mechanism to store and communicate environmental information during the project is an essential requirement of an EMP.

### 6.4.5 Meetings

Two kinds of environmental meetings will take place during the project:

- Kick-off meetings
- Weekly meetings

The purpose of the kick-off meetings will be to present the EMP to project staff and discuss its implementation.

A weekly meeting will be held during operation. The purpose of this meeting will be to discuss the conduct of the operation and environmental issues and their management. The proceedings of the meeting will be recorded in the form of a weekly environmental report.

#### 6.4.5.1 Changes-Record Register

A change-record register will be maintained at the site, in order to document any change in project design; especially those which have direct impact on the industry's emissions, effluents, wastes and resource management. These changes will be handled through the change management mechanism.

#### 6.4.5.2 Environmental Training

Environmental training will help ensure that the requirements of the EIA and EMP are clearly understood and followed by all project personnel in the course of the project.

*Amber*

*[Signature]*



Table 18: Environmental Training Schedule

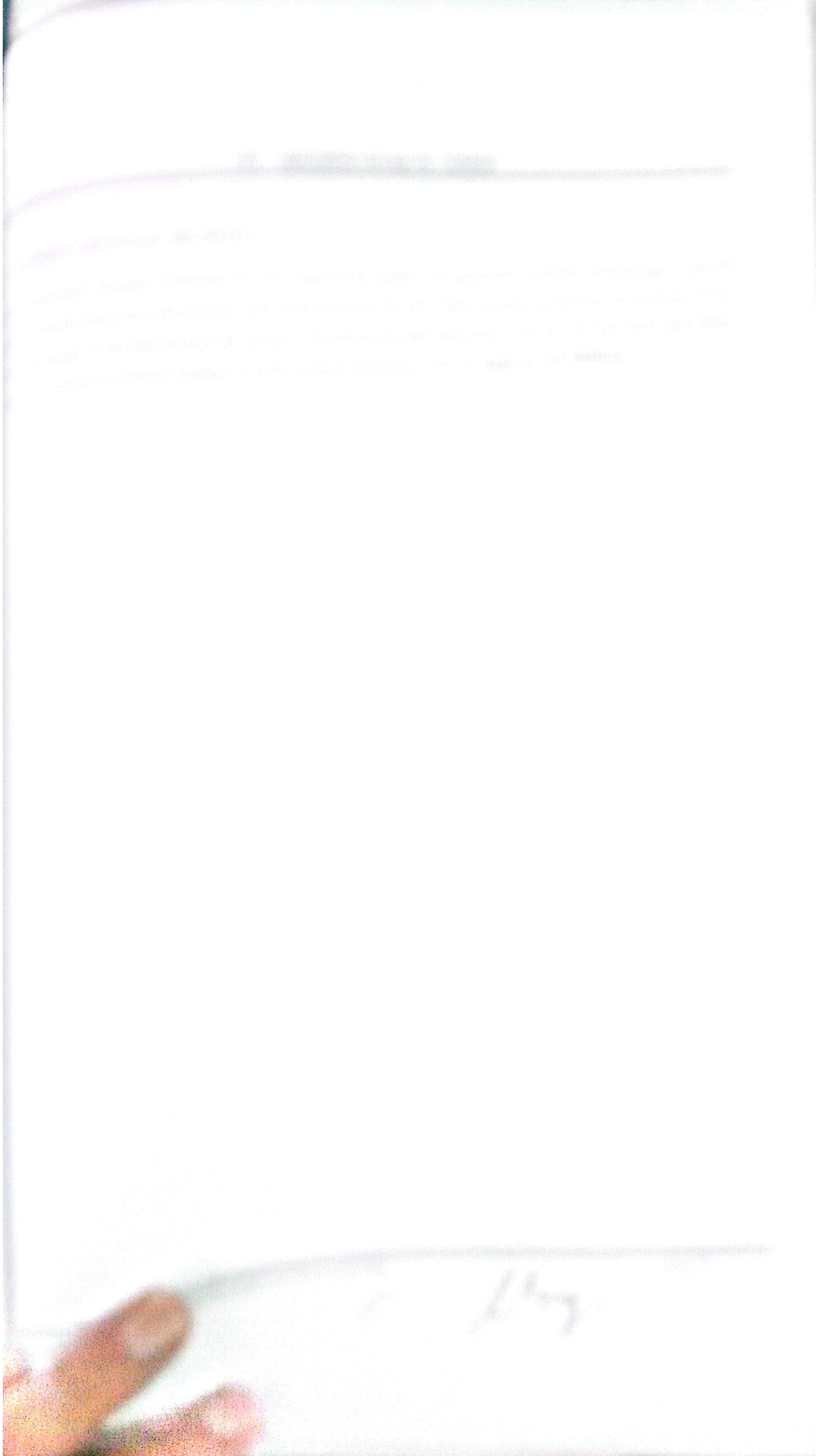
| Target audience           | Trainers               | Contents                                                                                 | Schedule                |
|---------------------------|------------------------|------------------------------------------------------------------------------------------|-------------------------|
| Selected management staff | Contractors            | Key finding of mitigation measure                                                        | After every five months |
| Selected personnel        | Proponent & Contractor | Mitigation measures                                                                      | Monthly                 |
| Fire Drill                | Field Expert           | Mitigation Measures Especially Fire Fighting, Safety, Health And Environment (Emissions) | Monthly                 |
| Technical Staff           | EMS Manager            | Waste disposal, vehicle movement restriction and other mitigation measures               | After every three month |
| Other staff               | Managers               | Waste disposal, resource conservation and other mitigation workers                       | Monthly                 |

