

# **EXECUTIVE SUMMARY**

**Of**

## **ENVIRONMENTAL IMPACT ASSESSMENT REPORT**

**FOR**

**PUBLIC HEARING**

**OF**

**Proposed Metallurgical Industry  
(Expansion of Existing Unit)**

**By**

**M/s Bhuleshwar Steel and Alloys Pvt. Ltd. (BSAPL)** Gat No. 233,  
250,252 Village – Yawat, Taluka – Daund, District – Pune, 412214

**SUBMITTED TO**

**MAHARSHTRA POLLUTION CONTROL BOARD**

**PREPARED BY**

**M/s SGM Enviro (I) Pvt. Ltd.**

Office No. 202, 4th Floor, Elite Colossal FC Road, Oppo.  
Police Ground, Shivajinagar, Pune-411005

**QCI –NABET ACCREDITED**

**October 2023**

## **EXECUTIVE SUMMARY**

### **1.1 INTRODUCTION**

**M/s Bhuleshwar Steel and Alloys Pvt. Ltd. (BSAPL)** was incorporated on 25.01.1993 with Registration number 11-70507 having its Registered office & works at Gat No. 233, 250,252, Village – Yawat, Taluka – Daund, District – Pune, 412214 with the main object of manufacturing of TMT Bar.

M/s Bhuleshwar Steel and Alloys Pvt. Ltd. herein after referred to as “BSAPL”, has been promoted by Mr. Vikas Goyal. The promoter has over 25 years of experience in steel manufacturing and trading. Through the implementation of efficient management practices and cutting-edge technology.

The Existing unit was established before EIA notification 2006 and producing rolling mill which not required Environmental Clearance previously. Industry has obtained required consents time to time from Maharashtra Pollution Control Board (MPCB) & is complying with all the norms of CPCB & MPCB.

Considering the present market demand of steel products BSAPL plan to expand existing production quantity 11000 MT/M (TMT Bar) to 50000 MT/M (TMT Bar, M.S Billets, M.S Flats, M.S Structural steel, M.S Pipe, Alloys Steel) within the existing plant premises at Gat No. 233, 250,252, Village – Yawat, Taluka – Daund, District – Pune, 412214

As per EIA Notification dated 14<sup>th</sup> Sept., 2006, and its subsequent amendments; the proposed project falls under Category “B”, Project Activity 3(a).

### **1.2 Need of the Project**

Metals constitute a key input to other manufacturing sectors like engineering, electrical and electronics, automobile and automobile components, packaging and infrastructure. The performance of the metal sector is hence a reflection of the overall economy. The outlook for the metal sector in India is bright. Sustained growth is expected across all key segments, aided by several factors, such as growing domestic demand, investment in capacity addition, increasing supply deficit in other countries and favorable government regulations. And to cater the growing need of steel/ sponge iron in this competitive scenario BSAPL has identified this opportunity and has decided to become a competitive leader in boosting field of metallurgical sector.

### **1.3 Location of the Project**

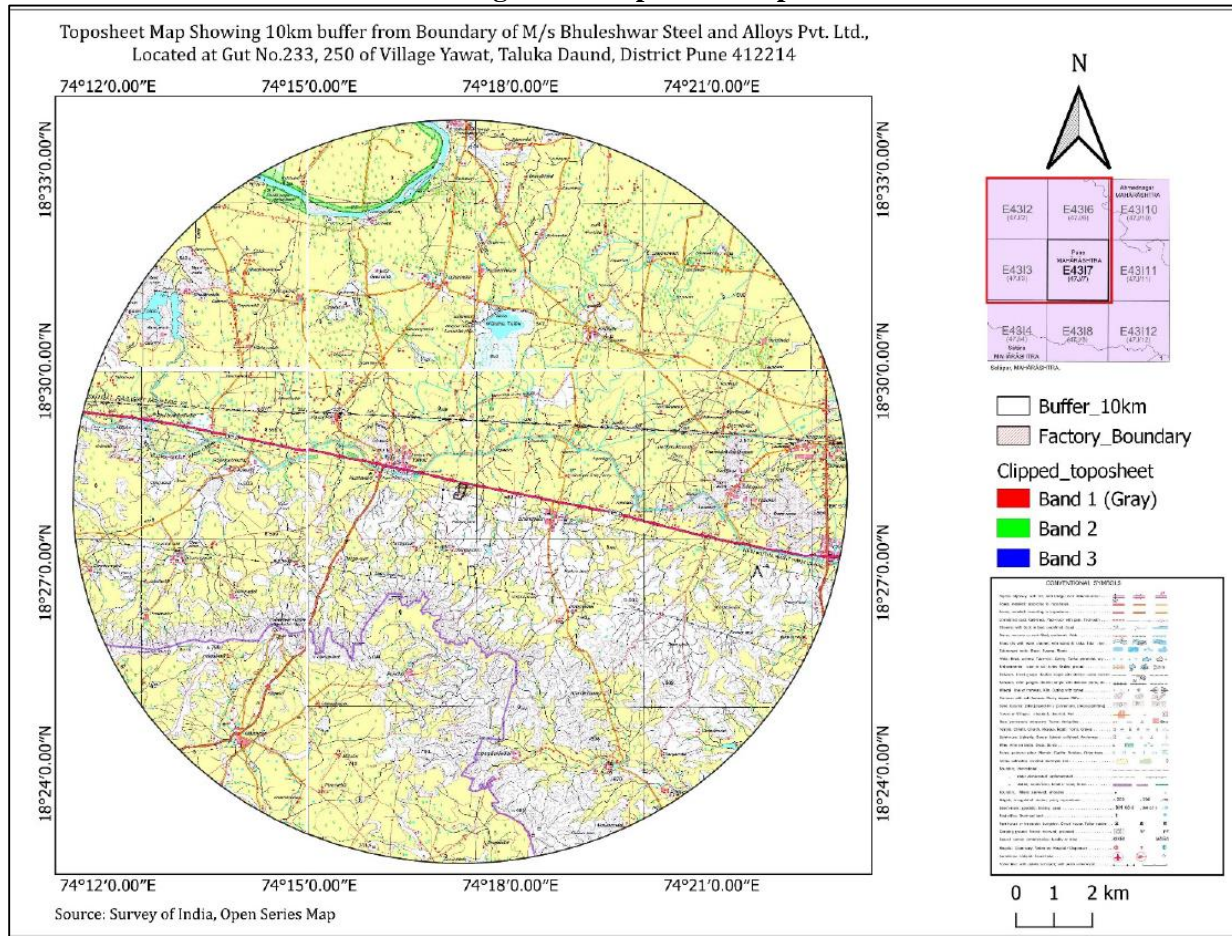
Registered office of M/s Bhuleshwar Steel and Alloys Pvt. Ltd. (BSAPL) is located at Gat No. 233, 250,252 Village – Yawat, Taluka – Daund, District – Pune, 412214

The Toposheet map and Google image of the project site is as shown in **Figure 1.1 and 1.2**

