EXECUTIVE SUMMARY OF

Draft Environmental Impact Assessment

SAAR LOHA

M/s Saarloha Advanced Materials Pvt. Ltd.

(Formerly known as M/s Kalyani Carpenter Special Steels Pvt. Ltd.)

At S.No.72-76, Mundhwa, Pune, Maharashtra

Capacity Augmentation and Up-gradation for Production of Finished Products in the form of Ingots, Blooms and Bars from 2, 04,000 TPA to 2, 44,000 TPA

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1.0 Introduction

M/s Saarloha Advanced Materials Pvt. Ltd., Mundhwa, Pune (Formerly known as M/s Kalyani Carpenter Special Steels Pvt Ltd). The existing production of Special Steels of the unit is 2, 04,000 TPA and the units can achieve 40,000 TPA additional output from the existing operate with augmentation of vacuum system and addition of ladle furnace.

Saarloha Advance Materials Pvt. Ltd. is Electric Arc Furnace (EAF) based plant for primary melting followed by ladle furnace and vacuum degassing facility for secondary metallurgy. Casting facility includes ingots and continuous cast blooms, blooming mill followed by 600 dia 3-hi two stands for hot rolling. The company improved the environment at the furnace and surroundings by installing the state of the art pollution control system provided by Badisch Stahl-Engineering, Germany.

