

# **EXECUTIVE SUMMARY**

**Of**

## **ENVIRONMENTAL IMPACT ASSESSMENT REPORT**

**FOR**

### **PUBLIC HEARING**

**OF**

## **Proposed Expansion of Existing Metallurgical Industry**

**By**

**M/s. SANT GYANESHWAR STEELS PVT. LTD.**

Gat No. 1076/77, Golegaon Road, Village – Markal, Taluka – Khed,  
District – Pune, Maharashtra

**SUBMITTED TO**

**MAHARSHTRA POLLUTION CONTROL BOARD**

**PREPARED BY**



**M/s SGM Enviro (I) Pvt. Ltd.**  
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QCI –NABET ACCREDITED

## EXECUTIVE SUMMARY

### 1. INTRODUCTION

M/s Sant Gyaneshwar Steel Pvt. Ltd. (SGSPL) Markal was incorporated on 21.06.1996 with Registration number 111927272. The industry is located at Gat No. 1076/77, Golegaon Road, Village – Markal, Taluka – Khed, District – Pune with the main object of manufacturing of M.S. Ingots &/or Billets & Runner Riser.

As per the EIA notification 2006 & its subsequent amendments existing project does not require Environmental Clearance. Existing industry have obtained consent to operate from Maharashtra Pollution Control Board (MPCB) & is complying with all the norms of CPCB & MPCB.

### 2. TYPE OF PROJECT

M/s. Sant Gyaneshwar Steel Pvt. Ltd. (SGSPL) is proposing to expand existing quantity of M.S. ingots &/or Billets manufacturing from 36,000 TPA to 1, 56,000 TPA & capacity of Runner Riser production will remain the same i.e. 720 MTA. This expansion activity will take place within the existing plant premises at Gat No. 1076/77, Golegaon Road, Village – Markal, Tal. - Khed, Dist. – Pune.

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

### 3. 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 SGSPL has identified this opportunity and has decided to become a competitive leader in boosting field of metallurgical sector.

### 4. SITE SELECTION & JUSTIFICATION THEREOF

Proposed expansion will be done within the existing plant 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.

### 5. BRIEF DESCRIPTION OF NATURE, SIZE, LOCATION OF THE PROJECT AND ITS IMPORTANCE TO THE COUNTRY, REGION

**Table 1: Brief Description of Nature, Size and Location of Existing & Proposed Project**

Sr. No.	Particular	Description			
1	Nature & size of existing project	Proposed Expansion of Existing Metallurgical unit by M/s Sant Gyaneshwar Steels Pvt. Ltd. for Production of MS Ingots &/or Billets & Runner Riser			
2 A	Total Area of project	Total plot area is 15700 Sq.m			
2 B	Area Details (Sq.m)	<b>Particular</b>	<b>Existing</b>	<b>Proposed</b>	<b>Total</b>
		Built up Area	2016.52	1616.94	3633.46
		Road Area	484.00	2462.68	2946.68
		Garden/Open Area	3699.48	1471.19	5170.67

		Total	6200	5550.81	11750.81
3	Raw Materials (MT/M)	M.S. Scrap	3170	5800	8970
		Additives/ Ferro Alloys	30	110	140
		Bricks/Reformatories	100	100	200
		Sponge Iron	0	5000	5000
4	Products & By-products (MTA)	MS Ingots &/or Billets	36,000	1,20,000	1,56,000
		Runner Riser	720	0	720
	Capacity of Electric Furnace (MT/Month)	-	6000 (At present, a furnace of 3000 MT is there, which will be upgraded to a Total Capacity of - 6000 MT/M)	7000	13000
	Power requirement	-	4990 KVA + Electricity requirement of existing furnace is 4500KWH/hr	10,000 KVA + Electricity requirement of proposed furnace is 9500 KWH/hr	14990 KVA + 14000 KWH/hr
5	Capacity of DG set (KVA)	-	1 x 250 KVA	1x250 KVA	2 x 250 each
6	Fuel Requirement (lit/hr)	Fuel Type- LDO	6 lit/hr	6 lit/hr	12 lit/hr
7	Stack Details	-	Existing Electric Furnace stack ht. 30 m	Proposed Electric Furnace stack ht. 30 m	Total- 2 stacks: 1 Stack of 30 m for existing furnace & 1 stack of 30 m for proposed furnace
		-	Existing D.G. Set (250 KVA) stack ht. 2 m	Proposed D.G. Set (250KVA) stack ht. 3 m	Total 2 No.s: (1 Existing + 1 Proposed)
8	Air Pollution Control Equipment for boiler	-	Proper stack height with Fume extraction system & dust collector is provided	Proper stack height with Fume extraction system & dust collector will be provided	-
9	Total water Requirement for unit (CMD)	Domestic	1.2	1.9	3.1
		Industrial Process	0	0	0
		Cooling Purpose	60	50	110
		Gardening	0.5	1.3	1.8
10	Waste water generation (CMD)	Domestic	1.0	1.7	2.7
		Industrial Process	0	0	0
		Cooling Purpose	0	0	0
		Gardening	0	0	0
11	Manpower		27	43	70
12	Solid Waste	Scrap	120	360	480

(MT/A)	Slag	1200	8400	9600
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**Table 2: Environmental settings of Project**