**Figure 1.1 Google image**



**Figure 1.2 Toposheet map**



**Table 1.1: Environmental settings of Project**

Sr. No	Particular	Description
<b>Location of the project site</b>		
1	Plot Number	Gat No. 233,250,252
2	Village	Yawat
3	Taluka	Daund
4	District	Pune
5	State	Maharashtra
6	Latitude/Longitude	Latitude: 18°28'13.88"N Longitude: 74°17'17.11"E
7	Average altitude above mean MSL	1970 ft above MSL
9	Toposheet Number	E4317
<b>Environmental setting details (with approximate aerial distance &amp; direction from the plant site)</b>		
10	Nearest village	Yawat is at 2.22 : NW direction
11	Nearest National highway/ State highway	Pune – Solapur Road: 0 km in N direction.
12	Nearest Railway station	Yawat railway Station: 3.89 km in NW direction.
13	Nearest airport	Pune International Airport at 41.69 km direction NW

14	Nearest major city	
15	Nearest national parks, wildlife sanctuaries, biosphere reserves within 10 km radius	No national parks, wildlife sanctuaries, biosphere reserves within 10 km radius
16	Reserve/ protected forests within 10 km radius	NA
17	Nearest water body within 10 km radius	Bhima River – 8.14 km away from project site in North West direction
18	Seismic zone	Zone III
19	Archeological site	None within 10 km radius
20	Critically polluted area as per CEPI/CPCB	None within 10 km radius

#### 1.4 Site Selection & Justification Thereof

Proposed expansion will be done on available open land within the existing plant premises. As adequate land is available within existing premises, no additional land will be acquired. Hence, no other alternative sites are examined. The site for the existing plant was finalized considering the ideal location for the industries. The proposed plant location is considered based on availability of raw material, power and water from nearby areas and hence it is the best option as far as location is considered.

#### 1.5 Project schedule and Cost

The proposed project is scheduled to be commissioned within 10-12 months after Environment Clearance (EC) and other statutory approvals are granted. Total cost of Proposed Expansion Project is Rs. 150 Cr.

#### 1.6 Brief Description of Nature, Size, Location of the Project and Its Importance to the Country, Region

**Table 1.2: Brief Description of Nature, Size and Location of Existing & Proposed expansion Project**

Sr.No.	Particular	Description			
1	Nature & size of existing project	Proposed Expansion of Existing Metallurgical unit by M/s Bhuleshwar Steel and Alloys Pvt. Ltd. For production of TMT Bar, M.S Billets, M.S. Flats, M.S.Structural steel, M.S Pipe, Alloys Steel			
2 A	Total Area of project	76,388.07Sq m			
2 B	Area Details(Sq.m)	<b>Particular</b>	<b>Total</b>		
		Plot Area Covered By Plant And Building (BUA)	28331.47		
		Green belt area	25823.63		
		Road Area	14034.23		
		Parking area	1872.7		
		Labour quarter	5085.6		
		Other services area	2616.8		
		<b>Particular</b>	<b>Existing</b>	<b>Proposed</b>	<b>Total</b>
3	Raw Materials (MT/M)	M.S. Scrap	0	34000	34000
		Ferro Alloys	0	20000	20000
		Sponge Iron	0	500	500
		M. S. Billets	11500	14500	26000
4	Products & Bi-products(MTA)	<b>Product</b>			
		TMT Bar	11000 MT/M	-	11000 MT/M
		TMT Bar, M.S Billets, M.S. Flats, M.S.Structural steel, M.S Pipe, Alloys Steel	-	39000 MT/M	39000 MT/M

		Total Product	11000 MT/M	39000 MT/M	50000 MT/M
		<b>Bi-product</b>			
		M.S.End Cutting	1800 Mt/A	5000 Mt/A	6800 Mt/A
		M.S. Miss rolls	1800 Mt/A	5000 Mt/A	6800 Mt/A
5	Capacity of Furnace	-	1 no. of Reheating furnace of capacity 15TPH	2 no. of Induction furnaces of capacity 40 MT each	3 no of furnace
6	Capacity of DG set (KVA)		125 KVA X 2	500 KVA X 2	Total 4 no of DG set 125 KVA X 2 500 KVA X 2
7	Fuel Requirement (lit/hr)	Diesel	40 Lit/hr	160 Lit/hr	200 Lit/hr
		Coal	30 MT/day	-	30 MT/day
		Furnace oil	13 KLD	-	13 KLD
8	Power requirement (KVA)	-	4MW	46MW	50 MW
7	Stack Details	-	Existing Reheating Furnace stack ht. 30 m	Proposed 2 number of induction furnaces are provided with stack height 32 m	Total- 3 stacks: 1 no. of Stack with height 30 m for existing furnace & 2 no. of stack with height 32 m for proposed furnace
		-	Existing D.G. Set (125 KVA X 2) with stack height 2.5 m	Proposed D.G. Set (500 KVA x 2) with stack height. 3 m	Total 4 No's of stack for DG sets (2 Existing + 2 Proposed)
8	Air Pollution Control Equipment for boiler	-	Proper stack height of 30 m with wet scrubber is provided for reheating furnace.	2 separate stacks of height of 32 m with bag house filter will be provided	-
9	Total water Requirement for unit (CMD)	Domestic	7	18.65	25.65
		DM Plant	0	5	5
		Furnace Cooling tower	0	110	110
		Rolling Mill Cooling	84	40	124
		Gardening	0.42	21.14	21.56
		Total	91.42	194.79	286.21
10	Waste water generation (CMD)	Domestic	5.8	17.28	23.08
		Industrial Process	0	0	0
		Cooling Purpose	0	0	0
		Gardening	0	0	0
		Total	5.8	17.28	23.08

11	Manpower		160	160	320
12	Solid Waste (MT/A)	Coal Char	10800 MT/A	0 MT/A	10800 MT/A
		Mill scale	500 MT/A	10000 MT/A	10500 MT/A
		Slag	0 MT/A	36000 MT/A	36000 MT/A
		Sewage Waste	0	18 MT/A	18 MT/A

## 1.7 Major Requirement for the Proposed Expansion Project

### 1.7.1 Raw Materials Requirement

**Table 1.3: List of raw materials required and their source along with mode of transportation**

Sr. No.	Raw Material	Quantity (MT/M)			Source	Transportation
		Existing	Expansion	Total		
1	M.S. Scrap	0	34000	34000	Authorized dealer	Road
2	Ferro Alloys	0	20000	20000	Authorized dealer	Road
3	Sponge Iron	0	500	500	Authorized dealer	Road
4	M. S. Billets	11500	14500	26000	Authorized dealer	Road

### 1.7.2 Power Requirement:

Company has a source of power from Maharashtra State Electrical Distribution Company Ltd. The power supplied to the company from a special line called “expressed feeder” which provides undisturbed power connection.

Total power requirement of the project is 50 MW.

