Disclaimer

The data was based on the originality of project site shown by the project proponent/ stakeholders/ promoters, provided maps, verbal communications and all other related documents. The authenticity of supra-mentioned relies with the proponent/ stakeholders/ promoters, not with the environmental consultant. The EIA report can't be negotiated in any court of law.

Author: _____

IEE & EIA Team

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LIST OF ABBREVIATIONS

EIA	Environmental Impact assessment
PEPA	Pakistan Environmental Protection Act
PEPA	Punjab Environmental Protection Act
NEQS	National Environmental Quality Standards
EAR	Environmental Audit Report
ToRs	Term of References
WAPDA	Water And Power Development Authority
WASA	Water and sanitation authority
EMP	Environmental Management plan
EMC	Environmental Monitoring Cell
NOC	No Objection Certificate
NCS	National Conservation Strategy
LAA	Land Acquisition Act
P & D Department	Planning and Development Department
Pak-EPA	Pakistan Environmental Protection Agency
SWM	Solid Waste Management
CSR	Corporate Social Responsibility

TMA	Town Municipal Authority
dB (A)	Decibel
PPM	Part per million
$\mu g/m^3$	Microgram per cubic meter
MTM	Metric Tons Per Month
KVA	Kilo Volt Ampere
PPEs	Personal protective equipment's
TDS	Total dissolve solid
TSS	Total suspended solid
SS	Suspended solid
COD	Chemical oxygen demand
BOD	Biological oxygen demand
HC	Hydrocarbons
PM	Particulate matter
PEQs	Punjab Environmental quality standards

DISCLAIMER

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Author: _____

EIA Team

EXECUTIVE SUMMARY

Title & Location of the project

The subject project for which this Environmental Impact Assessment Study has been conducted is the construction of Aluminum unit under the name of M/s Premium Aluminum Extrusion Industry, located at 12KM Ferozpur Road, Rehman Pura Stop, Near Madina Steel Mills Bholeke Behroon Mustafabad Lalyani Kasur.

According to the Environmental Protection Agency, Government of the Punjab, Lahore- "List of Projects Requiring an EIA", and the project under consideration categories falls in the category of the projects requiring Environmental Impact Assessment (EIA), Schedule II, sub section B, Clue 19. Further, the client is required to fulfill the legal requirements of the Section-12 of the Punjab Environment Protection Act, PEPA-1997(Amended 2012). TORs of the study under clause 5 (f) of policy and procedure for the filing, review and approval of Environmental Impact Assessment are annexed as **Annexure-A.**

Location

Project site is located at 12KM Ferozpur Road, Rehman Pura Stop, Near Madina Steel Mills Bholeke Behroon Mustafabad Lalyani Kasur.

Land coordinates of the project site are given below:

North: Link Road (Kacha Track)
South: Kacha Track
East: Agriculture Land
West: Agriculture Land

For further details layout map of the project on A3 page is attached as ***Annexure-C*** with the report.

Detail of the Proponent

Proponent: Khurram Javed

Postal Address: 12 km ferozpur road, Rehman Pura stop, Near Madina steel mills. Bholeke behroon, Mustafabad Lalyani, Kasur.

Detail of the Consultant:

Pak Green Enviro-Engineering (Pvt.) Ltd, as independent consultants, has been appointed by the proponent to conduct Environmental Impact Assessment Study.

Company office address: 46-M, Gulberg III, Lahore
Contact: 042-35441444, 0303-4442335.
For detail company profile see the *Chapter # 1 "Introduction"*

Brief Outline of the Proposal

Table 1: Brief outline of the Proposal

Name of the said project	Premium Aluminum Extrusion Industry
Purpose of the Project	Manufacturing of Aluminum billet. To enhance economic growth of the country.
Process Details	
Manufacturing Process	Melting of Scrap
Raw Material	Soft aluminum Scrap
Finished Products	Aluminum Bars (Billet)/Aluminum profiles
Intermediate Products	Nil
By Products	Nil
Land Requirement	
Total Area allocated for said project	07 Kanal 7 Marla
Total covered area	17512 SFT
Status and location	
Location of the said project	Located at 12KM Ferozpur Road, Rehman Pura Stop, Near Madina Steel Mills Bholeke Behroon Mustafabad Lalyani Kasur.
Description of project	Subject project is the Construction of Aluminum Unit for manufacturing of bars/billet. Soft Aluminum scrap will be used as raw material that will be melted.
Water Requirement	
Ways of extraction	Motor pump
Source of Water consumption	Underground.
Amount of waste water	60-70% of total used water
Source of waste water	Domestic Waste
Mode of treatment	During the operational phase of the project, 1 Water Treatment plant will be used for the treatment of

	wastewater. As the wastewater will be treated water will be discharged into Link Lakhneki drain. It can be used for irrigational purposes. NOC is attached
Solid Waste	
Source of solid waste generation	Domestic sources
Mode of disposal	Will be handed over to local contractor
Manpower	
Labor Force	About 30-40 person
Power requirements	
Source of power	Power requirements at the project site will be fulfilled by WAPDA.

The major impacts & their mitigation measures

The following major impacts associated with the project during operational phase of the project have been identified and mitigation measures suggested:

Summary of Environmental and social impacts and their mitigation of the project during the construction & operation phase

Pollutants	Recommendations during Construction phase	Recommendations during Operation phase
Particulate matter (PM)/dust	Sprinkling of water is recommended during the construction. All constructional raw materials should be kept covered.	PPEs should be provided to workers in case of particulate matter/dust. PPEs should be provided to the labor during handling and processing of raw material and product. HSE Policy and Guidelines and quality and safety standards should be followed. Effects of PM during handling, loading/unloading of raw material can be controlled by sprinkling of water and by providing PPEs. Indoor particulate matter can be controlled by installing and maintenance of suckers or by in-built dust collecting systems or air & humidity filters in production hall. Periodic Maintenance of dust collecting system is recommended
Gaseous emissions	Constructional machinery and vehicles should be tuned and maintained properly. All project vehicles should be checked regularly.	PPEs should be provided & implemented during working hours Periodic tuning & maintenance of Machinery & transportation vehicles is recommended Monitoring should be conducted as per EPA NEQS/PEQS
Noise	Vehicles to carry raw materials should be tuned properly	Ear plugs/muffs are Recommended at all the noise generation

	and trainings for safe driving practices/HSE are recommended for drivers/machinery operators. Ear plugs/muffs should be provided in case of heavy noise.	points and periodic maintenance of noise controlling devices is recommended. Trainings for safe driving practices & HSE trainings of the employees and workers is recommended. Monitoring should be conducted on quarterly basis as per EPA NEQS/PEQS
Solid Waste	Constructional solid waste should be utilized for land filling purposes. Domestic waste should be disposed-off properly, handed over to contractors, placed in bins.	The proposed project will be a feed producing unit that will manufacture the feed form dry ingredients. During the cleaning of the raw material (if required) it should be ensured that no solid raw material enter into the waste water discharge channel. If there would be any further Project related waste generated that can be recycled, will be recycled again within the process. Packaging waste will be handed over to contractor. Waste bins at suitable places are recommended for the proper domestic solid waste collection. Domestic waste will be handed over to contractors on regular basis Periodic cleaning of septic tank is recommended
Soil	Placed plastic sheets under leaching material to avoid	Plastic sheets under leaching material is recommended to avoid

Contamination	leaching or the leaching material should be placed over concreted area.	leaching or the leaching material should be placed over concreted area Fuel should be stored properly at safe place. Fuel Storage License from concerned department/authority is recommended in case of large/prescribed quantity
Waste water	Waste water treatment system/septic tank should be installed to treat the water at NEQS/PEQS prior to discharge into local drain or used for irrigation purpose. Waste water from construction and domestic sources should be treated in septic tank before drained out.	Waste water treatment system i.e. septic tank should be installed & maintained. NEQS/PEQS level should be achieved before discharging of waste water into drain or use for irrigation purpose Waste water from cooling/steaming should be recycled within the process. Monitoring should be conducted as per EPA NEQS/PEQS.
odor	Nil	Nil
Health and safety issues	HSE Trainings of persons/labors involved in the construction and planning of the project is recommended. PPEs should be provided to workers during constructional activities	Training of workers is recommended regarding health safety & Environment. Use of PPEs should be implemented & recommended at workplace. First aid measures/medical facility should be provided to project related employees. Firefighting system & Equipment should be maintained. Safety signs should be placed at all sensitive areas etc.

		Floors should be cleaned. Shift rotation should be implemented in case of long hours. Proper housekeeping should be ensured at workplace.
Socioeconomic	Workers/people should be informed in advance when work is about to start at the project site. Local people should be preferred for the employment	Community wellbeing should be considered and anticipated measures are recommended to preserve the local culture and ecosystem. Local people should be preferred for the employment.

Proposed Environmental Monitoring

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

- **Ambient Air**

  Monitoring for ambient air should be conducted on monthly basis during operational phase of the project and report should be submitted to EPA Punjab.
- **Noise**

  Monitoring for noise level should be conducted on monthly basis during operational phase of the project and report should be submitted to EPA Punjab.
- **Drinking water quality**

  Monitoring of drinking water quality should be conducted on monthly basis during operational phases of the project and report should be submitted to EPA Punjab. Record should be maintained regarding the underground water pump and consumption.
- **Wastewater**

  Monitoring of wastewater should be conducted on monthly basis during the operational phase of the project and report should be submitted to EPA Punjab.

Recommended Schedules of Proposed Monitoring

During Operational phase:

Table 2: Recommended monitoring during operational phase

Sr. No.	Parameters	Monitoring Schedules
1.	Noise Level	Monthly
2.	Water quality	Monthly
3.	Wastewater	Monthly

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

CHAPTER # 1

INTRODUCTION

This Section of the report provides an overview of the rational of the Project, objective of project, requirement of the project, purpose of the report and approach adopted to conduct the Environmental Impact Assessment Study.

Purpose of the report

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

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

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

M/S Premium Aluminum Extrusion Industry intends to submit Environmental Impact Assessment (EIA for the section 12, PEPA, 1997 (Amended 2012), under the name of M/S HNB SONS (Pvt) Ltd located at Sadhokay Tehsil Kamokey, District Gujranwala.

Premium Aluminum Extrusion Industry. is submitting Environmental Impact Assessment (EIA) report of the subject proposed project under section-12 of the Punjab Environmental

Protection Act, 1997 (Amended 2012) on the behalf of M/S Premium Aluminum Extrusion Industry.

The Premium Aluminum Extrusion Industry. conducted Environmental Impact Assessment (EIA) as per advised by the Environment Protection Agency of Punjab for M/S Premium Aluminum Extrusion Industry. The EIA report covers the examination of the physical, biological and environmental socioeconomic impacts on local area and population during operational stage along with monitoring for environmental parameters of the existing unit, to comply with National Environmental Quality Standards (NEQS)/ Punjab Environmental Quality standards (PEQs

Identification of the project

According to the Punjab Environmental Protection Act 1997 (Amended 2012) and its interpretation as per Review of IEE & EIA Regulations, 2022 for filling, review and approval of environmental assessments, the present project is categorized in the category B (Manufacturing & Processing), Clue 19 of Schedule-II for EIA, of PEPA, EIA/IEE Regulations, 2022 (Amended 2022), requiring Environmental Impact Assessment (EIA). Further, the client is required to fulfill the legal requirements of the Section-12 of the Punjab Environment Protection Act 1997(Amended 2012).

Detail of Proponent:

Proponent: Khurram Javed

Postal Address: 12 km ferozpur road, Rehman Pura stop, Near Madina steel mills. Bholeke behroon, Mustafabad Lalyani, Kasur.

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

Details of Consultant

Pak Green Enviro-Engineering (Pvt.) Ltd is an independent company, who conducts IEE, EIA, EMP and other environmental investigations through its panel of environmental consultants,

public participation practitioners and experienced environmental managers. The company has its own recommended instruments to check the baseline environmental data/PEQS and lab analysis facility for water, waste water priority parameters.

