SUMMARY ON

ENVIRONMENTAL IMPACT ASSESSMENT REPORT

OF

GAURI GANESH ISPAT PVT. LTD.

[Expansion of Steel Plant–DRI Kilns **(Sponge Iron from 1,98,000 TPA to 3,96,000 TPA)**, Induction Furnaces with LRF & CCM (MS Billets/Ingots)-3,45,800 TPA, Re-Rolling Mill (TMT Bars/Structural Steel Strips/Wire rods-3,42,144 TPA (1,74,636 TPA-Hot charging & 1,67,508 TPA-RHF), Expansion of Ferro Alloys production through **SEAF from 2x9 MVA to 4x9 MVA**, Pipe Mill Unit-1,50,000 TPA, Galvanized Pipes - 1,00,000 TPA, **WHRB Power Plant (12 MW to 32 MW**, **FBC Power Plant (8.0 MW to 28 MW)**, Fly Ash Bricks/Block making unit (**34,600 Bricks/day to 1,24,600 Bricks/day)** & establishment of a new Briquette Plant-400 Kg/Hr.]

Category – A Project

Schedule - 3(a) Metallurgical Industries (ferrous and non-ferrous), 1(d) Thermal Power Plants

at

Madhi Village, Tilda Tehsil,

Raipur District, Chhattisgarh

Submitted to

CHHATTISGARH ENVIRONMENTCONSERVATION BOARD

1.0 PROJECT DESCRIPTION

Gauri Ganesh Ispat Pvt. Ltd. is an existing steel plant at Village- Madhi, Tehsil- Tilda, District – Raipur, Chhattisgarh.

Gauri Ganesh Ispat Pvt. Ltd. has obtained Environmental clearance for a DRI based Steel plant to produce Sponge Iron of 1,98,000 TPA; Mild Steel Billets of 3,45,800 TPA; Rerolled Steel Products through Hot Charging and through Reheating Furnace of 3,42,144 TPA; Ferro Alloys 35,000 TPA & or Pig iron 70,000 TPA from 2 x 9.0 MVA SEAFs, Captive Power of 20 MW (12MW through WHRB and 8MW through AFBC); Pipe 1,50,000 TPA; Galvanizing products 1,00,000 TPA; and Fly Ash Bricks 34,600 TPA vide order no. **J-11011/486/2021-IA II (I)** dated **10-02-2023**.

"Permission to Establish" from CECB has been obtained under NIPL for change in DRI kiln configuration from 2 x 200 TPD & 2 x 100 TPD to 2x300 TPD and the total sponge iron production remains 1,98,000 TPA only vide order No. 5603/TS/CECB/2023 Naya Raipur Atal Nagar dt. 11.10.2023. All other products and configuration remains same as per EC granted vide dated 10-02-2023

Subsequently an amendment has been obtained to the Environment clearance from the Ministry of Environment Forest & Climate Change for '' Specific Condition No. (iv) related to source of water required for the project vide order no. F.No. J-11011/486/2021-IA II (I) dated 21/02/2025 and **permitted to use of 490 KLD groundwater for a period till December-2027 or until the "Kumhari Jalasay Jal Aawardhan Yojna (Samoda Barrage Mahanadi)" is commissioned, whichever is earlier.**

Currently DRI Plant of 2x300 TPD, Ferro Alloys Plant of 2x9 MVA and WHRB Power Plant of 12 MW & AFBC of 8.0 MW are in operation and CECB has granted CTO vide No **10568/TS/CECB/2025** dated **22/12/2025** and is valid up to **30/11/2026.**

Proposed Expansion Project

Now it has been proposed to expand the existing plant by Expansion of steel plant-DRI Kilns (Sponge Iron-1,98,000 TPA to 3,96,000 TPA), Induction Furnaces with LRF & CCM (MS Billets/Ingots)- 3,45,800 TPA, Re-Rolling Mill (TMT Bars/Structural Steel Strips/Wire rod-3,42,144 TPA (1,74,636 TPA-Hot charging & 1,67,508 TPA-RHF) , SEAF-2x9 MVA to 4x9

MVA(Ferro Alloys), Pipe Mill Unit-1,50,000 TPA, Galvanized Pipes-1,00,000 TPA, WHRB Power Plant-12 to 32 MW, FBC Power Plant-8.0 to 28 MW, Fly Ash Bricks/Block making unit-34,600 Bricks/day to 1,24,600 Bricks/day & New Briquette Plant-400 Kg/Hr.

Existing plant is located over an extent of **26.934 Ha.** of land & Now as part of expansion additional land of **5.289 Ha.** is purchased by the company. Hence total land available after expansion will be **32.223 Ha.** Proposed expansion will be taken up in the existing plant premises & in adjoining additional land.

The project cost envisaged for the proposed expansion project is **Rs. 542 Crores.**

The proposed project activity is listed at schedule no. 3(a) Metallurgical Industries (ferrous & non-ferrous) and 1(d) Thermal Power Plants under Category "A" of the schedule of the EIA Notification, 2006 and appraised at Central Level.

