EXECUTIVE SUMMARY

1.0   INTRODUCTION

M/s. ACMPL is engaged in manufacturing of M.S. Ingot/ Billets and re-rolled steel product. The project has got existing EC for expansion of Induction Furnaces with Hot Charging rolling mill from 30,000 TPA to 59,500 TPA from SEIAA, CG on dt. 20.09.2021. The project is categorized as B2 as per OM dated. 24th December, 2013. However, SEIAA has been appraised this project as B1 as per provision 7(i) a, SEAC on due diligence found there is no increase in pollution load thus, thus, there is no requirement of carrying out EIA and Public Hearing and project has grant EC under B_1 Category. The unit is having valid consent under Air Act and Water vide consent letter No. 3227/RO/TS/CECB/2022 dtd. 20.01.2022 renewed upto 31.12.2025.

The company (M/s Agrawal Channel Mills Pvt. Ltd.) is currently operating 10 MT X 4 Nos. Induction Furnace with CCM, now the company has proposed to increase its production facility by augmentation of existing 10 MT X 4 Nos. of IF's with 12 MT X 4 Nos along with the implementation of additional new 20 MT X 2 Nos Induction Furnaces.

The company is also having a separate rolling mill having capacity of 30000 TPA Steel Rerolled Steel products through Billet Reheating Furnace operating under consent number 655 & 656 /RO/TS/CECB/2015 dated 06/06/2015 and renewed upto 31 May 2029 vide letter no 927 /RO/TS/CECB/2015 dated 29/05/2019. Now the company is proposing to amalgamate these two divisions in single unit to utilize its own Cold MS Billet likely to be generated in the proposed expansion capacity, which cannot be utilized in hot form in hot charging rolling mill due to several limitations of direct hot charging technologies.

Anacon Laboratories Pvt. Ltd., Nagpur, is QCI-NABET accredited in '**Category A'** environment consultant organization (Certificate No.: NABET/EIA/2326/RA 0304) has been assigned to undertake an Environmental Impact Assessment (EIA) study and preparation of Environment Management Plan (EMP) for various environmental components, which may be affected due to the impacts arising out of the proposed project.

The proposed project is brownfield involving capacity expansion within 2.39 Ha. of existing land area. It is proposed to expand the production of Induction, CCM and Hot Charging based steel Rolling Mill facility from existing 59,500 TPA to 289,400 TPA MS Billets with total Rerolled Steel Production capacity of 272,000 TPA out of which 242,000 TPA will be through Hot Charging and 30,000 TPA through existing BRF based rolling mill at Plot No 34-35, Phase –II, Industrial Growth Centre, Siltara, Raipur, State Chhattisgarh Pin code 493 111.

EIA process requires the primary baseline data collection to know the information on the biophysical, social and economic backgrounds of Greenfield project. The Environmental Impact Assessment (EIA) report is prepared for obtaining Environmental Clearance (EC) from Ministry of Environment, Forest and Climate Change (MoEFCC), New Delhi and the Consent for Establishment from the Chhattisgarh Environment Conservation Board (CECB) for the proposed Expansion project.

1.1   IDENTIFICATION OF PROJECT

The proposal is for expansion of production capacities at Plot No 34-35, Phase –II, Industrial Growth Centre, Siltara, Raipur, State Chhattisgarh by M/s. Agrawal Channel Mills Pvt Ltd, in the following manner: Existing production facilities comprises of Induction Furnaces 10 MT X 4 Nos to produce MS Billets of 59500 TPA. It is proposed to augmented existing 10MT x 4 Nos to 12 MT X 4 Nos

furnaces with addition of new 20 MT X 2 Nos of IF's. Thus, a total of 289400 TPA MS Billets production facility will be possible through new induction furnaces.

The company has existing separate 30000 TPA Rolled Steel Products through BRF. Now the total capacity of Rerolled Steel product after amalgamation of existing and proposed enhancement will be will be 272,000 TPA out of which 242000 TPA rerolled product will be proposed by hot charging and remaining 30,000 TPA through billet reheating furnace.

The proposal is for expansion of production capacities at Plot No 34-35, Phase –II, Industrial Growth Centre, Siltara, Raipur, State Chhattisgarh by M/s. Agrawal Channel Mills Pvt Ltd, in the following manner:

➢ **MS Billet through Induction Furnace, CCM:**

Existing production facilities comprises of Induction Furnaces 10 MT X 4 Nos to produce MS Billets of 59500 TPA. It is proposed to augmented existing 10MT x 4 Nos to 12 MT X 4 Nos furnaces with addition of new 20 MT X 2 Nos of IF's. Thus, a total of 289400 TPA MS Billets production facility will be possible through new induction furnaces.

➢ **Rerolled Steel Products through Rolling Mill:**

The company has existing separate rolling mill to produce 30000 TPA Rerolled Steel Products through BRF. Now the total capacity of Rerolled Steel product after amalgamation of existing and proposed enhancement will be will be 272,000 TPA out of which 242000 TPA rerolled product will be proposed by hot charging and remaining 30,000 TPA through billet reheating furnace.

The following capacities would require EC for expansion of the existing facilities:

TABLE 1 : EXISTING AND PROPOSED CAPACITY DETAILS (IN TPA)

Product	Existing	Proposed Addition/change	Final after Expansion
Hot charging Rolled Steel product through Induction Furnace	59500	182500	242000 (intermediate product Billet 289400 TPA)
Rerolled Steel product through Billet Reheating Furnace	30000	Nil	30000

1.2   LOCATION OF THE PROJECT

The proposed expansion project activities will be carried out within existing plant premises of 2.39 Ha. The plant is located at Plot No 34-35, Phase –II, Industrial Growth Centre, Siltara, Raipur, State Chhattisgarh. No additional land required. The nearest city is Raipur which is around 12 Km in south direction. Nearest airport is Swami Vivekanand International Airport, Raipur, which is around 22.31 km at south south east direction. The nearest habitation is Siltara and Sondra Village which is at 0.98km and 1.77 Km in east and south west direction respectively from project site. The nearest roadway is NH 30 – 0.76 km in east direction. The nearest railway station is Mandhar Railway Station which is 6.01 Km in the south east direction.

The details of environmental setting are given in **Table 2.**

1.3   EIA/EMP REPORT

In line with the approved ToR obtained from EAC (Industry –I), MoEF&CC, New Delhi, baseline environmental monitoring was conducted during Pre-monsoon season (15th March 2023 – 15th June 2023) for determining the status of ambient air quality, ambient noise levels, surface and groundwater quality, soil quality, status of flora, fauna and eco-sensitive areas and socio-economic