Contact: Pak Green Enviro-Engineering (Pvt.) Ltd.
Office No. 46-M, Gulberg III, Lahore
Tel: 042-35441444, 03034442335
Email: info@pakgreen.pk; pak.green@hotmail.com

The current study was carried out by the following professionals:

Table 3: Detail of Consultant

Sr. #	Designation	Name/Qualification	Experience
1.	Lead Environmental Professional	Abdul Hafeez Nasir PhD Scholar Environmental Management	12 Years' Experience as Environmentalist
2.	Environmental Professional	Iftikhar Ahmed M.Phil. Environmental Sciences	08 Years' Experience as Environmentalist
3.	Chief Chemist/ Subject Matter Specialist (SMS)	Muhammad Raza Ullah M.sc Chemistry GCU Lahore	Twenty Years' experience
4.	Project Coordinator	Ahmed Raza B.com, PU, Lahore	Eight Years' Experience
5.	Associate Environmental Professional	Sabeera Tauheed MS (Hons) PU Lahore	5-year Experience as an environmentalist
6.	Associate Environmental Professional/Author	Muhammad Imran Environmental Engineering UAF Faisalabad	2-year Experience
7.	Associate Environmental Professional	Nageen quyyum Bs (Hons) Environmental Science	2-year Experience

		PU Lahore	
8.	Associate Environmental Professional	Maham Ahsan MS (Hons) LCA Lahore	2-year Experience

Brief Description of Nature, Size and Location of Project

The said project is Construction of Aluminum unit of under the name of M/s Premium Aluminum Extrusion Industry. Project site is located at 12KM Ferozpur Road, Rehman Pura Stop, Near Madina Steel Mills Bholeke Behroon Mustafabad Lalyani Kasur. The project is the Construction of Aluminum unit for the manufacturing of billets. The Soft Aluminum scrap will be used as raw material. The Aluminum scrap will be melted to form billets.

The total area of the said project is 07 Kanal 7 Marla. Total covered area is 17512 SFT. Total cost of the project is 50 million rupees. There are no other associated activities with regard to the subject project.

1.1.1 Location

Project site is located at 12KM Ferozpur Road, Rehman Pura Stop, Near Madina Steel Mills Bholeke Behroon Mustafabad Lalyani Kasur.

North: Link Road (Kacha Track)
South: Kacha Track
East: Agriculture Land
West: Agriculture Land

For further details layout map of the project and Google earth map of the project site on A3 page is attached as ***Annexure-C*** with the report.

1.1.2 Methodology for EIA Report:

For the purpose of this report, environmental and social baseline data and conditions at/around the project site has been undertaken. The methodology adopted to conduct the EIA Study includes Review of Layout Plan, detail meetings with the representative of proponent, orientation session, development of data acquisition plan, Analysis of Data, review of existing data, primary

& secondary data collection survey, Screening of Potential Environmental Impacts and Mitigation Measures and also interviews with people near the project area has been conducted to collect their opinion regarding the project and after findings it has been concluded that the project has mostly positive impacts on the socio-economic environment of the existing community.

1.1.3 Structure of Report:

The EIA report is divided into 9 chapters and appendices as:

Chapter 1: Covers introduction to project

Chapter 2: Presents Project Description

Chapter 3: Describes in detail the Existing Environmental Baseline conditions of the study area

Chapter 4: Exhibits the Impacts Assessment and their Mitigation Measures

Chapter 5: Outlines the monitoring plan and EMP to implement the suggested mitigation measures

Chapter 6: Explains the Stakeholders Participation

Chapter 7: Gives the Conclusion and Recommendations

SCREENING

The proposed project falls under clue 19 of category B of Schedule II of Review of IEE and EIA Regulations, 2022 (Amended 2022).

SCOPING

Scoping is the preliminary stage of Environmental Impact Assessment where initial visits of the project site is done to assess the spatial and temporal boundaries of the project, to assess significant impacts and consult the local community about their issues regarding the project.

SPATIAL AND TEMPORAL BOUNDARIES OF THE PROJECT

The project lies at the industrial area of having several industrial units around its vicinity. The proposed project is the construction of Aluminum Extrusion Industry Unit under the name of

M/S Premium Aluminum Extrusion Industry. Project layout is shown in the map attached as **Annexure-C**

IMPORTANT ISSUES AND CONCERNS RAISED DURING THE PROJECT

As it is the construction of Aluminum Extrusion Unit all safety measures and safety protocols will be taken by M/S Premium Aluminum Extrusion Industry. Project area is industrial in nature and many other industrial units are already in process of establishment and operation in the surroundings. The community was also concerned about employment to local people. The proponent made sure that maximum job opportunities will be provided to the residents.

CHAPTER # 2

Alternative Consideration and Reason for Their Rejection:

1.1.4 Technology Alternative:

The subject project will be used imported technology for Aluminum profiles. Alternate conventional technologies for the Aluminum Extrusion Industry Unit are complex, expensive and involving generation of by-products does not seem economical. the technology used by the project is more efficient as compared to conventional technology because it prevents material loss and produce very low waste.

1.1.4.1 Reasons for selection of current technology:

- Low waste production
- High efficiency
- Imported advance technology
- Environment friendly

1.1.5 Activity/Demand Alternative:

The subject proposed project is the Aluminum Extrusion Industry unit. There is not any hazardous activity or manufacturing being done. The subject project is using environmentally friendly and modern technology by hygienic processing for the manufacturing of Aluminum profiles. The design has been improved to make it environmentally friendly and sustainable.

CHAPTER # 3

Description of the project

Type and Category of the Project:

The subject project is the operational unit under the name of M/s Premium Aluminum Extrusion Industry. The industry will deal with the manufacturing of billets by using aluminum scrap/Aluminum profiles. The project site is located at 12KM Ferozpur Road, Rehman Pura Stop, Near Madina Steel Mills Bholeke Behroon Mustafabad Lalyani Kasur.

According to IEE / EIA Regulation 2022, the said project falls under category B, clause 19 of Schedule II of Review of IEE and EIA Regulations, 2022. TORs of the study under clause 5 (f) of policy and procedure for the filing, review and approval of environmental assessment are annexed as ***Annexure – A.***

Objectives of the Project

Objectives of the subject project are:

- To enhance the economic growth of country;
- To develop a sustainable economic approach to interlink various industries;
- To provide more job opportunities to local public and to improve their living standards;
- To improve the economic activities;
- To manufacturing of billets;
- To reuse scrap material in valuable product;

Location and site layout of the project:

Project site is located at 12KM Ferozpur Road, Rehman Pura Stop, Near Madina Steel Mills Bholeke Behroon Mustafabad Lalyani Kasur.

North: Link Road (Kacha Track)
South: Kacha Track
East: Agriculture Land

West: Agriculture Land

For further details layout map of the project and Google earth map of the project site on A3 page is attached as ***Annexure-C*** with the report.

1.1.6 Reasons of selection of subject project site:

Following are the reasons of selection of subject project site:

- Availability of access roads
- Communication facilities
- Availability of electricity
- Basic infrastructure
- Less plantation/ no tree cutting issue involved
- No fauna species at site
- Convenient plot layout
- Industrial activity already going on in the area
- No protected species in the area

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

Road Access

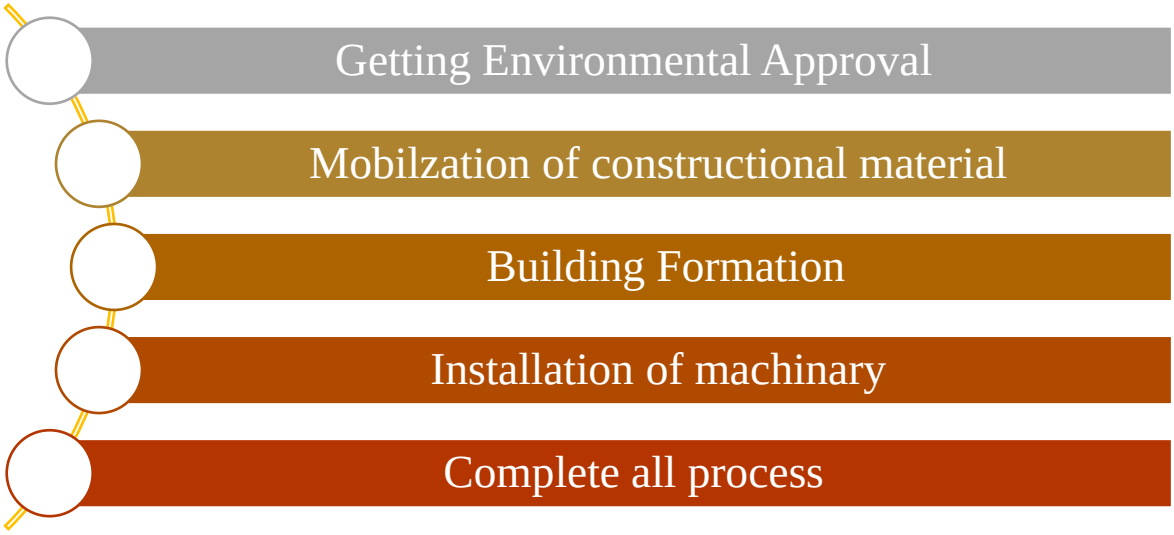
Main Ferozepur Road is the main road present at the East side of the project site.

Cost and magnitude of the operation

Total cost of the project is 50 million rupees. There are no other associated activities with regard to the subject project.

Schedule of Implementation

The project is operational Unit of Aluminum.



Description of the project:

The said project is Construction of Aluminum Unit under the name of M/s Premium Aluminum Extrusion Industry. Project site is located at 12KM Ferozpur Road, Rehman Pura Stop, Near Madina Steel Mills Bholeke Behroon Mustafabad Lalyani Kasur. The project is the manufacturing of billets. The Aluminum scrap will be used as raw material. The Aluminum scrap will be melted to form billets. Scrap material will being inserted in the furnace. Then the billets will be formed and after that it will go the press machine. There will be some dyes with multiple sections of maximum 35 ft after that an iodizing chemical will be used for the hardness then the product will be dried in oven or sunlight and at the end product will be packed.

The total area of the said project is 07 Kanal 7 marla. Total covered area is 17512 kanal. Total cost of the project will be 50 million rupees. There are no other associated activities with regard to the subject project.

Table 4: Features of Project

Name of the said project	Premium Aluminum Extrusion Industry
Purpose of the Project	Manufacturing of Aluminum billet. To enhance economic growth of the country.
Process Details	
Manufacturing Process	Melting of Scrap
Raw Material	Soft Aluminum scrap
Finished Products	Aluminum Bars (Billet)/ Aluminum profiles
Intermediate Products	Nil
By Products	Nil
Capacity of Project	50Tons/month
Land Requirement	
Total Area allocated for said project	07 Kanal 7 marla
Total covered area	17512 SFT
Status and location	
Location of the said project	12KM Ferozpur Road, Rehman Pura Stop, Near Madina Steel Mills Bholeke Behroon Mustafabad Lalyani Kasur
Description of project	Subject project is the Aluminum unit for manufacturing of bars/billet. Aluminum scrap will be used as raw material that will be melted in the furnace to make aluminum profiles There are four steps of process • Casting • Extrusion • Anodizing • Powder coating

Water Requirement	
Ways of extraction	Motor pump
Source of Water consumption	Underground.
Amount of waste water	60-70% of total used water
Source of waste water	Domestic Waste
Mode of treatment	During the operational phase of the project, 1 Treatment plant will be for the treatment of wastewater. As the wastewater will be produced only from domestic usage. The treated water will be discharged into LOCAL drain. It can be used for irrigational purposes.
Solid Waste	
Source of solid waste generation	Domestic sources
Mode of disposal	Will be handed over to contractors
Solid waste during operation of unit	Dry Sludge
Manpower	
Labor Force	About 30-40 person during operation
Power requirements	
Source of power	Power requirements at the project site are being fulfilled by LESCO.