**Table 1.4: Power Requirement**

Particular	Power requirement
Existing Load	4 MW
Proposed load	46 MW (20 MW For each Induction furnace)

### 1.7.3 Manpower Requirement

Total Manpower requirement after expansion will be 320 nos. Residential facility will be provided to about 125 nos employees. Most of the manpower requirement will be fulfilled by employing the local people. Man power requirement for construction work i.e. on contract basis will be about 50. Construction workers will be from nearby villages.

### 1.7.4 Water Requirement for Proposed Expansion Project

The water is required in the project for cooling tower circulation, cooling of all mill stands. Water is also required for effective dust suppression system, domestic use and gardening

**Table 1.5: Water Budget of proposed expansion project**

Sr no	particulars	Consumption m3/d			Loss m3/d			Effluent m3/d		
		Existing	Proposed	total	Existing	Proposed	total	Existing	Proposed	total
1	Domestic	7	18.65	25.65	1.2	1.37	2.57	5.8	17.28	23.08
2	DM Plant	0	5	5	0	2	2	0	0	0
3	Furnace Cooling Tower	0	110	110	0	93.5	93.5	0	0	0
4	Rolling Mill Cooling	84	40	124	84	40	124	0	0	0
5	Gardening	0.42	21.14	21.56	0.42	21.14	21.56	0	0	0
	<b>Total</b>	<b>91.42</b>	<b>194.79</b>	<b>286.21</b>	<b>85.62</b>	<b>158.01</b>	<b>243.63</b>	<b>5.8</b>	<b>17.28</b>	<b>23.08</b>

- Total water requirement: 286.20 CMD
- Fresh water requirement: 261.65 CMD
- Recycled water form STP and DM plant: 24.55

### **1.7.5 Land Requirement**

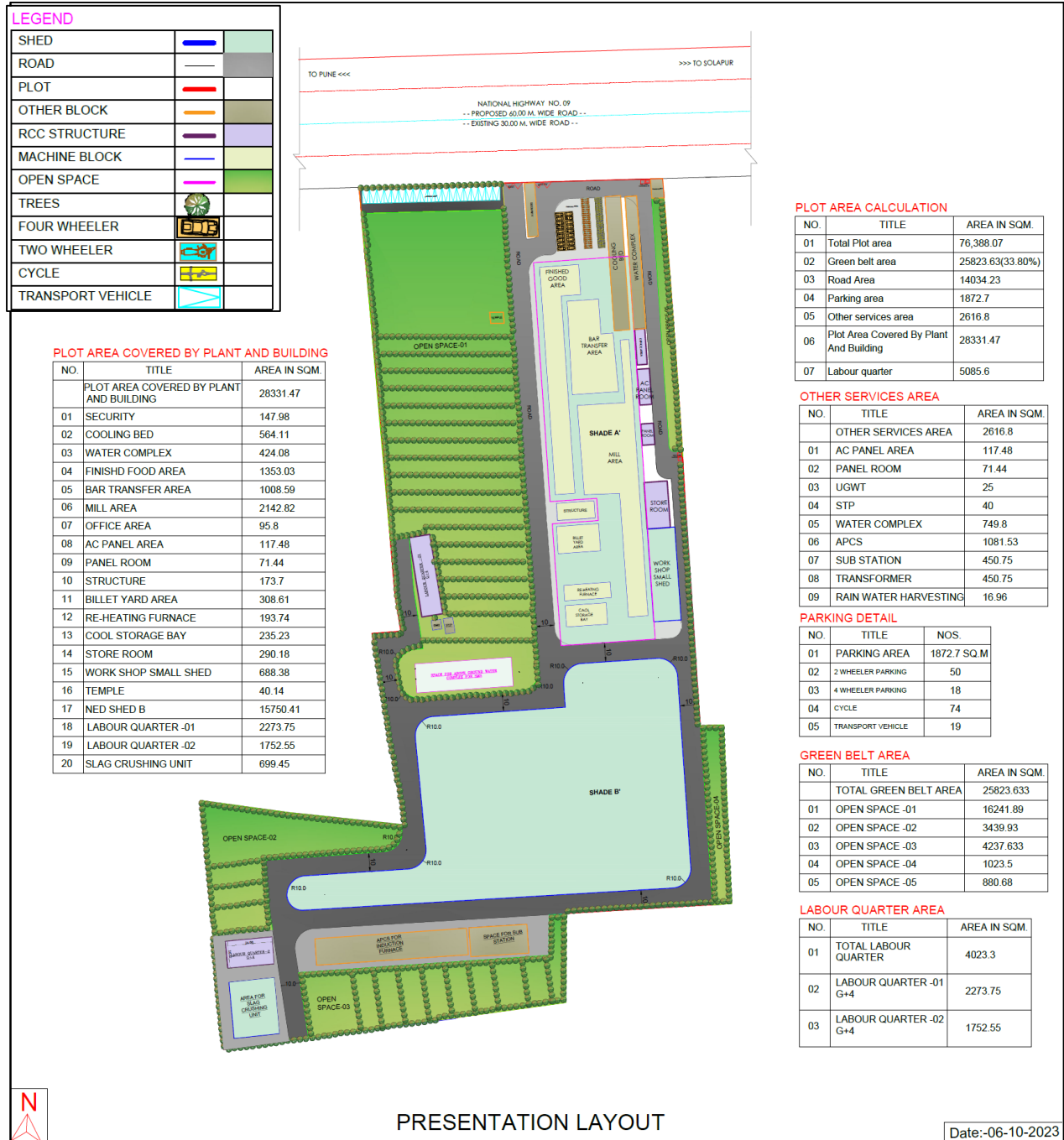
The Company site is located Gat No. 250, 233,252, Pune- Solapur road, village- Yawat, Taluka- Khed, and District – Pune. Total plot area of industry is 76,388.07 Sq.m.

The details of proposed land use is tabulated in following table-

**Table 1.6: Details of Land Use**

<b>No</b>	<b>Description</b>	<b>Area in sq. m</b>
1	Total Plot area	76,388.07
2	Green belt area	25823.63(33.80%)
3	Road Area	14034.23
4	Parking area	1872.7
5	Other services area	2616.8
6	Plot Area Covered By Plant And Building	28331.47
7	Labour quarter	5085.6

**Fig 1.3: Layout of the project**



**1.8 Process Description, Process Flow Sheet from Raw Material to Product**

**1.8.1 Manufacturing Process:**

**Induction furnace with CCM:**

Incoming scrap and sponge iron is analyzed for chemical composition during unloading of truck and segregated to remove unwanted material like cast iron, non-metallic, non-ferrous etc. Now to reduce energy consumption rate as recommended in Heat Integration study; the loose scrap is bundled in bailing press and over size heavy scrap sheared by sheering machine.

Scrap is be transferred to induction furnace by magnetic loaders for smelting. The molten metal is poured to ladle furnace for adjusting the properties by adding other metals (silicon, manganese, etc) and then cast



into billets. The billet is cut to specified size by hydraulic shear machine during casting out then sent for rolling to TMT Bar.