status of the villages within 10 km radius study area from the project site **(Figure 1)**. The observations of the studies are incorporated in the EIA/EMP report. Impacts of the proposed project activities during construction and operation stages were identified and duly addressed in the report.
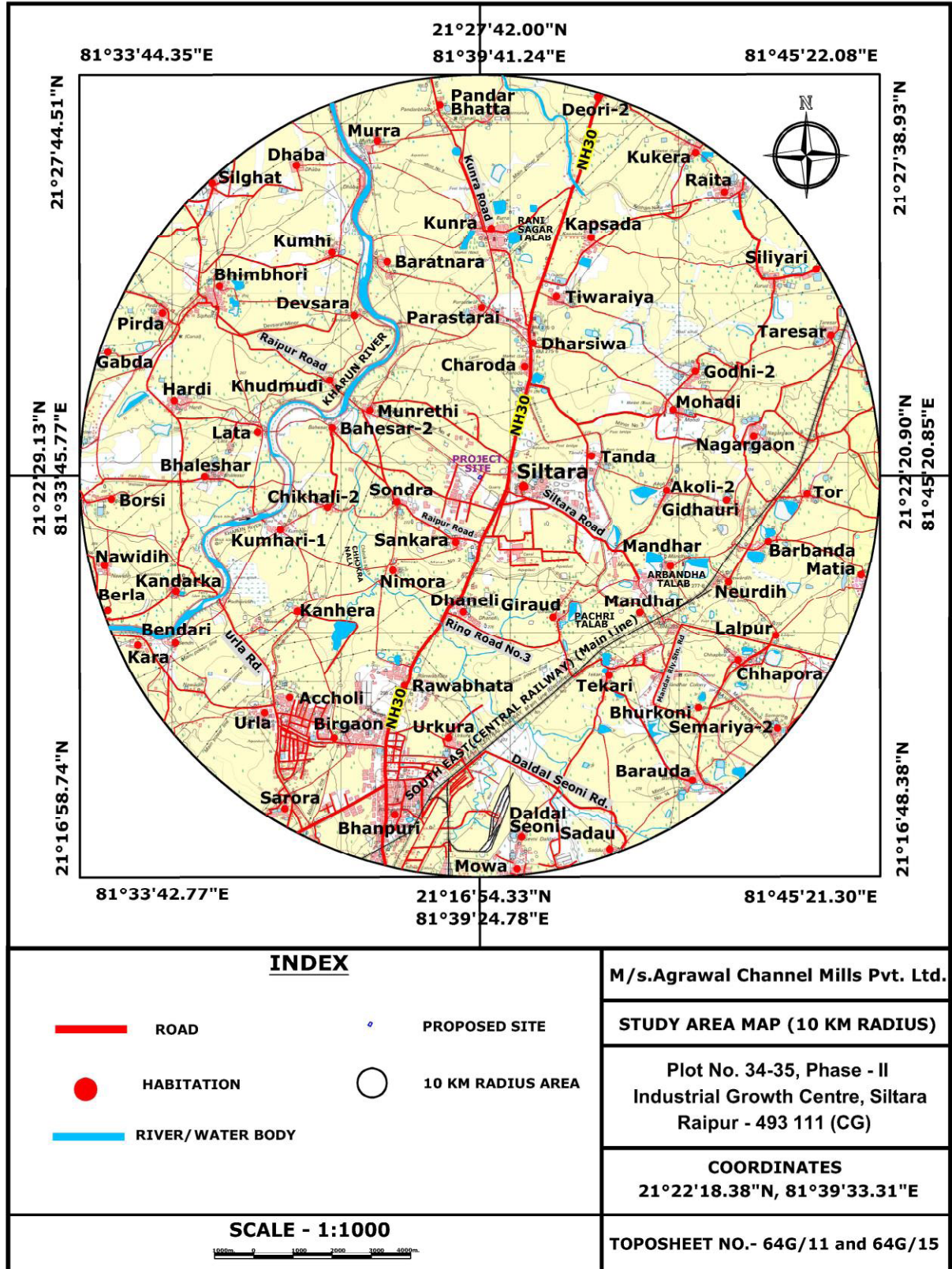

FIGURE 1: STUDY AREA (10 KM RADIAL DISTANCE)

TABLE 2 : DETAILS OF ENVIRONMENTAL SETTINGS

Sl.	Particulars	Details		
1.	Project Location & Registered Office	Plot No. 34-35, Phase - II Industrial Growth Centre, Siltara Raipur – 493 111, State – Chhattisgarh		
2.	Geographical Locations	**Points**	**Latitude**	**Longitude**
		01	21°22'17.02"N	81°39'29.15"E
		02	21°22'23.27"N	81°39'31.73"E
		03	21°22'21.56"N	81°39'35.61"E
		04	21°22'21.56"N	81°39'35.61"E
3.	Toposheet No.	64G/11 and 64G/15		
4.	Climatic Conditions	Mean annual rainfall is 1252.8 mm Temperature: Pre monsoon 20.6^0 C (Min.) 41.7^0 C (Max.) : Winter 13.3^0 C (Min.) 31.0^0 C (Max) : Post monsoon 17.3^0 C (Min.) 31.8^0 C (Max.) Source: IMD, Raipur		
5.	Nearest representative IMD station	IMD Raipur, Chhattisgarh – 12.00 Km, SE		
6.	Land Form, land Use and Ownership	The land is existing industrial land; total involved land is 2.39 Ha. No additional land proposed to be acquired. Greenbelt area 19.20% (i.e. 0.46 Ha.) will be kept unchanged. The land already diverted to industrial purpose. Additional Green belt will be developed at Khsara No 506/1 area 0.784 at Village Akoli, P.H. No. 21/93, RNN Dharsiwa, Tahsil and District- Raipur (CG) which is just at a distance of 3.5 KM (E Direction). Thus total greenbelt will be 52%.		
7.	Site topography	Project site located at min. 275 m, max. 278 m (above MSL)		
8.	Nearest roadway	1) NH - 30, 0.76 KM, E 2) Raipur road – 2.45km/W 3) Road connecting NH30 -0.15km/N		
9.	Nearest Railway Station	Mandhar Railway Station – 6.01 Km, SE		
10.	Nearest Air Port	Swami Vivekananda International Airport – 22.31 Km, SSE		
11.	Nearest Port	NA		
12.	Nearest lake	NA		
13.	Nearest State/National Boundaries	Odisha - 89.53Km/SE		
14.	Nearest major city with 2,00,000 population	Raipur – 12.00 Km, S		
15.	Nearest village/major town	• Siltara-0.98 km/E • Sondra - 1.77 Km/SW • Sankara - 1.85 Km/SSW • Tanda - 2.7 Km/E		
16.	Hills/valleys	Nil		
17.	Nearest tourist place	Nil		
18.	Archaeologically important places	None in 10 KM study area Shiva Mandir Deobaloda, Bhilai, Chhattisgarhˇ 25.72 Km/SSW		
19.	Nearest Reserved/ Protected forests	Nil		
20.	Nearest water bodies	1. Kharun River- 4.90 Km/W 2. Pachri Talab, Giraud - 4.19 Km/SE 3. Arbandha Talab, Giroud Rd, Mandhar, -5.78km/ESE 4. Rani Sagar Talab, Kunra, Kunra, - 6.46Km/NNE 5. Dongia Talab-Giraud, - 4.21Km/SE		