1.1.7 Raw Material

Aluminum scrap will be used as raw material. The material will be purchased from the local market and imported from other countries.

1.1.8 Description of Process

Raw material mix mainly Soft Aluminum Scrap is charged into the furnace. As soon as the charge is completely melt.

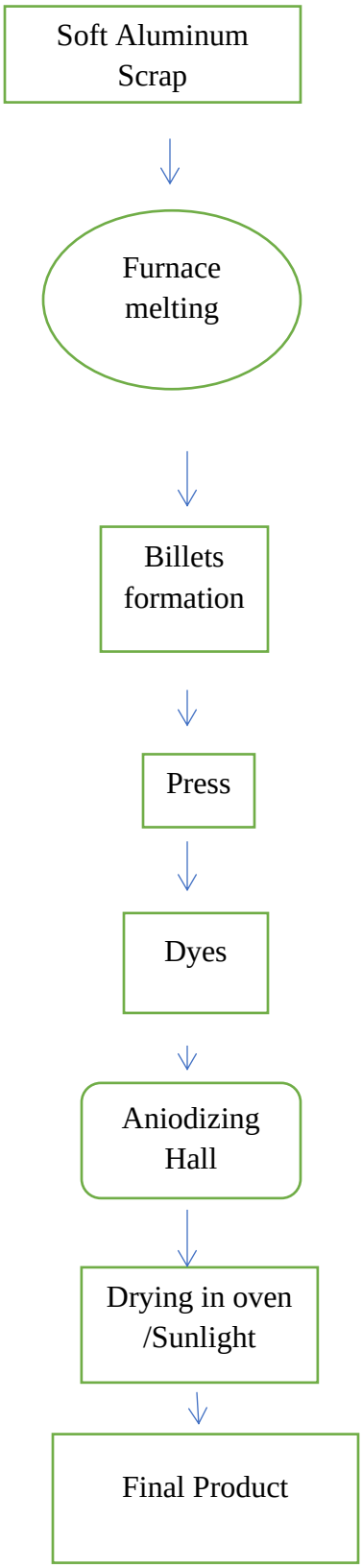
The aluminum scrap will be melted in the furnace at a temperature of 1200 degree centigrade and billets will be formed, after that these billets will go through the press machine that will have multiple sections in which dyes of different sizes e.g max. 35 ft will make the shape of the billets.

After shaping, it will be go through the Aniodizing Hall for hardness. After hardening of the product it will be dried in oven or sunlight and final product will be packed and sale to the market.

The said project is Construction of Aluminum unit of under the name of M/s Premium Aluminum Extrusion Industry. Project site is located at 12KM Ferozpur Road, Rehman Pura Stop, Near Madina Steel Mills Bholeke Behroon Mustafabad Lalyani Kasur. The project is the Construction of Aluminum unit for the manufacturing of billets. The Soft Aluminum scrap will be used as raw material. The Aluminum scrap will be melted to form billets.

The total area of the said project is 07 Kanal 7 Marla. Total covered area is 17512 SFT. Total cost of the project is 50 million rupees. There are no other associated activities with regard to the subject project.

1.1.8.1 Mass Balance & Process Flow



1.1.9 Water & Wastewater Detail:

During the operational phase of the project, water use in the induction furnace to cool down the coils. No water is used in the manufacturing process. For cooling, 150m3/hr is used. Out of total circulating water, 5% water loss in cooling and 95% is warm water, free from any contamination return back. This water goes to cooling tower and again recirculate in the system. 200 l/d use for domestic purposes. A septic tank is constructed to treat the wastewater.

Table 5; Water Detail

Water Requirement	
Water consumption for the project	In operation phase, for cooling, 150 m3/hr is used
Ways of extraction	Motor pump
Source of Water consumption	Underground.
Amount of waste water	60-70% of total used water for domestic purposes only
Source of waste water	Domestic Waste
Mode of treatment	During the operational phase of the project, septic tanks are constructed for the primary treatment of wastewater. The treated water will be discharged into local small nalah. It can be used for irrigational purposes.

1.1.9.1 Solid Waste Disposal:

Domestic and slag Solid waste will be produced about 30-70 kg which are placed in solid waste bins within the project boundary wall and handed over to contractors. Slag wastes will be recycled up to possible extent where possible.

1.1.10 Plantation:

Sufficient plantation will be done within the premises of the unit and in the surrounding

1.1.11 Infrastructure of Project:

Water demand will be fulfilled by the Motor Pump. Electricity will be supplied by the Water and Power Development Authority (WAPDA) provided to the project. Generator facility will also be present to cope with load shading hours.

1.1.12 Fire Protection System

Addressable fire protection equipment's like fire extinguishers and foam trolley units will be provided to protect the workplace against any fire hazards.

1.1.13 Safety Trainings

Workers and all the staff will be provided with proper training about the work and safety practices pre-employment and during employment. The proponent will be conduct training regarding HSE, Firefighting, and usage of PPES, handling of products etc. and to improve the training modules.

1.1.14 Use of Drugs and Narcotics

Drugs and narcotics will be strictly prohibited in the unit. Smoking will only be allowed in rest timings at properly isolated places. Unit/Company has designated smoking place.

1.1.15 Quality Lab

M/S HNB SONS (Pvt.) Ltd will establish its own Quality lab to inspect the raw material after receiving and product before slag.

1.1.16 Parking

Ample parking for cars, motor bikes, loading/unloading of vehicles will be available in the premises of project.

1.1.17 Vegetation Features of Site:

The proponent will done plantation within the premises of project site.

1.1.18 Restoration & Rehabilitation Plans:

All possible precaution will be taken to prevent an untoward incident in terms of life and property losses. All measures will be undertaken for ensuring occupational safety, security and clean environment in the project area. Local species of trees and flowering plants have been planted within the unit premises.

Government approvals required by the project:

All the approvals will be obtained by the project proponent.

CHAPTER # 4

DESCRIPTION OF ENVIRONMENT

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

Physical Environment/ Resources

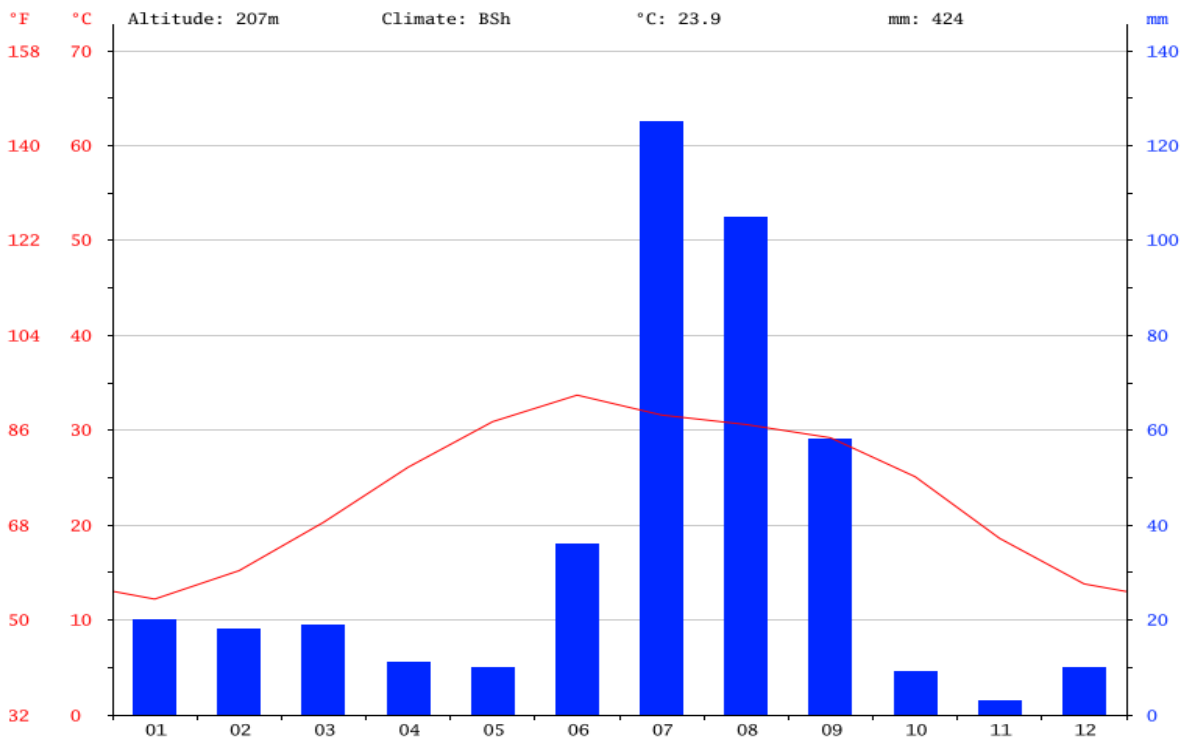
1.1.19 Topography:

Topographically speaking, Kasur District lies between the river Satluj which flows along its boundaries with India and river Ravi which flows its boundary with Sheikhupura District. The district 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 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.

1.1.20 Climate:

The climatic conditions of the project area are same as the condition of the district Kasur. Kasur has extremes of climate; the summer season begins from April and continues till September. June is the hottest month. The mean maximum and minimum temperature for this month are about 45 and 27 degree Celsius respectively. The winter seasons lasts from November to February. January is the coldest month. The mean maximum and minimum temperatures for the coldest month are 22 and 0 degree Celsius respectively. Rainfall Towards the end of June monsoon conditions appear and during the following two and a half months the rainy season alternates with sultry weather. The winter rain falls during January, February and March ranging from 23 to 31 millimeters.

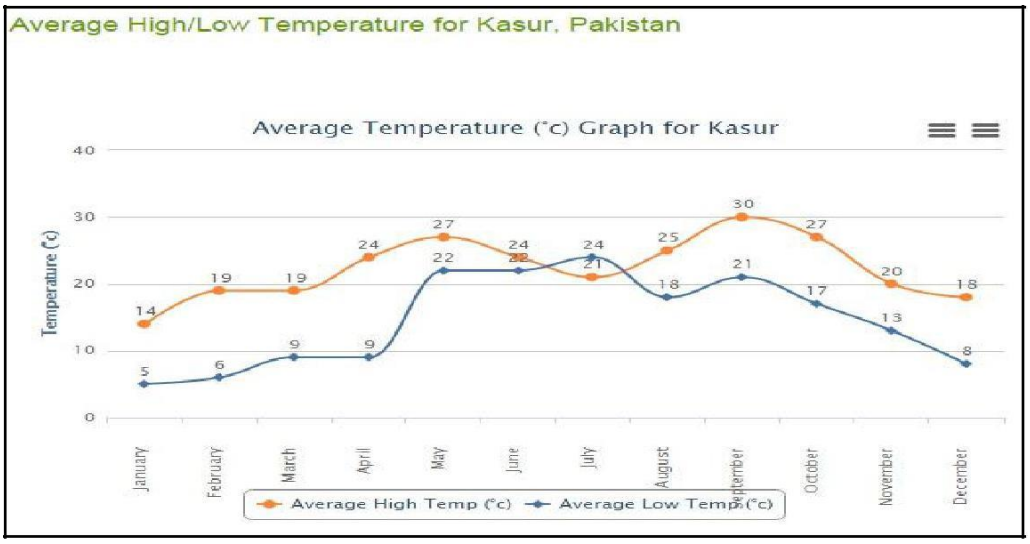
1.1.21 CLIMATE GRAPH KASUR



Graphical representation of climate of Kasur

1.1.22 Temperature:

Over the course of a year, the temperature typically varies from 5°C to 30°C and is rarely below 2°Cor above 44°C. At an average temperature of 33.7 °C, June is the hottest month of the year. The lowest average temperatures in the year occur in January, when it is around 12.2 °c


