

# ***Executive Summary***

***Of***

*Expansion of Manufacturing of M.S. Billets from 1,84,500 TPA to 3,50,000 TPA by replacing existing 10 T Induction furnace with 15 T Induction Furnace and by Installing additional 1X30 T Induction Furnace and production of TMT Bars through Rolling Mill from 72,000 TPA to 3,50,000 TPA*

**Proponent**

***M/s Jaideep Metallic & Alloys Pvt. Ltd***

***By***

***Pollution & Ecology Control Services  
NAGPUR***

**Environmental Consultant**

**Pollution and Ecology Control Services**

**Accreditation no.: QCI/NABET/EIA/1720/RA0101**

**Extension Letter: QCI/NABET/ENV/ACO/21/2133 dated 17<sup>th</sup> November, 2021**

## *Executive Summary*

### **PREAMBLE**

M/s Jaideep Metallic & Alloys Pvt. Ltd. has proposed Expansion of Manufacturing of M.S. Billets from 1,84,500 TPA to 3,50,000 TPA by replacing existing 10 T Induction furnace with 15 T Induction Furnace and by Installing additional 1X30 T Induction Furnace and production of TMT Bars through Rolling Mill from 72,000 TPA to 3,50,000 TPA Gut No.73, 74,76, 78, 79, 80, 179, & 180 Village : Lakhmapur, Bhiwandi-Wada Road, Taluka : Wada, District : Palghar, Maharashtra. M/s Jaideep Metallic & Alloys Pvt. Ltd has obtained Environmental Clearance for the production of 1,30,000 TPA molten steel ingots and billets by installing 15 T Induction Furnace at Gut no 78 (P) and 79 Village– Lakhmapur, Bhiwandi-Wada Road, Taluka - Wada, District – Palghar, Maharashtra vide letter no SEIAAA-EC-0000002125 dated 20th February 2020. The Management of Jaideep Metallics & Alloys Pvt. Ltd. has acquired Sun Metallics & Alloys Pvt. Ltd in 2009 which has 10 T Induction furnace for 54500 T of Billets, Ingots production and 72,000 T of TMT bar production through rolling mill at Gut no. 73, 74,76, 78, 79, 80, 179, & 180 Village – Lakhmapur, Bhiwandi-Wada Road, Taluka - Wada, District – Palghar, Maharashtra. Pollution and Ecology Control Services, Nagpur, is QCI-NABET accredited in ‘Category A’ environment consultant organization, 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.

<b>Sr. No</b>	<b>Products</b>	<b>IF configuration (Existing)</b>	<b>IF configuration after expansion</b>	<b>Production (TPA) (Existing)</b>	<b>Proposed Capacity (TPA)</b>	<b>Production after Expansion (TPA)</b>
1	Billets, Ingots	1X10 T	1X15 T	1,84,500	1,65,500	3,50,000
		1X15 T	1X15 T			
		1X10 T (Sun metallic)	1X30 T			
3	TMT Bars	Rolling Mill	-	72,000	2,78,000	3,50,000

The proposed plant is located at Gut No.-73, 74,76, 78, 79, 80, 179, & 180 Village – Lakhmapur, Bhiwandi-Wada Road, Taluka –Wada, District – Palghar, Maharashtra The total plot area is 5.72 ha. It is located centrally vis-à-vis source of raw material.