1.1 Project Location

Figure 1: General Location Map

A: 18°31'30.70"N, 73°54'51.67"E

B: 18°31'23.34"N, 73°54'51.69"E

C: 18°31'23.67"N, 73°54'48.84"E

D: 18°31'25.38"N, 73°54'35.26"E

E: 18°31'30.57"N, 73°54'35.09"E

Figure 2: Google image of the plant

Figure 3: Greenbelt Development within plant

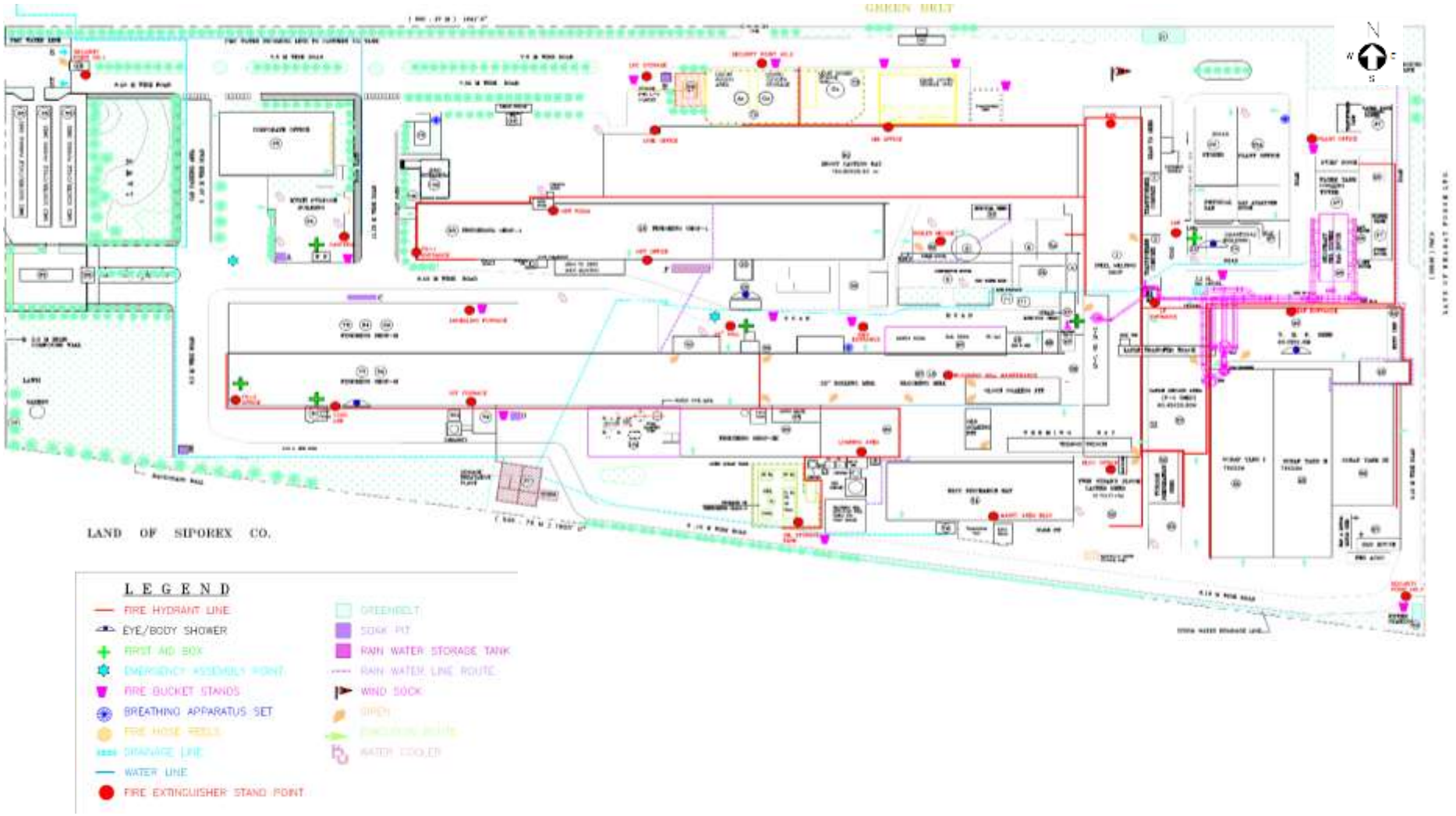

Figure 4: Plant Layout

Electric Arc Furnace

Ladle Furnace Vacuum degasifying

Electro Slag Re melting

Bloom casting

Ingot Casting

Rolling Mill

Figure 5: Process Photographs

2.0 Project at a Glance

Table 1: Project Highlights and Environmental Settings

Sr. No.	Particulate	Description
1.	Project	Capacity augmentation and up-gradation for production of finished products in the form of Ingots, Blooms and Bars from 2, 04,000 TPA to 2, 44,000 TPA at S.No.72-76, Mundhwa, Pune, Maharashtra
2.	Proponent	M/s Saarloha Advanced Materials Pvt. Ltd. (Formerly known as M/s Kalyani Carpenter Special Steels Pvt Ltd)
3.	Geographical coordinates	18°31'27.89"N, 73°54'45.74"E
4.	Land	Plot area: 1, 01, 208 sq. m. Greenbelt development: 33400.0 sq.m. 33% of the total plot area
5.	Products range	**Blooms:** 320 x 400 mm max. **Ingots:** Up to 70 MT **Bars:** up to 200 mm dia. Total existing capacity 204000 TPA and it will be augmented to 244000 TPA
6.	Operation days	365 days
7.	Raw material	Steel Scrap, Dololime, Lime, Ferromanganese, Ferrosilicon lumps, Coke, Albars / Lumps / Shots, Graphite Electrode, Silicomanganese
8.	Water	Total water requirement 800 CMD. No additional water will be required for proposed expansion. (Source Irrigation, PMC water , Ground water)
9.	Power	No additional power will be required. Existing Connected Load Total 54.2 MW Existing Demand load 36.8 MVA
10.	Furnace	Annealing Furnace 30 T/cycle Annealing Furnace 15T/cycle Walking Beam Furnace 35 Ton/Hr. X 1 Electric Arc Furnace 30 TonX 1 Laddle Furnace 30 TX 2 Electro Slag Re-melting 17TPD X 1 Shot Blasting 2.2 Mt/Hr.X 1 Shot Blasting M/c. No. 2 X 1
11.	Boiler	10 TPH X 1, 6 TPH X 2

12.	DG set	5 of total capacity 1235(KVA)
13.	Fuel	Furnace Oil, HSD, Biodiesel, Carbon Black Feed Stock (CBFS), LPG, Producer Gas.
14.	Manpower	No additional man power required for expansion Existing Total manpower: 1050
15.	Total project cost	50 Cr.
16.	Additional Environment management cost	17.25 Lakhs
	Environment aspects	
17.	Total effluent generation	Industrial effluent around 30 CMD will be Reused in HTQ Gas cooling-Spray cooling. Domestic effluent generation will be 65.01 CMD**; it** is treated in STP of 130 CMD. Treated effluent is used in greenbelt development.
18.	Air Emission	Particulate matter, sulphur-di-oxide and nitrogen oxide etc from Process emission and material handling DG and stack. Existing APCS are Fume extraction system, Dust Collectors, Bag filters, adequate stack height.
19.	Solid waste	Nonhazardous Solid waste: Slag Ball, Slag Overflow, Debris, Bricks, Metal Waste, Dust Grinding, Miscellaneous Packing Mater Wood , Paper, Cardboard, Glass, Process Dust, Hazardous waste: Used / Spent oil , Waste / Residue, containing oil Empty Oil Barrels
Environment Sensitivity		
20.	Nearest Habitation	Village Ghorpadi 0.5 km Village Mundhwa at 2 km
21.	Nearest National Highway	NH-9 Pune Solapur highway 2 km in south
22.	Nearest Railway station	Ghorpadi railway station at 2.0 km, Hadapsar railway station 1.5 km Pune Railway station 4.22 km
23.	Nearest Airport	Pune Airport 6.18 km North
24.	River/Water Body (within 10 km radius)	Mula-Mutha river 1.6 km in North
25.	Wildlife sanctuary / Protected area / Eco-sensitive zone	No any