Average High/Low Temperature for Kasur, Pakistan
Average Temperature (°c) Graph for Kasur
Temperature (°c)
40
30
20
10
0
14
19
19
24
27
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21
25
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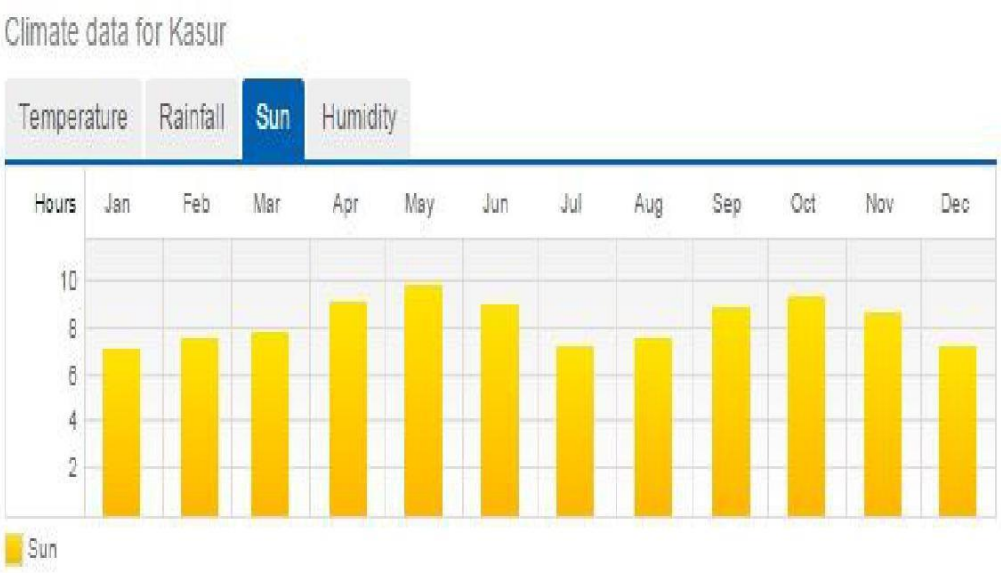
Average High Temp (°c)
Average Low Temp (°c)


Climate data for Kasur
Temperature
Rainfall
Sun
Humidity
Hours
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
10
8
6
4
2
Sun

REFERENCE SOURCE:

http://www.worldweatheronline.com/Kasur-weather-averages/Punjab/PK.aspx

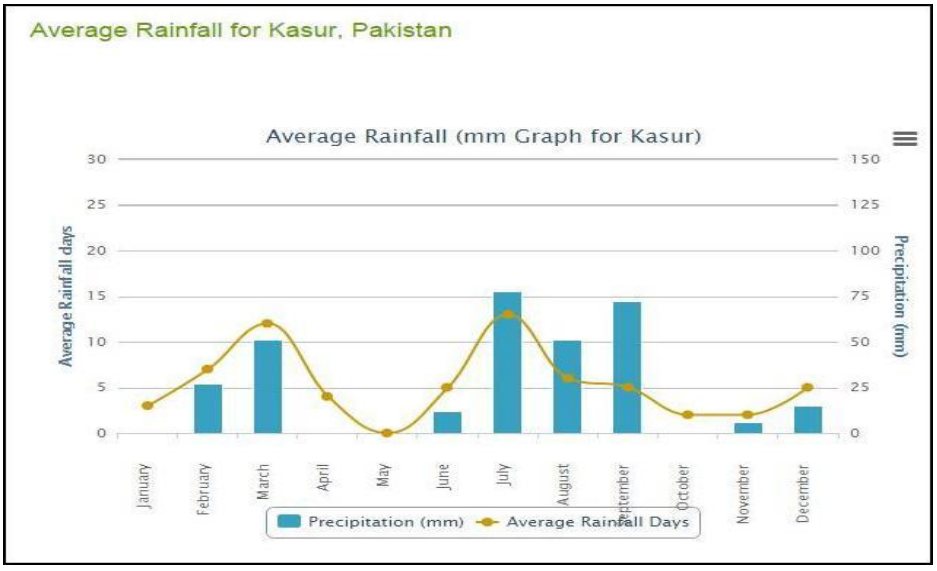
http://www.meteovista.co.uk/Asia/Pakistan/Kasur/3311772#ui-tabs-16

1.1.23

1.1.24 Precipitation:

Precipitation is the lowest in November, with an average of 3 mm. The greatest amount of precipitation occurs in July, with an average of 125 mm.

Between the driest and wettest months, the difference in precipitation is 122 mm. The variation in temperatures throughout the year is 21.5 °C.



Graphical representation of rainfall in District Kasur

1.1.25 Air Quality:

Atmospheric pollution, particularly in industrial areas has a strong impact on daily life. Project site is located at Mouza Koray Sial Depalpur Road Kasur where many industrial activities are already in process. Industries and vehicles are a major source of air pollution in the project area. Monitoring was conducted at the project site by using Fine Dust Sampler IPM-FDS 2.5/10µ and Ambient Air Analyzer.

To record the baseline ambient air quality of the project area, monitoring was conducted at advised locations to assess the concentration of priority pollutants (Carbon monoxide, Nitrogen dioxide, Sulphur dioxide and PM_{10}) in the air. Lab reports of Ambient Air Monitoring are attached as **Annexure-D** with the IEE report.

1.1.26 Noise Level Monitoring:

1.1.27 Basic Environmental conditions:

During the measurement following conditions were prevailed on workplace:

1.1.28 Metrological Conditions:

During the noise level monitoring weather was dry and sky was clear. Air was blowing at normal speed.

1.1.29 Monitoring Instrument:

The description of the instrument used for the noise level monitoring is given below:

Name: Digital sound level meter

Model: AR824

Company: Intel Instruments plus

Frequency Range: 31.5 Hz to 8 kHz

Methodology adopted:

Noise level was monitored at four points; lab results are attached as **Annexure-D.**

1.1.30 Ground water:

The underground water will be used as a source of water at the project site. Sample was taken from the tube well near the project area to test its parameters. Lab results are attached as **Annexure-D.**

Ecological Resources

Biodiversity has an important role in the functioning of the ecosystem. Human being is one of the species of the ecosystem and that species is the end user in the food chain. Fauna and flora are the important components of the ecosystem. The observed species of fauna and flora at the project site are described below.

1.1.31 Flora:

Native plants of the Punjab have been restricted to the graveyards and other protected sites/area. The observed flora in and around the project area is being mentioned below.

a) Kikar (*Acacia arbica*),
b) Beri (*Zizyphus jajaba*),
c) Shisham or Tali (*Dalbergia sissoo)*

1.1.32 Fauna:

Birds including sparrows and crows were observed in the vicinity of the project area. And during the interview of the local peoples, they reported the presence of jackal's and dogs in the night.

Socioeconomic Resources

"The socioeconomic environment is one the component of the regional ecosystem." The development projects can impact either negatively or positively to the regional socio economic environment.

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1.1.33 POPULATION

According to the local people the estimated population of nearby three villages present in the project area is approximately 25000 persons.

1.1.34 PROFESSION

Main profession of the area is agricultural activities however some of the peoples are doing jobs in different institutes of the District and upcountry.

1.1.35 INCOME

Per-capita income in the surrounding area is approximately 5000 Pakistani rupees.

1.1.36 EDUCATION LEVEL

Literacy rate in the area is approximately ranging from 15-25% (Source: UC Chairman of village Babarkhai, Gehlan.

1.1.37 LANGUAGE

The popular language of the area is “Punjabi”

1.1.38 CULTURAL DIVERSITY

The important cultural events in the district are the Urs of Baba Bulleh Shah and Urs of Baba Imam Shah Bukhari as well as the Urs of Baba Sheikh Bhago. Kasur is also known in folklore for its slippers. A famous Punjabi folk song is:"Jutti Kasuri, Pairenapuri, hairab baves ahnuturnapaya." (The slippers of Kasur don't fit me, Oh God, I had to walk!) Food: The staple food of the area is wheat, rice and pulses. Inferior grains are not generally eaten. Meat is frequently eaten specially in the urban towns. Wheat (flour) is baked in the form of chapattis on an iron plate placed on the fire hear.

Quality of life values

Quality of life the in the project area is poor as there are proper sanitation system and basic health facilities. Some of the important factors are discussed are below;

1.1.39 HEALTH & EDUCATION

Basic health & education facilities are available in the rural area of the project site but these health and educational facilities are not sufficient. People have to visit the city Chunian and Kasur for the proper health and educational facilities.

1.1.40 COMPENSATION IN MONEY TERMS

As the project has been developed on the land of proponent and people are not getting affected from the project.

Chapter#5

Screening Of Potential Environmental Impacts & Their Mitigation Measures

Assessing Impacts

The following chapter describes the overall possible impacts of project on the physical, biological and socioeconomic environment because of operation phases and mitigation measures to minimize the significance of the possible impacts up to an acceptable level. The anticipated impacts related to operation of the said project have been assessed and mitigation measures have been suggested in this report.

Methodology for Impact Evaluation:

The methodology adopted for impact evaluation includes the Modified Leopold Matrix.

1.1.41 Leopold Matrix

The analysis is performed with the Leopold Matrix (LM). This matrix has

1. On the horizontal axis, the actions which cause environmental impact, and
2. On the vertical axis, the existing environmental conditions which may be affected by those actions.

This provides a format for comprehensive review of the interactions between proposed actions and environmental factors.

The most important blocks marked are evaluated individually, and a number between 0 and 10 is placed in the upper left-hand corner to indicate the relative magnitude of the impact (0 represents the least magnitude, and 10 the greatest). Likewise, a number between 0 and 10 is placed in the lower right-hand corner to indicate the relative importance of the impact (again, 0 represents the least magnitude and 10 the greatest).

Table 6: Scale Table of Importance & Magnitude

Sr. No.	Type of Impact	Scale of Magnitude (0 – 10)	Scale of Importance (0 – 10)
1	No Impact	0	0
2	Low Impact	1 – 4	1 – 4
3	Medium Impact	5 – 6	5 – 6
4	High Impact	7 – 10	7 – 10

Operational Phase																	
Magnitude / Importance			Actions												Total Score of Impact	Average Score of Impact
			Transportation of raw material	Production Activities	Operation of generators	Water consumption	Wastewater generation	Storage of raw materials	Social activities	Public welfare	Economic activities	Employment	Infrastructure improvement			
PHYSICAL	Soil	Soil Quality	2/1	3/2	0/0	1/1	5/2	4/4	1/1	0/1	1/1	1/3	4/6		22/22	2/2
		Erosion	2/1	6/6	0/0	0/0	2/2	1/1	2/1	0/0	1/1	1/1	3/4		18/17	1.6/1.5
		Geomorphology	0/0	5/5	0/0	4/2	5/3	2/1	0/0	0/0	1/1	2/1	4/6		23/19	2.09/1.7
	Water	Surface Water	0/0	0/0	0/0	6/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0		6/0	0.5/0
		Subsurface Water	1/2	1/1	0/0	7/8	5/7	1/1	0/0	0/0	1/1	0/0	2/2		18/22	1.6/2
	Air	Air Quality	2/1	6/6	0/0	0/0	2/2	1/1	2/1	0/0	1/1	1/1	3/4		18/17	1.6/1.5
		Odors	1	1	3	0	5	4	1	0	0	1	1		17	1.5

			1	1	3	0	7	6	1	1	1	1	1	23	2.0
		Noise	5/6	9/10	7/8	0/0	5/4	2/2	5/	0/1	5/6	4/6	4/6	46/55	4.1/5
BIOLOGICAL	Fauna & Flora	Crops	2/2	5/6	3/2	0/0	4/6	2/2	2/3	4/3	5/7	3/3	3/3	33/37	3/3.3
		Birds	2/2	7/7	5/5	2/1	4/4	1/1	5/4	0/0	5/5	3/4	4/4	34/37	3.4/3.3
		Mammals	5/4	6/7	2/2	2/1	4/3	2/1	3/3	0/0	4/3	3/4	3/3	34/31	3.3/2.8
SOCIO-ECONOMIC	Social	Industrial	5/6	7/7	5/5	4/6	6/7	4/5	6/6	5/6	8/8	9/9	7/7	66/72	6/6.5
		Recreational Use	2/3	3/4	2/3	3/3	3/3	1/1	3/4	4/5	4/5	2/1	4/3	31/35	2.8/3.1
		Historical / Cultural	2/2	7/7	2/2	2/1	4/4	1/1	5/4	4/4	5/5	3/4	4/4	39/38	3.5/3.4

Over all the impact of project is positive in term of employment and infrastructure improvement. Mostly the average values are falling in 1.5 – 3 range which means the overall impact is low. To counter with the negative impacts Environmental Management plan is formulated which will be ensured by the project proponent. Beside this Environmental monitoring plan is also formulated for Environmental monitoring of various parameters which will be also implemented by the proponent.