The Topographical map of 10 km radius is given in the figure below

**DETAILS OF ENVIRONMENTAL SETTINGS**

Sr No	Particulars	Details
1	Project Site	Gut No.-73, 74,76, 78, 79, 80, 179 & 180 Village – Lakhmapur, Bhiwandi-Wada Road, Taluka - Wada, District – Palghar, Maharashtra
2	Latitude Longitude	A. 19°35'2.01"N 73° 6'44.84"E B. 19°34'57.15"N 73° 6'42.78"E C. 19°34'57.11"N 73° 6'40.27"E D. 19°34'55.97"N 73° 6'39.99"E E. 19°34'56.26"N 73° 6'37.02"E F. 19°34'58.22"N 73° 6'36.55"E G. 19°34'59.01"N 73° 6'31.61"E H. 19°35'2.65"N 73° 6'30.78"E
3	Elevation above MSL	103 MSL
4	Toposheet	47 E/2, 47 E/3
5	Present landuse	Industrial
6	Nearest National Highway/State Highway	SH – 35 : 10m (E) SH – 76 : 20m (E)
7	Nearest Airport/ Air Strip	Chhatrapati Shivaji International Airport: 58.70 Km (SSW)
8	Nearest Railway Station	Atgaon Railway Station : 24.50 Km (ESE)
9	Nearest Village	Lakhmapur : 850 m (NW)
10	Forest	Reserved Forest : 550m (E) Reserved Forest : 550m (NW) Reserved Forest : 6.7 Km (SW) Reserved Forest : 4.0 Km (NW) Reserved Forest : 4.5 Km (NNW)
11	Ecologically Sensitive Zones like wild life sanctuaries, national parks and biospheres	Boundary of Eco sensitive of Tansa wildlife sanctuaries: 15 km as per letter from Deputy Conservator of Forests, Jawhar Forest Division Jawhar Dist Palghar
12	Water Bodies	Vaitarna River : 4.0 Km (NNW) Dhandela Nala : 3.0 Km (NNE) Dongri Nala : 6.5 Km (ESE)

		Tansa River : 7.5 Km (SSE) Mokhai N : 4.5 Km (WSW) Charanavati N : 4.0 km (SE)
13	School	1) Shree Pragat Vighnesh School : 5.0 Km (SE) 2) Z. P. School Pahunipada : 3.5 Km (NNE) 3) National English School : 5.5 Km (SSW) 4) Govt. School & Hostel : 6.5 Km (SW)
14	Hospital	1) Kalyani Hospital Khupari : 2.0 Km (S) 2) Lakshmi Clinic : 6.0 Km (SSW) 3) Rural Hospital : 12.5 Km (NW)
15	Industries	1) Devgan Industries : 2.0 Km (S) 2) Ashwathi Industries Ltd. : 5.5 Km (E) 3) Indofab Industries : 6.5 Km (WNW) 4) Krisiv Industries : 5.5 Km (SSE) 5) Vijay Chem Industries : 6.5 Km (S)

**Raw Material Requirement:** Existing and Proposed raw material requirement for the project is as below:-

Sr. No.	Raw Material	Existing Requirement (TPA)	Proposed Requirement (TPA)	Source	Mode of Transportation
<b>Rolling Mill</b>					
1.	Molten Billets	74,300	2,85,600	In house	-
<b>SMS</b>					
1.	Sponge	38745	34755	Maharashtra	Road
2.	Scrap	148522	133227	Mumbai	Road
3.	Flux	2767	2482	Mumbai	
4.	Silico manganese as Additives	2767	2482	Mumbai	Road

**WATER REQUIREMENT**

Total Water Requirement for the project is 190 KLD: Water requirement of the unit is fulfilled from Ground water and from Private Tankers, RWH Pit. The breakup of water requirement for proposed plant is given below:

Unit	Water Requirement m <sup>3</sup> /day			Total Wastewater Generation m <sup>3</sup> /day	Mode of disposal of wastewater
	Existing	Proposed	Total		
Cooling	80	72	162	-	-
Domestic Purpose	10	10	20	16	The sewage generated will be treated in Packaged Type STP and treated water reused for plantation purposes.
Plantation	10	8	18	-	-
<b>Total</b>	<b>100</b>	<b>90</b>	<b>190</b>	-	-

**Power Requirement**

The total power required for expansion project will be 12000 KVA and it will be procured from State Electricity Board.