Sl.	Particulars	Details		
21.	Nearest Industries	1	Vaswani Industries Limited - Iron & Steel Industry Bahesar, Road, Sondra, Chhattisgarh	1.48Km/WSW
		2	GHANKUN STEELS PVT. LTD., Sondra, Chhattisgarh	1.60Km/SW
		3	Nakoda Ispat Ltd. Power Plant Siltara Phase 2, Industrial Road, Sondra, Chhattisgarh	1.31Km/SSW
		4	Vandana Global Limited, Industrial Growth Centre, Sondra, Chhattisgarh	1.18Km/SW
		5	Nandan Steel And Power Ltd, Chikhali-2, Chhattisgarh	2.29km/WSW
		6	API ISPAT AND POWERTECH PAT. LTD., Munrethi, Chhattisgarh	1.70Km
		7	Aarti Sponge And Power Limited, BAHESAR ROAD, Siltara, Chhattisgarh	2.12Km/WNW
		8	SKS ISPAT & POWER LTD, Munrethi, Chhattisgarh	2.42Km/NW
		9	Sarda Energy & Minerals Ltd., Sankara, Chhattisgarh	1.98Km/ESE
		10	Hindustan Coils Plt siltara	3.05km/ESE
		11	Jayaswal Neco Industries Ltd., Sarora, Civil Lines, Raipur, Chhattisgarh	2.34Km/SE
		12	Bhagwati Power & Steel Limited, Siltara, Chhattisgarh	0.72Km/NNE
		13	MAHAMAYA STEEL INDUSTRIES LIMITED, Urla Industrial Complex, Birgoan, Raipur, Chhattisgarh	9.55Km/SW
		14	M/s. R. R. Ispat Ltd., Industrial Area, Urla, Raipur	7.70Km/SW
		15	M/s. Bajrang Metallic Pvt. Ltd., (Melting Div.) Industrial Area, Sarora, Raipur	9.78Km/SSW
		16	Shree Sita Ispat & Power Pvt Ltd, Road, Bana-2, Chhattisgarh	9.99Km/SW
		17	Rashmi Sponge Iron & Power Industries Private Limited, Bilaspur Road, Birgoan, Siltara, Chhattisgarh	1.29km/NNW
		18	SK Sarawagi & Co. Pvt. Ltd., Industrial Road, Sondra, Chhattisgarh	0.18Km/WSW
		19	Indian steel & power pvt.ltd, GPIL Road, Siltara, Chhattisgarh	2.84km/NE
		20	Shivalay Ispat and Power Pvt. Ltd., Village Kara, Raipur, Chhattisgarh	9.77Km/SW
		21	M/s. C. G. Ispat (Pvt.) Ltd., Vill.- Bahesar, Dharsiwa, Raipur	3.29km/WNW
		22	Goldstar Steels Pvt Ltd, Industrial Area, Bhanpuri, Raipur, Chhattisgarh	8.15km/SSW
		23	M/s. A.P.I. Ispat& Power tech Pvt Ltd., Village-Sitara, Raipur	1.72km/WNW
		25	KUMAR INDUSTRIES, Industrial Road, Siltara, Chhattisgarh	0.34Km/SSW
		26	Aarcee Ispat Udyog, Chhattisgarh	0.54Km/SW
22.	Areas occupied by sensitive man- made land uses (hospitals, schools,places of worship, Universities, Community Hall etc.)	1. C H C Dharsiwa (Hospital)-5.14Km/NNE 2. UMA DENTAL CARE-4.07Km/SSW 3. B.K. Multi-speciality Clinic, Rawabhata, Transport Nagar, Birgoan, Raipur, Chhattisgarh˘ 7.26Km/SSW 4. Ambition English Medium school, Raipur, Chhattisgarh-3.76km/NNE		

Sl.	Particulars	Details
		5. Jagmohan Lal Higher Secondary School, Sankara, Chhattisgarh-1.42Km/ESE
		6. Swami Atmanand School Barbanda, Raipur, Chhattisgarh-7.22Km/ESE
		7. Ishwar Public School, Birgaon Main Road, Vishal Colony, Birgoan, Raipur, Chhattisgarh-7.68Km/SSW
		8. Sharda Public School Urkura, Sharda public school, Urkura, Chhattisgarh-7.09Km/SSW
		9. Shree Sunrise English Medium School, Urkura, Chhattisgarh-7.23Km/SSW
		10. Columbia Global School, Vidhan Sabha Rd, Tekariˇ 2, Chhattisgarh-7.7Km/SE
		11. Gyan Deep Vidya Mandir-7.21Km/SE
		12. Nagar Palika Nigam Birgaon Community Hall, Unnamed Road, Durga Nagar, Birgoan, Raipur, Chhattisgarhˇ 8.49Km/SSW
23.	Seismic zone	The project site falls in Zone-II as per IS 1893 (Part-I): 2002. Hence, seismically it is a stable zone.

2.0 PROJECT DESCRIPTION

2.1 PROCESS DESCRIPTION

2.1.1 Manufacturing process of Steel Melting Shop with CCM and Hot Charging Rolling Mill Induction Furnaces

- The manufacturing process installed in the unit is one which is well established and proven technology presently being followed by majority of similar manufacturing units mostly in small or medium scale sector.

- The melting process involves taking sample of Sponge Iron & Pig Iron; Iron Powder and mild steel scrap, end cutting from rolling mills or scrap from user units is taken from raw material storage. This is than tested for its chemical composition and noted..

- Melting of steel along with other alloying element is accomplished in the crucible of coreless M.F. Induction Furnace.

- After completion of melting cycle of an hour the homogeneous molten mass is poured hydraulically into the ladle.

➢ **CCM**

- The ladle containing liquid steel is placed on the Continuous Casting Machine platform and continuous casting of hot billet is carried out in the same.

- In the CCM section hot billet shearing machines will be installed with each casting strand, so as to facilitate the cutting of billets to proper length for feeding in to the rolling mill.

2.1.2 Manufacturing process of rerolled steel through Billet heating furnace (Producer Gas based) Rolling Mill

- Cold Steel Billets received in the mill are cut to size; either by Gas Cutting or by automatic shearing machine

- The sized billets are then Pushed into Billet reheating furnace fired with coal/ hot producer gas.

- After the Billet is Red Hot then these are pushed out to rolling stands for re-rolling.

- Steel Pieces are rolled through all stands in order to get required shape of finished goods i.e., MS Channel, Structures and other rerolled product as finished product.

Producer Gas plant based on Coal

In Order to provide required thermal energy to Billet reheating furnace in Rolling Mill permission for coal producer gas plant is obtained   with about 1 to 1.5 ton per hour C grade coal used which would produce about 3000 NM3 to 3500 NM3 producer Gas per hour. The TAR condensate collected from the Hot Cyclone and PG Pipe traps (Water Seals) would be collected and used in the BRH furnace.

2.1   LAND REQUIREMENT

The total project area for expansion is 2.39 Hectare. The land is existing industrial land. No additional land proposed to be acquired. Greenbelt area 19% (i.e., 0.46 Ha.) will be kept unchanged. The land already diverted to industrial purpose. Sufficient flat land, free from major undulations and sparse vegetation is available within the plant premises. The detail of land use planning is provided in **Table 2.3**. The land documents are enclosed as **Annexure IV**.

TABLE 3 :AREA STATEMENT

Land Use	Proposed Area (Ha)	In %
Built Up Area	1.05	43.83
Road and Paved area	0.15	7.43
Open Area	0.71	29.54
Green Belt area	0.46	19.20
Parking	0.02	0.83
Total	**2.39**	**100.00**

2.2   RAW MATERIALS REQUIREMENT, SOURCE & MODE OF TRANSPORT

Availability of raw material is abundant in a range of distance within 50 km to 250 km area from project site. The details of raw material requirement are given in Table 2.4.