Sr. No	Particular	Description
<b>Location of the project site</b>		
1	Plot No.	1076/77
2	Village	Markal
3	Taluka	Khed
4	District	Pune
5	State	Maharashtra
6	Latitude/Longitude	Latitude 18 <sup>0</sup> 39'39.11" N Longitude: 73 <sup>0</sup> 57'29.10" E
7	Average altitude above mean MSL	1866 ft above MSL
8	Corner Co-ordinates of the plant site	Coordinates of the project site as follows A 18 <sup>0</sup> 39'45.27" N 73 <sup>0</sup> 57'29.39" E B 18 <sup>0</sup> 39'44.99" N 73 <sup>0</sup> 57'30.81" E C 18 <sup>0</sup> 39'33.69" N 73 <sup>0</sup> 57'27.49" E D 18 <sup>0</sup> 39'33.78" N 73 <sup>0</sup> 57'29.10" E
9	Toposheet Number	E43I2, E43H14
<b>Environmental setting details (with approximate aerial distance &amp; direction from the plant site)</b>		
10	Nearest village	Markal :1.46 km
11	Nearest National highway/ State highway	Pune – Nashik Highway (11.88 km in W Direction)
12	Nearest Railway station	Kasarwadi Railway station (15.88 km in SW Direction)
13	Nearest airport	Pune Airport 9.50 Km in SW direction
14	Nearest major city	Pimpri-Chinchwad : 17 km in SW direction
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	Indrayani River – 1.68 km away from project site in 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 15 km radius

## 6. MAJOR REQUIREMENT FOR THE PROPOSED PROJECT

### 6.1. RAW MATERIALS REQUIREMENT

**Table 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	3170	5800	8970	Locally available	Truck
2	Additives/ Ferro Alloys	30	110	140	Locally available	Truck
3	Bricks/ Reformatories	100	100	200	Locally available	Truck
4	Sponge Iron	0	5000	5000	Locally available	Truck

## 6.2 POWER REQUIREMENT

The power requirement of the existing unit is 4990 KVA. After expansion the power requirement will be 10,000 KVA. This demand will be met by sourcing the power from MSEDCL from nearby Sub-station. Electricity requirement of existing furnace is 4500KWH/hr & that of proposed furnace is 9500 KWH/hr.

## 6.3 MANPOWER REQUIREMENT

Additional manpower is needed to operate the expansion unit plant will be 43. More than 85 % 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 20. Construction workers will be from nearby villages. Residential facility will not be required for the construction personnel.

## 6.4 WATER REQUIREMENT FOR PROPOSED PROJECT

**Table 4: Water Budget of proposed expansion project**

Sr. No.	Particular	Quantity (m <sup>3</sup> / day)	
		Water Consumption	Effluent Generation
1	Domestic	1.9	1.7
2	Industrial	0	0
3	cooling	50	0
4	Gardening	1.3	0
<b>Total</b>		<b>53.2</b>	<b>1.7</b>

**Total water requirement for proposed expansion project = 53.2 m3/day**

**Fresh water requirement for proposed expansion project = 3.2 m3/day**

## 6.5 LANDREQUIREMENT

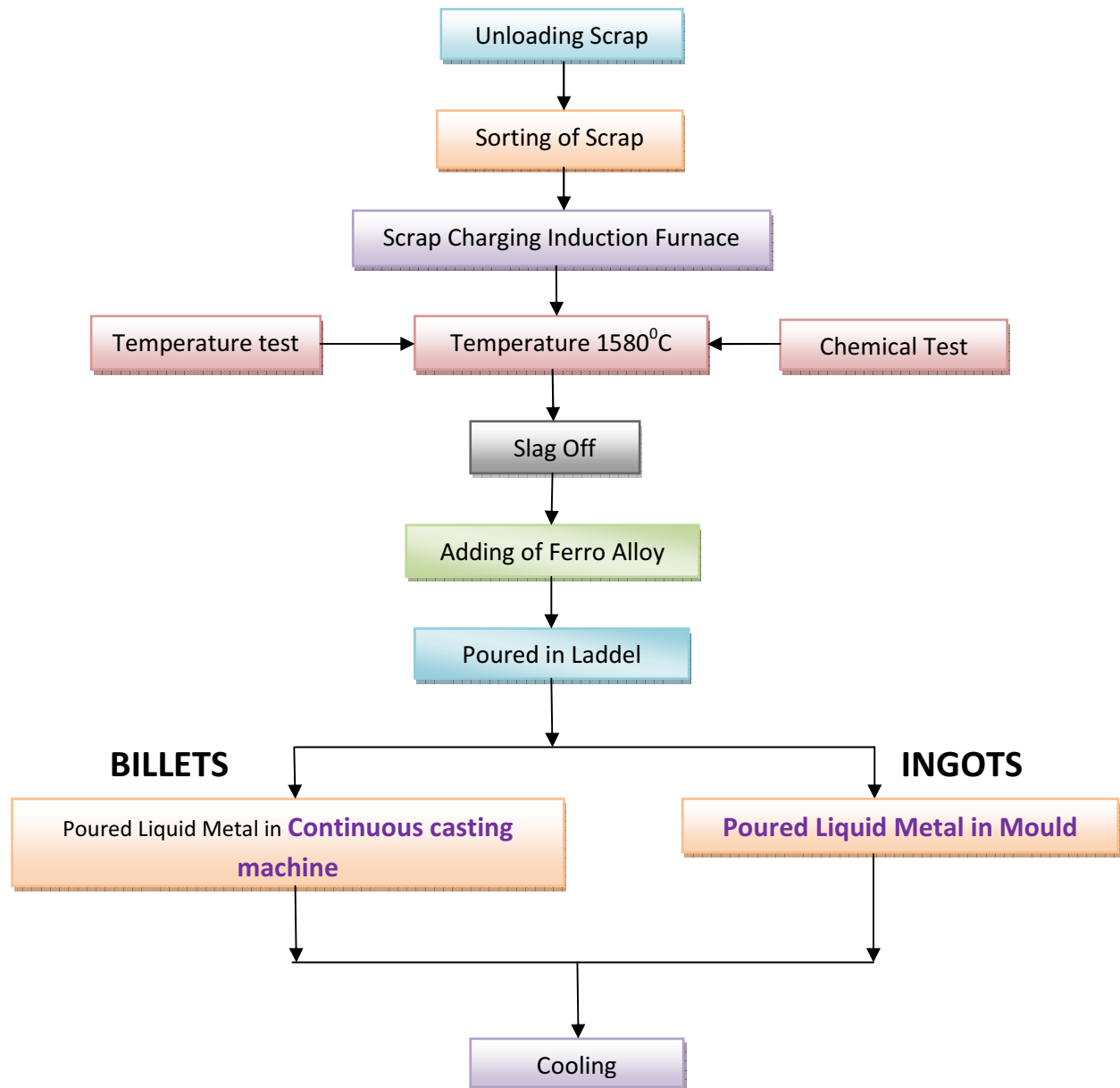
The Company site is located Gat No. 1076/77, Golegaon Road, and Village -Markal, Taluka- Khed, District – Pune. Total plot area of industry is 15700 Sq.m. The details of proposed land use is tabulated in following table-