Impact analysis and prediction:

In order to evaluate the socioeconomic and environmental impacts, filed surveys are extremely essential. In addition to the surveys, consultation with the community and their active participation plays a vital role in successful implementation of the project. For the impact analysis and predictions following methods were adopted:

1.1.42 Consultations/ case studies:

To study the impacts of the project on physical and biological environment, site visits were conducted by the environmental practitioners and experts and possible physical and biological impacts which may arise due to the subject project were identified through consultations and case studies and their mitigation measures were suggested accordingly.

1.1.43 Meetings:

For the identification of the social impacts of the project, meetings and group discussions were held with the local people, stakeholders, nearby residents and passerby because social acceptability of the project and the area is a key to success. Consultation with the stakeholders is a tool for managing two-way communication between the project proponent and the affected public. Its goal is to improve decision making and built understanding by actively involving individuals, groups and organizations, which have stake in the project. This involvement increases project's long term viability and enhances its benefits to locally affected people and other stakeholders.

To identity the different types of stakeholders and ascertain their perceptions about the project. Informal group discussions were also held as an additional tool for obtaining feedback from the stakeholders that are being discussed in the following.

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

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

Characteristics of impacts:

1.1.44 Impact assessment criteria:

The impacts were assessed in the light of criteria given as under:-

- Magnitude or degree of impact
- Time and duration of impact
- Likelihood of impact occurrence
- Sensitivity of impact
- Risk related to impact

Analysis of Impacts and Recommended Mitigations

1.1.45 Impacts during Operational Phase:

The positive and negative impacts of subject project, during its operation are discussed below:

1.1.45.1 Impacts on Physical Environments

1.1.45.1.1 Solid waste/ sludge management:

In the operation of said project proper solid waste management system will be adopted for the prompt, timely and efficient disposal of solid waste & sludge for the reduction of its impacts. Impacts due to solid waste & sludge may be temporary and minor in nature.

Nature of impact: Direct

Duration: Short term

Timing: operation

Reversibility: Not applicable

Likelihood: Low (unlikely) if mitigation measures are being ensured that Solid waste management in efficient way.

Consequences: Mild, as will be removed from site within few hours

Impact significance: Low, based upon low likelihood and mild to moderate consequence.

Mitigation measures:

- Devise plan & develop guidelines for the safe handling, storage & disposal;
- Sludge is placed at the site after cleaning of wastewater treatment facility;
- PPEs are strongly recommended for workers for the handling of sludge;
- Separate bins at various places must be present for solid waste collection and segregation;
- Waste will be handed over to Local waste contractor;
- Solid waste will be recycling at maximum level;
- Industrial ecology practices will be implemented wherever possible;
- 7 R's of sustainability is recommended;

1.1.45.1.2 Wastewater

Waste water will be produced only from domestic activities. In operation, no activity is place to used water and wastewater produced from it.

Nature of impact: Direct

Duration: Short term

Timing: operation

Reversibility: Not applicable

Likelihood: Low

Consequences: Mild

Impact significance: Low.

Mitigation measure

- Wastewater that is finally disposed off, will be in limits of PEQS
- Septic tanks are available.

- Water conservation approaches are being follow by each industry to reduce its wastewater

1.1.45.1.3Gaseous Emissions:

Emissions can be produced by generators, vehicles and equipment, similar to those produced by generators in terms of the resulting pollutants (SO2, NOX, PM, etc.). However, the extent to which they can produce should keep considerably lower, since much smaller engines are being used in vehicles.

Nature of impact: Direct
Duration: long term
Timing: operation
Reversibility: irreversible
Likelihood: moderate if mitigation measures are being ensured.
Consequences: moderate, if pollutants level in the ambient air will be controlled within acceptable limits by adopting proper mitigations.
Impact significance: moderate, based upon low likelihood and mild to moderate consequence.

Mitigation Measures

None of the potential effects discussed above are being exceeded to acceptable limits.
The mitigation measures given below used to reduce their impact, and ensure that they remain within acceptable limits.

- All equipment and vehicles during the operation of project are being properly tuned and maintained in good working condition in order to minimize exhaust emissions.
- Speed limits are being imposed and encourage more efficient journey management worked to reduce the dust emissions produce by vehicular traffic. Water sprinkling will be done where necessary.
- Management is making sure process will be environment friendly
- Pollution abatement technologies regarding air pollution are being adopted.

1.1.45.1.4Energy Requirement

Energy consumption in industrial area is usually very high. Machinery work runs all day in different industries. Energy conservation technique should be in mind.

Mitigation measures

- Do not waste the energy/electricity when there is no need of it.
- Use energy efficient machinery and equipment
- Use energy saving products
- Conduct and maintain records for energy audits
- Do not leave the machinery in running form when there is no working being done
- Machinery must never be left unattended

1.1.45.1.5Noise level:

Noise is the major concern during the operation phase. It can be generated from the traffic on the road and from the machinery used for operations.

Nature of impact: Direct

Duration: long term

Timing: operation

Reversibility: Not applicable

Likelihood: low

Consequences: slightly significant

Impact significance: moderate, based upon low likelihood and mild to moderate consequence.

Mitigation measures:

- Machinery and vehicles are being tuned and maintained
- Limits are imposed on unnecessary use of horns
- Safety signs are being displayed. public & drivers are being aware of them

1.1.45.1.6Employment opportunities:

Subject project had helped in generating new jobs for the local population. The requirement of Managers, Engineers, Workers, technicians, skilled and unskilled labor etc. generated employment opportunities. About 200+ persons employed during operations phase. Hence, there is large number of employment opportunities especially for the locals of District Lahore.

Potential Environmental Enhancement Measures

Following necessary measures should be adopted during operational phase of the project and most of them are being adopted:

- Sprinkling of water will be done on dusty roads and tracks.
- Machinery should never be left unattended.
- Efforts should also be made to discuss traffic conditions so that regular traffic is not disturbed. Transporters engaged for the project would be forced to adhere to the load specifications of the access road. No overloading should be allowed in any case.
- Air pollution controlling devices are being installed within the project.
- Machinery will be kept maintained.
- Waste water will be treated through septic tanks that were installed within the premises of the subject project.
- Proper SOPs are being followed with proper schedule along with the HSE conditions.
- A proper tree plantation plan is formulated to save the environment.
- Solid waste will be handed over to local contractors.
- Noise will be controlled by adopting proper measures.
- PPEs are being provided to workers during working.
- Hygienic conditions are being ensured and proper quality will be maintained by quality control testing.
- First aid facilities will be made available.

Purpose of Mitigation measures

1.1.46 What is the problem i.e. in terms of "major environmental impacts" which may arise by the subject project activity?

The major impacts which may arise by the subject project are air, water and noise pollution. Other impacts are of minor importance. These impacts may arise during operational phase of the project, during the operational phase of the subject project, it will be ensured that precautionary measures are being adopted, during the activity and post activity to cause minimum impacts to the environment.

1.1.47 When the problem will occur and when it should be addressed?

Negative impacts may arise during the operational phase of the project if proper precautionary measures and procedures are not being followed. If proper precautionary measures and procedures are being implemented, there should not be any major problem. If any impact would arise due to the subject project activity, it will be addressed on site. Trainings will be conducted on site while other precautionary measures will also be adopted to make the project safe and environmental friendly.

1.1.48 Where and how the problem should be addressed?

The problem should be address at the site and immediate response should be provided to address the problem which may arise. Institutional capacity responsible for the implementation of EMMP is responsible for addressing such problems if arise.

Whys of achieving mitigation measures

1.1.49 Improved monitoring and management practices:

Management of Premium Aluminum Extrusion Industry will be taken appropriate measures to provide pollution free and safe environment during the said project activity by implementing improved management practices and monitoring techniques suggested in EMP.

Environmental Management and Monitoring Program

The primary objectives of the EMMP are to:

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

Institutional Capacity

The overall responsibility for compliance with the environmental management plan rests with the project proponent. He has appointed a HSE/Project Manager of relevant qualification. HSE/Project Manager is acting as Environmental Manager and is managing all HSE conditions at the PEQS.

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

Following functionaries will be involved in the implementation of EMP:

- Project Proponent
- HSE Officer
- In-Charge Administration
- Supervisor of project

Organogram of authorities involved in the implementation of EMP.

Training Schedule

Training for the management and workers on environmental aspects of the project will be arranged during the operational phase of the project.

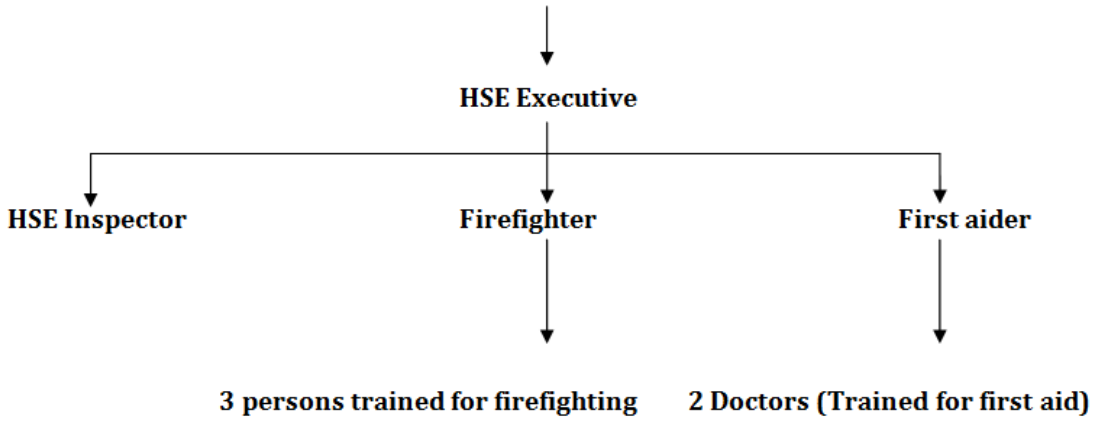

Figure 1: Institutional Capacity for the Implementation of EMP

Management of Aluminum Unit is hiring or appointing HSE officer. HSE officer will be responsible for conducting the training of the labor, which will be organized either by the management of Aluminum Unit. Following schedules of training will be implemented:

Table 7: Training Programs

Sr. No.	Description of program	Labor/ Personnel involved	Time/ duration
1)	General HSE Training	Trainers and whole labor	Quarterly for 1 hour
2)	Instrument use/ workplace specific items	Trainers and whole labor	Quarterly for 1 hour
3)	PPEs use and safe work practices at work site.	Trainers and whole labor	Quarterly for 1 hour
4)	Reporting and investigating accidents/ incidents	Trainers and whole labor	Quarterly for 1 hour

5)	Emergency procedures	Trainers and whole labor	Quarterly for 1 hour
6)	Medical and first aid	Trainers and whole labor	Quarterly for 1 hour
7)	Health and safety promotion	Trainers and whole labor	Quarterly for 1 hour

In order to raise the level of professional and managerial staff, there is a need to upgrade their knowledge in the related areas. HSE/Project Manager should play a key role in this respect and arrange the training programs. HSE/Project Manager will provide training to staff and workers about the best environmental management practices. The training modules will include air, noise and water pollution monitoring, social awareness, Environmental Laws, Punjab Environmental Quality Standards (PEQS), Usage of personal protection equipments, and health and safety related issues on the Project site.