In order to obtain Environmental Clearance for the proposed expansion of Steel plant, Form-I (Part A, B), proposed TOR along with Pre-Feasibility Report have been submitted to the Honourable Ministry of Environment, Forest and Climate Change (MoEF&CC), New Delhi vide dated 08/11/2025 vide Proposal No. **IA/CG/IND1/555942/2025.**

Accordingly, Standard TOR has been issued by MOEF&CC for the proposed expansion of steel plant vide **F.No.J-11011/486/2021 – IA-II (IND-I) dated 10th November 2025.** Draft EIA report has been prepared by incorporating the Terms of Reference and submitted to Chhattisgarh Environment Conservation Board (CECB) for conducting public hearing/consultation.

***Pioneer Enviro Consultants Private Limited**, Hyderabad,* which is accredited by NABET, Quality Council of India, vide certificate No. NABET/EIA/25-28/RA 0456, for preparing Environmental Impact Assessment (EIA) report for Metallurgical Unit, has prepared EIA report for the proposed expansion project.

This report furnishes the details of location of Site, Description of the project, prevailing baseline status w.r.t Air Environment, Water Environment, Noise Environment, Land Environment, Flora & Fauna and Socio-economic environment. This report also helps in identification of environmental impacts and suggesting mitigation measures to be followed

during Construction and Operation of the proposed project as a part of Environmental Management Plan. This report also acts as guidance manual for the proponent for following the Environmental Management Plan (EMP) and for adopting post project Environmental Monitoring Program as per statutory norms.

1.1 ENVIRONMENTAL SETTING WITHIN 10 Km. RADIUS OF THE PLANT SITE

The following is the environmental setting within the 10 Km. radius of the Plant site:

Environment Setting Within 10 Kms. Radius of the Plant Site

S.No.	Salient Features / Environmental features	Distance w.r.t. site / Remarks
1.	Type of Land	Existing land is Industrial land and Additional land is Private Non-agricultural land
2.	National Park/ Wild life sanctuary / Biosphere reserve / Tiger Reserve / Elephant Corridor	Nil, There are no National Park/ Wildlife sanctuary / Biosphere reserve / Tiger Reserve / Elephant Corridor within 10 Km. radius of the plant site.
3.	Historical places / Places of Tourist importance / Archeological sites	Indira Priydarshini Nature Safari & Mohrenga Jungle Lake - 9.3(ESE) , Lakhan lal Mishra Jalasay - Water park,Nardha – 7.8 (SE), Jheel Garden , Baikunth – 4.0 (NNW),
4.	Critically polluted area as per MoEF&CC Office Memorandum dated 13th January 2010	Nil And also the Plant area does not fall in the areas given in Hon'ble NGT order issued vide dated 10thJuly 2019.
5.	Defence Installations	Nil
6.	Nearest Village	Hamlet of Madhi (V) – 0.1 Km (E); Madhi (V) - 1.0 Km (S) , Khapri- 1.5 Km (E)
7.	Nearest Hospital	Hospital, Baikunth- 3.6 kms (NNW), Govt. Hospital Tilda-9.6 kms (N),
8.	Nearest School	Secondary School, Madhi village -0.03 kms (SE),
9.	Forests	Khaulidabri PF – 9.2 km(SE), Mohrenga PF – 6.0 km (E)
10.	Water body	Pond – Adjacent (S), Kirna Tank / Jalso dam-1.0 km (W), Dhumma Nala-1.4 kms.(NW), Siliari Distributary-1.7 kms (S), Bhatapara Branch (Maha Nadi Canal)-1.9 kms (NW), Kulhan Nala-2.2kms (SWW), Kirna Irrigation Canal-2.6kms (W), Jamuniya Nadi-3.5 kms (E), Rindergaon Main Irrigation Canal-7.4 kms (SSE), Lakhan lal Mishra Jalasay (Bangoli tank)-7.5 kms (SE)

S.No.	Salient Features / Environmental features	Distance w.r.t. site / Remarks
		Pikridih Tank-9.6 kms (SE), & Few seasonal nalas, ponds exists within the study area.
11.	Nearest Highway	NH # 130B – 7.6 kms(SSE) (Baloda Bazar to Raipur) Tilda-Simga road -5.2 Kms (NE)
12.	Nearest Railway Station	Siliari Railway Station, Distance – 5.5 kms (SW) Baikunth Railway Station Distance – 4.5 KMs (NW)
13.	Nearest Port facility	Nil within 10 Km. radius.
14.	Nearest Airport	Nil within 10 Km. radius. Swami Vivekanand Airport, Raipur– 30.6 Kms. (SSW)
15.	Nearest Interstate Boundary	Nil within 10 Km. Radius. (Chhattisgarh – Odisha Interstate border – 85 Kms.)
16.	Seismic zone as per IS-1893	Seismic zone – II
17.	R & R	There is no rehabilitation and resettlement issue, as there are no habitations in the existing plant area as well as in adjoining additional land.
18.	Litigation / court case is pending against the proposed project / proposed site and or any direction passed by the court of law against the project	Nil

1.2 PLANT CONFIGURATION AND PRODUCTION CAPACITY

Following is Existing plant configuration and production capacity & proposed capacities in expansion

Plant Configuration and Production Capacity (Existing & Proposed)