### Continuous Casting Machine (CCM):

A billet continuous-casting machine (CCM) is high-performance technology for producing high-quality steel products by continuous casting. Some of the advantage of CCM is as follows:

- High quality of the billet cast;
- High output capacity;
- High reliability.
- Casting a wide size range of products;
- Casting a wide grade range of products;
- Full casting process cycle, including;
- Preparation of steel teeming into molds;
- Steel teeming into molds with metal stream shrouding and unshrouding;
- Billets cutting to cut-to-length Cooling and delivery of billets weighing

### Rolling Mill Division:

Thermo mechanical processing, also known as thermo-mechanical treatment (TMT), is a metallurgical process that integrates work hardening and heat-treatment into a single process. M.S. billets at ~ 10500 C directly from CCM will be progressively rolled to reduce the billets to the final size and shape of reinforcing bar. After the last rolling stand, the bar is passed through quench box to cool the bar. A microprocessor controls the water flow to the quench box to manage uniform cooling.

### Auxiliary Equipment:

Auxiliary equipment's are supportive to the plant and machineries. These shall consist of compressor unit, pump house, lath machine and guide boxes etc.

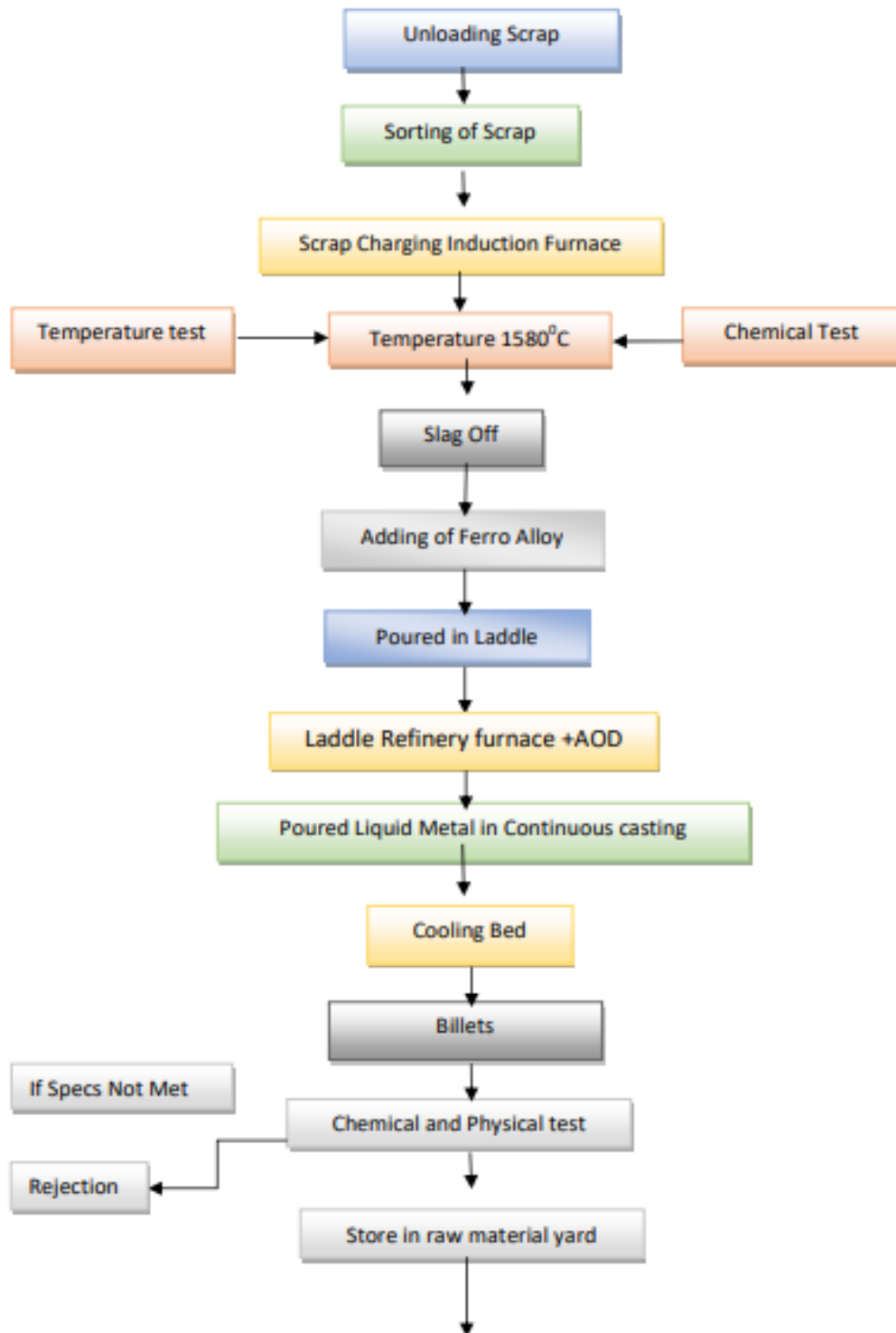
**Table 11.7 List of machineries**

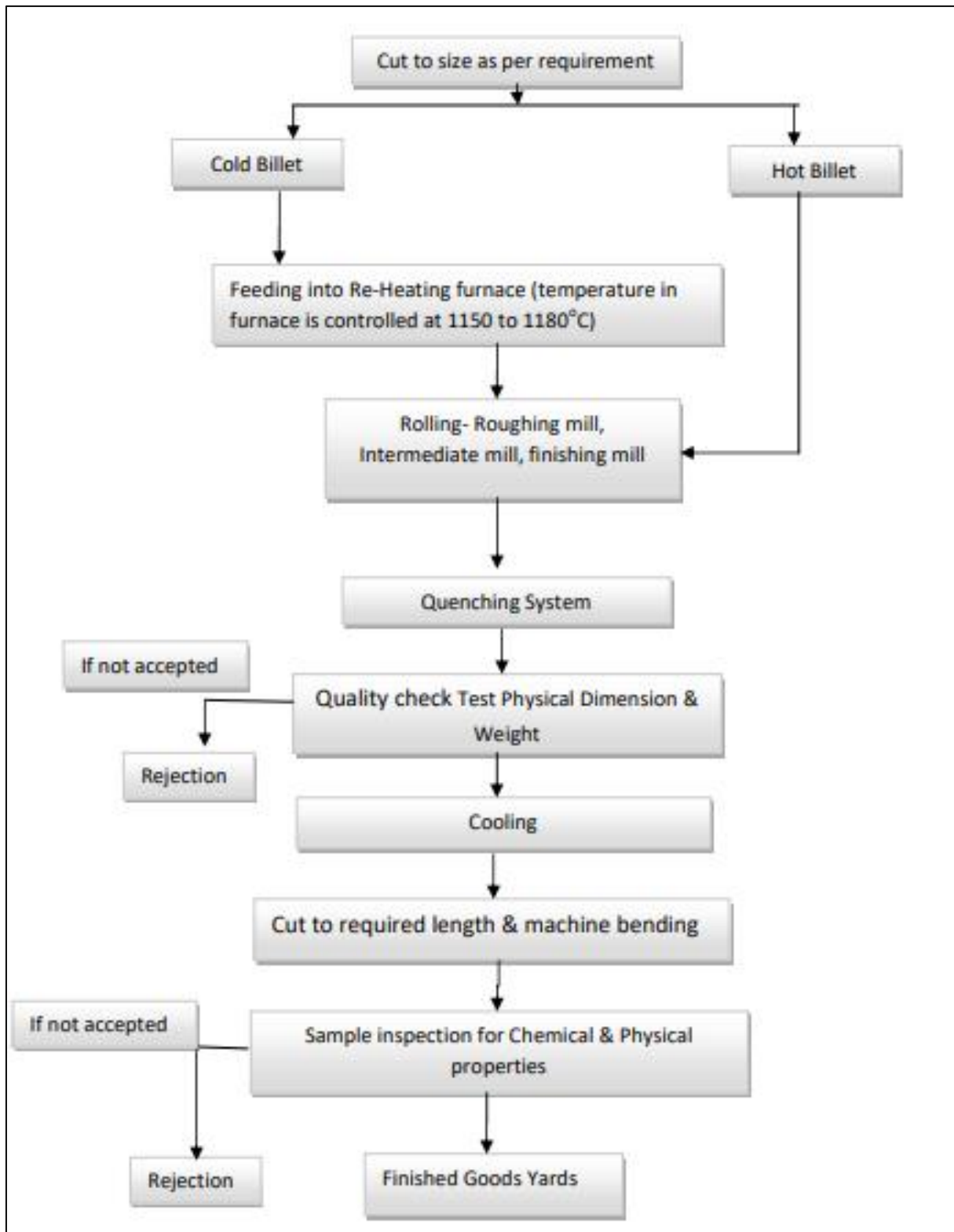
LIST OF PLANT AND MACHINERIES	
INDUCTION FURNACE DIVISION	
1	1- 20000 KW / 40 T Induction Furnace incl. PLC system for Average Demand Controller and PLC based Power Optimizer
2	25 MVA x 2 furnace duty and 5 MVA x 1 Auxiliary Transformer
3	D.G. Set ( 2*500 KVA& 2*125 KVA) (Stand by)
4	Cooling Tower, Water circulation pump, softener, piping Air drier & Valves for SM
5	Cooling Pumps, Cooling Tower, Softener, External Heat Exchanger, Pipe Line & Fittings for CCM
6	EOT Cranes (70/20 T) EOT Cranes (20 T) EOT Cranes (20T) Magnet 72” Dia Magnet 65” Dia
7	Grab
8	Ladle 40/45 T capacity
9	Bail Arm
10	Induction Furnace C I Slag pots
11	Motorized with hydraulic operated feeding car
12	CCM (Billet Casting Machine 6/11 mt radius
13	Three strand including Automatic Billet Shearing Machine
14	Electrical Substation 132 KV including Line charges & Bay charges
15	CCM Aux, slag pot, emergency pot, launder temp indicator, Argon gas purging system etc
16	Ladle Preheat or
17	Pollution Control Equipments (Bag Filter, spark arrestor of suction hood & ducting chimney
18	Scrap Processing Machine Bailer and Shearing Machine

19	Electric Panels & Automatic Power Control System
20	Electric Motors (Small)
21	Transformer
22	Bus Bar
23	Electrical Cables
24	Air Compressor & other utilities
25	Lining Vibrator
Rolling Mill	
1	Rolling Mill Equipment's
2	High Speed Bar Delivery system & Cooling Bed twin Channel 72meter long Bar delivery equipment Automatic Cooling bed Cold Bar Shear.
3	Mill Auxiliaries & accessories