The HSE/Project Manager will train all workers & staff in basic sanitation and health care issues (e.g., how to avoid malaria and transmission of Sexually Transmitted Infections (STI) HIV/AIDS and in general health and safety matters, and on the specific hazards of their work. Training should also consist of basic hazard awareness, site specific hazards, safe work practices, and emergency procedures for fire, evacuation.

HSE/Project Manager will be conducted Training on monthly or quarterly basis regarding health & safety, hygiene, firefighting and first aid.

Summary of impacts and their mitigation measures

Serial	Environmental Issues/ Impacts	Mitigation Measures
PLANNING, SITE SELECTION AND DESIGN STAGE		
1	Observance of administrative and legal formalities	It is recommended for obtaining of approval from relevant departments
2	Acquisition of land	The subject land is the property of the project proponent and was reserved for the subject project.
3	Loss of environmentally sensitive areas	There is no any sensitive area near the project site however the project proponent will achieve the NEQS/PEQS at the boundary wall of the subject project to avoid the environmental impacts on the nearby area.
4	Changes in traffic pattern	There is no need to change the traffic pattern due the development of the subject project because the subject project is present in agricultural area.
5	Potential conflicts with stakeholders	There is no any conflict at the current stage of the project. Nearby areas were visited regarding their concerns. They have no any objection regarding development of the subject project as per proposed design.

		It is recommended to Settle the issues through scoping and specific group discussions. (if arise any in future)
6	Resettlement issues	No resettlement issues
7	Project Design	Structure Stability Assessment of soil has been done, as per building design i.e. total area of building, No. of stories, etc. Provision of Emergency Exits, Assembly Points, firefighting arrangements, water storage for firefighting should be incorporated in the design. Installation of Dust/flue gases/odor controlling devices should be incorporated in the design. Project proponent is committed to provide all these provision in the design of the project.
SITE DEVELOPMENT STAGE		
1	Erosion due to stripping and site clearance	Sprinkling of water on road side or dusty tracks
2	Generation of dust	Careful loading and unloading of construction materials is recommended. Sprinkling of water on construction site and surrounding areas is recommended.
3	Generation of noise	Avoid suing forbidden horns at the site. Do not throw heavy equipment and construction materials in haphazard manner.
4	Local flooding	Immediate repair and maintenance of water supply pipes and sewers in case of any defect

		will be undertaken.
5	Outbreak of fire	Firefighting equipment must be maintained at the site in good working condition.
6	Safety	Safety of the workers and others must be ensured. Privacy of the neighbors must not be disturbed.
7	Labor issues	Employ the local labor as far as possible Wages of the labor should be as per Government policy.
CONSTRUCTION STAGE		
1	Minor erosion of land	There are two types of erosions: 1. Wind Erosion 2. Water erosion It is recommended to construct the boundary wall first that will reduce the soil erosion due to wind and chances of water erosion due to water flow from the adjacent will be reduced also. Clearing of land should be step wise; vegetation should be removed only from the area where main building will be developed. Add more vegetation, restore the land by more plantation Sprinkling of water on dusty tracks is recommended

2	Contamination of land and water	Hazardous substances like oil, fuel, etc. should be kept on concreted surface. Essential services like water supply, sewerage disposal and solid waste management must be in working condition.
3	Impacts of dust, noise and flue gases on neighbors	Sprinkle water on dusty tracks is recommended Avoid using forbidden horns at the site. Do not throw heavy equipment and construction materials in haphazard manner. Proper tunings of vehicles and machinery must be ensured. Schedule construction timings should be implemented for minimum disturbance to neighbors. Continuous Environmental monitoring must be ensured as per proposed monitoring plan.
5	Waste water	Waste water treatment system i.e. septic tank should be maintained NEQS/PEQS level should be achieved before discharging of waste water into drain or use for irrigation purpose Monitoring should be conducted as per EPA NEQS/PEQS
6	Contamination of land and water sources	Continuous vigilance on maintenance of services Tarpaulin sheets must be placed to avoid leaching of oil into ground
7	Fire breakouts	Training of workers regarding flammable substances will be ensured. SOPs of fire prevention

		should be adopted like forbidden of smoking, regular testing of electricity infrastructures and regular testing of gas supply system to the industry. Firefighting equipment must be kept in working condition at site
8	Safety/security concerns	Safety of the workers and others will be ensured. Privacy of the neighbors will not be disturbed.
9	Malfunction of utilities	It is proposed to appoint maintenance engineer with technicians like plumber and electrician for smooth operation of utility services.
10	Occupational Health, Safety and Environment	Regular medical check-ups must be ensured to improve the working condition and efficiency of workers. Relevant safety devices like belts, gloves and testers must be strictly used by the operators at the work site. Safety of management, workers and visitors must be ensured. Observance construction and safety codes must be ensured.

Operation phase	
Land & Soil	
Air pollution and Dust emission	
• The transportation of the project machineries and material also may cause dust. • Un-metaled roads may cause dust. • Dust raised on dirt tracks by project-related vehicles. • Combustion products from vehicles used for project-related activities	✓ Air emissions controlled devices are being installed to control the air pollution. ✓ Sprinkling of water will be done to control the dust or PM ✓ Vehicle emissions inspection will be done on regular basis ✓ Sprinkling will be done on the unpaved area to avoid dust pollution/ particulate matter. ✓ Vehicles/ trucks will be serviced regularly ✓ All project vehicles will be checked regularly to ensure that engines are in sound working condition and are not emitting smoke.
Noise	
• The major sources of the noise at said project site are project related machinery. • High noise level cause hearing loss, deafness, high blood pressure, headache, depression and mental disturbance.	✓ Personal Protective Equipment PPEs including Ear muffs, Ear plugs and other noise abating equipment are being provided to the workers and other staff of the subject project. ✓ Proper maintenance and tuning of the vehicles will be done. ✓ Sound proof room has been built for generator to control the noise.

• Noise level do not exceed 75 dB(A) at the distance of 2 km radius, activity site is located at a safe distance from the nearest human settlement .	
Waste Water	
• Water contamination due to improper debris disposal • Spread of diseases, underground water contamination	✓ Domestic waste water will be drained out in nearby local drain after treated in septic tanks ✓ Oils, lubricants, chemicals will be stored safely at their designated spots, enclosures or store rooms.
Solid waste	
• Solid waste may generate from operation of project.	✓ A solid waste management division will be formulated to deal with the proper disposal of solid waste, supervised by HSE Manager, SW Manager, and other related personnel. ✓ Proper solid waste management system is recommended for each individual industrial unit. ✓ Industrial ecology practices are being adopted wherever possible. ✓ 7 R's of sustainability is recommended

	✓ Solid waste related to the operation is also being managed in proper way.
Health and Safety	
• Health and safety issue may arise during regular operations	✓ Use of PPEs will be implemented at workplace. ✓ First aid measures/medical facility will be provided to project related employees. ✓ Safe drinking water will be provided to workers, staff, and poor people of the area. ✓ Smoking or any drugs will be prohibited during working hours or performing work. ✓ At the time of earthwork, fencing will be ensured for the area under the exploration.

Equipment Maintenance Detail

Subject project is the operational unit of Aluminum Unit under the name of Premium Aluminum Extrusion Industry, located at 12KM Ferozpur Road, Rehman Pura Stop, Near Madina Steel Mills Bholeke Behroon Mustafabad Lalyani Kasur.

The Company should maintain the records for Health, Safety & Environment and hiring HSE manager to check and deal with the HSE issues. The company is maintaining PPEs, medical facilities, firefighting Equipment's as fire buckets, fire hydrants and fire extinguishers and records for their periodic fillings or replacement.

Environmental Budget

The cost which is required to effectively implement the mitigation measures is important for the sustainability of the Project in operation stage of the Project. Management of Aluminum Unit is allocating 2% of total cost of the project as Environmental Budget for meeting the following purposes:

Table 8; Allocation of Environmental Budget

HSE training	On quarterly basis
Maintenance and management of environment	On regular basis
Maintenance of equipment	On regular basis
Restoration	As per requirement
Plantation	During the operation phase
Strategic planning to cope with any emergency situation	As per policy
Formulate the disaster management plan to cope with natural disaster	As per policy

Implementation of all these parameters will be included in the environmental budget. Any equipment failure will not be included in this budget.

ENVIRONMENTAL MANAGEMENT PLAN FOR PREMIUM ALUMINUM EXTRUSION INDUSTRY

Serial No.	Environmental Parameter/ Element	Mitigation measure to be taken during:		Responsibility
		Construction	Regular operations	
PHYSICAL ENVIRONMENT				
1	Gaseous emissions and particulate matter/dust emissions	Construction materials i.e. sand, clay shall be transported to the project site as per HSE Rules. Dust may generate during unloading of raw materials. Sprinkling will be done on dust tracks to control the particulate matter. All equipment, generators, and vehicles used during the project will be properly tuned and maintained in good working condition in order to minimize	Project will not cause much gaseous emissions during operation. Filter bags will be used to control the air pollution. Generator shall cater for emergency situation only. Scrubbers/dust collection system will be installed at the stack of generator if required. PPEs such as masks will be provided. Monitoring will be conducted as per EPA-PEQS	Environmental/HSE Manager

		exhaust emissions. All project vehicles will be checked regularly to ensure that engines are in sound working condition and are not emitting smoke. Ambient air quality has been monitored for baseline study and results have been annexed (Annexure-D)		
2-	Health & safety	Workers/people will be informed in advance when work is about to start at the project site. This may result in people keeping young children away from work areas. Machinery will never be left unattended. Safe driving practices will be adopted, particularly while	Training of workers will be conducted regarding health and safety, firefighting and health hygiene. Use of PPEs will be implemented at workplace. First aid measures will be provided to workers. Safety signs, safety boards, exit arrows etc. will be placed on site.	Environmental/HSE Manager

		passing through human settlements. Basic health facilities will be provided to workers.	An Assembling point will be kept to gather in case of emergency situation such as fire hazards. Fire Fighting Equipment's & system will be enhanced Floor will be kept clean without slippery to avoid any hazard. Safe drinking water will be provided to workers and staff (admitted by the proponent)	
3-	Water supply	It shall be ensured that no activity tempers with the water supply system.	It shall be ensured that no activity tempers with the water supply system. Project proponent committed to provide safe drinking water to all workers and staff.	Environmental/HSE Manager
4-	Solid wastes	Limited solid wastes from the construction activities shall be segregated and duly disposed of. The solid redundant materials	All Solid waste form domestic and project related will be stored in solid waste bins and will be handed over to contractors. Proper solid waste management system	Environmental/HSE Manager

		will be disposed of at designated sites by local Government through a certified contractor. None of these wastes shall be accumulated on site. It shall be ensured that none of the wastes or materials of construction spread on the public roads or on the foot path or else. Construction Solid waste will be stored in solid waste bins and will be handed over to contractors. Construction waste will be utilized for landscaping, road repairing and maintenance purposes.	will be adopted.	
5-	Noise	In order to avoid noise in the project area, vehicles will be properly tuned and training of	No activity producing extra ordinary levels of noise will be allowed as a policy matter. Standby generators will be installed in	Environmental/HSE Manager

		operators/drivers will be conducted. Ear plugs will be provided & implemented in case of heavy noise. Noise level monitoring has been conducted for the baseline study and results have been annexed (Annexure-D)	emergency situation in a specially constructed room where its noise will be curtailed within the limiting values of the Punjab Environmental Quality Standards. Ear plugs, ear muffs will be provided & implemented in case of any noisy work environment. Noise Monitoring will be conducted as per EPA-PEQS.	
6-	Waste water	The waste water to be generated from domestic/construction sources will be discharged into the waste water septic tanks for its treatment and then it may be used for watering the lawns or agricultural land and may be disposed off in the drain. from domestic/construction sources will be discharged into the waste water septic tanks for its treatment and then it may be used	The waste water to be generated due to washing, cleaning and other domestic activities shall be discharged into the waste water septic tanks for treatment at PEQS levels. No contaminated effluents will be released into the environment without having been treated. An appropriately designed septic tank will be used to treat sewage and outlets will release treated effluent into drain. The	Environmental/HSE Manager

		for watering the lawns or agricultural land and may be disposed off in the drain.	integrity of the entire system will be maintained and monitored. Periodic cleaning of the septic tank is recommended. Environmental Monitoring will be conducted on quarterly bases as per EPA-PEQS.	
7	Odor	Nil	Nil	---
8	Soil erosion	The project site has few and scattered amount of vegetation which will be to removed The land is almost clear and free of dense vegetation Rain water drainage system will be planned to avoid soil erosion.	Maximum plantation is recommended on suitable places and with the consultation of the concerned authority Rain water drainage system will be constructed.	Environment/HSE Manager