**Table 5: Details of Land Use**

Sr. No.	Particular	Existing	Proposed	Total Area (Sq.m.)
1	Built up Area	2016.52	1616.94	3633.46
2	Road Area (Sq.m)	484.00	2462.68	2946.68
3	Garden/Open Area	3699.48	1471.19	5170.67

## 7. PROCESS DESCRIPTION ALONG WITH MAJOR EQUIPMENTS AND MACHINERIES, PROCESS FLOW SHEET (QUANTATIVE) FROM RAW MATERIAL TO PRODUCTS

Figure 1: Manufacturing process M.S. Ingots & Runner Riser



## 8. DESCRIPTION OF ENVIRONMENT

Baseline study in this Environmental Impact Assessment report was conducted for a period of three months during 1<sup>st</sup> March 2018 to 31<sup>st</sup> May 2018.

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.

Ambient air quality monitoring has been carried out at 8 stations in the study area on 24 hourly bases. Ambient Air Quality Monitoring reveals that the concentrations of PM<sub>10</sub> and PM<sub>2.5</sub> for all the 8 AAQM stations were found between 77.5 to 25 µg/m<sup>3</sup> and 35.5 to 12 µg/m<sup>3</sup>. The concentrations of SO<sub>2</sub> and NO<sub>x</sub> were found to be in range of 7.7 to 4 µg/m<sup>3</sup> and 41.1 to 21.5 µg/m<sup>3</sup> respectively. The concentration of CO is in range of 0.65 to 0.175 mg/m<sup>3</sup>. The resultant concentration of the parameters is well within the prescribed limits of GPCB & NAAQS.

Prediction of impacts on air environment has been carried out by employing a mathematical model. In the present case, **Industrial Source Complex Short-Term (ISCST3)** dispersion model based on steady state Gaussian plume dispersion, designed for multiple point sources for short term has been used for predicting the ground level concentrations. Results of mathematical modelling reveals that the maximum incremental short term 24 hourly ground level concentrations for PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub> and NO<sub>x</sub> likely to be encountered during pre-monsoon season are 2.38 µg/m<sup>3</sup>, 1.44 µg/m<sup>3</sup>, 4.06 µg/m<sup>3</sup> and 7.22 µg/m<sup>3</sup> respectively occurring at a distance of about 2-km in the South West direction.

Noise level monitoring has been carried out at 8 stations in the study area. Noise level varies from 49.7 to 56.75 Leq dB (A) during day time and from 44.15 to 49.55 Leq dB (A) during night time. 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.

Surface water sampling has been carried out at 1 station in the study area. SGSPL is going to achieve Zero liquid discharge in surface water for the proposed project & hence there is no effect on the river water quality due to this industry.

Ground water sampling has been carried out at 8 stations in the study area. Analysis results of ground water reveals that pH varies from 6.7 to 7.5, Total hardness varies from 281.88 to 411.68 mg/l, Total dissolved solids vary from 366 to 623 mg/l.

Soil samples collected from 8 identified locations indicate pH value ranges from 6.97 to 8.03, which shows that the soil is having near neutral pH. Water holding capacity ranges from 28.50 % to 61.76 % in the soil samples. Free Ammonical nitrogen is found in ranges from 0.14 % to 0.19 % and Potassium is found to be ranging from 1 mg/kg to 8 mg/kg. Soil of the area is found to be suitable for agricultural activities.

The study area is delineated in 10 km radius from the project site. The proposed project site is surrounded by agricultural land. There are no any national parks, wildlife sanctuaries, biosphere reserves or critically polluted areas in the 10 km radius from the proposed project site. No Archeological site is present within the study area. No forest is located in the study area. No Schedule - I fauna was found during the field survey. There is intense anthropogenic pressure on flora, fauna and forest resources, which are observed to be dwindling. However, no rare, endangered & threatened plant species was observed in the study area.

Population of study area is 114,796. Scheduled Caste fraction of the population of the study area (10 km) is 10,542 (9.18%) and Scheduled Tribe 3298 (2.87 %). Literacy rate of the area is 69.59 %. Population of the workers engaged in occupation is 45.80 %. Of these 49,153 (42.81 %) are main workers and 3426 (2.98 %) are marginal workers. Remaining, 62,215 (54.19 %) of the total population is considered as non-workers. The socio-economic analysis of the study area shows that in terms of education could be improved as the literacy rate is quite low i.e. 69.59 %. With a high dependency ratio, the overall socio-economic status of the target population could improve with increase in work participation rate. Hence, the long-term positive impacts on socio-economic conditions of the area are anticipated.