4	Lubrication Oil system- 2 Nos
5	Bolts for Mill Portion
6	DC Drives
7	DC Motors
8	AC Motors
9	Rolls
10	Water Cooling & Circulation System
11	Rolls Nek Bearing for Mill stand
12	Workshop Machinery
13	C.N.C. Machines (Notching & Branding Machine)
14	Inter Connected Piping for water, Hydraulic, Lubrication & Air
15	Conveyor tables & Transfer System
16	Air Compressor
17	Transformers
18	Electric Panels
19	Electrical Cables
20	APFC Panels
21	Pollution Equipment's
22	Cranes
23	Weigh Bridge (100 T)

## 1.8.2 Process flow Chart

Figure 1.4: Process flow chart





## 1.9 Description of Environment

Baseline study for Environmental Impact Assessment report in 10-km radius study area was conducted for a period of three months during 1<sup>st</sup> November 2022 to 31<sup>st</sup> January 2023 through an NABL approved laboratory [EHS matrix Pvt. Ltd.].

Air, noise, water & soil analysis studies were carried out. Survey of the flora & fauna in the surroundings & demographic pattern of the survey area were also studied.

### 1.9.1 Topography, Land use & its Classification

The topography around the project site is mostly plain. Ground elevation at the site is 656 m above MSL. The land use and land cover of the study area analyzed based on multispectral satellite imagery reveals that the major land use category within the study area is represented by Agriculture (~35.63%), followed by Reservoir (~0.64%), Canal (~2.10%), Barren Land (~20.09%), green cover (~1.06), River (~0.35), and Built-up area (~40.09).

### 1.9.2 Soil environment

Soil samples collected from 8 identified locations within the study area. Soils in the area are brown in color. These soils are not very deep and are suitable for most of the crops or Soil of the area is found to be suitable for agricultural activities.

### 1.9.3 Air Environment

The Ambient Air quality was monitored for PM10, PM2.5, NO<sub>x</sub>, SO<sub>2</sub>, CO, NH<sub>3</sub>, C<sub>6</sub>H<sub>6</sub>, BaP, O<sub>3</sub>, Pb and Ni, at eight locations in the study area.

Table 1.8: Summary of AAQM Results

Parameters	Minimum	Maximum	Average	NAAQS
PM2.5 µg/m <sup>3</sup>	18.8	32.3	24.37	60
PM10 µg/m <sup>3</sup>	43	70	57.23	100
SO <sub>2</sub> µg/m <sup>3</sup>	6.4	13.1	9.93	80
NO <sub>x</sub> µg/m <sup>3</sup>	9.1	16.3	12.53	80
CO mg/m <sup>3</sup>	0.7	1.3	1.01	4

In general, the ambient air quality is satisfactory with respect to all major pollutants. The Average values of all pollutants were found to be below NAAQS. The other parameters such as Ammonia (NH<sub>3</sub>), Benzene, Benzo- $\alpha$ -Pyrene (BAP), Ozone (O<sub>3</sub>), Lead (Pb) and Nickel (Ni) were found to be below respective detection limits.

Air quality modeling was conducted to know the incremental values of PM using AERMOD Cloud software.

### 1.9.4 Noise Environment

The noise quality was monitored at eight (8) locations in the study area during the study period.