TABLE 4 :RAW MATERIAL REQUIREMENT AND MODE OF TRANSPORTATION

Name of Raw Material	Qty. Required (in TPA)	Source	Distance (In Km)	Mode of Transportation
For Induction Furnace (SMS)				
Sponge Iron	311,105.00	Local market	Within 50 Kms	ByRoad through covered vehicles
Pig Iron / CI Scrap	38,189.00	Captive production/ Local market	Within 50 Kms	By Road through covered vehicles
Melting Scrap	18,000.00	Captive generation/ Local market	Captive/ Within 50 Kms	Internally available/ By Road through covered vehicles
Ferro Alloys	2894.00	Local market	Within 50 Kms	By Road through covered vehicles
Aluminum	290.00	Open Market/BALCO	Within 250 Kms	By Road through covered vehicles
Ramming Mass	724.00	Open Market	Within 100 Kms	By Road through covered vehicles
Total	**371,202.00**			
Rolling Mill (272,000 TPA)				
For Hot Charging based Rerolling mill (242,000 TPA)				
Hot Billets	242,400.00	Captive Production in Steel Melting	Captive	Internal Transfer

Name of Raw Material	Qty. Required (in TPA)	Source	Distance (In Km)	Mode of Transportation
		shop		
Total	**242,400.00**			
For Reheating Furnace based Rerolling mill				
Cold Billets	30000.00	Captive Production		Internal Transfer
Coal	3600.00	SECL Coal mines/ Open market/Local Market	Within 500 Kms	Coal will be transported by rail head upto nearest Railway sidings and then by Road through covered vehicles
Total	**33600.00**			

2.3.1 Solid and Hazardous waste generation

The total estimated solid waste generation (including existing and proposed expansion) will be 84650.00 TPA and 3 KLA Hazardous Waste in the form of Waste oil/ used oil. The detail of solid waste generation is presented in Table 2.12 and hazardous waste generation details are presented in Table 2.13.

TABLE 5 : SOLID AND HAZARDOUS WASTE GENERATION AND ITS DISPOSAL

Name of Waste generated	Qty (TPA)	Proposed Disposal Plan
Mill Scale	18,000	Sold to Ferro Alloys/Pellet Plant
Defective Billets (IF)	9,300	Reused in own Induction Furnace/ Sold to other Mini Steel Plants
Slag from Induction Furnace	47,028	Used for own metal recovery unit and granulated slag will be given to brick making and road making etc beneficial purpose.
Miss Rolls and End cuts	8,700	Reused in own Induction Furnace/ Sold to other Mini Steel Plants
Refractory & Ramming Mass waste (IF)	362	Sold to authorized recyclers
Ash from Coal firing in BRF	1,260	Given to Fly Ash Brick making unit
Total	**84,650**	

TABLE 6 : HAZARDOUS WASTE GENERATION

Type of Hazardous Waste	H. W. Category	Quantity	Disposal
Waste Oil/Used Oil	5.1(as per HWM Schedule I)	3 KL/Annum	Will be given to authorized recycler having Authorization from competent authority.
Used Lead Acid batteries	17 (as per HWM Schedule IV)	___	

2.3 WATER REQUIREMENT & SOURCE

Closed circuit cooling system will be adopted. Industrial waste water (46 KLD) will be treated in ETP (Cap. 50 KLD). Treated water will be used in process.

Domestic waste water generation (16 KLD) will be treated in STP (25 KLD). Treated water will be used for greenbelt development

No GW withdrawal, water will be source from CG Ispat Bhumi Ltd. industrial water supply network. Closed Circuit cooling system will be adopted to minimize the fresh water requirement

2.4   POWER REQUIREMENT & SUPPLY

Total power requirement (existing and proposed expansion) will be 37 MW and all the power will be sourced through State Grid (CSPDCL). In addition, existing plant already has 250 kVA and 1 no of 400 kVA DG sets is proposed which will be continued to be used as emergency backup. Total power requirement – 37 MW

2.5   MANPOWER REQUIREMENT

The industry will provide employment to about 440 (330 existing + 110 additional) persons. Total manpower requirement is given in **Table** .

TABLE 7 : TOTAL MANPOWER REQUIREMENT FOR THE PROPOSED EXPANSION PROJECT

Particulars	Existing	Proposed additional	Total
Administrative Staff	40	10	50
Production Staff	290	100	390
Total :	**330**	**110**	**440**

2.6   FIRE FIGHTING FACILITIES

In order to fight with emergency situation due to fire in plant premises, firefighting facilities are provided in various units of the plant. In addition to this, all plant units, office buildings, laboratories, etc. will be provided with adequate number of portable fire extinguishers to be used as first aid fire appliances.

2.7   PROJECT COST

The total project cost of the project is 2690 Lakhs (which includes Existing - Rs.1190 Lakhs + Rs. 1500 Lakhs).

3.0   EXISTING ENVIRONMENTAL SCENARIO

3.1   BASELINE ENVIRONMENTAL STUDIES

Baseline environmental studies were conducted at project site along with 10 km radial distance from the project site. The baseline environmental quality data for various components of environment, viz. Air, Noise, Water, and Land were monitored during **Pre-monsoon season (15th March 2023 – 15th June 2023)**

3.2   METEOROLOGY & AMBIENT AIR QUALITY

Summary of the Meteorological Data Generated at Site (15th March 2023 – 15th June 2023)

Predominant Wind Direction	Period: 15th Mar 2023 – 15th June 2023
First Predominant Wind Direction	WSW (12.86%)
Second Predominant Wind Direction	W (10.05%)
Calm conditions (%)	2.63
Avg. Wind Speed (m/s)	2.65

The status of ambient air quality within the study area was monitored for pre-monsoon season at 8 locations. All these 8 sampling locations were selected based on the meteorological conditions considering upwind and downwind, cross wind directions and reference point. The levels of Respirable Particulate Matter (PM_{10}), Fine Particulates ($PM_{2.5}$), Sulphur Dioxide (SO_2,), Oxides of Nitrogen (NO_X) and carbon monoxide (CO), Ammonia, Ozone, Benzene and BAP were monitored. The details of Ambient Air Quality Monitoring Results are summarized and given in **Table 6**.

TABLE 8 : SUMMARY OF AMBIENT AIR QUALITY MONITORING RESULTS

Sr. No.	Location		PM_{10} µg/m³	$PM_{2.5}$ µg/m³	SO_2 µg/m³	NO_2 µg/m³	CO mg/m³	Ozone µg/m³	NH_3 µg/m³
1	Project Site	Min	73.9	32.2	17.7	25.3	0.310	9.4	8.3
		Max	94.7	43.1	28.5	36.5	0.469	16.9	14.8
		Avg	85.2	37.1	22.5	30.1	0.386	13.2	11.4
		98th	94.5	42.6	27.6	35.9	0.458	16.7	14.5
2	Sondra	Min	63.8	26.9	12.5	16.8	0.254	7.9	6.9
		Max	87.4	37.6	19.0	23.9	0.547	14.2	12.8
		Avg	76.5	32.8	15.6	21.2	0.365	10.8	9.6
		98th	86.5	37.5	18.6	23.9	0.540	14.2	12.6
3	Siltara	Min	80.5	36.2	17.7	25.9	0.444	10.3	10.1
		Max	126.0	51.3	27.0	40.6	0.562	18.3	14.4
		Avg	104.7	43.1	21.5	32.7	0.512	14.3	12.2
		98th	124.7	50.1	26.4	39.8	0.558	18.1	14.2
4	Tanda	Min	71.7	28.1	13.8	21.6	0.346	10.0	8.7
		Max	92.1	42.6	19.9	30.0	0.475	14.8	13.5
		Avg	82.5	35.2	16.3	25.4	0.414	12.5	10.6
		98th	92.0	42.0	19.7	29.6	0.472	14.7	13.2
5	Charoda	Min	63.0	24.6	12.0	15.4	0.269	7.3	6.0
		Max	82.2	36.8	17.2	23.3	0.405	12.4	11.4
		Avg	72.6	29.7	14.4	19.6	0.329	10.2	8.7
		98th	81.6	35.6	16.6	22.9	0.390	12.2	11.0
6	Nimora – 1	Min	58.3	19.5	10.5	13.8	0.258	8.1	5.9
		Max	77.2	32.9	13.8	20.3	0.334	11.7	8.7
		Avg	69.5	27.8	12.3	16.8	0.294	9.7	7.5
		98th	76.7	32.4	13.8	19.8	0.328	11.6	8.6
7	Sankara	Min	71.8	24.0	15.3	20.8	0.300	9.2	7.4
		Max	87.3	41.3	20.0	29.5	0.406	13.6	10.9
		Avg	81.3	31.5	17.4	24.3	0.344	11.4	9.0
		98th	87.3	39.6	19.8	28.9	0.402	13.3	10.8
8	Munrethi	Min	57.1	20.3	7.8	12.7	0.245	6.2	5.6
		Max	72.2	28.6	11.6	17.5	0.319	9.7	9.4
		Avg	65.2	24.6	9.5	14.7	0.278	8.1	7.2
		98th	71.7	28.3	11.3	16.9	0.314	9.5	8.9
	CPCB Standards		**100 (24hr)**	**60 (24hr)**	**80 (24hr)**	**80 (24hr)**	**2 (8hrs)**	**100 (8hr)**	**400 (24hr)**