## 9. ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

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

**Table 6: 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 construction 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. Wherever required check dams and dykes will be provided for control of soil erosion.</li> <li>4. 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>5. Appropriate sanitation facilities will be provided for the workers to reduce impact on surface water quality.</li> <li>6. Construction wastes will not be discharged to surface or ground water bodies.</li> <li>7. 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. Vehicles with internal combustion engines will be provided with silencers and mufflers in order to reduce noise levels.</li> </ol> <p>Green belt will be developed to attenuate noise impacts and to reduce noise pollution</p>



4.	Soil	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. Litter disposal and collection points will be established around the work sites. Empty packaging materials, drums, glass, tin, paper, plastic, pet bottles, wood, thermocol and other packaging materials, etc. will be disposed through recyclers. The construction spoils will be temporarily stored at designated dumpsite located inside the plant premises.
<b>(B) Operation Phase</b>		
1.	Air	Adequate stack height to the proposed electric furnace, Fume extraction system & dust collector will be provided
2.	Fugitive	Internal roads paved, leveled, no undulations, no sharp curves, slow speed. Tree plantation on surrounding available area.
3.	Water and Waste Water	1. No effluent generation will take place from proposed industry. Hence no provision of ETP. 2. Rain Water Harvesting will be done.
4.	Solid Waste	100% collection every day. Segregated and treated/ disposed per SPCB norms.
6.	Noise	Smooth roads. Sturdy foundation. No Vibrations. Acoustic enclosures to existing DG Set as per manufacturers' design. Use as standby only. Trees are planted around. Side cladding. Large No. of tree barriers.
7.	Socio-economic	Employment generation, Community Skills Development, Improved Standard of Living, Community Organizational Capacity Development Economic Exposure and Development

## 10. ENVIRONMENTAL MONITORING PROGRAMME

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

**Table 7: Schedule for Environmental Monitoring**

Sr. No.	Particulars	Parameters	Location	Frequency
1	Flue gases from furnace	PM <sub>10</sub> , PM <sub>2.5</sub> , SO <sub>2</sub> and NO <sub>x</sub>	Stack monitoring	Monthly
2	Ambient air quality	PM <sub>10</sub> , PM <sub>2.5</sub> , SO <sub>2</sub> and NO <sub>x</sub> , CO.	<ul style="list-style-type: none"> <li>• Check wind direction</li> <li>• Select two point in upwind direction at 120° from site</li> <li>• Take one point within site at down wind direction from furnace about 1 km distance</li> <li>• Take two points beyond site in down wind direction about 2 km distance at 120° from site opposite to points taken in upwind direction.</li> </ul>	24 hrs sample, half yearly
3	Water (Ground Water and Surface Water)	As per drinking water standards	<ul style="list-style-type: none"> <li>• Take one upstream and downstream sample of surface water. Minimum distance 500 m.</li> <li>• One point upstream at higher elevation from plant site. Also at lower contour point at 3 locations.</li> </ul>	Quarterly

4	Soil	organic & inorganic matter	• Outside plant boundary at lower contour	Pre & post monsoon
5	Noise level, work zone (hourly)	Equivalent noise level-dB (A)	<ul style="list-style-type: none"> <li>• One location in furnace house.</li> <li>• One location near I.D. Fan.</li> <li>• Especially monitor noise during soot blowing.</li> <li>• Four locations around plant boundary</li> </ul>	Quarterly
6	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
7	Environmental Audit	As per Direction of ISO 14001	-	Once in a Year
8	Water utilization, m <sup>3</sup> /d	-	For process, domestic, cooling and boiler	Daily
9	Power utilization	-	For air pollution control facility at boilers and for STP	Daily

## 11. ADDITIONAL STUDIES

Additional Studies conducted as per revised ToR issued by SEAC-I in its 168<sup>th</sup> meeting dated 26<sup>th</sup> August 2019, are Risk Assessment and Disaster Management Plan. Public Hearing is to be conducted for the project.

### RISK ASSESSMENT

An industry with its complex nature of activities involving various plant machineries, raw materials, products, operations, intermediates and environmental discharge has a number of associated hazards. A minor failure can lead to major failure resulting into a disaster causing heavy losses to life, property and environmental. Risk assessment studies are being conducted to ensure safety and reliability of any new plant, through a systematic and scientific methods to identify possible failures and prevent their occurrences before they actually cause disasters and production loss.

#### Objectives of the risk assessment study

1. To identify the major hazards relating to fire, explosion and toxicity due to storage and handling of hazardous chemicals.
2. To visualize maximum credible accident scenarios
3. To analyze and quantify primary and secondary effects and damage potentials of the identified maximum credible accident scenarios using standard procedure.
4. To study the nature of exposures, pathways and consequences of maximum credible accident scenarios and characteristics of risk levels.
5. To provide guidelines for disaster management plan.

### DISASTER MANAGEMENT PLAN

A major disaster in a work is the one, which has potential to cause serious injury or loss of life. It may cause extensive damage to property and serious disruption both inside and outside the works. A Disaster would normally require the assistance of outside emergency services to handle it effectively. Whatever are the causative factors, like plant failure; human error; earthquake; vehicle crash; sabotage etc, they will normally manifest in three basic forms viz, fire, explosion, and *or* toxic release.