S. No.	Units (Products)	Plant Configuration (Production Capacity) Based on E.C. order dt. 10-02-2023	Plant Configuration (Production capacity) Amended CTE based on NIPL vide order dt. 11-10-2023	Total permitted production capacities /plant configuration including NIPL	Proposed Plant Configuration (Production Capacity)	After expansion Configuration (Production Capacity)
1.	DRI Kilns (Sponge Iron)	2 x 200 TPD & 2 x 100 TPD (1,98,000 TPA)	Change in configuration 2 x 300 TPD (1,98,000 TPA)	2 x 300 TPD (1,98,000 TPA)	**1 x 600 TPD (1,98,000 TPA)**	2 x 300 TPD & 1 x 600 TPD (3,96,000 TPA)
2.	Induction Furnace (M.S.Billets /	(6 x 20 T & LRF 1 X 20 T) (3,45,800 TPA)	No change	(6 x 20 T & LRF 1x20 T) (3,45,800	----	(6 x 20 T & LRF 1x20 T) (3,45,800 TPA)

S. No.	Units (Products)	Plant Configuration (Production Capacity) Based on E.C. order dt. 10-02-2023	Plant Configuration (Production capacity) Amended CTE based on NIPL vide order dt. 11-10-2023	Total permitted production capacities /plant configuration including NIPL	Proposed Plant Configuration (Production Capacity)	After expansion Configuration (Production Capacity)
	Hot Billets)			TPA)		
3.	Rolling Mill	3, 42,144 TPA	No change	3, 42,144 TPA	----	3, 42,144 TPA (1,74,636 TPA & 1,67,508 TPA)
	Hot Charging Rolling Mill	1,74,636 TPA		1,74,636 TPA		
	Reheating furnace based Rolling mill	1,67,508 TPA		1,67,508 TPA		
4.	Submerged Electric Arc Furnaces (Ferro Alloys -FeSi / FeMn / SiMn / FeCr/Pig iron)	2 x 9 MVA (FeSi-22,600 TPA / FeMn-70,000 TPA / SiMn-35,000 TPA and /or Pig iron-70,000	No change	2 x 9 MVA (FeSi-22,600 TPA / FeMn-70,000 TPA / SiMn-35,000 TPA and /or Pig iron-70,000	**2 x 9 MVA (FeSi-14,000 TPA / SiMn-28,000 TPA and / Pig iron-48,000 TPA**	4 x 9 MVA (FeSi-36,600 TPA / FeMn-70,000 TPA / SiMn-63,000 TPA and / Pig iron-1,18,000
5.	Briquetting Plant	---	---	---	**400 Kg/Hr.**	400 Kg/Hr.
6.	Fly Ash Bricks / Block making unit	34,600 nos/day	No change	34,600 nos/day	**90,000 per/day**	1,24,600 per/day
7.	Pipe Mill Unit	1,50,000 TPA	No change	1,50,000 TPA	--	1,50,000 TPA
8.	Galvanizing unit	1,00,000 TPA	No change	1,00,000 TPA	--	1,00,000 TPA
9.	Power Plant – WHRB	12 MW	No change	12 MW	**20 MW**	32 MW
	Power Plant – FBC	8 MW	No change	8 MW	**20 MW**	28 MW

11.1.3 RAW MATERIALS (FOR EXPANSION PROJECT)

The following will be the raw material requirement for the proposed expansion project:

RAW MATERIAL REQUIREMENT, SOURCE &MODE OF TRANSPORT (Expansion)

S.No.	Raw Material	Quantity (TPA)	Sources	Distance w.r.t. site (in Kms.)	Mode of Transport
1.	**1 x 600 TPD DRI Kilns (Sponge Iron) – 1,98,000 TPA**				
a)	Pellets (100 %)	2,87,100	Odisha & Chhattisgarh	~ 500	By rail & road (covered trucks)
	Or				

S.No.	Raw Material		Quantity (TPA)	Sources	Distance w.r.t. site (in Kms.)	Mode of Transport
	Iron ore (100%)		3,16,800	Odisha, Chhattisgarh & Jharkhand	~ 600	By rail & road (covered trucks)
b)	Coal	Indian	2,57,400	SECL Chhattisgarh / MCL Odisha	~ 500	By rail & road (covered trucks)
		(or)				
		Imported	1,64,786	Indonesia / South Africa /Australia /other country	~ 600 (from Vizag Port)	Through sea route, rail route & by road (through covered trucks)
c)	Dolomite		9,900	Chhattisgarh / A,P.	~ 100	By road (covered trucks)
2.	**FBC Boiler [Power Generation 20 MW]**					
a)	Indian Coal (100 %)		1,18,800	SECL Chhattisgarh / MCL Odisha	~ 500	By rail & road (covered trucks)
b)	Imported Coal (100 %)		76,032	Indonesia / South Africa / Australia	~ 600 (from Vizag Port)	Through sea route, rail route & by road (covered trucks)
c)	Dolochar + Indian Coal	Dolochar	39,600	Inhouse Generation	---	through covered conveyors
		Indian Coal	99,000	SECL Chhattisgarh / MCL Odisha/other country	~ 500	By rail & road (covered trucks)
	OR					
d)	Dolochar + Imported Coal	Dolochar	39,600	Inhouse Generation	---	through covered conveyors
		Imported Coal	56,232	Indonesia / South Africa / Australia/other country	~ 600 (from Vizag Port)	Through sea route, rail route & by road (covered trucks)
3.	**Ferro Alloys (2 x 9 MVA)**					
3 (i)	*Ferro Silicon – 14,000 TPA*					
a)	Quartz		30,800	Chhattisgarh / Andhra Pradesh/ Madhya Pradesh	~ 500	By road (covered trucks)
b)	Mill Scale & MS Scrap		6,300	Inhouse Generation & Chhattisgarh	--- ~ 100	By road (covered trucks)
c)	Coke		21,700	Jharkhand / Bihar	~ 500	By road (covered trucks)
d)	Electrode paste		1,400	Chhattisgarh	~ 300	By road (covered trucks)
e)	Briquetted Bag filter dust		980	Inhouse Generation	---	---
3 (ii)	*Silico Manganese – 28,000 TPA*					
a)	Manganese Ore		56,000	MOIL / OMC Imported	~ 500 ~ 600 (from Vizag	By road (covered trucks) From Port By Road (covered Trucks)