From the above results, it is observed that the ambient air quality at all the monitoring locations was within the permissible limits specified by CPCB.

3.3   AMBIENT NOISE LEVELS

Site of an area was selected to meets the manmade land use pattern as prescribed in the standard e.g., Industrial, Commercial, Residential and Silence Zone. Eight (8) locations were identified based on the activities in the village area, traffic and sensitive areas like hospitals and schools. The noise monitoring locations are shown in Figure 3.3.1 and details are given in Table 3.3.1.

TABLE 9 : SUMMARY OF AMBIENT NOISE LEVEL MONITORING RESULTS

Sr. No.	Monitoring Locations	Equivalent Noise Level	
		Leq_{Day}	Leq_{Night}
Residential Area			
1	Sondra	52.8	40.1
2	Tanda	51.4	39.7
3	Munrethi	53.2	41.3
CPCB Standards dB(A)		**55.0**	**45.0**
Commercial Area			
4	Sankara	64.2	46.3
5	Charoda	63.7	44.5
CPCB Standards dB(A)		**65.0**	**55.0**
Silence Zone			
6	Govt. Hr. Sec. School, Siltara	48.4	38.1
7	Jagmohan Lal HS School, Sankara	47.8	37.7
CPCB Standards dB(A)		**50.0**	**40.0**
Industrial Area			
8	Project Site	68.1	54.6
9	Siltara Industrial Area	66.7	51.8
CPCB Standards dB(A)		**75.0**	**70.0**

Source: Field monitoring and analysis by Anacon Laboratories Pvt. Ltd., Nagpur

3.4   SURFACE AND GROUND WATER RESOURCES & QUALITY

3.4.1   Regional Geology

➢ **Site Specific Geology**

The study area is mainly covered by rocks of Meso to Neo Proterozoic age. Major rock types present in the study area are stromatolitic dolomitic limestones. Though few appearances of sandstones and laterites are noticed in the study area. The rocks of study area are represented by Chandi Formation belonging to Raipur Group of Chhattisgarh Super Group.

● **Chandi Formation**:

Chandi Formation is mostly a calacareous facies with intra-formational arenite represented by stromatolitic limestone and dolomite with argillaceous intercalations at places. The limestone /Dolomite is pink, purple, reddish brown, grey, greenish grey, in colour, fine to medium grained, hard and compact bedded rock. The arenite is reddish brown, brown in colour, fine to coarse grained, cross bedded with micaceous shale partings. Fine grained facies is thinly laminated

● **Geomorphology**

The study area is gently undulating, and pediments and pediplains are the most prominent geomorphic units. Physiographically the area district having plains belonging to Chhattisgarh basinal area and the general slope is towards the north-east. Active flood plains and abandoned channel s are concentrated mainly in the western part of the study area. Other significant geomorphic features area cut-off meanders, point bars and lateric uplands.

The study area is drained by the Kharun & Kulhan Rivers and their distributaries. Drainage pattern of the area is dendritic to sub-dendritic in nature.

3.4.2 Hydrogeology and Aquifer Systems

The occurrence of groundwater and its distribution in space are highly influenced by the underlying geological formations and hydrogeological characteristics of the surroundings. The porous, weathered, jointed, and fractured zones present in the rocks or formation provide scope for groundwater occurrence, storage, and movement. The hydrogeology of the area broadly describes the disposition of water-bearing formations, occurrence of groundwater and its yield potential, groundwater regime conditions and depth to water levels in different seasons, etc.

The main rock type consists of arenaceous-argillaceous-calcareous rocks and is dominated by limestone/ dolomite and calcareous shale. The ground water in these formations occurs under semi-confined and confined conditions. The weathered, cavernous and fractured part of the formation constitutes the aquifers in the area.

Chandi Limestones

Chandi limestone is controlled by the solution cavities, joints and fractures. Generally, 1 to 2 sets of fractures are encountered within 50 m depth, 1 to 3 sets of fractures within 50 to 200 m depth. The discharge varies from 0.1 to 2.0lps. The drawdown varies widely from 2m to 29.7m. These formations are mostly developed by the way of dug wells, bore wells and tube wells.

Pre-monsoon depth to water level varies from 1.9 – 18.54 mts.

Post-monsoon depth to water level varies from 0.77 – 10.0 mts.

3.4.4 Water Quality

A - Surface Water Quality

Parameters	Unit	Baseline Monitoring Period (15th Mar, 2023 – 15th June, 2023)
		Range
pH	-	7.28 – 7.82
EC	µs/cm	695.95 - 941.62
TDS	mg/l	449 - 529
Total hardness	mg/l	193.08 - 211.64
DO	mg/l	5.4 – 6.4
BOD	mg/l	6.54 – 21.36
COD	mg/l	22.95 – 65.18
Chloride	mg/l	70.53 – 156.46
Sulphate	mg/l	29.28 – 37.71
Nitrate	mg/l	12.67 – 28.27
Fluoride	mg/l	0.24 – 0.44
Iron	mg/l	0.11 – 0.32
Cadmium	mg/l	BDL (DL - 0.001)
Arsenic	mg/l	BDL (DL - 0.01)
Zinc	mg/l	0.11 – 0.22
Lead	mg/l	BDL (DL - 0.001)
Chromium	mg/l	BDL (DL - 0.03) – 0.05
Total Coliform	MPN/100 ml	46 - 253

B - Groundwater Quality

Parameters	Unit	Baseline Monitoring Period (15th Mar, 2023 – 15th June, 2023)
		Range
pH	-	7.40 – 7.89
EC	µs/cm	780.69 – 1375.94
TDS	mg/l	484 - 773
Total hardness	mg/l	248.24 – 553.19
Chloride	mg/l	92.78 – 181.30
Sulphate	mg/l	19.14 – 44.40
Nitrate	mg/l	9.74 – 27.74
Fluoride	mg/l	0.29 – 0.53
Iron	mg/l	0.05 – 0.44
Cadmium	mg/l	BDL (DL - 0.001)
Arsenic	mg/l	BDL (DL - 0.01)
Zinc	mg/l	0.12 – 0.22
Lead	mg/l	BDL (DL - 0.001)
Chromium	mg/l	BDL (DL - 0.03) – 0.04

Location wise Water Quality Assessment

S. N.	Locations	WQI	Quality	Remark
1.	Project Site	77.00	Good	**Water quality assessments based upon above physico-chemical parameters showed quality of ground water samples is good.**
2.	Sondra	82.64	Good	
3.	Sankara	66.53	Good	
4.	Giraud	62.65	Good	
5.	Siltara	97.14	Good	
6.	Tanda	71.93	Good	
7.	Charoda	64.45	Good	
8.	Munrethi	85.45	Good	

A. Bacteriological Characteristics

Coliform group of organisms are indicators of fecal contamination in water. All surface water samples were found to be bacteriologically contaminated. Presence of total coliforms in surface water indicates that a contamination pathway exists between any source of bacteria (septic system, animal waste, etc.) and the surface water stream. A defective well can often be the cause when coliform bacteria are found in well water. For surface water, treatment followed by chlorination or disinfection treatment is needed before use for domestic purpose. Groundwater samples were not found to be bacteriologically contaminated.