#### The objectives of disaster management plan include the following-

1. Controlling the disaster, localizing the disaster and eliminating the hazard

2. Welfare of person managing the disaster.
3. Head count and rescue operations.
4. Treatment of injured.
5. Safeguarding others by timely evacuation.
6. Minimizing damage to property and environment.
7. Informing and assisting relatives.
  - i. Informing and collaborating with statutory authorities.
  - ii. Informing the news media.
  - iii. Preserving records and organizing investigations.
  - iv. Ensuring safety of the works before personnel re-enter and resume work.
  - v. Investigating and taking steps to prevent recurrence.
  - vi. Resorting normalcy

## **12. PROJECT BENEFITS**

### **Implementation of proposed project will result in:**

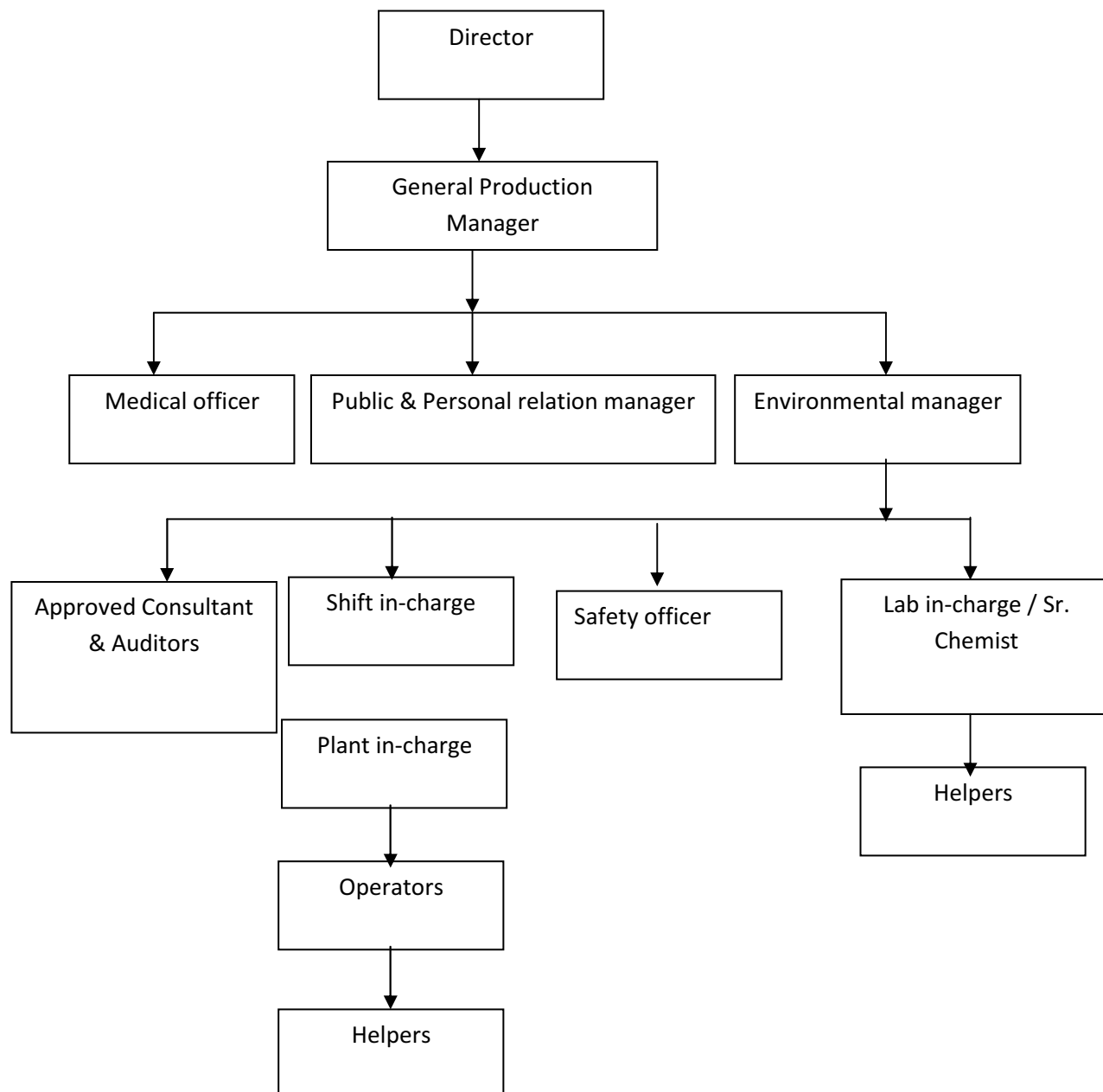
- Improvement in the physical infrastructure
- Improvement in the social infrastructure
- Improvement in employment potential

## **13. ENVIRONMENT MANAGEMENT PLAN**

Environmental Management Plan is detailed under the following heads:

- Air Quality Management
- Noise Management
- Waste Water Management
- Solid & Hazardous Waste Management
- Energy Conservation
- Greenbelt Development & Plantation Programme
- Occupational Health & Safety Measures.
- Enterprise social commitment (ESC)- Industry will utilize 1% of its project cost for ESC.

**Figure 2: Environment Management Cell**



**Table 8: 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
3	Quantity of effluent	To be measured daily and in-plant control. Not to exceed any time	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 ETP 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, bagasse to be baled, molasses not in open pits, press mud to be carted out every day	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
<b>Legends:</b> ENV-M- Environmental Manager, LAB- I- Lab incharge, ENV- C- Environmental Chemist.			

## 14. CONCLUSION

The proposed 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.

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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 SGSPL has identified this opportunity and has decided to become a competitive leader in boosting field of metallurgical sector.

### 4. SITE SELECTION & JUSTIFICATION THEREOF

Proposed expansion will be done within the existing plant 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.