3.0 Process description

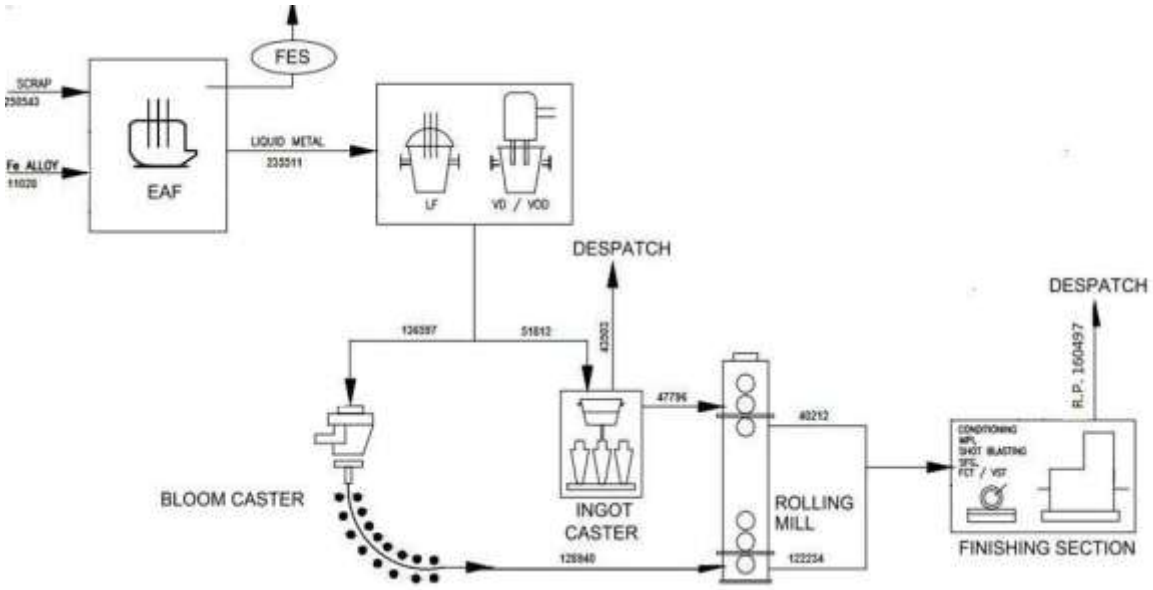

Figure 6: Production flow chart

4.0 Description of Environment

Baseline monitoring study was conducted for the period of March 2018 to May 2018, as per the guideline of OM 29 August 2017.

Table 2: Frequency of primary data collection

Environmental Attributes	Frequency of monitoring	Parameters	Observed Results
Ambient Air Quality	9 Locations 24 hourly samples Twice a week for 3 months (in µg/m$^{3)}$	PM10	Found Within NAAQ limits
		PM2.5	
		SO_2	
		NO_x	
		CO	
Water Quality		Colour	

(Ground & Surface)	Once in season at 10 locations (Physical, chemical and biological parameters)	pH	All parameters are within limit except MPN count and E-Coli in surface water as well as ground water.
		TDS	
		COD	
		E-Coli	
Soil Quality	Once in season at 8 locations	Soil type and texture, Physico-chemical properties, NPK	Dark brown to black, clay loam, soil is medium in fertility, good water holding capacity, heavy metal contamination signs not seen.
Noise Quality	Once in season at 9 Locations (Noise levels in dB(A))	Average Day	62.3
		Average Night	55.3
Land use Pattern	One time visit of the study area for ground truthing	Identification & classification of land use	Most of the land is Agricultural land followed by Barren land
Geology and hydrogeology	Once in study period	Geology and hydrogeology of the study area	Basaltic lava flows, the ground water in deccan trap basalt occurs mostly in the upper weathered and fractured parts down to 20-25 m depth, alluvium occurs in small areas.
Ecology	General in 10 km radial study area and data collected around the project site through field visits	Flora	Alstonia scholaris, Cassia tora, Senna siamea etc.
		Fauna	Common mormon, Lemon pansy, green bee-eater, drongo etc.
Socioeconomic Data	General in 10 km radial study area and data collected around the project site through field visits	Socio-economic characteristics of the affected area	Sanitation facilities are unsatisfactory, Power supply facility is available in almost villages and town, Drinking water sources is mostly from PWD water supply, Medical facilities in terms of primary health center