**Employment potential**

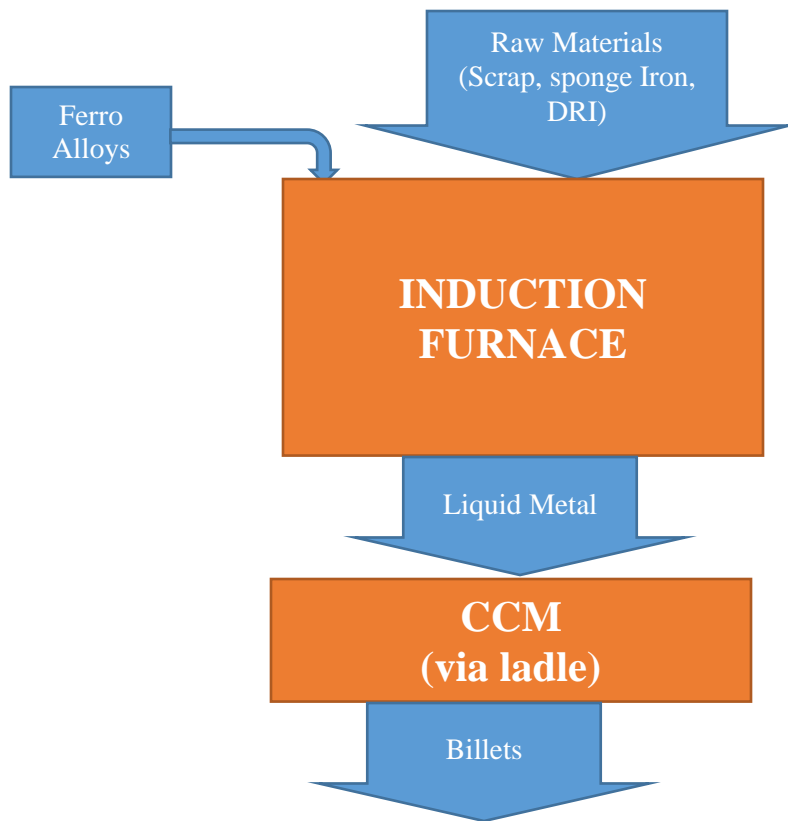
The proposed project will create the direct and indirect employment for about 200 people.

**TECHNOLOGY AND PROCESS DESCRIPTION****Manufacturing process of M.S Billets**

MS Billets are produced by melting scrap and sponge iron/ directly reduced iron (DRI) in an induction furnace. The melting process is a batch process and each batch is referred to as "Heat". MS scrap is introduced into the induction furnace and molten through the process of induction. Based on requirement, additives known as Ferro Alloys are added in small quantities to maintain a chemical composition suitable for manufacture of TMT bars.

The heat of liquid metal so obtained is then transferred to a ladle through which it is transferred to a continuous casting machine (CCM). The CCM moulds and cools the liquid metal into solid MS billets. Hydraulic shears which are a part of the CCM cut the billet so produced to required lengths.