Table 1.9: Summary of Ambient Noise Monitoring Results

Category	Leq daytime		Leq night time		Day time Standard	Night time Standard
	Min	Max	Min	Max		
Residential	44.8	51.4	36.9	41.8	55	45
Industrial	45.1	47.1	35.1	37.1	75	70

From the above study, it can be concluded that the resultant noise levels in the study area are within the limits as prescribed by the Noise Pollution (Regulation and Control) Rules, 2000.

### 1.9.5 Water Environment

Surface water samples were collected once during the study period at one (2) locations to assess the baseline water quality in the study area. The samples were compared with the CPCB's surface water classification and they conform to Class A Water Quality Criteria.

Some of the important parameters are summarized below.

Table 1.10: Summary of Surface Water Analysis

Parameter	Value at Matoba Lake	Value at Bhima River Upstream	Value at Bhima River Downstream	Specification (IS10500:2012)
pH	7.41	7.88	8.11	6.5-8.5
Dissolved Oxygen mg/l	5.9	5.5	5.8	NS
Biochemical Oxygen Demand mg/l	8.0	9.2	<5.0	NS
Total Coliform No./100ml	Absent	Absent	Absent	<2

BSAPL is going to achieve Zero liquid discharge in surface water for the proposed project expansion & hence there is no effect on the river water quality due to this industry.

Ground water samples were collected from eight (8) locations to assess the existing groundwater quality of the study area during the study period. The chemical characteristics of Ground water are confirming to permissible limits of drinking water standards, prescribed in IS: 10500 (Test Characteristics for Drinking Water) and suitable for consumption. Some of the important parameters are summarized below.

Table 1.11: Summary of Ground Water Analysis

Parameter	Value
pH	7.35
Turbidity NTU	<1
Total Dissolved Solids mg/l	312.62
Total Hardness as CaCO <sub>3</sub> mg/l	175.33
Alkalinity	180.43
Fluoride as F mg/l	<0.1
Nitrate as NO <sub>3</sub> mg/l	<1

### 1.9.6 Biological Environment

The ecological study of the area has been conducted within 10 km radius of the project site in order to understand the existing status of flora and fauna.

Flora: 28 species of Trees, 8 species of Shrubs and 3 species of Herbs were identified.

Fauna: 21 species of birds, 5 species of Butterflies were identified.

Avifauna: 18 species were identified within the Study Area.

None of the identified species within the study area are Schedule I species of the Indian Wildlife Protection Act, 1972 or listed in IUCN Red List of Threatened Species. There are no legally protected areas such as National Parks or Wildlife Sanctuaries, biosphere reserves or critically polluted areas within 10 km of the Project Site. The project site is surrounded by agricultural land.

### 1.9.7 Socio-Economic Environment

There are total 20 villages in the study area. The study area is essentially rural in nature with moderate inhabitation. The nearest town is Yawat from the Project Site, towards east. The socio economics of study area is studied through primary and secondary survey. The socio-economic aspects of the study area are summarized in the table given below.

Table 1.12: Summary of Socio-Economic Aspects

Sr. No	Contents	In Figures	In Percentage (%)
1	Population	71582	-
2	Literates	47924	66.94979185
3	Illiterates	23658	33.05020815
4	SC	8185	11.43443883
5	ST	1926	2.690620547
6	Workers		
a.	Main Workers	33447	46.72543377
b.	Marginal Workers	2543	3.552569082
7	Total Workers	35990	50.27800285
8	Non-Workers	35592	49.72199715

The primary survey revealed that study area is having education facilities primarily in the form of Anganwadi and Primary Schools. Colleges and other diploma courses are available at Daund city .There are only eleventh health care facilities available in the study area. In some of the villages, primary health sub centers were available. The main water supply in the surveyed villages is through well, tap water, hand pump, and tube well. Water supply for study area is from Matoba Lake which is about 4.26 km in North direction from project site. All villages are availing electricity facility for all purpose.

### 1.9.8 Traffic Scenario

Traffic survey was conducted at three major intersections within the study area for assessing the traffic density.

The traffic movement was monitored once in both directions at the aforesaid locations continuously for 24 hours. The monitored vehicles were categorized into two wheelers, three wheelers, cars, heavy vehicles, etc. The volume of vehicles moving through the roads of the project site were estimated as PCUs and compared with the level of service based on IRC guidelines. The level of service is falling under Category C (Good) and D (Fair) as per IRC guidelines.

### 1.10 Anticipated Environmental Impacts and Mitigation Measures

Anticipated environmental impacts due to the proposed project along with mitigation measures are given in Table below.

**Table 1.13 Environmental impacts Mitigation Measures in Brief**

Sr.No.	Facets of Environment	Mitigation & Impact Thereafter
<b>(A) Construction Phase</b>		
1.	Air	<ol style="list-style-type: none"> <li>1. The approach roads will be paved or asphalted and regular sprinkling of water on roads and construction site will be undertaken.</li> <li>2. Regular PUC check will be undertaken.</li> <li>3. All vehicles and equipment with internal combustion engines being used will be maintained for effective combustion to reduce vehicular emissions.</li> <li>4. Vehicles and all internal combustion engines will meet the prescribed emission standards of CPCB.</li> <li>5. Unleaded petrol blended with fuel ethanol will be used for vehicles in use.</li> <li>6. Recycled water will be sprayed through high pressure water hoses during dust generating construction activities e.g. excavation, crushing, concrete mixing, material handling etc. for dust suppression.</li> <li>7. Measures will be taken not to use asbestos in the construction work.</li> <li>8. Development of sufficient vegetation will be considered.</li> </ol>
2.	Water and Waste Water	<ol style="list-style-type: none"> <li>1. Fresh water requirement will be minimized by using RMC</li> <li>2. High pressure hoses will be used for cleaning and dust suppression purpose.</li> <li>3. Monsoon season would be avoided for the construction activity, particularly the excavation work.</li> <li>4. Wherever required check dams and dykes will be provided for control of soil erosion.</li> <li>5. Fast growing soil holding/binding vegetation e.g. grass will be grown around the construction site before commencement of construction activity to reduce soil erosion and dust suppression.</li> <li>6. Appropriate sanitation facilities will be provided for the workers to reduce impact on surface water quality.</li> <li>7. Construction wastes will not be discharged to surface or ground water bodies.</li> <li>8. Rain Water Harvesting will be done.</li> </ol>
3.	Noise	<ol style="list-style-type: none"> <li>1. Mandatory use of personal protective equipment like ear plugs shall be ensured to mitigate any significant impact of such equipment on personnel operating the machinery.</li> <li>2. Long exposure to high noise levels shall be avoided by practicing proper shift arrangement for workers.</li> <li>3. Noise making construction activities shall be carried out during day time only.</li> <li>4. Construction equipment generating minimum noise and vibrations will be chosen.</li> <li>5. Vehicles and construction equipment with internal combustion engines will be provided with silencers and mufflers in order to reduce noise levels.</li> <li>6. Green belt will be developed to attenuate noise impacts and to reduce noise pollution</li> </ol>
4.	Soil	<ol style="list-style-type: none"> <li>1. Construction wastes will be segregated as much as possible at site itself to increase the feasibility of recycling concrete and masonry as filling material and steel pieces as saleable scrap.</li> </ol>