S.No.	Raw Material	Quantity (TPA)	Sources	Distance w.r.t. site (in Kms.)	Mode of Transport
				Port)	
b)	FeMn Slag	12,600	Maharashtra/ Chhattisgarh	~ 300 Kms.	By road (covered trucks)
c)	Coke	8,400	Jharkhand / Bihar	~ 500	By road (covered trucks)
d)	Dolomite	8,400	Chhattisgarh / A,P.	~ 500	By road (covered trucks)
e)	Electrode paste	560	Chhattisgarh / Maharashtra	~ 300	By road (covered trucks)
f)	Quartz	9,800	Chhattisgarh /A.P./ Madhya Pradesh	~ 500	By road (covered trucks)
g)	Briquetted Bag filter dust	420	In house generation	---	---
3 (iii)	*Pig Iron – 48,000 TPA*				
a)	Iron Ore	52,560	Odisha, Chhattisgarh, Jharkhand & Imported	~ 500	By rail & road (through covered trucks)
b)	Mill Scale	31,200	Inhouse Generation	---	By road (covered trucks)
c)	Coke	30,144	Gujarat / Bihar	~ 500	By road (covered trucks)
d)	Lime Stone	7,200	Chhattisgarh / A,P.	~ 500	By road (covered trucks)
e)	Fluorspar	1,200	Chhattisgarh / A,P.	~ 500	By road (covered trucks)
f)	Dolomite	7,200	Chhattisgarh / A,P.	~ 500	By road (covered trucks)

1.4 MANUFACTURING PROCESS

1.4.1 Sponge Iron (DRI)

The proposal consists of 1 x 600 TPD of DRI kiln to produce Sponge Iron with 1 x 20 MW WHRB facility. Refractory lined rotary kilns will be used for reduction of iron ore in solid state. Refractory lined rotary kiln will be used for reduction of iron ore in solid state. A central Burner located at the discharge end will be used for initial heating of the kiln.

Iron ore will be continuously fed into the kiln along with coal which has dual role of fuel as well as reductant. Dolomite will be added to scavenge the sulphur from the coal. A number of air tubes will be provided along the length of the kiln. The desired temperature profile will be maintained by controlling the volume of the combustion air through these tubes. The Carbon monoxide generated due to the combustion of coal, reduces the iron ore and converts it into sponge iron. The rotary kiln is primarily divided into two zones viz. the pre

heating zone and the reduction zone. The preheating zone extends over 30 to 50 % of the length of the kiln and in this the moisture in the charge will be driven off and the volatile matter in the coal will be burnt with the combustion air supplied through the air tubes. Heat from the combustion raises the temperature of the lining and the bed surface. As the kiln rotates, the lining transfers the heat to the charge. Charge material, pre-heated to about 1000^0C enters the reduction zone. Temperature of the order of 1050^0C will be maintained in the reduction zone, which is the appropriate temperature for solid state reduction of iron oxide to metallic iron.

This hot material will be transferred to Heat exchanger. In Heat exchanger the material will be cooled to 160^0C. The cooler discharge material consists of sponge iron lumps, sponge iron fines and char. Magnetic and non-magnetic material will be separated through magnetic separators and stored in separate bins. The hot flue gases will be taken to a Waste Heat Recovery Boiler and after heat recovery they will be treated in high efficiency ESP and discharged into the atmosphere through stack whose height will be in accordance with CPCB norms.

1.4.2 Power Generation

Through WHRB Boiler

Waste hot flue gases generated from DRI kiln will be taken to waste Heat Recovery Boiler where the heat is utilized to generate 20 MW capacity power plant.

Through FBC Boiler

Coal (Imported / Indian) along with dolochar will be used as fuel in FBC Boiler to generate 20MW (1 x 20 MW) of electricity. The flue-gases will be treated in high efficiency ESP and then discharged through a stack of adequate height into the atmosphere.

1.4.3 Submerged Electric Arc Furnaces

2 nos. of additional Submerged Electric Arc Furnaces (2 x 9 MVA) will be setup in the proposed expansion project. Ferro Silicon, Silicon Manganese, Pig iron will be produced using manganese ore as main raw material, Ferro Silicon will be produced using Quartz as main raw material & Manganese ore will be used as main raw material to produce Silico Manganese & Iron ore will be the main raw material to produce Pig Iron in the Sub-merged electric Arc

Furnaces using reducer (Coke) under high voltage. Flue gases will be extracted through 4thhole and then treated in bag filters.