			and primary health sub centers in the rural areas are good.

5.0 Anticipated Environmental Impacts

Anticipated environmental impacts due to proposed augmentation are given in below **Table** 3

Table 3: Anticipated Impacts

Environmental Facets	Anticipated Impacts
Air Environment	Minor increase in concentration of air pollutants due to process, fugitive and utility emissions.
Water Environment	No negative impact.
Land Environment	Impacts on land due to improper disposal of hazardous/ solid waste.
Ecological Environment	Positive as greenbelt of appropriate width will be developed and maintained by the company in the area. No impacts are envisaged on aquatic flora & fauna as there no effluent discharge outside the plant premises.
Social Environment	Overall development of the area in respect of the infrastructure development, educational growth, health facilities etc.
Economic Environment	Positive impacts on economy of the region and revenue generation.
Noise Environment	Negligible negative impact
Occupational Health & Safety	Major health hazards are identified in worst case scenario.

6.0 Environmental Monitoring Program

Details of the environmental monitoring frequency, which will be undertaken for various environmental components, are given below in Table.

Table 4: Post Project Monitoring

Environmental Facets	Parameter	Frequency of Monitoring	Methodology
Drinking water	To monitor quantity of water consumption	Daily in-house monitoring.	IS 10500 : 2012
Fresh water for Industrial Use	pH, EC, TDS, BOD, COD, Oil & Grease, Total Hardness, Total Alkalinity, Ammonia, Nitrite, Nitrate, Phosphate, Sulphate, Chloride (additional parameters as per condition of EC by MoEFCC and Consent Order by MPCB, if required/mentioned)	Quarterly 3rd party monitoring.	Standard methods for examination of water and wastewater analysis published by American Public Health Association.
Industrial wastewater	All parameters as per Consent order of MPCB as well as condition of EC, if mentioned.	Monthly 3rd party monitoring for wastewater	Standard methods for examination of water and wastewater analysis published by American Public Health Association
Ambient Air	PM_{10}, $PM_{2.5}$, SO_2, NO_x, CO, VOC (Additional parameters, if required, as per consent order issued by MPCB & EC issued by MoEFCC)	Quarterly for 2 stations within premises (in downwind direction)	As per relevant sections of IS 5182.
Workplace monitoring	Noise, VOC, Temperature Level	Quarterly in all plant area	NOISH

Environmental Facets	Parameter	Frequency of Monitoring	Methodology
Stack monitoring	PM, SO_2, NO_x, CO (Additional parameters, if required, as per consent order issued by MPCB & EC issued by MoEFCC)	Monthly 3rd party monitoring	As per relevant sections of IS 5182.
Noise monitoring	Noise levels in decibels	Monthly 3rd party monitoring at Operation area, utility area and factory boundary walls for day & night. Monthly at one location in nearest human settlement & at nearest forest area for day & night.	Noise meter
Occupation health Checkups program	As per factory act & other statutory provisions (pre-employment & postemployment).	Yearly during project operation period.	--

7.0 Additional Studies

The following Additional Studies were done in reference

- Public Consultation
- Risk Assessment for storage, handling and measure due to fire and explosion and handling areas.

8.0 Project Benefits

- Main features of the proposed augmentation are,
  - Debottlenecking of the old production lines.
  - Adopting the latest state of art technology
  - Reducing the cycle time wherever possible.
  - Mechanizing the operations wherever possible.
  - Adopting the latest technologies for Pollution Control Systems
- No major new production equipment is proposed to be added. The enhanced production is proposed to be achieved by increasing the operating efficiencies of the processes and by improvement of logistics.
- The specific energy consumption would marginally come down due to higher productivity and improved techno economic parameters.
- Saarloha manufactures special steel which is used besides others by
  1. Ministry of Defense GOI
  2. Ministry of Railways GOI
  3. Nuclear Power Corporation of India Ltd. (NPCIL)
  4. Vikram Sarabhai Space Centre (VSSC)
  5. Bharat Heavy Electricals Ltd. (BHEL)