		<p>2. Litter disposal and collection points will be established around the work sites. Empty packaging materials, drums, glass, tin, paper, plastic, pet bottles, wood, and other packaging materials, etc. will be disposed through recyclers.</p> <p>3. The construction spoils will be temporarily stored at designated dumpsite located inside the plant premises.</p>
<b>(B) Operation Phase</b>		
1.	Air	<ul style="list-style-type: none"> <li>Adequate stack height to the electric furnace, dust collector is provided for existing furnace and bag house filter will be provided for proposed furnace.</li> </ul>
2.	Fugitive	<ul style="list-style-type: none"> <li>Internal roads paved, levelled, no undulations, no sharp curves, slow speed.</li> <li>Tree plantation on surrounding available area.</li> <li>Fugitive emissions to be monitored regularly and records to be maintained.</li> <li>Regular water sprinkling</li> </ul>
3.	Water and Waste Water	<ul style="list-style-type: none"> <li>No effluent generation will take place from proposed industry. Hence no provision of ETP.</li> <li>For domestic effluent STP of capacity 25 KLD will be installed and Treated water shall be used for Landscaping after disinfection.</li> <li>Rain Water Harvesting will be done.</li> </ul>
4.	Solid Waste	<ul style="list-style-type: none"> <li>100% collection every day. Segregated and treated/ disposed as per MPCB norms.</li> <li>Generated coal char given to brick manufacturer and mill scale and will be sent to the authorized dealer.</li> </ul>
6.	Noise	<ul style="list-style-type: none"> <li>Ear muffs or other protective devices will be provided to the staff working in high noise prone area.</li> <li>Smooth roads, speed limits imposed within plant movement</li> <li>Trees plantation within the plant as well as around the boundary of the facility to mitigate noise pollution.</li> <li>Regular maintenance of equipment, pumps shall be undertaken</li> </ul>
7.	Socio-economic	<ul style="list-style-type: none"> <li>Employment generation, Community Skills Development, Improved Standard of Living, Community Organizational Capacity Development Economic Exposure and Development</li> </ul>
8	Ecological Environment:	<ul style="list-style-type: none"> <li>Strengthening of greenbelt</li> <li>Causality replacement and gap plantation to be taken up</li> <li>Developing avenue plantation</li> </ul>
9	Traffic Scenario	<ul style="list-style-type: none"> <li>During the proposed project an addition of ~ 130 trips per day of trucks is envisaged</li> <li>Plant to operate an automated scheduling system which aims to eliminating waiting times and improving efficiency of trucks accessing the plant this</li> <li>Provision of adequate truck parking facility</li> </ul>

### 1.11 Environmental Monitoring Programme

Details of the environmental monitoring schedule / frequency, which will be undertaken for various environmental components, is given in table below-

**Table 1.14: Schedule for Environmental Monitoring**

Sr. No.	Particulars	Parameters	Location	Frequency
<b>1</b>	<b>Air Environment</b>			
i	Stacks –Furnace and DG sets	PM <sub>10</sub> , PM <sub>2.5</sub> , SO <sub>2</sub> and NO <sub>x</sub> ,	Stack monitoring	Quarterly
ii	Ambient air quality	PM <sub>10</sub> , PM <sub>2.5</sub> , SO <sub>2</sub> and NO <sub>x</sub> , CO.	At 3 locations of project site.	24 hrs sample, Quarterly
iii	Workroom environment	TPM , VOC, Temperature	Plant / Storage/ handling Area	
<b>2</b>	<b>Water Environment</b>			
i	Ground water	As per drinking water standards	At drinking water locations.	Quarterly
ii	STP	pH, O & G, TDS, TSS, COD, BOD. Heavy Metals & other Compounds specific to project	Stage wise within Plant	Weekly
<b>3</b>	<b>Land Contamination</b>			
i	Soil	organic & inorganic matter	Near STP Inside & Outside plant boundary at lower contour	Pre & post monsoon
<b>4</b>	<b>Noise Environment</b>			
i	Ambient Noise	Equivalent noise level- dB (A)(Day & Night)	at fence level and at nearest habitats	Quarterly
ii	Workroom noise	Leq (8 hours)	near noise producing sources like DG set, Furnace Area, STP, other work place area	
<b>5</b>	<b>Biological Environment</b>			
i	Greenbelt	Number of plantation (Units), Number of Survived plants/ trees, Number of poor plants/ Trees	Check plant growth and survival of plants	Ongoing- round the year
6	Environmental Audit	As per Direction of ISO 14001	-	Once in a Year
7	Water utilization, m <sup>3</sup> /d	-	For process, domestic, cooling and boiler	Daily
8	Power utilization	-	For air pollution control facility at furnace and for ETP	Daily

### 1.12 Additional Studies

Additional Studies conducted as per ToR issued by MOEF, are Risk Assessment and Disaster Management Plan. Public Hearing is to be conducted for the project.

#### 1.12.1 Risk Assessment

Following scenario emerged during HAZOP and measures to make operations safe have been defined. Risk can be due to:

- Falling Object
- Contact with hot metal
- Fire & Explosion
- Extreme Temp.
- Noise
- Electric

The below recommendations for safety measures are proposed to maintain safe work environment:

- Necessary risk mitigation measures, including fire fighting measures will be implemented.
- Hazards due to mechanical injury will be reduced by use of EIA/EMP of BSAPL for its proposed project all necessary safety measures will be provided.
- Use of PPE is mandatory for all floor personnel
- Lightning arrestor is/will be provided to avoid risk damage and injury due to continuous lightning during monsoon season

### **1.12.2 Disaster Management Plan**

Disaster Management Plan will be implemented in consultation with the District Administration to take care of health and safety during any untoward incident. In view of handling of processes in industry, On-site Emergency Plans are important and hence has been prepared for the industry. Additionally recommendations for and Off-site shall be provided to the District Administration. During operational phase, surrounding population shall be made aware of safety precautions to be taken in case of any emergency situation due to the overall project activity.

### **1.12.3 Occupational Safety & Health Management**

During the construction and operation phases there are chances of major or minor accidents at the project site.

- During the construction All the workers will be provided with helmets, goggles and safety equipment's, welder equipment's for eye and face protection, ear plug, ear muffs, dust masks, safety belt, hand gloves, and safety shoes along with safety instructions in the form of manual and first-aid facilities will be made available.
- For the continuous and continual development, company will continue to train & educate the operators and workers with the environment, health & safety rules & regulation, procedure and measures.
- During operation, workers working in hot zone will be provided with heat resistant aprons,gloves. Resting shed shall be provided to enable them take rest outside the hot zone.
- Job rotation will be done to avoid continuous exposure to heat radiation.
- There shall be regular medical check-up of the workers.
- Adequate safety precautions shall be exercised strictly for observing safety norms.