1.4.4 Brick Manufacturing Plant

It is proposed to expand Fly Ash brick making unit from 34,600 bricks/day to 1,24,600 bricks /day capacity. Fly ash (70%), Gypsum (5%), cement (10%) and Stone dust (15%) are manually feed into a pan mixer where water is added to the required proportion for homogeneous mixing. The proportion of raw material may vary depending upon quality of raw materials

1.5 Water Requirement

- Water required for proposed expansion project will be **802 KLD**. Water drawl permission will be obtained from Water Resources Department, Government of Chhattisgarh for the proposed expansion.
- Existing water requirement of the project i.e. 1360 KLD met from partly surface water and Partly Ground water. However, during Phase-1 i.e. up to December-2027 ground water to the tune of 490 KLD (max.) is being utilized (obtained NOC from CGWA for drawl of 490 KLD of ground water and the permission is valid till 04-06-2027) to meet its construction and operational requirements.
- No groundwater will be utilized after January, 2028, and Phase-1 water requirements will also be completely sourced through surface water.
- Total water requirement after expansion will be 2162 KLD.
- Air cooled condensers will be provided to FBC Power plant instead of water-cooled condensers to reduce the water consumption significantly.

WATER REQUIREMENT BREAKUP

S. No.	**Units (products)**	PHASE # 1 (units under Operation)	PHASE # 2 (un implemented units which will commence operation after January 2028)	Proposed Expansion	After Expansion
		Ground water requirement in KLD (GW will be used up to *January-2028)*	Surface water (in KLD)	Surface water (in KLD)	Surface water (in KLD)
1.	Sponge Iron	100	---	100	200
2.	Induction Furnaces	---	390	---	390

	along with CCM and LRF				
3.	Hot Rolling Mill	---	382	---	382
4.	Captive Power Plant	296	---	592	888
		142		285	427
		107		214	321
		47		93	140
5.	Submerged Arc Furnaces	50	---	50	100
6.	Black pipe Mill	---	43	---	43
7.	Galvanizing unit	---	31	---	31
8.	Fly Ash Bricks	10	---	20	30
9.	Briquette Plant	---	---	20	20
10.	Domestic requirement	14	14	20	48
11.	Greenbelt development	20	10	---	30
	Total	**490**	**870**	**802**	**2162**

1.6 Waste Water Generation

Existing

- There is no effluent discharge from the existing DRI Unit as Closed-circuit cooling system adopted.
- Sanitary wastewater is being treated in existing STP.
- Zero liquid effluent is being maintained in the existing plant.

Proposed

- Total waste water generation from proposed expansion will be 245 KLD.
- There will be no wastewater discharge from the proposed DRI Unit as closed-circuit cooling system will be adopted.
- Wastewater from Induction Furnace, Rolling Mill, Ferro Alloys, Power Plant, Galvanized Plant will be treated in ETP and after ensuring compliance with SPCB norms, it will be utilized for dust suppression, ash conditioning and for greenbelt development
- Wastewater from Rolling Mill will be treated in oil separator followed by settling tank and will be recycled through closed circuit cooling system.
- Air Cooled condensers will be provided in the power plant, which will be reduce the water consumption significantly. Hence wastewater generation will also be minimized.
- RO rejects will be utilised for Flushing in Toilets, Cleaning of Toilets, Floor washings, etc.

- Sanitary waste water will be treated in STP and will be utilized for greenbelt development.
- After Expansion the STP capacity will be 50 KLD.
- Garland drains will be provided around all the raw material stacking areas
- Zero liquid effluent discharge practice will be maintained in the proposed expansion.
- During monsoon the treated effluent will be utilized as makeup water in Rolling Mill. Accordingly, the makeup water for Rolling mill also reduces during the rainy period.

BREAKUP OF WASTEWATER GENERATION

S.No.	Unit	Quantity in KLD		
		Existing Plant	Proposed Expansion	Total after Proposed Expansion
1.	DRI Kilns	Nil	Nil	Nil
2.	Induction Furnaces	40	Nil	40
3.	Rolling Mill	20	Nil	20
4.	Galvanizing unit	2	Nil	2
5.	Black pipe mill	Nil	Nil	Nil
6.	Fly Ash Bricks	--	Nil	Nil
7.	Submerged Arc Furnaces	4	4	8
8.	Power Plant (WHRB & FBC)	112	225	337
	a) Cooling Towerblowdown	35	72	107
	b) Boilers blowdown	30	60	90
	c) D.M. plant regeneration water	47	93	140
9.	Domestic	22	16	38
10.	Greenbelt development	Nil	Nil	Nil
11.	Briquette Plant	Nil	Nil	Nil
	Total	**200**	**245**	**445**

1.7 Wastewater Characteristics

The following are the Characteristics of waste water

CHARACTERISTICS OF WASTEWATER

PARAMETER	CONCENTRATION			
	Cooling Tower blowdown	DM Plant Regeneration	Boiler Blowdown	Sanitary waste water
pH	7.0 – 8.0	5.0 – 10.0	9.5 – 10.5	7.0 – 8.5
BOD (mg/l)	--	--	--	200 – 250
COD (mg/l)	--	--	--	300 – 400
TDS (mg/l)	1000	5000 – 6000	1000	800 – 900
Oil & Grease (mg/l)	--	10	--	5 – 10
TSS (mg/l)	--	--	--	150-200

2.0 DESCRIPTION OF ENVIRONMENT

Base line data has been collected on ambient air quality, water quality, noise levels, flora and fauna and socio-economic details of people within 10 km radius of the plant.