### 5. BRIEF DESCRIPTION OF NATURE, SIZE, LOCATION OF THE PROJECT AND ITS IMPORTANCE TO THE COUNTRY, REGION

**Table 1: Brief Description of Nature, Size and Location of Existing & Proposed Project**

Sr. No.	Particular	Description			
1	Nature & size of existing project	Proposed Expansion of Existing Metallurgical unit by M/s Sant Gyaneshwar Steels Pvt. Ltd. for Production of MS Ingots &/or Billets & Runner Riser			
2 A	Total Area of project	Total plot area is 15700 Sq.m			
2 B	Area Details (Sq.m)	<b>Particular</b>	<b>Existing</b>	<b>Proposed</b>	<b>Total</b>
		Built up Area	2016.52	1616.94	3633.46
		Road Area	484.00	2462.68	2946.68
		Garden/Open Area	3699.48	1471.19	5170.67

		Total	6200	5550.81	11750.81
3	Raw Materials (MT/M)	M.S. Scrap	3170	5800	8970
		Additives/ Ferro Alloys	30	110	140
		Bricks/Reformatories	100	100	200
		Sponge Iron	0	5000	5000
4	Products & By-products (MTA)	MS Ingots &/or Billets	36,000	1,20,000	1,56,000
		Runner Riser	720	0	720
	Capacity of Electric Furnace (MT/Month)	-	6000 (At present, a furnace of 3000 MT is there, which will be upgraded to a Total Capacity of - 6000 MT/M)	7000	13000
	Power requirement	-	4990 KVA + Electricity requirement of existing furnace is 4500KWH/hr	10,000 KVA + Electricity requirement of proposed furnace is 9500 KWH/hr	14990 KVA + 14000 KWH/hr
5	Capacity of DG set (KVA)	-	1 x 250 KVA	1x250 KVA	2 x 250 each
6	Fuel Requirement (lit/hr)	Fuel Type- LDO	6 lit/hr	6 lit/hr	12 lit/hr
7	Stack Details	-	Existing Electric Furnace stack ht. 30 m	Proposed Electric Furnace stack ht. 30 m	Total- 2 stacks: 1 Stack of 30 m for existing furnace & 1 stack of 30 m for proposed furnace
		-	Existing D.G. Set (250 KVA) stack ht. 2 m	Proposed D.G. Set (250KVA) stack ht. 3 m	Total 2 No.s: (1 Existing + 1 Proposed)
8	Air Pollution Control Equipment for boiler	-	Proper stack height with Fume extraction system & dust collector is provided	Proper stack height with Fume extraction system & dust collector will be provided	-
9	Total water Requirement for unit (CMD)	Domestic	1.2	1.9	3.1
		Industrial Process	0	0	0
		Cooling Purpose	60	50	110
		Gardening	0.5	1.3	1.8
10	Waste water generation (CMD)	Domestic	1.0	1.7	2.7
		Industrial Process	0	0	0
		Cooling Purpose	0	0	0
		Gardening	0	0	0
11	Manpower		27	43	70
12	Solid Waste	Scrap	120	360	480



(MT/A)	Slag	1200	8400	9600
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**Table 2: Environmental settings of Project**

Sr. No	Particular	Description
<b>Location of the project site</b>		
1	Plot No.	1076/77
2	Village	Markal
3	Taluka	Khed
4	District	Pune
5	State	Maharashtra
6	Latitude/Longitude	Latitude 18 <sup>0</sup> 39'39.11" N Longitude: 73 <sup>0</sup> 57'29.10" E
7	Average altitude above mean MSL	1866 ft above MSL
8	Corner Co-ordinates of the plant site	Coordinates of the project site as follows A 18 <sup>0</sup> 39'45.27" N 73 <sup>0</sup> 57'29.39" E B 18 <sup>0</sup> 39'44.99" N 73 <sup>0</sup> 57'30.81" E C 18 <sup>0</sup> 39'33.69" N 73 <sup>0</sup> 57'27.49" E D 18 <sup>0</sup> 39'33.78" N 73 <sup>0</sup> 57'29.10" E
9	Toposheet Number	E43I2, E43H14
<b>Environmental setting details (with approximate aerial distance &amp; direction from the plant site)</b>		
10	Nearest village	Markal :1.46 km
11	Nearest National highway/ State highway	Pune – Nashik Highway (11.88 km in W Direction)
12	Nearest Railway station	Kasarwadi Railway station (15.88 km in SW Direction)
13	Nearest airport	Pune Airport 9.50 Km in SW direction
14	Nearest major city	Pimpri-Chinchwad : 17 km in SW direction
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	Indrayani River – 1.68 km away from project site in 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 15 km radius

## 6. MAJOR REQUIREMENT FOR THE PROPOSED PROJECT

### 6.1. RAW MATERIALS REQUIREMENT

**Table 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	3170	5800	8970	Locally available	Truck
2	Additives/ Ferro Alloys	30	110	140	Locally available	Truck
3	Bricks/ Reformatories	100	100	200	Locally available	Truck
4	Sponge Iron	0	5000	5000	Locally available	Truck

## 6.2 POWER REQUIREMENT

The power requirement of the existing unit is 4990 KVA. After expansion the power requirement will be 10,000 KVA. This demand will be met by sourcing the power from MSEDCL from nearby Sub-station. Electricity requirement of existing furnace is 4500KWH/hr & that of proposed furnace is 9500 KWH/hr.

## 6.3 MANPOWER REQUIREMENT

Additional manpower is needed to operate the expansion unit plant will be 43. More than 85 % 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 20. Construction workers will be from nearby villages. Residential facility will not be required for the construction personnel.