### **1.13 Project Benefits**

The following benefits are expected from the proposed project:

- This project of **BSAPL** will have positive social and economic benefits.
- Some of these would be direct benefits of long term nature.
- The project will overcome the demand and supply gap of steel product in the country and the additional steel availability will boost the infrastructure of the area and the overall economic scenario of the country.
- The project will also generate additional revenue for the State Government.
- The project will create additional direct/indirect employment for people.
- Local people will be preferred for employment during the construction and operation stage.

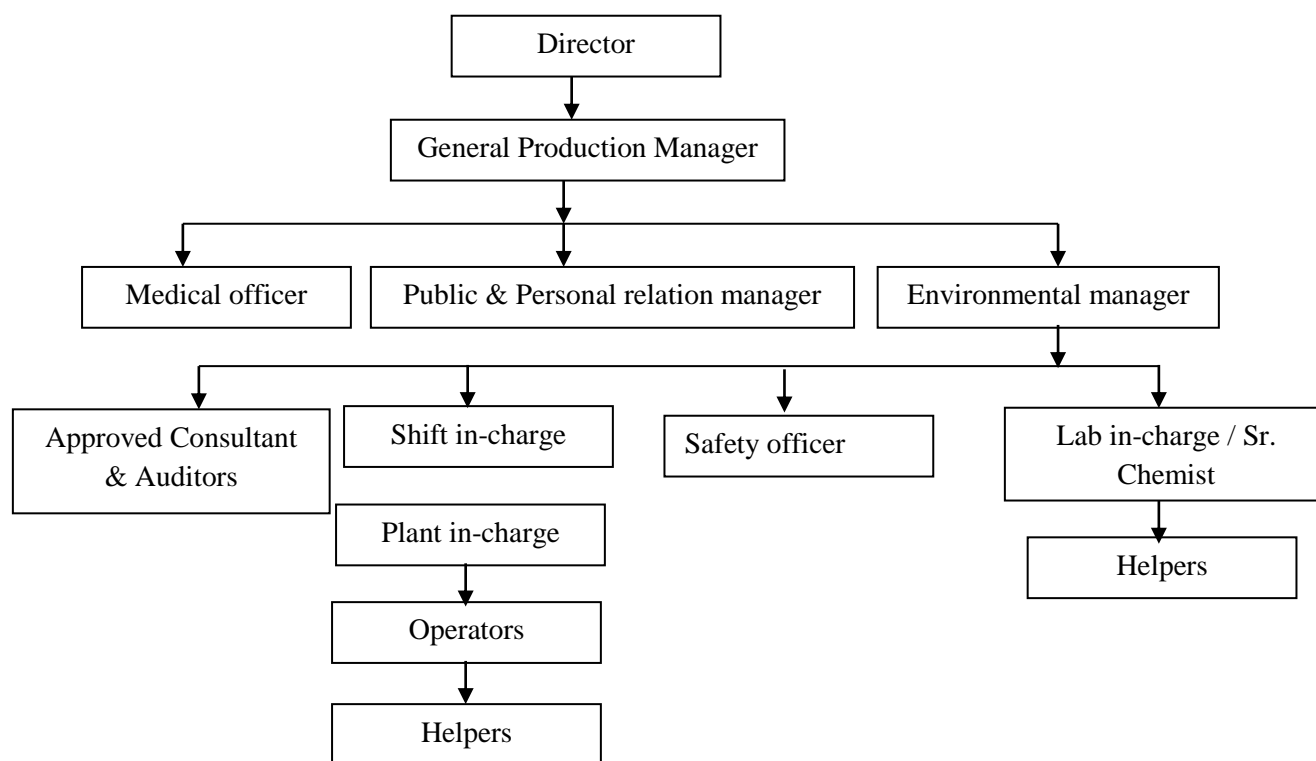
### 1.14 Environment Management Plan

An environmental monitoring program in place, periodic review & audits are carried out for effective environmental management and the same shall be strengthen and extended for the proposed project activity as well. The Plant has an EHS department which ensures overall effective implementation of the management plan.

In general, systems are in place to ensure compliance with respect to environmental statutory requirements and Environment Policy of BSAPL are strongly adhered to all time. The same shall be extended to the proposed project as well

All recommendations given in the EIA report including that of occupational health, risk mitigation and safety will be complied. BSAPL have allocated INR 710 Lacs as environmental pollution control measures; which is 4.73% of total project expansion cost.

**Figure 1.2: Environment Management Cell**



**Table 1.15: Responsibility distribution for compliance of Consent conditions of proposed unit**

S.N.	Condition regarding	Mode of Compliance	Action by
1	Validity Period	Keeping a watch, Application for renewal will be submitted in advance	ENV-M
2	Production Quantity	Not to exceed the permitted quantity. Feed will be adjusted to recovery	ENV-M
4	Quantity of sewage	To be measured periodically. Not to exceed	ENV-M
5	Total water input	To be measured daily. Not to exceed. Repair meters. Make break-up as per usages. Fill monthly Cess returns. Pay as per assessment.	ENV-M

6	Quality of Effluents	By running STP in correct fashion, Monitor, correct.	ENV-M, LAB- I, ENV- C
7	Disposal of treated effluent	Not over application. No Percolation, No spillages. Monitor	ENV-M
8	Fuel Quantity	Not to exceed permitted quantity	Env-M,
9	Emission System	Control boiler dampers, ID/FD fans, Co2 % monitor	Env- M
10	Ambient air quality	Keep monitoring	Env-M
11	Noise Levels	Check foundations for vibrations, Tree plantation	Env-M
12	Solid wastes	Quantity to be measured & record kept,	Env-M
13	Environ. Audit	To be complied every year before 30 <sup>th</sup> Sept.	Env-M
14	Inspections	Inspection book to be opened. Instruction given by State PCB visiting Officer to be complied & reported.	Env-M

Legends: ENV-M- Environmental Manager, LAB- I- Lab incharge, ENV- C- Environmental Chemist.

### 1.15 Corporate Environment Responsibility (CER) Action Plan

CER plan has been made from this perspective, to ensure the quality of life and quality of study area people will be improved. CER, in fact, is about business giving back to the society.

BSAPL proposes to allocate 0.75% of their total expansion cost for CER activities as suggested in MoEFCC O.M. regarding Corporate Environment Responsibility vide. F.No. 22-65/2017-IA III. The total cost of expansion for the project is around 150 Cr. And 0.75% (i.e. 1.125 Cr.) has been allocated for CER Action Plan. The same shall be implemented over a period of 5 years.

The activities under CER shall cover education, health, infrastructure, culture and sports, skill development & training and women empowerment.

### 1.16 Conclusion

The proposed expansion project will prove beneficial to the local people as more infrastructure development, improvement in education and health facilities, roads, availability of drinking water, etc. in near-by villages will be done.

There will be no significant impact on the area, as adequate preventive measures are being/will be adopted to contain the various pollutants within permissible limits. Regular monitoring of all the components of environment is being / will be done. Increased social welfare measures taken by the company will bring development in the near-by villages. Greenbelt development around the area is being /will be also taken up as an effective pollution mitigative technique, as well as to control the pollutants.