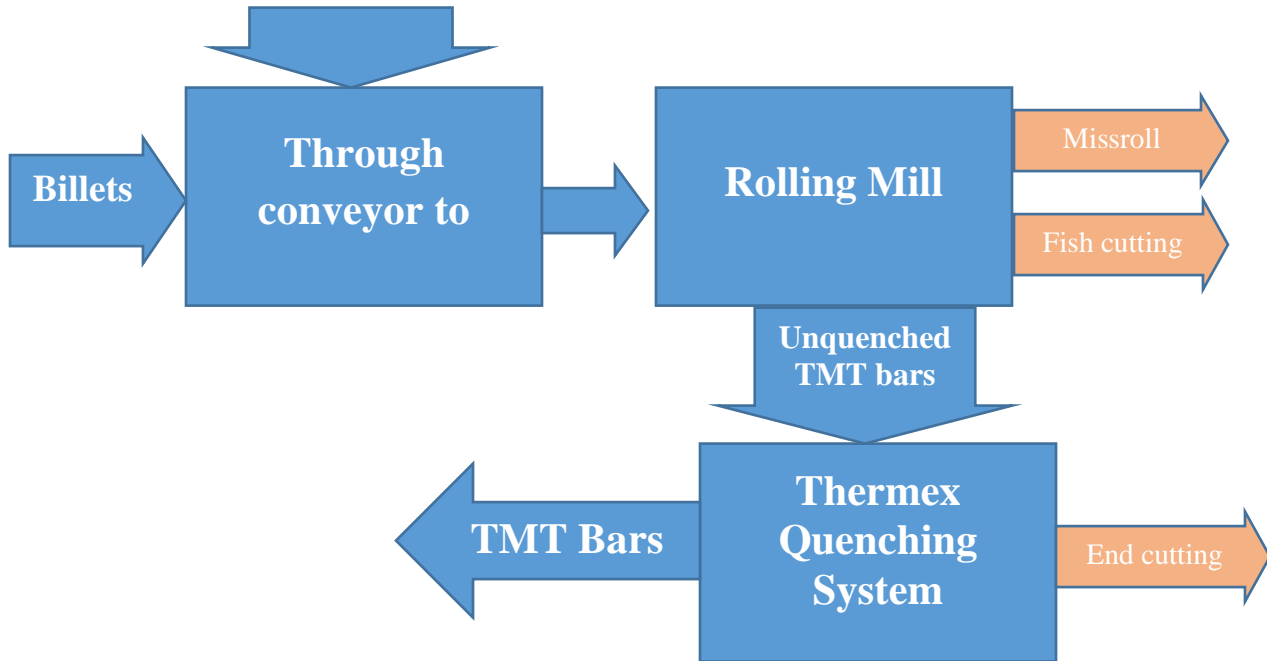
MS billets are intermediate products further used by Rolling mill for production of TMT bars.



**TMT bars:**

Hot billets is then passed through a number of rolls, with its physical dimensions and shape changing during each pass through the roll and the final shape is taken in the finishing roll.

Billets that smoothly pass through the finishing roll are then quenched using a Thermex Quenching system to get the desired physical properties. The TMT bars so produced are transferred to the cooling bed and cut to standard length. The wastage arising from the cutting is referred to as end cutting/ melting and transferred to the scrap yard.



## DESCRIPTION OF ENVIRONMENT

The baseline environmental quality for the period of 1<sup>st</sup> November 2021 to 30<sup>th</sup> January 2022 was assessed in an area of 10 km radius around the proposed project site.

### Air Environment

The ambient air quality monitored at 08 locations selected based on predominant wind direction, indicated the following ranges;

PM <sub>10</sub>	:	39.9 - 46.3 µg/m <sup>3</sup>
PM <sub>2.5</sub>	:	19.7 – 30.2 µg/m <sup>3</sup>
SO <sub>2</sub>	:	9.2 – 17.8 µg/m <sup>3</sup>
NO <sub>x</sub>	:	13.1 – 22.7 µg/m <sup>3</sup>

Industrial Area	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>x</sub>
Residential, Rural Area (CPCB Norms)	100 µg/m <sup>3</sup>	60 µg/m <sup>3</sup>	80 µg/m <sup>3</sup>	80 µg/m <sup>3</sup>

The concentrations of PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub> and NO<sub>x</sub> were found within the National Ambient Air Quality Standards (NAAQ).

### Water Environment

### Noise Environment

Noise levels measured at eight stations are within limit of 55.0 dB (A) for Residential Area or 75.0 dB (A) for Industrial Area as given in MoEF Gazette notification for National Ambient Noise Level Standard.