#### 4.6.6 Equipment Maintenance Details

Plant machinery will be maintained by the proponent according to the design and as suggested by the contractor. Fire safety equipment such will be regularly monitored to eliminate hazards of associated risk. Following is the maintenance details for the portable fire extinguisher:

Table 19: Equipment Maintenance Plan

| Task                       | Weekly | Monthly | Semi-Annually | Annually |
|----------------------------|--------|---------|---------------|----------|
| Visual Inspection          | ✓      |         |               |          |
| Testing and Inspection     |        | ✓       |               |          |
| Check for Leakage          |        |         |               | ✓        |
| Recharging                 |        | ✓       |               |          |
| Fire Mains and Nozzles     |        |         | ✓             |          |
| Containers/Cylinders       |        |         | ✓             |          |
| Control and Section Valves |        |         |               |          |





## CHAPTER 7: CONCLUSION AND RECOMMENDATIONS

## CONCLUSION

The project presents Environmental Impact Assessment (EIA) of the project namely Establishment of M/s Specialists Group Inc. Limited located at Khara link Road Of Main Ferozepur Road, District Kasur. The main objective of project is to enhance the production of steel products to meet the market demand. EIA of project is performed according to guidelines of which includes description of the project, description of the environmental baselines, potential environmental impacts and suggested mitigation measures. An implementation mechanism for mitigation measures in the form of an Environmental Management Plan is included in the report.

The performed EIA showed all anticipated impacts (both positive and negative), associated with the project. Appropriate mitigation measures as explained in the environmental study shall reduce, if not eliminate, these impacts so that these are within acceptable limits. Moreover, no deterioration, depletion or exploitation of resources is expected to be caused by this project.

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

Accordingly recommended that Environmental Approval for the project may be issued by the Punjab Environmental Protection Agency, subject to payment of the requisite scrutiny fee by the proponent of the project.

## RECOMMENDATIONS

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

- Implementation of EMP must be given top priority.
- Proper PPEs including ear plugs, ear muffs, mufflers, goggles, gloves and shoes etc. should be provided to workers
- Train workers to use PPEs
- Advise workers to follow SOPs.
- Installation of fire extinguishers in the premises and their monitoring must be ensured.
- Equipment maintenance and efficiency must be checked.
- No compromise on public health and environment should be allowed.
- Waste minimization practices should be employed and workers should be encouraged to adopt such methods.
- Wages should be distributed on time.
- Proper tree plantation plan should also be developed in order to make the unit environment friendly.

- Small waste storage bins should be installed at different corner for proper waste collection and discharge.
- Proper dispensary and first aid box should be provided for workers
- Smoking should be avoided within premises of project site and near fuel storage areas.
- The Security Guards shall also be trained to act in case of all possible emergency situations. The fire alarms can be activated to signal evacuation. At the same time, communication shall be made with hospitals, emergency services and police for urgent support.
- The proposed Environmental Management & Monitoring Plan should be implementation.