

**EXECUTIVE SUMMARY ON
ENVIRONMENTAL IMPACT ASSESSMENT REPORT**

For

**SUMIT ISPAT PVT. LTD.
[Ferro Alloys Plant]**

Taraimal Village, Tamnar Tehsil,
Raigarh District, Chhattisgarh State

Submitted to:

**CHHATTISGARH ENVIRONMENT CONSERVATION BOARD
CHHATTISGARH**

1.0 INTRODUCTION

SUMIT ISPAT PVT. LTD. has proposed to establish Submerged Electric Arc Furnaces (2 X 9 MVA) to produce Ferro Silicon 12,780 TPA , Silico Manganese 28,620 TPA , Ferro Manganese 37,080 TPA at Taraimal Village, Tamnar Tehsil, Raigarh District, Chhattisgarh State. The total land acquired for the proposed project is 14.2 Acres & in part of the Khasra no. 4.

. The total cost of the project is Rs. 25 Crores.

Pioneer Enviro Laboratories & Consultants Pvt. Ltd., Hyderabad has prepared Draft Environmental Impact Assessment Report for the proposed project. The report contains detailed description of the following

- a. Detailed characterization of status of environment within 10 km. radius of the plant for major environmental components including air, water, noise, soil, flora, fauna and socio-economic environment as per the TOR issued by Ministry of Environment & Forests, New Delhi
- b. Assessment of air emissions, liquid waste and solid waste from the proposed activity along with the noise level assessment.
- c. Environmental Management Plan proposed to be adopted in the proposed industry.
- d. Post project Environmental Monitoring to be adopted.

2.0 PROJECT DETAILS

2.1 RAW MATERIALS

Manganese ore, Pet Coke, Dolomite, Quartz are the major raw materials required for manufacturing of the above specified Ferro Alloys.

2.2. DESCRIPTION OF MANUFACTURING PROCESS

FERRO ALLOYS UNIT:

Ferro manganese, silicon-manganese will be produced using manganese ore as main raw material in a sub-merged arc furnace using reducer (Coke) under high voltage. Similarly Ferro silicon will be produced using Quartz as main raw material.

2.3 WATER REQUIREMENT

The proposed project requires about 45 cum/day of water. This includes Make-up water for Ferro Alloys plant and for domestic water. The water required for the

proposed project will be met from Groundwater Sources. An application has been filed to the Groundwater department and it is under process. The following is the breakup of water requirement.

WATER REQUIREMENT

SOURCE	QUANTITY (cum/day)
Make up water for cooling	40
Domestic	5
Total	45

2.4. WASTE WATER GENERATION AND CHARACTERISTICS

There will not be any process waste water (or) cooling water blowdown generation from the Ferro Alloys Unit as closed circuit cooling system will be adopted. The total effluent quantity expected from the proposed Ferro Alloys unit will be 4 Cum /day of sanitary waste water.

EFFLUENT CHARACTERISTICS

The characteristics of sanitary effluents generated are as following.

CHARACTERISTICS OF SANITARY WASTE WATER (Untreated)

PARAMETER	CONCENTRATION
pH	7.0 – 8.5
BOD	200 – 250 mg/l
COD	300 – 400 mg/l
TDS	800 – 900 mg/l

2.5. EFFLUENT TREATMENT PROCESS

Closed circuit cooling system will be provided in cooling of Ferro Alloys. Hence there will not be any waste water generation from process and cooling of Ferro Alloys manufacturing. The only wastewater that is generated will be sanitary waste water which will be treated in septic tank followed by soak pit.

No effluent will be discharged outside the premises. Zero effluent discharge will be maintained in the proposed project.

2.6. AIR EMISSIONS

The gases from each furnace will be treated separately in fume extraction system comprising of hoods, bagfilters and the treated gases will be discharged through 2 nos. of stacks each of 30 m height for effective dispersion of emissions into the atmosphere. The out let dust emission will be less than 50 mg/Nm³.

2.7. SOLID WASTE MANAGEMENT

The following will be the solid waste generation from the proposed project.

SOLID WASTE	QUANTITY (TPA)	DISPOSAL METHOD
Ferro Silicon slag	1980	Will be given to cast iron foundries.
Silico Manganese Slag	11700	Will be utilized in road construction
Ferro Manganese Slag	16200	Will be used in manufacture of Silico manganese as it contains high MnO ₂ .

The slag does not contain any toxic chemicals. However TCLP test will be conducted upon commencement of production and slag disposal will be in accordance with MOEF/CPCB/CECB norms.

3.0 PREDICTION OF IMPACTS

3.1 PREDICTION OF IMPACTS ON AIR QUALITY

Emissions from the other industries to arrive at the cumulative impact on air environment to assess the incremental GLCs of PM₁₀, SO₂ & NO_x. The predictions of Ground Level Concentrations have been carried out using Industrial Source Complex Model. Meteorological data such as wind direction, wind speed, max. & min. temperatures collected at the site have been used as input data to run the model.

It is observed from the computation results that the maximum predicted incremental rise due to the proposed project in 24 hourly ground level concentrations of PM₁₀, SO₂ & NO_x are 0.8 µg/m³, 1.3 µg/m³ & 1.0 µg/m³ respectively at a distance of 450 m from the origin stack in the down wind direction.

The predicted results show that the net resultant concentrations (Max. Baseline conc. + Max. incremental rise in conc.) of PM₁₀, SO₂ & NO_x due to the three units and other industries in that area will be well within the revised National Ambient Air Quality Standards after commissioning of all units proposed. Hence there will not be any adverse impact on air environment due to the proposed Project.