Area Code	Category of Area	Limits in dB(A) Leq	
		Day time	Night time
A	Industrial Area	75	70
B	Commercial Area	65	55
C	Residential Area	55	45
D	Silence Zone**	50	40

\*\* Silence zone is defined as area up to 100 meters around premises of hospitals, educational institutions and courts. Use of vehicle horns, loud speakers and bursting of crackers are banned in these zones

### Land Environment

4 Soil samples were collected analyzed for physico-chemical characteristics at selected locations in the study area to assess the existing soil conditions around the proposed project site. From the analysis results of the soil samples, it was observed that the soil was medium fertile and having average productivity. The soil in the study area needs additional fertilizers for improving the fertility status and increase in crop productivity. Overall the soil quality in the area was found medium fertile with moderate productivity.



## **ANTICIPATED ENVIRONMENTAL IMPACTS & MITIGATION MEASURES**

### **Impact on Air Quality**

The impacts on air quality due to source of the air pollution in the proposed expansion activities have been identified.

The present baseline concentrations were monitored in the EIA study. The additional emissions are mainly from induction furnace during melting process.

The proposed project activity will result in air emissions from the following areas.

- a) Raw material Handling and storage area
- b) Induction Furnace
- c) Transportation

The atmospheric dispersion modeling and the prediction of ground level pollutant concentrations has great relevance in the following activities:

- Estimation of impact of industry on surrounding environment.
- Estimation of maximum ground level concentration and its location in the study area.

The mathematical model used for predictions on air quality impact in the present study area is AERMOD.

The predicted ground level concentrations obtained when superimposed on the baseline concentrations are within the prescribed NAAQ Standards for residential areas.

In point source emissions, the stacks are subjected to plume rise which again is dependent on force of buoyancy and momentum. The higher is the plume rise or stack, the lesser will be ground level concentrations (GLC's). The emissions when released into the atmosphere are subjected to transportation, dispersion, transformation, and fall out and wash out and finally reach the ground level at a particular distance. That's why the GLC is comparatively low at project site

### **Mitigation Measures**

- Company shall provide dust suction system which will control fugitive emission due to material and raw material handling.

- Regular monitoring of air quality parameters.
- The vehicles transporting raw materials will be covered with tarpaulin in order to prevent dust emission during the transport.
- It would be ensured that all the vehicles in the working zone are properly maintained to keep emissions within the permissible limits.
- At loading and unloading points, arrangement for Water sprinkling will be made so that dust generation during transportation of materials will brought down to minimal.
- Plantation in the plant premises will be done in the 33% of the total land.
- All the internal roads shall be concreted / asphalted to reduce the fugitive dust due to vehicular movement
- Whenever, APCS is not working, then raw material feed will be stopped. Consequently there will be no production in the unit till APCS is rectified.

### **Impact on Water**

The total water requirement for the proposed activities is 190 KLD. During plant operation no waste water will be generated from the process. Domestic wastewater will be treated in Packaged Type STP

<b>Sr. No.</b>	<b>Solid Waste</b>	<b>Existing Quantity (TPA)</b>	<b>Proposed Quantity (TPA)</b>	<b>Total Quantity (TPA)</b>	<b>Disposal/Utilization</b>
1.	Slag	7380	6620	14000	Being/will be used in leveleling of internal road, hardening of road
2.	Tail Cuttings	2160	8340	10500	Being /will be used in induction furnace as raw material

### **Impact on Demography and Socio-Economics**

The impacts of the proposed project, during its operation, on demography and socio-economic condition can be identified as follows.

- Negative impacts can be depletion of natural resources like water and land. The impact on the air quality will be marginal.
- Increase in employment opportunities and Reduction in migrants to outside for employment.
- Increase in consumer prices of indigenous produce and services, land prices, house rent rates and Labour prices.
- Improvement in socio-economic environment of the study area.
- Improvement in transport, communication, health and educational services.
- Increase in employment due to increased business, trade commerce and service sector.
- The overall impact on the socio economic environment will be beneficial.