3.5 LAND USE LAND COVER CLASSIFICATION

The land-use & land cover map of the 10 km radial study area from the periphery of project site has been prepared using Resource SAT-1 (IRS-P6), sensor-LISS-3 having 23.5m spatial resolution and date of pass 24th May 2021 satellite image with reference to Google Earth data. In order to strengthen the baseline information on existing land use pattern, the following data covering 10 km radius is approximate about 21°22'23.29"N to 21°22'14.82"N latitude and 81°39'29.12"E to 81°39'35.74"E longitude and elevation 284 to 305 meters are used as per the project site confined within that area.

The Land Cover classes and their coverage are summarized in **Table 8.**

TABLE 10 : LU/LC CLASSIFICATION SYSTEM

Sr. No.	Level-I	Level-II
1	Built-up land	Settlement
		Industrial Settlement
		Road Infrastructure
		Railway Line
2	Agricultural Land/ Crop Land	Single Crop
		Double Crop
3	Mines Area	Stone Quarry
4	Scrubs/Wastelands	Open Scrub
		Wasteland
5	Waterbodies	River/Nala/Stream/Canal
		Pond/Lake/Jalashay

3.6   SOIL QUALITY

The project site and its terrain consist of flat to moderately steep slopes. The terrain is characterized by forest, agricultural land, land, various settlements, waterbody and open scrub/wasteland. It is also observed that the open scrub area and barren land are dominant in South South East (SSE) and North West (NW) Portion of the study area. The following observations from the Soil Quality reports are as follows:

Parameters	Unit	Results	Fertility Status
pH	-	5.85 – 6.72	Slightly acidic to Neutral
Organic Carbon	%	1.94 – 3.30	more than sufficient
Nitrogen	Kg/hec	171.39 – 313.58	Better
Phosphorus	Kg/hec	20.22 – 35.26	Less to medium
Potassium	Kg/hec	129.34 – 254.25	Less to average
Sodium Absorption Ratio	-	0.82 – 1.64	Excellent (Little or No Hazard)

3.7   BIOLOGICAL ENVIRONMENT

Floral composition in Study Area:

Total 110 plant species were enlisted within the study site out of which habitat wise details are given as follows: Trees: 62, Shrubs: 23, Herbs: 13, Climbers: 7, Grasses & Bamboos: 4, and Parasite: 1 species observed in the study area.

Endemic Plants of the Study Area

Among recorded plant species none were assigned the status of endemic plant of this region.

RET (Rare, Endangered and Threatened species) Status

According to IUCN Status report 2013 out of total 110 plant species identified within study area among the observed species *Chloroxylon swietenia* which is Vulnerable (VU) species as per IUCN RED list. The other identified plant species in the study area belongs to least concern (LC), Data Deficient (DD) and Data not available (NA), as per IUCN status. Thus, none of reported species in study area belongs to Rare, Endangered or Threatened category.

Fauna Details:

- **As per IUCN RED (2013) List**

Among the reported animals, all are categorized under least concern category as per IUCN list.

> ## As per Indian Wild Life (Protection) Act, 1972

Among mammals; Jackal (*Canis aureus*), Common Langur (*Semnopithecus entellus*), Common Mongoose (*Herpestes edwardsi*), Indian fox (Vulpes bengalensis), are protected in Schedule–II. whereas, Black-naped hare (*Lepus nigricollis*), Palm squirrel (*Funambulus pinnati*) protected in Schedule-IV and Rats protected in Schedule-V.

Among the Herpetofauna, Indian Cobra (*Naja naja*), and Common Rat Snake (*Ptyas mucosa*) were provided protection as per Schedule-II of Wild life protection act, (1972) and Common Indian Krait (*Bungarus caerulus*), Indian Toad (*Bufo parietalis*) were provided as per Schedule – IV of Wildlife protection act 1972 and as amended.

Among the Avifauna: All birds were observed in the study are included in Schedule-IV as per wildlife protection act.

3.8   SOCIO-ECONOMIC ENVIRONMENT

Information on socio-demographic status and the trends of the communities in the 10 km radius was collected through primary social survey and secondary data collection from census 2011 & District Census hand book 2011. Summary of the socio-economic status of the study area is given in **Table 12**. Details regarding education and infrastructure facilities 2011 are presented in **Table 11** respectively

TABLE 11 : SUMMARY OF SOCIO-ECONOMIC ENVIRONMENT OF VILLAGES WITHIN 10 KM RADIUS AREA

Zones	Total household	Total Population	Total Male	Total Female	Total 0-6 child	Total SC	Total ST	Population Literate	Population Illiterate
0-2 km	3929	17859	9883	7976	2881	3801	844	11681	6178
2-5km	6053	30022	15132	14890	4656	3231	1127	19876	10146
5-10km	38498	181178	93531	87647	29606	26468	7551	116997	64181
10km	48480	229059	118546	110513	37143	33500	9522	148554	80505
In%	-		51.75	48.25	16.22	14.63	4.16	64.85	35.16

Source: Primary census abstract 2011, District Raipur and Durg, State Chhattisgarh.

TABLE 12 : IN PERCENTAGE DETAILS REGARDING INFRASTRUCTURE FACILITIES WITHIN 10 KM RADIUS STUDY AREA

Infrastructure Facilities	Availability (In percentage) As per year 2011, Census District Raipur
Educational Facilities	100
Drinking water	100
Road	100
Electricity	100
Communication	78.12
Transportation	89.06
Govt. PHC & SC	37.50
Bank & Society	89.06
Drainage	50
Recreation	95.31

Source: Primary census abstract 2011, District Raipur and Durg, State Chhattisgarh.

4.0 ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

4.1 Air Environment

Impact on Air Environment

The impact on air environment mainly depends on magnitude of operation and threshold limit of the project. The source of emission will be mainly in form of fugitive emission and point source.

The mathematical **Model AERMOD** was used for predicting the GLCs, which is entirely in line with the requirement of Central Pollution Control Board, New Delhi. In 1991, the U.S. Environmental Protection Agency (EPA) in conjunction with the American Meteorological Society (AMS) formed the AERMOD. AERMOD is a steady-state plume model aimed at short-range (up to 50 km) dispersion from stationary industrial-type sources.

The impact of a source or group of sources on air quality is evaluated using mathematical models. The widely accepted interpretation models simulate the relationships between air pollutant emissions and its impact on air quality. For the present study, this model is used for the prediction of maximum ground level concentrations.