## 6.4 WATER REQUIREMENT FOR PROPOSED PROJECT

**Table 4: Water Budget of proposed expansion project**

Sr. No.	Particular	Quantity (m <sup>3</sup> / day)	
		Water Consumption	Effluent Generation
1	Domestic	1.9	1.7
2	Industrial	0	0
3	cooling	50	0
4	Gardening	1.3	0
<b>Total</b>		<b>53.2</b>	<b>1.7</b>

**Total water requirement for proposed expansion project = 53.2 m3/day**

**Fresh water requirement for proposed expansion project = 3.2 m3/day**

## 6.5 LANDREQUIREMENT

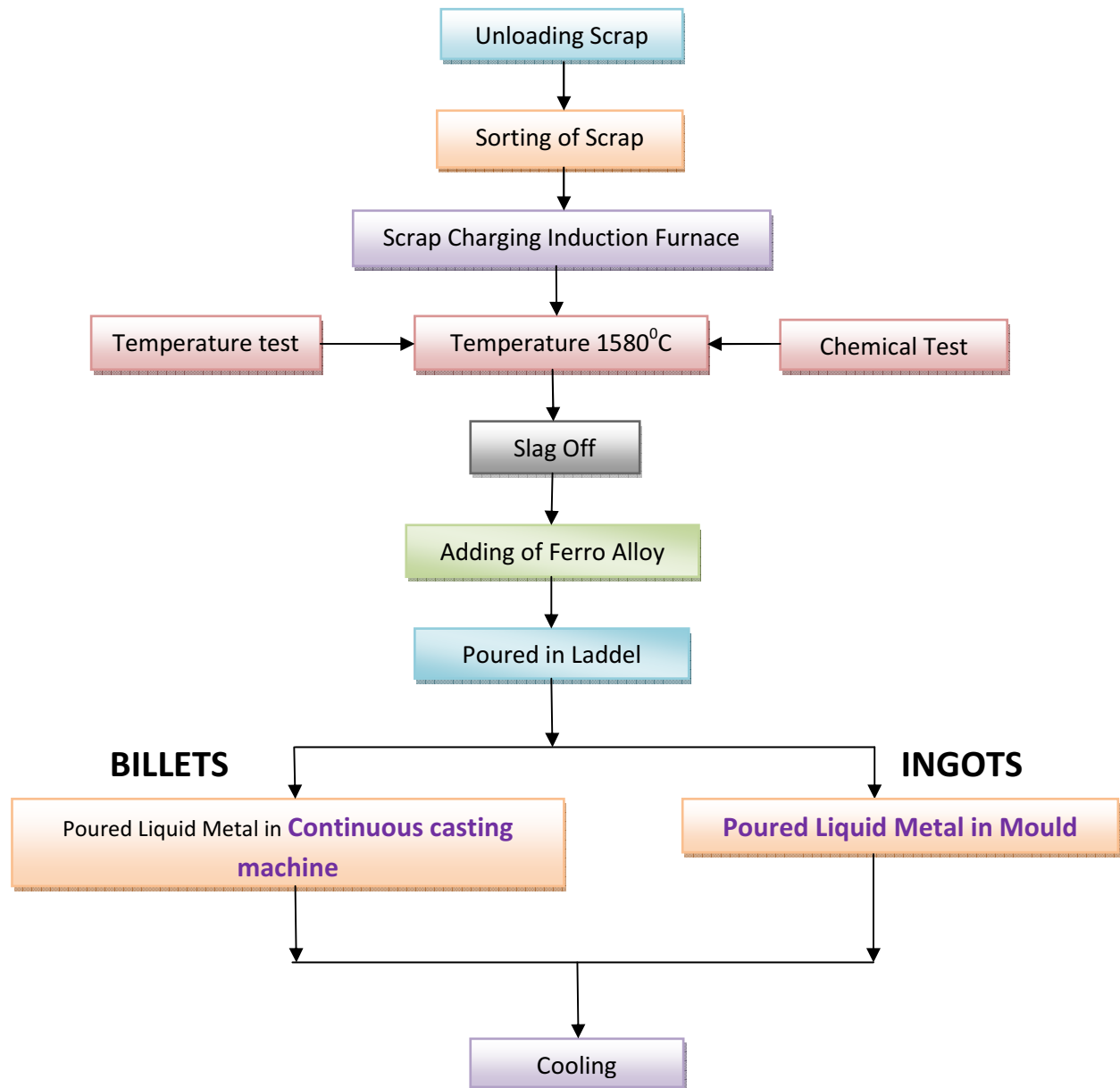
The Company site is located Gat No. 1076/77, Golegaon Road, and Village -Markal, Taluka- Khed, District – Pune. Total plot area of industry is 15700 Sq.m. The details of proposed land use is tabulated in following table-

**Table 5: Details of Land Use**

Sr. No.	Particular	Existing	Proposed	Total Area (Sq.m.)
1	Built up Area	2016.52	1616.94	3633.46
2	Road Area (Sq.m)	484.00	2462.68	2946.68
3	Garden/Open Area	3699.48	1471.19	5170.67

## 7. PROCESS DESCRIPTION ALONG WITH MAJOR EQUIPMENTS AND MACHINERIES, PROCESS FLOW SHEET (QUANTATIVE) FROM RAW MATERIAL TO PRODUCTS

Figure 1: Manufacturing process M.S. Ingots & Runner Riser



## 8. DESCRIPTION OF ENVIRONMENT

Baseline study in this Environmental Impact Assessment report was conducted for a period of three months during 1<sup>st</sup> March 2018 to 31<sup>st</sup> May 2018.

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.

Ambient air quality monitoring has been carried out at 8 stations in the study area on 24 hourly bases. Ambient Air Quality Monitoring reveals that the concentrations of PM<sub>10</sub> and PM<sub>2.5</sub> for all the 8 AAQM stations were found between 77.5 to 25 µg/m<sup>3</sup> and 35.5 to 12 µg/m<sup>3</sup>. The concentrations of SO<sub>2</sub> and NO<sub>x</sub> were found to be in range of 7.7 to 4 µg/m<sup>3</sup> and 41.1 to 21.5 µg/m<sup>3</sup> respectively. The concentration of CO is in range of 0.65 to 0.175 mg/m<sup>3</sup>. The resultant concentration of the parameters is well within the prescribed limits of GPCB & NAAQS.