2.1 Ambient air quality

Ambient air quality has been monitored for $PM_{2.5}$, PM_{10}, SO_2, NOx & CO at 8 stations including plant site during ***15th October 2025 to 15th January 2026***. The following are the concentrations of various parameters at the monitoring stations:

AAQ DATA SUMMARY

S.No.	Parameter	Concentration range (in μg/m³)	Standard as per NAAQS (in μg/m³)
1.	$PM_{2.5}$	28.9 to 41.8	60
2.	PM_{10}	48.3 to 69.7	100
3.	SO_2	10.6 to 18.4	80
4.	NO_X	13.3 to 21.5	80
5.	CO	490 to 925	2000

2.2 Water Quality

2.2.1 Surface Water Quality

2 nos. of samples i.e. Kirna tank (1.0 Km. – West Direction), and one sample from Bhatapara branch canal (1.9 Kms.- North West direction) have been collected and analyzed for various parameters. The analysis of samples shows that all the parameters are in accordance with BIS-2296 specifications.

2.2.2 Ground Water Quality

8 Nos. of ground water samples from open wells / bore wells were collected from the nearby villages to assess ground water quality impacts and analyzed for various Physico-Chemical & Bacteriological parameters. The analysis of samples shows that all the parameters are in accordance with BIS: 10500 specifications.

2.3 Noise Levels

Noise levels were measured at 8 locations during Day time & Night time. The equivalent **day-night** noise levels in the study zone are ranging from **48.52 dBA to 61.68 dBA.**

3.0 ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

3.1 Prediction of impacts on air quality

The likely emissions from the proposed project are $PM_{2.5}$, PM_{10}, SO_2, NOx & CO. The predictions of Ground level concentrations have been carried out using Industrial Source Complex (ISC-3) model. Meteorological data such as wind direction, wind speed, max. and min. temperatures collected at the Plant site have been used as input data to run the model.

The net resultant concentrations (Maximum baseline conc. + predicted incremental rise in conc.) of $PM_{2.5}$, PM_{10}, SO_2 and NO_X shown in below Table, by considering the emissions from existing & unimplemented units will be well within the National Ambient Air Quality Standards (NAAQS) when the expansion commences the operation. Hence there will not be any adverse impact on air environment due to the proposed expansion activities.

NET RESULTANT MAXIMUM CONCENTRATIONS DURING THE OPERATION OF THE PROPOSED EXPANSION PROJECT

Item	$PM_{2.5}$ ($\mu g/m^3$)	PM_{10} ($\mu g/m^3$)	SO_2 ($\mu g/m^3$)	NO_X ($\mu g/m^3$)	CO ($\mu g/m^3$)
Maximum baseline conc. in the study area	41.80	69.70	18.40	21.50	925.00
Maximum predicted incremental rise in concentration due to proposed expansion of **GGIPL** (Point Sources)	0.93	1.54	7.14	5.61	1.16
Maximum predicted incremental rise in concentration due to proposed expansion project (Vehicular Emissions)	0.94	1.60	---	4.24	3.87
Net resultant concentrations during operation of the proposed expansion project	**43.67**	**72.84**	**25.54**	**31.35**	**930.03**
National Ambient Air Quality Standards	**60**	**100**	**80**	**80**	**2000**

The net resultant Ground level concentrations during operation of the expansion project are within the NAAQS. Hence there will not be any adverse impact on air environment due to the proposed expansion project.

3.2 Prediction of impacts on Noise quality

The major sources of noise generation in the proposed expansion project will be STG, boilers, compressors, DG set, etc. Acoustic enclosures will be provided to the STG. The ambient noise levels will be within the standards prescribed by MoEF 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 less than 70 dBA during night time. 10.684 Ha. of extensive greenbelt (inclusive of existing) will be developed to 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 expansion project.

3.3 Prediction of impacts on Water Environment

Existing

- There is no effluent discharge from the existing DRI Unit as Closed-circuit cooling system adopted.
- Sanitary wastewater is being treated in STP
- Zero liquid effluent is being maintained in the existing plant.

Proposed

- Total waste water generation from proposed expansion will be 245 KLD
- There will be no wastewater discharge from the DRI Unit as closed-circuit cooling system will be adopted.
- Wastewater from Induction Furnace, Rolling Mill, Ferro Alloys, Power Plant, Galvanized Plant will be treated in ETP and after ensuring compliance with SPCB norms, it will be utilized for dust suppression, ash conditioning and for greenbelt development
- Wastewater from Rolling Mill will be treated in oil separator followed by settling tank and will be recycled through closed circuit cooling system.
- Air Cooled condensers will be provided in the power plant, which will be reduce the water consumption significantly. Hence wastewater generation will also be minimized.
- RO rejects will be utilised for Flushing in Toilets, Cleaning of Toilets, Floor washings, etc.
- Sanitary waste water will be treated in STP and will be utilized for greenbelt development.
- Garland drains will be provided around all the raw material stacking areas
- Zero liquid effluent discharge practice will be maintained in the proposed expansion.
- During monsoon the treated effluent will be utilized as makeup water in Rolling Mill. Accordingly, the makeup water for Rolling mill also reduces during the rainy period.