9.0 Environmental Management Plan

Following mitigation measures shall be adopted by factory to minimize the impact of project on the surrounding environment:

Table 5: EMP for various Environmental Attributes

Environmental Attributes	Mitigation Measures
Air Quality Management	**Process Emission** • Advanced German technology Fume extraction system (FES), High temperature Quenching (HTQ), Dust

Environmental Attributes	Mitigation Measures
	Collectors, Bag filters. Operation of DG sets will be done only in case of power failure & stack height has been provided as per the CPCB norms. • The whole process is carried out in closed condition so as to avoid any chances of other emissions. **Utility Emission** • All the D.G. sets is a standby arrangement and will only be used during power failure. • Adequate stack height shall be provided to Boiler and D.G. sets. **Fugitive Emission** • Dust Extractor may be installed at loading-unloading section to minimize the PM emission at the site. • Dust suppression on haul roads shall be done at regular intervals.
Water & Wastewater Management	• For proposed augmentation, there will not be increase in additional manpower. Existing domestic water is available in ample quantity, therefore some domestic water will be used in industrial activity. Hence, domestic water consumption and sewage generation will be reduced. • Domestic effluent generation will be 65.01 CMD; it is treated in STP of 130 CMD. Treated effluent is used in greenbelt development. Industrial effluent around 30 CMD will be reused in HTQ Gas cooling-Spray cooling. Effluent from RO reject, cooling and boiler blow down will be reused in High temperature Quenching (HTQ). So there is no any effluent discharge in the premises or in the surface water body.
Noise Management	• Closed room has been provided for all the utilities so as to attenuate the noise pollution. • Acoustic enclosure has been provided to D.G sets. • Free flow of traffic movement has been maintained. Earmuffs shall be used while running equipment's of the plant. • Proper maintenance, oiling and greasing of machines at regular intervals shall be done to reduce generation of noise. • Greenbelt shall be developed around the periphery of the plant to reduce noise levels.

Environmental Attributes	Mitigation Measures
Solid & Hazardous Waste Management	• The hazardous waste i.e. spent oil generated shall be very minor and shall be burnt in boiler along with fuel. • Nonhazardous Solid waste such as: Slag Ball, Slag Overflow, Debris, Bricks, Metal Waste, Dust Grinding, Miscellaneous Packing Mater Wood , Paper, Cardboard, Glass, Process Dust • Hazardous waste: Used / Spent oil, Waste / Residue, containing oil Empty Oil Barrels. • Process dust is disposed to HSWTSDF facility of MEPL at Ranjangaon. • Other waste is sell to authorized recycler/processor
Traffic Management	• Culverts shall be maintained. • The trucks carrying raw material & fuel shall be covered to reduce any fugitive dust generation. • Good traffic management system shall be developed and implemented for the incoming and outgoing vehicles so as to avoid congestion on the public road.
Green Belt Development / Plantation	• Plantation has been done as per Central Pollution Control Board (CPCB) Norms. • The plantation in and around the plant site helps/will help to attenuate the pollution level. • Native species shall be given priority for Avenue plantation.
Corporate Environment Responsibility	• An amount of INR 50.00 lakhs (1.0 % of total project cost) will be allocated for CEF activities in the coming 3 years which will be utilized on the basis of requirement.
Occupational Health & Safety	• Company shall monitor the health of its worker before placement and periodically examine during the employment • Health effects of various activities and health hazard if any observed shall be recorded and discussed with the health experts for corrective and preventive actions need to be taken by the industry • Dispensary and ESI facility shall be provided to all workers as applicable • All safety gear shall be provided to workers and care shall be taken by EMC that these are used properly by them. All safety norms shall be followed

10.0 Conclusion

Saarloha Advanced Material Ltd., has committed to implement all the pollution control measures to protect the surrounding environment. The project can definitely help to the requirement of special steel to Ministry of Defense GOI, Ministry of Railways GOI, Nuclear Power Corporation of India Ltd. (NPCIL), Vikram Sarabhai Space Centre (VSSC), Bharat Heavy Electricals Ltd. (BHEL), Export Customers Moreover, it is safe to say that the project is not likely to cause any significant impact on the ecology of the area, as adequate preventive measures has already been implemented to keep various pollutants within permissible limits. Green belt development around the area would also be taken up as an effective pollution mitigation techniques.