Presentation of Results

The model simulations are done for the air pollutants due to existing and proposed project. Ground level concentration has been carried out using hourly meteorological data for various scenarios as

PREDICTED INCREMENTAL GROUND LEVEL CONCENTRATIONS

Pollutant	Concentration due to existing activities ($\mu g/m^3$)	Distance (m)	Direction
Particulate Matter (PM_{10})	0.18		
Particulate Matter ($PM_{2.5}$)	0.08	400	SW
SO_2	1.22		
NOx	3.99		

Details of Air Pollution Control System/Mitigation measures

Facilities	Air Pollution Control equipment
DRI Kiln with WHRB and combined with Bio mass Power plant flue gas duct	a. Dust extraction system, ESP with Chimney, b. Bag Filters for Product house; Kiln discharge end and transfer points.
Induction Furnace (25MT x 6)	6 No. Movable suction hood along with 1 common Bag Filters with a common chimney.
DG Set (75kVA to 800 kVA)	Acoustic Enclosure

Additional Measures to reduce/control pollution control

- Roads will be frequently sprinkled with water.
- Most of the materials like Sponge Iron ore, pig iron will be stored under covered shed.
- In case of storage of Sponge Iron, pig iron in open, it will be covered by tarpaulins to prevent spread of dust from it during transportation.
- Regular sweeping of road by using vacuum cleaner will be carried out
- Regular maintenance of vehicles and machineries will be carried out in order to control emissions.
- Green belt development will be taken up all along the roads, plant premises etc.
- Protective appliances will be provided to all the workers exposed in dusty atmosphere.

- Avoiding overloading of the trucks.

- Workers will be equipped with all personal protective devices like Gum Boot; hand gloves; Safety helmet; Safety goggles, earplugs at work place.

- By controlling the speed of the truck.

- Proper gradient of roads to reduce cumulative noise.

- Transportation of materials will be limited to day hours only.

- Periodical maintenance of process machinery.

4.2   Noise Impacts

There will be noise generation from earth moving equipment and material handling traffic. The major sources of noise during the construction phase are vehicular traffic, construction equipment like dozers, scrapers, concrete mixers, cranes, pumps, compressors, pneumatic tools, saws, vibrators etc. The operation of these equipments will generate noise ranging between 85-90 dB (A) near the source. These noise levels will be generated within the plant boundary and will be temporary in nature.

The construction activity will be carried out mostly during daytime. The construction equipment will undergo preventive maintenance test at routine intervals. Any machinery or equipment generating excessive noise levels (above 90 dBA) will be taken out of service and replaced by new ones. The noise generation will be confined within the surrounding areas of construction site. Greenbelt will be developed from construction stage hence its impact will be minimum.

- Dense plantation will help to reduce noise pollution in the following ways –

- The sounds that are produced by the leaves helps muffle the noise.

- Hedging makes a thick front of the wall and blocks the noise.

- Thick tree trunks create a sound-absorbing buffer zone.

- They help in filtering the noise.

- The research also concluded that a 20 m dense plantation can give a noise reduction of 6 dB (A).

- Equipment will be standard and equipped with silencer. The equipment will be in good working conditions, properly lubricated and maintained to keep noise within permissible limits.

- Most of the equipment's will be placed in closed room

- Equipment's will be placed on acoustic floor to reduce vibration and noise

- High noise zone will be marked, and earplugs will be provided to the workmen near high noise producing equipment.

- Use of PPES awareness program will be provided to all workers.

- Proper shifting arrangement will be made to prevent over exposure to noise and vibration.

- Silent DG sets will be used site.

- Speed limits will be enforced on vehicle.

- Regular noise & vibration monitoring will be carried for all equipment's to check compliance with prevailing rules.

4.3   Impact on Water Environment

The proposed expansion may have some impact on the water environment. The impact may be on the source of water in the form of depletion of water resources of the area and in the form of deterioration of quality of natural water resources due to discharge of plant effluent

➢ **Mitigation measures**

- Adequate pollution control Equipment as per the CPCB Guidelines should be adopted and proper maintenance of industrial and pollution control equipment should be done to ensure minimum pollution.

- The efficiency of the pollution control equipment should be checked periodically to comply with the emission standards provided by CPCB and minimize the pollution levels.

- Ensure that roads are properly signed, vehicles are well maintained and drivers are well trained and safety conscious.

- A Safety climate should be prepared and every worker should be trained with all safety equipment. All health and safety measures should be adopted by the company to ensure the safety of the workers and the surrounding society.

- Project proponent should take appropriate steps to keep environment clean and green belts development/ Plantation along with the internal Road.

- Transportation of hazardous waste should be done as per CPCB Guidelines. The heavy trucks are covered to prevent spillage or dusting. The drivers should be imparted training.

4.4   Impact on Biological Environment

Ecology & Biodiversity: Aspect- Impact identification and mitigation measures suggestion for proposed expansion project

S. No.	Project Aspects / Activities	Residual Impacts	Mitigation Measures Suggested
1.	Transportation, unloading & storage of Material and Movement of vehicle inside plant, Dust and sound generation due to proposed expansion activities	Impact on nearby vegetation and avifauna in a scale of 3 out of 5 due to proposed expansion activity.	Thick greenbelt will be developed along periphery of the project site in order to provide buffer between plant fugitive emission and nearest vegetation.
2.	Gaseous emission from Stack, Movement of vehicle inside plant and Raw material & finished product transportation, Product manufacturing	Decline in photosynthetic activities, Stomatal index may be minimized, Crop yield may be reduced.	Air quality modelling outputs study revealed that, the resultant concentrations of particulate matter, are well within the prescribed limits and no addition of sulphur di-oxide and oxides of nitrogen in expansion project. is proposed at total 16.0142-hectare land out of which Green belt will be developed within and outside the plant premises. Indigenous species for plantation is recommended along the approach road and plantation under CER. Thus, the impact due to proposed expansion project would be minimal as project activity will be carried out within the plant boundary limit with proper control measures.

4.5   Impact on Socio-economic environment

➢ **Positive Impacts**

• Benefits to the nation and GDP due to steel production and Business development. Nation also gets benefitted with taxes.

• Creation of indirect employment through the local community establishing small shops like tea stalls, supply of intermediate raw materials, repair outlets, hardware stores garages etc.

• Economic growth due to development of area and increase in quality of life.

• Improvement in green cover due to the plantation of trees in the study area, also are leading to a decrease in environmental pollution.

• Improvement in social and infrastructural development by the industries as a part of CER and EMP.

➢ **Negative Impacts**.

• Health of the surrounding population may get affected due to emission of gases in the atmosphere. Production of Sponge Iron and operation of Induction furnace can cause release of pollutants in the Air Environment. Other components of Environment like animals, birds and trees may also get affected.

• The increase in vehicles due to the proposed expansion may lead to extra pressure on the existing traffic. Heavy vehicle movement lead to dispersion of dust particles which affects the health of the workers and Local Peoples. Trucks, tankers, and other vehicles may cause additional air pollution to the surrounding areas. The effects may be more prominent in nearby villages.

• Possibilities of Hazards and accident which may cause harm to the workers working or loss of life of the workers.

• Generation of Solid and Hazardous waste will be there, if the waste is not managed properly, it may cause contamination of the area, environment and health of the nearby population.

• If influx of workers from outside areas, then there may an increased pressure on residential accommodation the neighborhood.

➢ **Mitigation Measures**

In order to mitigate the adverse impact likely to arise in social, cultural and economic aspects in the surrounding region due to the proposed expansion project and improvement in quality-of-life following mitigation measures should be adopted:

• Adequate pollution control Equipment as per the CPCB Guidelines should be adopted and proper maintenance of industrial and pollution control equipment should be done to ensure minimum pollution.

• The efficiency of the pollution control equipment should be checked periodically to comply with the emission standards provided by CPCB and minimize the pollution levels.