9-	Traffic related problems	The vehicles number will be regulated in a way that no stampedes occur on the site. None of the vehicles will be parked on the road or foot paths in front of the building.	Proper parking area will be reserved for staff and visitors vehicles No vehicle or motor cycle will be allowed to be parked in the front of the road.	Environmental/HSE Manager
10-	Trash burning	No trash burning will be allowed in or out side the site.	No trash burning will be allowed in or outside the site.	Environmental/HSE Manager
BIOLOGICAL ENVIRONMENT				
11	Fauna and Flora	Proposed site is devoid off any protected species of both fauna & flora.	Awareness programs will be planned regarding the protection of fauna & flora. Species of Indigenous plants will be planted at site. Animal/reptiles/birds Hunting will be prohibited	Environmental/HSE Manager
SOCIOECONOMIC IMPACTS				
12	Resettlement issues	There is no any issue of resettlement due to the	There will not be any issue of resettlement due to the operation of the subject project.	Environmental/HSE Manager

		construction of the subject project.		
13	Change in culture & language	Maximum employment of Local people is recommended to preserve the local cultural language. It will help in communication with the local people to resolve any emerging issue near the project area	Maximum employment of Local people is recommended to preserve the local cultural language. It will help in communication with the local people to resolve any emerging issue near the project area	H.R. Manager
14	Education	The project proponent will initiate an educational awareness program.	The project proponent is committed to initiate an educational awareness program and will provide education fee for the children of the workers.	Proponent
15	Health	The project proponent should provide first aid facilities at site and also social security and medical checkups of the workers.	The project proponent is committed to provide first aid facilities at site and also social security and medical checkups of the workers.	Proponent

16	Culture, Norms of the area	Maximum local employment should be ensured to preserve the culture of the area	Maximum local employment should be ensured to preserve the culture of the area	Proponent
17	Gender inequality	Women involvement in decision making process should be ensured. Equal employment opportunity in suitable department of the proposed project should be ensured	Women involvement in decision making process should be ensured Equal employment opportunity in suitable department of the proposed project should be ensured	Proponent

Public Consultation & Stakeholders Participation

This section deals with the social acceptability of the project and the area. Consultation with the stakeholders is a tool for managing two-way communication between the project proponent and the affected public. Its goal is to improve decision making and build understanding by actively involving individuals, groups and organizations, which have stake in the project. This involvement increases project's long term viability and enhances its benefits to locally affected people and other stakeholders. It gives the feeling of an ownership to the local population and public indolent is also helpful in smooth implementation and success of the project.

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

Objectives of Consultation

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

The important general objectives of the consultation process are:

- Information dissemination, education and liaison
- Informing the stakeholders about the subject project
- Providing an opportunity to local public to raise their views and helping in more sensitive considerations for the formation of mitigation measures for the subject project
- Providing those involved in the planning stage with an opportunity to ensure that the benefits of the proposal are maximized and that no major impacts have been overlooked

- It provides an opportunity to local public to influence the design of project in a positive manner
- Increasing public confidence in front of proponent, reviewers and decision makers
- Identification of problems and needs of the stakeholders and public
- Providing better transparency and accountability in decision making stage;
- Reducing conflicts through early identification of contentious issues and working on them to find acceptable solutions
- Reaction, comment and feedback of stakeholders on project
- Developing proposal which are truly sustainable

Methodology of Consultation:

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

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

Stakeholder Identification:

Stakeholders considered at all levels according to the importance of the project. They are at provincial, district and village level. The process of consultation is an ongoing process which continues during the project life cycle and even after the submission of this environmental assessment report and so on. Therefore, three-tier approach was adopted. Stakeholders were identified, categorized and consulted at provincial (EPD Punjab, Irrigation department, Agriculture department, Wildlife department etc.), district level (EPD, Irrigation department, Agriculture department, Wildlife department etc.) & village level (Direct & indirect affectees and Locals)

Consultations with government, provincial and district level departments were carried out through meetings and visits while consultations with locals, villagers, neighbors and directly affected peoples were under taken during baseline study of the area.

A series of public consultations were required to get the feedback/ concerns of the different departments, Industries, local public, PAPs, and general public residing near the subject area.

Proponent

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

Responsible Authority

Management of M/s Premium Aluminum Extrusion Industry is the responsible authority to take all measures throughout the life cycle of the project.

Other Departments and Agencies

For the impact analysis detailed meetings were held with the management of M/s Premium Aluminum Extrusion Industry, local community, education institutes, health institutes, hospital and NGOs. Issues were discussed that may affect the environment and also the implementation of said project. All possible mitigation measures were considered and incorporated in the Environmental Management Plan.

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

Environmental Practitioners and Experts

Team of M/s Pak Green Enviro-Engineering (Pvt.) Ltd visited the project site, had discussions with stakeholders and consulted with the local people of nearby and other villages to evaluate the project socio-economic impacts. People of the area belong to different professions like mostly belong to employment, own businesses, doctors, some in abroad, in Army, teaching, in agriculture, etc. Women were also consulted for their point of view regarding the betterment of the area by this project, some of them communicated but according to social value of the area they mostly hesitate to communicate comfortably and get pictured. People provide the massive information about the project and have positive remarks regarding the project development.

Affected & Wider Community

There is no affected community present in the radius of our study area. PGEE team has consulted with the inhabitants of the 12KM Ferozpur Road, Rehman Pura Stop, Near Madina

Steel Mills Bholeke Behroon Mustafabad Lalyani Kasur. They provided positive remarks regarding the said project. Stakeholders participation Performa's and socioeconomic questionnaire were get filled by the inhabitants to evaluate the project socio-economic impacts. List of the respondents/participants can be seen in bellow table:

Table 9: List of Respondents

Sr. No	Name	Status /Education	Age	Residence
1	Imran Nadeem	Employee	30	Pakki Haveli
2	Zahoor Jutt	Driver	25	
3	Tashfeen Abbas	Student	23	
4	Amir Ali	Resident	33	
5	Rizwan Haider	Employee	31	
6	Saleem Chandiyo	Shopkeeper	29	
7	Tariq Hameed	Shopkeeper	27	
8	Naseer Akbar	Student	24	
9	Zoya Haider	Nil	36	
10	Imran Yaseen	Employee	34	
11	Mushtaq Khalid	Matric	31	Pakki haveli
12	Sameen khookar	Driver	39	
13	Rehan Khalid	Resident	41	
14	Akram Rashid	Shopkeeper	41	
15	Ghulam Mujtaba	Students	19	
16	Sallem Zafar	Worker	42	
17	Shokat Gul	Laborer	36	
18	Hamid Akram	Farmer	38	
19	Salamat Ali	Worker	41	
20	Rehmat ullah	Worker	36	
21	Anas Karim	Engineer	33	Mustafa Abad
22	Jamshed Butt	Private Job	34	
23	Hammad	Medical Rap	28	
24	Faisal Idrees	Employee	35	
25	Hamad Abid	Matric	42	
26	Zayan Ali	Student	22	

27	Bilal Shakoor	Nil	34	
28	Itrat bano	Employee	33	
29	Shoukat Mayo	Employee	43	
30	Usman Akram khan	Driver	42	
31	Ali ahmed jan	Shopkeeper	46	Mustafa Abad
32	Abdullah Yasir	Matric	32	
33	Shamshaad Akhter	Employee	37	
34	Kulsoom Bibi	Employee	31	
35	Maryam bibi	Employee	30	
36	Bibi Zainab	Worker	40	
37	Safia Begum	Housewife	42	
38	Asifa Ali	Engineer	31	
39	Shumaila Shokat	Student	24	
40	Komal Haider	Govt. job	33	

Questionnaire filled during the public consultation/interview are attached as A**nnexure-. E**

1.1.50 Sample Size

40 sample sizes were selected by the Team of consultants for conducting the socioeconomic survey. Women were also consulted for the said survey; some of their names are mentioned in the above list of respondents while most of them were not willing to give personal information.

1.1.51 Statistical Analysis

SPSS 19.0 has been used for the statistical analysis of the data collected during the visit of study site villages through questionnaires

1.1.52 Result & Discussion

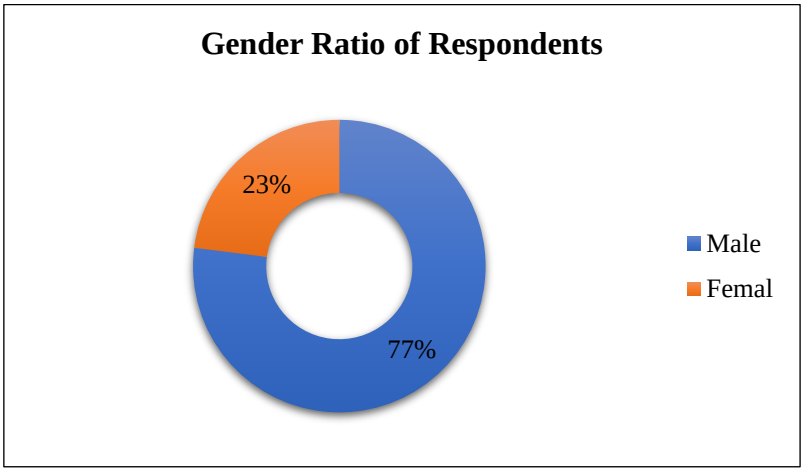

Figure 2: Gender Ratio of Respondents

Discussion

In the sampled population, 77% respondents were male while 23% respondents were female. The number of female respondents is less as compared to male respondents because according to the social binding female hesitates to respond or communicate comfortably.

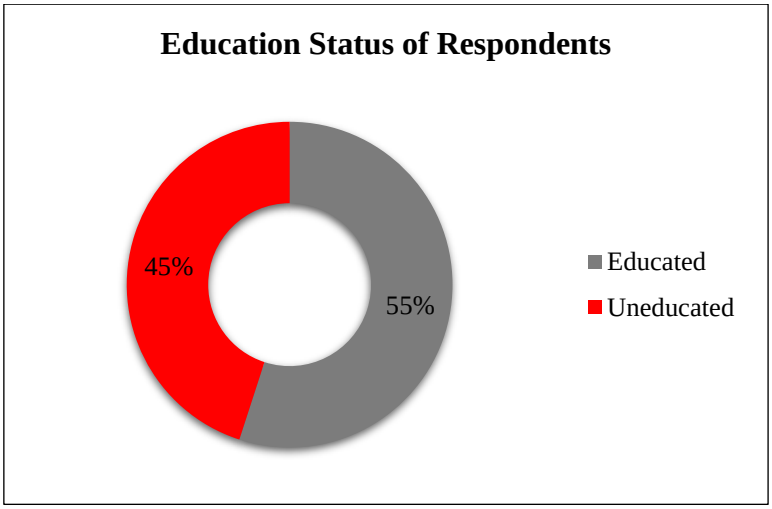

Figure 3: Education Status of Respondents

Discussion

In the sampled population, 55% respondents were educated while 45% were uneducated. So, according to the survey overall education status of the area is good.