### **ENVIRONMENT MONITORING PROGRAMME**

The environmental monitoring is important to assess performance of pollution control equipment installed in the proposed expansion project. The sampling and analysis of environmental attributes including monitoring locations will be as per the guidelines of the Central Pollution Control Board / State Pollution Control Board.

Environmental monitoring will be conducted on regular basis by company to assess the pollution level in the proposed expansion project as well as in the surrounding area. Therefore, regular monitoring program of the environmental parameters is essential to take into account the environmental pollutant of the study area.

The objective of monitoring is:

- To verify the result of the impact assessment study in particular with regards to new developments;
- To follow the trend of parameters which have been identified as pollutants;
- To check or assess the efficiency of the controlling measures;
- To ensure that new parameters, other than those identified in the impact assessment study, do not become critical due to the commissioning of proposed expansion facilities;

- To establish a database for future Impact Assessment Studies for new projects.

The attributes, which needs regular monitoring, are specified below:

- Air quality
- Water and wastewater quality;
- Noise levels;
- Soil quality;
- Ecological preservation and afforestation; and
- Socio Economic aspects and community development

### **ENVIRONMENT MANAGEMENT PLAN**

The Company is bounded to take all mitigation measures as given in the report. The company has a well-defined policy to keep the environment clean.

#### **Air Environment**

The sources of air pollution are raw material handling system, materials transportation, raw materials feeding to the operating equipment. The automatic process equipment will be deployed for the raw material feeding system.

Adequate measures already adopted to arrest the emission of pollutants within the stipulated & statutory norms.

- Bag filters along with fume extraction system is proposed in expansion phase followed by stack.
- Fugitive emission from material unloading operations, material transfer points will be controlled fully with total enclosure.
- Fugitive as well ambient air quality monitoring shall be carried out on regular basis to ensure the compliance with National Ambient Air Quality Standards (NAAQS). The ambient air quality within the factory premises shall not exceed the standards ( $PM_{10}$   $100\mu\text{g}/\text{m}^3$ ,  $PM_{2.5}$   $60\mu\text{g}/\text{m}^3$   $SO_2$   $80\mu\text{g}/\text{m}^3$ ,  $NO_x$   $80\mu\text{g}/\text{m}^3$ ) prescribed by CPCB.

- Regular Stack Monitoring are being carried out and same will be continue in expansion phase. It will ensure that all the emissions from the plant will be controlled to meet the relevant standard set by CPCB/State Pollution Control Board after expansion of project

### **Noise Environment**

Regular maintenance of the various equipment, ear plugs/muffs will be provided for the personnel working close to the noise generating units. Further all the openings like covers, partitions will be designed properly to abate noise pollution.

### **Water Environment**

There is no trade effluent generation from the existing plant as the entire water used for cooling purpose only. It is also not expected any trade effluent after the proposed expansion too.

### **Management Plan of Solid waste**

- Slag is being/will be used for Land filling in Low Lying Area and will be continued after expansion
- Wastes or residues containing oil will be sold to authorized vendors

### **Socio Economic Environment**

The company would aid in the overall social and economic development of the region. The plant will give employment 200 people of local area after expansion. In order to mitigate the adverse impacts likely to arise in the proposed expansion project activities and also to minimize the apprehensions to the local people, it is necessary to formulate an affective EMP for smooth initiation and functioning of the project. The suggestions are given below:

- Communication with the local people will be established regular basis by project authority to provide an opportunity for local youth.
- Project authorities will undertake regular environmental awareness program on environmental management.

- Job opportunities are the most demanding factor, the local people as per their education will be employed.
- For social welfare activities to be undertaken by the project authorities, collaboration should be sought with the local administration, gram panchayat, block development office etc for better coordination.

### **Green Belt Development**

The plantation helps to capture the fugitive emissions and attenuate the noise apart from improving the aesthetics quality of the region Avenue plantation within the plant and green belt development will be done. 33% of the land will be developed as green belt Greenbelt will be developed with local trees.