Hence there will not be any adverse impact on environment due to the proposed expansion project.

3.4 Prediction of Impacts on Land Environment

The effluent will be treated to achieve SPCB standards. Zero effluent discharge will be adopted. All the required air pollution control systems will be provided to comply with CPCB / SPCB norms. All solid wastes will be disposed / utilized as per CPCB / SPCB norms. 10.684 Ha. of extensive greenbelt (inclusive of existing) will be developed as per guidelines. Hence, there will not be any adverse impact on land environment due to the proposed expansion project.

3.5 Socio - Economic Environment

There will be further upliftment in Socio Economic status of the people in the area. Hence, there will be further development of the area due to the proposed expansion project.

Due to this the economic conditions, the educational and medical standards of the people living in the study area will certainly move upwards which will result in overall economic development, improvement in general aesthetic environment and increase in business opportunities.

4.0 ENVIRONMENTAL MONITORING PROGRAMME

Post project monitoring will be conducted as per the guidelines of SPCB and MoEF&CC are tabulated below:

MONITORING SCHEDULE FOR ENVIRONMENTAL PARAMETERS

S.No.	Particulars	Frequency of Monitoring	Duration of sampling	Parameters required to be monitored
1. Water & Wastewater quality				
A.	Water quality in the area	Once in a month except for heavy metals which will be monitored on quarterly basis	Grab sampling	As per IS: 10500
B.	Effluent at the outlet of the ETP	Once in a month	Composite sampling (24 hourly)	As per EPA Rules, 1996
C.	STP Inlet & Outlet	Once in a month	Composite sampling (24 hourly)	As per EPA Rules1996
2. Air Quality				
A.	Stack Monitoring	Online monitors (all stacks) Quarterly Once	Continuous ----	PM, SO_2, NOx & CO PM, SO_2, NOx & CO
B.	Ambient Air quality (CAAQMS)	Continuous Quarterly Once	Continuous 24 hours	$PM_{2.5}$, PM_{10}, SO_2, NOx & CO $PM_{2.5}$, PM_{10}, SO_2, NOx

S.No.	Particulars	Frequency of Monitoring	Duration of sampling	Parameters required to be monitored
				& CO
C.	Fugitive emissions	Quarterly Once	8 hours	PM
3. Meteorological Data				
A.	Meteorological data to be monitored at the plant.	Daily	Continuous monitoring	Temperature, Relative Humidity, rainfall, wind direction & wind speed.
4. Noise level monitoring				
A.	Ambient Noise levels	Once in a month (hourly)	Continuous for 24 hours with 1 hour interval	Noise levels
5. Soil Quality monitoring				
A.	Soil Quality	Half yearly once	Core drilling sample	pH, SAR, texture, N,P,K, etc.

5.0 ADDITIONAL STUDIES

Draft EIA report has been prepared incorporating the Terms of Reference & submitted to Chhattisgarh Environment Conservation Board for conducting Public hearing / consultation.

Risk analysis deals with the identification and quantification of risks, the plant equipment and personnel are exposed to due to accidents resulting from the hazards present in the factory. Hazard analysis involves the identification and quantification of the various hazards that are likely to occur in the industry.

No Rehabilitation and Resettlement is involved in the proposed project as there are no habitations in the additional land proposed for expansion. Hence no R & R study has been carried out.

6.0 PROJECT BENEFITS

With the completion of expansion 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. Top priority will be given to locals in employment.

The expansion project creates direct employment to about 300 persons (skilled, semiskilled & unskilled) once the expansion comes to the operational stage and indirect employment of about 250 persons.

As per MoEF&CC Office Memorandum vide F.No.22-65/2017-IA.III dt. 30th September 2020, budget will be allocated for social welfare activities based on Social Impact Assessment (SIA) & after completion of Public Hearing.

7.0 ENVIRONMENT MANAGEMENT PLAN

7.1 Air Environment

The following are air emission control systems proposed in the proposed expansion project:

AIR EMISSION CONTROL SYSTEM PROPOSED (EXPANSION)

S. No.	Source	Control Equipment	Emission at the outlet
1.	DRI kiln with WHRB	Electro Static Precipitators (ESP)	PM < 30 mg/Nm^3
2.	Submerged Electric Arc Furnaces	4th Hole Fume Extraction system with bag filters	PM < 30 mg/Nm^3
3.	FBC Boiler	Electro Static Precipitators (ESP)	PM < 30 mg/Nm^3
		Automated lime dosing will be done	SOx < 100 mg/Nm^3
		Low NOx burners with 3-stage combustion, flue gas recirculation and auto combustion control system will be provided.	NOx < 100 mg/Nm^3
Note :Apart from the above Dry fog system with dust suppression at transfer points, Mist canon spray, dust extraction system with bag-filters at other dust emanating areas, covered conveyers, mechanical dust sweepers, wheel washing facility at entry and exit etc. will also be provided.			

Apart from the above the following air emission control systems/ measures are proposed in the Plant:

- All conveyors will be completely covered with G.I. sheets to control fugitive dust.
- All bins will be totally packed and covered so that there will not be any chance for dust leakage.
- All the dust prone points material handling systems will be connected with de-dusting system with bag filters.
- All discharge points and feed points, wherever the possibility of dust generation is there a de-dusting suction point will be provided to collect the dust.