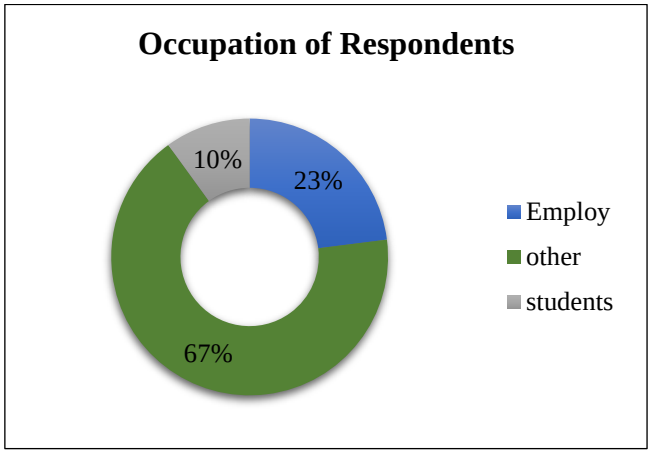

Figure 4: Occupation of Respondents

Discussion

According to above graphical representation, source of income of majority of the respondents in the area was mainly employee in the private and government sectors. In the sampled population, 10% were students while all other respondents' source of income was business man, farmers, doctors and teachers.

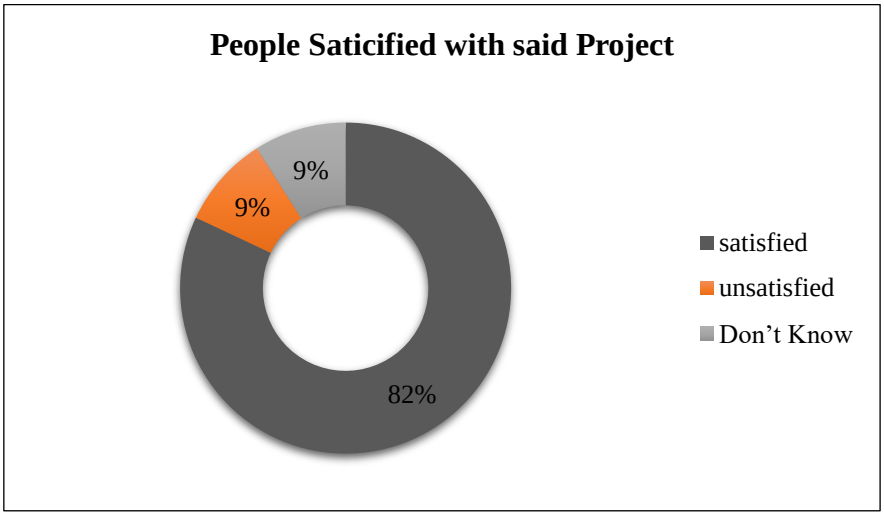

Figure 5: Ratio of people satisfied with said Project

Discussion:

As per survey, 82% people were satisfied with the said project and they gave positive remarks about the establishment of subject said project as they were hopeful to get job over there. While 9% respondents had no opinion regarding the project and 9% respondents were not satisfied with the establishment of industrial estate due to their concerns regarding the aesthetic degradation, pollution and no preference to local people for jobs.

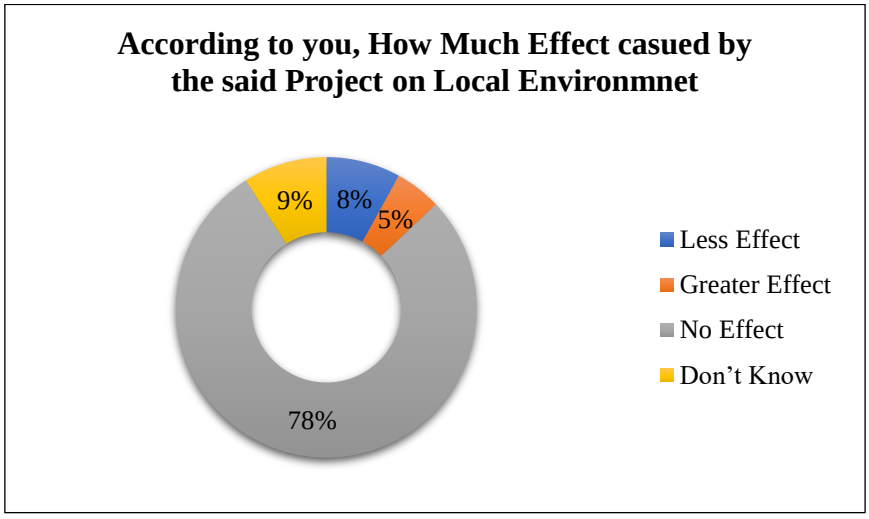

Figure 6: Ratio of Respondents having different views regarding Impact on Environment

Discussion:

As per survey, 78 % respondents remarked that the subject project will not cause much effect on the environment while 9% respondents had no point of view regarding the project activity, 8% respondents remarked that subject activity have less effect on the environment of area and only 5% remarked that activity have greater effect on the environment of the area.

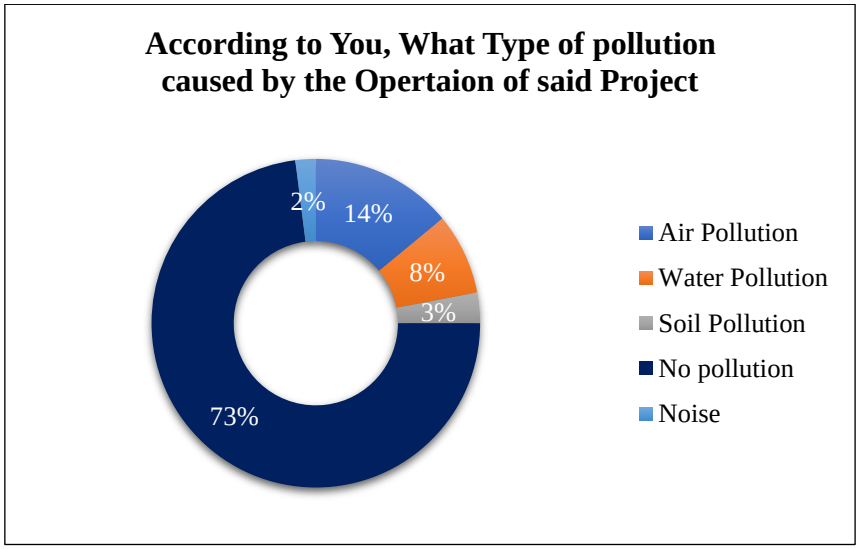

Figure 7: Types of Pollution cause by the said Project

Discussion

When the people were asked that according to you, what type of pollution will be caused by the subject said project, 14% people said that project will cause higher air pollution, 3% said that project will cause soil pollution due to its activities. 8% said that it will cause water pollution, 2% said that it will cause noise pollution while 73% of the sampled population said that project will cause no pollution according to their point of view.

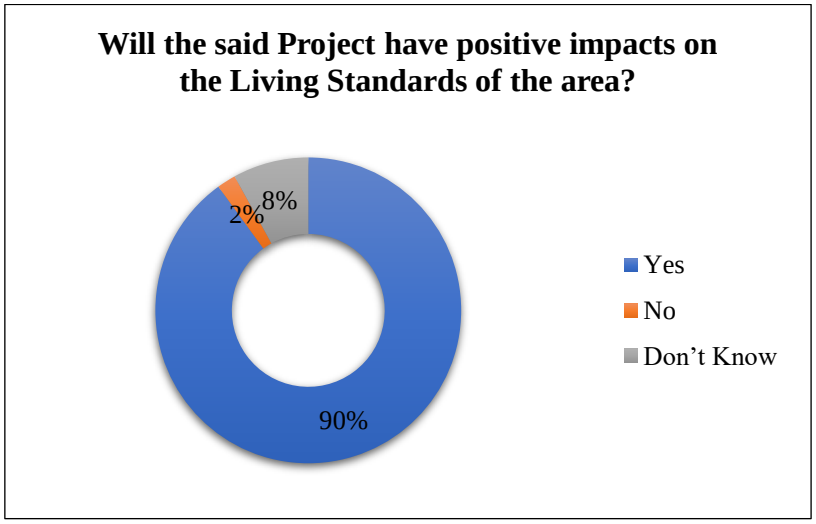

Figure 8: Effect of said Project on the Living Standard of people

Discussion:

When people were asked that "Will the said industrial estate have positive impacts on the living standards of the area?", 90% respondents said that subject project will enhance the living standard and income level of the area, 2% said that there will be no effect on the living standards and income level while only 8% respondents had no remarks regarding the subject project.

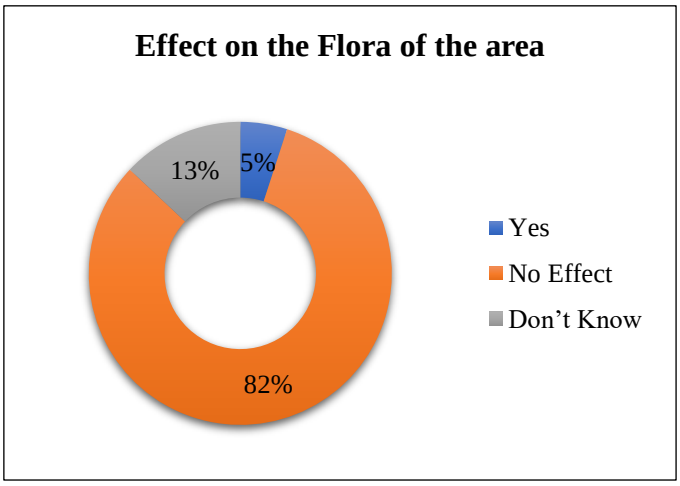

Figure 9: Effect of said Project on Flora

Discussion

When the people were asked "Will the project affect the Flora of the area?" 82% of the respondents remarked that the project will have no effect on the plants by the operation of the said project, 5% said that it will affect the plant species of the area and 13% gave no comments regarding the question.

Conclusion & Recommendations

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

Conclusion

The EIA study reveals that the project is economically viable and socially acceptable and the proponent will implement the project in the environment friendly manner. He will adopt all the necessary measures to control any impact if resulting from the project. He is providing the safe drinking water, safe working environment, proper training and first aid facility to all workers and staff. The project is generating additional jobs during operation phases.

Recommendations

- In view of the comprehensive screening process and findings of the present study there is no need of conducting further investigations.
- Tree plantation inside and near the project area is recommended.
- The Management of Premium Aluminum Extrusion Industry will continue to assist the local communities as a corporate/social responsibility (CSR).
- Use of narcotics and smoking m prohibited during working, filling or handling of fuel.
- PPEs must be provided to workers such as gloves, masks, etc.
- Proper solid waste management system must be adopted.
- Safety signs, safety board's etc. must be placed on site during various developmental stages.
- Machinery never being left in running condition.
- First Aid measures, health & safety Equipment (PPEs) are being provided to workers.
- The management of subject project will assist the local communities as a corporate social responsibility.
- Jobs and employment will be provided to the local area.

The present EIA report is enough to meet the administrative and legal framework. After the complete study of the project, it is concluded that project will not have significant adverse impacts on the nearby community and on environment. Overall the project will have positive

impacts on the local population and country as a whole. Therefore, it is requested for the environmental approval for the subject project.

References:

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13. Guideline for the public consultation

Glossary

Words	Dictionary
Discrepancies	A difference between conflicting facts, claims or opinions
Mitigation	The action of lessening in severity or intensity
Evaluated	Estimate or determine the nature, value, quality, ability, extent, or significance of
Legislation	law enacted by a legislative body
Aspects	A distinct feature or element in a problem
Compliance	Acting according to certain accepted standards
Flora	All the plant life in a particular region or period
Fauna	All the animal life in a particular region or period
Screening	The display of a motion picture
Substitutions	An event in which one thing is substituted for another
Regulations	An authoritative rule
Stakeholders	A person or organization with an interest or concern in something
Vulnerable	Susceptible to attack
annunciation	A formal public statement
rehabilitation	The conversion of wasteland into land suitable for use of habitation or cultivation