3.2 PREDICTION OF IMPACTS ON NOISE QUALITY

The major sources of noise generation in the proposed project will be DG set. The ambient noise levels will be within the standards prescribed by MoE&F vide

notification dated 14-02-2000 under the noise pollution (Regulation & Control), rules 2000 i.e. the noise levels will be less than 75 dBA during day time and 70 dBA during night time. The 5.0 Acres extensive greenbelt proposed to be developed in the plant premises will further attenuate the noise levels. Hence there will not be any adverse impact due to noise on population in surrounding areas due to the proposed project.

3.3 PREDICTION IMPACTS ON WATER QUALITY

Closed circuit cooling system will be implemented in the proposed project. Hence there will not be any waste water generation from the process & cooling. Sanitary waste water will be treated in septic tank followed by soak pit. Rain water harvesting pits will be constructed in consultation with Central Ground Water Board to harvest the rainwater to improve water table. Hence there will not be any adverse impact on water environment due to the proposed project.

3.4 PREDICTION OF IMPACTS ON BIOLOGICAL ENVIRONMENT

All the required pollution control systems will be installed and operated to comply with the norms. Once all the norms are complied with then there will not be any adverse impact on flora, fauna due to the proposed project.

3.5 PREDICTION OF IMPACTS ON SOCIO ECONOMIC ENVIRONMENT

With the establishment of the proposed project employment potential will increase. Land prices in the area will increase. The economic status of the people in the area will improve due to the proposed project. Periodic medical checkups will be carried out. Local people will provided with semiskilled and unskilled employment. Priority will be given to locals in skilled employment if found suitable qualification & experience.

4.0. BASELINE DATA

Baseline data has been collected on ambient air quality, water quality, noise levels, flora & fauna and socio-economic details of the people within 10 km. radius of the proposed project site.

4.1. AMBIENT AIR QUALITY

Ambient air quality was monitored for PM₁₀, PM_{2.5}, SPM, SO₂ & NO_x at 8 stations for one season as per MoEF guidelines. The following are the concentrations of various parameters at all the monitoring stations.

PM _{2.5}	:	14.3- 26.3 µg/m ³
PM ₁₀	:	25.2 – 47.9 µg/m ³
SPM		89.5 – 146.2 µg/m ³
SO ₂	:	8.0- 13.1 µg/m ³
NO _x	:	9.2 – 15.3 µg/m ³

PAH in SPM is Below Detectable Level.

4.2. WATER QUALITY

Ground water samples were collected at 8 locations and analysed for various physico – chemical & Bacteriological parameters. The water samples show that they are suitable for potable purpose.

4.3. NOISE LEVELS

Noise levels were measured at 8 stations during daytime & night time. The noise levels at the monitoring stations are ranging from 45.37 dBA to 50.65 dBA.

5.0. ENVIRONMENTAL MANAGEMENT PLAN

5.1. AIR ENVIRONMENT

The following Air pollution control systems are proposed in the project.

S. NO.	STACK ATTACHED TO	CONTROL EQUIPMENT	STACK HEIGHT (M)	PARTICULATE EMISSION AT THE OUTLET OF STACK
1.	Submerged Electric Arc Furnaces (2 x 9 MVA)	Fume extraction & cleaning system with bag filters	30 (2 nos.)	< 50 mg/Nm ³

The following air pollution control systems/ measures are proposed in the proposed project.

- Dust suppression system will be provided at the dust emission areas.
- All internal roads will be made pucca to prevent the fugitive dust emission.
- All the required Air pollution control measures will be strictly implemented so that the ambient air quality will be with in the revised National Ambient Air Quality standards of MOEF during the operation of the plant.
- 5 Acres Extensive greenbelt proposed will help in further mitigating the air emissions.

5.2. WATER ENVIRONMENT

Closed circuit cooling system will be implemented. Hence there will not be any waste water generation from the process & cooling in the Ferro alloys plant. Sanitary waste water will be treated in septic tank followed by soak pit. Rain water harvesting pits will be constructed to recharge the water. Hence there will not be any adverse impact due to the proposed project.

5.3. NOISE ENVIRONMENT

The major sources of noise in the proposed project will be DG set. The combined effect of all the three units and other industries are also considered. The Ambient noise levels will be less than 75 dBA during daytime & less than 70 dBA during Night time. The employees working near the noise generating sources will be provided with earplugs. Acoustic enclosures will be provided to DG Sets. The extensive greenbelt development proposed within the plant premises will help in attenuating the noise levels further. Noise barriers in the form of trees are recommended to be grown around administrative block and other utility units.

5.4. LAND ENVIRONMENT

All the required Air pollution control systems will be installed and operated to comply with CECB norms. Zero effluent discharge will be maintained. Solid wastes will be reused/disposed off as per norms. Extensive greenbelt will be developed in the plant premises.

5.5. GREENBELT DEVELOPMENT

Green belt development will further enhance the environment quality through limitation of air emissions; attenuation of noise levels, balancing Eco-environment, prevention of soil erosion and creation of aesthetic environment. Greenbelt of 5 acres will be developed in the plant premises as per CPCB guidelines.

5.6. POST PROJECT ENVIRONMENTAL MONITORING

Ambient Air Quality, Sack monitoring & effluent analysis will be carried out regularly as per CPCB norms and the analysis reports will be submitted to the Regional office of the Ministry of Environment & Forest, Bhopal & Chhattisgarh Environment Conservation Board regularly.