• Ensure that roads are properly signed, vehicles are well maintained and drivers are well trained and safety conscious.

- A Safety climate should be prepared and every worker should be trained with all safety equipment. All health and safety measures should be adopted by the company to ensure the safety of the workers and the surrounding society.

- Project proponent should take appropriate steps to keep environment clean and Green belts development/ Plantation along with the internal Road.

- Transportation of hazardous waste should be done as per CPCB Guidelines. The heavy trucks are covered to prevent spillage or dusting. The drivers should be imparted training.

5.0   ANALYSIS OF ALTERNATIVES (SITE AND TECHNOLOGY)

5.1 Site Selection

The proposal is for a Brownfield project for the expansion of their facilities for production of MS Billets, Hot-rolled Steel Rerolled products, along with existing Reheating Furnace based Rerolling Mill unit within the existing premises of M/s. ACMPL which is having prior environmental clearance. Since the Project is a brownfield project no site alternative has been considered. The additional induction furnaces will be implemented within the existing shade.

5.2   Selection of Alternative Technology

The following aspects of the project are dealing with the study of alternative technology in brief involved in each of the products and choice of the technology based on environmental applicability, technical and financial viability.

6.0   ENVIRONMENTAL MONITORING PROGRAM

An Environmental Management Cell (EMC) will be established for the proposed project under the control of by General Manager (Plant Head) with a direct reporting to Board of Directors.

The company has proposed to set up its own Environment Monitoring lab as it is evident with the investment of about Rs 123 lakhs on Capital cost towards monitoring equipment whereas Rs.3.10 Lakhs cost per year for monitoring of Environment. This facility will be created along with the gradual implementation of the project.

In addition to the above as the proposed project comes into operation, NABL/MoEFCC accredited lab (Third party) will engage to monitor all the environmental components as per CPCB/CECB norms.

7.0   ADDITIONAL STUDIES

7.1   PUBLIC CONSULTATION

The Draft EIA-EMP report for expansion of production facility of Induction, CCM and Hot Charging based steel Rolling Mill facility at Plot No.34-35, Phase-II, Industrial Growth Centre Siltara, Raipur is prepared as per the TOR issued by EAC(Industry-I), MoEF&CC, New Delhi and the report is submitted for public consultation process as per the provisions of EIA Notification 2006 and amendments thereof.

After completing the public consultation process, the points raised and commitment of project proponent during the public hearing will be incorporated in the final EIA-EMP report for final submission to Environmental Clearance.

7.2   RISK ASSESSMENT & DISASTER MANAGEMENT PLAN

Hazard analysis involves the identification and quantification of the various hazards (unsafe conditions) that exist in the project site. Industrial process and activities cause hazards. There may

be possible hazards to human beings, flora-fauna, building structure and the environment. Extreme care is essential in handling all of them in various stages of manufacturing viz. processing, treatment, transport etc. On the other hand, risk analysis deals with the identification and quantification of risks occurring due to the plant equipment and personnel exposed, due to accident resulting from the hazards in the plant.

The main objective of the risk assessment study is to determine damage due to major hazards having damage potential to life and property and provide a scientific basis to assess safety level of the facility. The secondary objective is to identify major risk in manufacturing process, operation, occupation and provide control through assessment and also to prepare on-site, off site plans to control hazards.

Risk analysis (RA) provides a numerical measure of the risk that a particular facility causes to the public. It begins with the identification of potential hazardous events and determination of impact of each event. The consequences of each event are then calculated for numerous combinations of weather conditions and wind direction. These consequences predications are combined to provide numerical measures of the risk for entire facility.

8.0 PROJECT BENEFITS

Proposed Social Welfare Arrangement

M/s. Agrawal Channel Mills Pvt. Ltd. also support social welfare activities under CSR obligation under companies act.

The Social welfare/CSR activities will aim at strengthening the bond between the project authorities and the local population in the vicinity of project area. In line with CSR policy, M/s ACMPL is being and will carry community welfare activities in the following areas:

- Community development
- Health& medical care
- Roads

- Education
- Drainage and sanitation
- Drinking water supply occasionally in the event of water scarcity through tankers, etc.

- The project benefits also entail revenue earnings to national and state exchequer through Gross GST (Estimated Rs 19.4 Crores GST), road tax, income by registration of trucks & trailers, income tax, corporate tax, etc.
- Fully compliance of Corporate Responsibility for Environmental Protection (CREP) for steel industry.
- Thus, result in –
  - ✓ Periodic Monitoring Low emissions,
  - ✓ Water conservation, recycle of treated wastewater,
  - ✓ Solid waste management
  - ✓ Thereby protection of environment and also result in low cost of production
  - ✓ Hot Charging based steel rerolling will also result in fuel emission avoidance of almost 33600t CO_2 per annum.

9.0 ENVIRONMENTAL MANAGEMENT PLAN

An Environmental Management Plan comprising following set of mitigation, management, monitoring and institutional measures to be taken during implementation and operation of the project, to eliminate adverse environmental impacts or reduce them to acceptable levels.

- Overall conservation of environment.

- Minimization of natural resources and water.

- Ensure effective operation of all control measures.

- Monitoring of cumulative and longtime impacts.

- Ensure effective operation of all control measures.

- Control of waste generation and pollution.

The total project cost of the project is 2690 Lakhs (which includes Existing - Rs.1190 Lakhs + Rs. 1500 Lakhs). Capital cost of EMP in the project will be **Rs 285 Lakhs** (Existing Cost Rs. 169 Lakhs and Proposed Rs. 116 Lakhs) and recurring cost will be **Rs. 6.20 Lakhs**.

10.0   CONCLUSION

The proposed project of M/s. Agrawal Channel Mills Pvt. Ltd. will be beneficial for the overall development of the nearby villages. Some environmental aspects like dust emission, noise, wastewater, traffic density, etc. will have to be controlled better than the permissible norms to avoid impacts on the surrounding environment. Necessary pollution control equipment like bag house, water sprinklers, enclosures, etc. are integral part of the plant infrastructure. Additional pollution control measures and environmental conservation measures will be adopted to control/minimize impacts on the environment and socio-economic environment of the area. Measures like development of green belt and plantation in nearby village and along transport road, adoption of rainwater harvesting/recharging in the plant and in nearby villages will be carried out. The proposed CSR/CER activities to be initiated by the industry will be helpful to improve the social, economic and infrastructure availability status of the nearby villages.

Thus, it can be concluded that with the judicious and proper implementation of the pollution control and mitigation measures, the proposed project will not add adverse pollution levels to the environment, moreover, it will be beneficial to the society and will help to reduce the demand-supply gap of steel to some extent and will contribute to the economic development of the region and thereby the country.

11.0   DISCLOSURE OF CONSULTANTS

The Environmental studies for proposed expansion project of M/s. Agrawal Channel Mills Pvt. Ltd. has been carried out by M/s. Anacon Laboratories Pvt. Ltd., Nagpur (M/s. ALPL). Anacon established in 1993 as an analytical testing laboratory and now a leading Environmental Consultancy company backed by testing lab for environment and food in Central India region. M/s. ALPL is a group of experienced former Scientists from the Government Institutions and excellent young scientist of brilliant career with subject expertise. It is recognized by Ministry of Environment & Forests, New Delhi for carrying out environmental Studies & accredited by Quality Council of India (QCI) for conducting Environmental studies having Accreditation Certificate No.: **NABET/EIA/2326/RA0304** dtd. 18 September, 2023 valid till Sept 29, 2026.