7.2 Water Environment

Existing

- There is no effluent discharge from the existing DRI Unit as Closed-circuit cooling system adopted.
- Sanitary wastewater is being treated in STP
- Zero liquid effluent is being maintained in the existing plant.

Proposed

- Total waste water generation from proposed expansion will be 245 KLD
- There will be no wastewater discharge from the DRI Unit as closed-circuit cooling system will be adopted.
- Wastewater from Induction Furnace, Rolling Mill, Ferro Alloys, Power Plant, Galvanized Plant will be treated in ETP and after ensuring compliance with SPCB norms, it will be utilized for dust suppression, ash conditioning and for greenbelt development
- Wastewater from Rolling Mill will be treated in oil separator followed by settling tank and will be recycled through closed circuit cooling system.
- Air Cooled condensers will be provided in the power plant, which will be reduce the water consumption significantly. Hence wastewater generation will also be minimized.
- RO rejects will be utilised for Flushing in Toilets, Cleaning of Toilets, Floor washings, etc.
- Sanitary waste water will be treated in STP and will be utilized for greenbelt development.
- Garland drains will be provided around all the raw material stacking areas
- Zero liquid effluent discharge practice will be maintained in the proposed expansion.
- During monsoon the treated effluent will be utilized as makeup water in Rolling Mill. Accordingly, the makeup water for Rolling mill also reduces during the rainy period.

TREATED EFFLUENT DISPOSAL

Total Effluent generation	:	445 KLD
Effluent quantity to be used for ash conditioning	:	120 KLD
Effluent to be used for dust suppression in CHP	:	110 KLD
Effluent to be used for Floor washing, Toilet cleaning & Flushing	:	25 KLD
Effluent to be used for Greenbelt development	:	190 KLD

10.684 Ha. of greenbelt will be developed within the plant premises by using the treated effluent. A dedicated pipe distribution network will be provided for using the treated effluent for greenbelt development.

7.3 Noise Environment

The major sources of noise generation in the proposed project will be STG, boilers, compressors, DG set, etc. Acoustic enclosure will be provided. All the machinery will be manufactured in accordance with MoEF&CC norms on Noise levels. The employees working near the noise generating sources will be provided with earplugs. 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.

7.4 Land Environment

The waste water generated from the proposed expansion project will be treated in the Effluent Treatment Plant to comply with the SPCB standards and will be used for dust suppression, ash conditioning and for greenbelt development. All the required Air emission control systems will be installed and operated to comply with SPCB norms. Solid wastes will be disposed of as per norms. Extensive greenbelt will be developed in the plant premises. Desirable beautification and landscaping practices will be followed. Hence there will not be any impact due to the proposed expansion project.

SOLID WASTE GENERATION & ITS DISPOSAL

S.No.	Waste	Quantity (TPA)	Proposed method of disposal
		Expansion	
1.	Ash from DRI	35,640	Will be used in proposed Fly ash Brick Making Unit
2.	Dolochar	39,600	Will be given to FBC power plant as fuel.
3.	Kiln Accretion Slag	1,782	Will be used in proposed Fly ash Brick Making Unit
4.	Wet scrapper sludge	7,920	Will be used in proposed Fly ash Brick Making Unit
5.	Ash from Power Plant (Indian Coal + Dolochar)	68,310	Will be used in proposed Fly ash Brick Making Unit
6.	Slag from FeMn	14,520	Will be reused in manufacture of SiMn as it contains high SiO_2 and Silicon.
		(or)	
	Slag from FeSi	1,960	Will be given to Cast iron foundries
		(or)	

S.No.	Waste	Quantity (TPA)	Proposed method of disposal
		Expansion	
	Slag from SiMn	28,000	will be used for Road construction / will be given to slag cement manufacturing
		(Or)	
	Slag from Pig Iron	28,800	Will be given to slag based cement manufacturing unit

7.5 Greenbelt Development

- As per earlier E.C. Out of total **26.93 Ha.** of land, **8.93 Ha.** i.e. **33.16 %** of land is envisaged for greenbelt in the existing plant premises.
- Out of 25,172 nos. of Trees planted in the premises, 22,310 nos. are survived.
- As part of expansion 5.289 Ha. of land has been acquired. Hence the total land after expansion will be **32.223 Ha.**
- The total Greenbelt area will become **10.684 Ha.** i.e. **33.16** % of Total land area .
- Total saplings will be 26710 nos.
- It has been proposed to develop 10-15 meters wide green belt along the periphery inside the factory premises.
- Greenbelt will be developed as per CPCB guidelines.
- 2500 plants will be planted per hectare as per CPCB norms.
- Local DFO will be consulted in developing the green belt.

7.6 Cost for Environment Protection

Capital Cost for Environment Protection for proposed expansion : Rs. 43.88 Crores

Recurring Cost per annum for Environmental protection : Rs. 7.956 Crores/annum

7.7 Implementation of CREP Recommendations

All the CREP recommendations will be implemented & followed strictly.

- Continuous stack monitoring system is proposed for stack attached to WHRB & FBC Boiler.
- Online Ambient Air Quality Monitoring Stations will be established in consultation with SPCB during operation of the plant.
- Fugitive emission monitoring will be carried out as per CPCB norms.
- Energy meters will be installed for all the pollution control systems.
- Additional Rain water harvesting pits will be constructed outside the plant premises in consultation with CGWB.