Prediction of impacts on air environment has been carried out by employing a mathematical model. In the present case, **Industrial Source Complex Short-Term (ISCST3)** dispersion model based on steady state Gaussian plume dispersion, designed for multiple point sources for short term has been used for predicting the ground level concentrations. Results of mathematical modelling reveals that the maximum incremental short term 24 hourly ground level concentrations for PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub> and NO<sub>x</sub> likely to be encountered during pre-monsoon season are 2.38 µg/m<sup>3</sup>, 1.44 µg/m<sup>3</sup>, 4.06 µg/m<sup>3</sup> and 7.22 µg/m<sup>3</sup> respectively occurring at a distance of about 2-km in the South West direction.

Noise level monitoring has been carried out at 8 stations in the study area. Noise level varies from 49.7 to 56.75 Leq dB (A) during day time and from 44.15 to 49.55 Leq dB (A) during night time. 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.

Surface water sampling has been carried out at 1 station in the study area. SGSPL is going to achieve Zero liquid discharge in surface water for the proposed project & hence there is no effect on the river water quality due to this industry.

Ground water sampling has been carried out at 8 stations in the study area. Analysis results of ground water reveals that pH varies from 6.7 to 7.5, Total hardness varies from 281.88 to 411.68 mg/l, Total dissolved solids vary from 366 to 623 mg/l.

Soil samples collected from 8 identified locations indicate pH value ranges from 6.97 to 8.03, which shows that the soil is having near neutral pH. Water holding capacity ranges from 28.50 % to 61.76 % in the soil samples. Free Ammonical nitrogen is found in ranges from 0.14 % to 0.19 % and Potassium is found to be ranging from 1 mg/kg to 8 mg/kg. Soil of the area is found to be suitable for agricultural activities.

The study area is delineated in 10 km radius from the project site. The proposed project site is surrounded by agricultural land. There are no any national parks, wildlife sanctuaries, biosphere reserves or critically polluted areas in the 10 km radius from the proposed project site. No Archeological site is present within the study area. No forest is located in the study area. No Schedule - I fauna was found during the field survey. There is intense anthropogenic pressure on flora, fauna and forest resources, which are observed to be dwindling. However, no rare, endangered & threatened plant species was observed in the study area.

Population of study area is 114,796. Scheduled Caste fraction of the population of the study area (10 km) is 10,542 (9.18%) and Scheduled Tribe 3298 (2.87 %). Literacy rate of the area is 69.59 %. Population of the workers engaged in occupation is 45.80 %. Of these 49,153 (42.81 %) are main workers and 3426 (2.98 %) are marginal workers. Remaining, 62,215 (54.19 %) of the total population is considered as non-workers. The socio-economic analysis of the study area shows that in terms of education could be improved as the literacy rate is quite low i.e. 69.59 %. With a high dependency ratio, the overall socio-economic status of the target population could improve with increase in work participation rate. Hence, the long-term positive impacts on socio-economic conditions of the area are anticipated.

## 9. ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

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

**Table 6: 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 construction 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. Wherever required check dams and dykes will be provided for control of soil erosion.</li> <li>4. 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>5. Appropriate sanitation facilities will be provided for the workers to reduce impact on surface water quality.</li> <li>6. Construction wastes will not be discharged to surface or ground water bodies.</li> <li>7. 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. Vehicles with internal combustion engines will be provided with silencers and mufflers in order to reduce noise levels.</li> </ol> <p>Green belt will be developed to attenuate noise impacts and to reduce noise pollution</p>

4.	Soil	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. Litter disposal and collection points will be established around the work sites. Empty packaging materials, drums, glass, tin, paper, plastic, pet bottles, wood, thermocol and other packaging materials, etc. will be disposed through recyclers. The construction spoils will be temporarily stored at designated dumpsite located inside the plant premises.
<b>(B) Operation Phase</b>		
1.	Air	Adequate stack height to the proposed electric furnace, Fume extraction system & dust collector will be provided
2.	Fugitive	Internal roads paved, leveled, no undulations, no sharp curves, slow speed. Tree plantation on surrounding available area.
3.	Water and Waste Water	1. No effluent generation will take place from proposed industry. Hence no provision of ETP. 2. Rain Water Harvesting will be done.
4.	Solid Waste	100% collection every day. Segregated and treated/ disposed per SPCB norms.
6.	Noise	Smooth roads. Sturdy foundation. No Vibrations. Acoustic enclosures to existing DG Set as per manufacturers' design. Use as standby only. Trees are planted around. Side cladding. Large No. of tree barriers.
7.	Socio-economic	Employment generation, Community Skills Development, Improved Standard of Living, Community Organizational Capacity Development Economic Exposure and Development

## 10. ENVIRONMENTAL MONITORING PROGRAMME

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

**Table 7: Schedule for Environmental Monitoring**

Sr. No.	Particulars	Parameters	Location	Frequency
1	Flue gases from furnace	PM <sub>10</sub> , PM <sub>2.5</sub> , SO <sub>2</sub> and NO <sub>x</sub>	Stack monitoring	Monthly
2	Ambient air quality	PM <sub>10</sub> , PM <sub>2.5</sub> , SO <sub>2</sub> and NO <sub>x</sub> , CO.	<ul style="list-style-type: none"> <li>Check wind direction</li> <li>Select two point in upwind direction at 120° from site</li> <li>Take one point within site at down wind direction from furnace about 1 km distance</li> <li>Take two points beyond site in down wind direction about 2 km distance at 120° from site opposite to points taken in upwind direction.</li> </ul>	24 hrs sample, half yearly
3	Water (Ground Water and Surface Water)	As per drinking water standards	<ul style="list-style-type: none"> <li>Take one upstream and downstream sample of surface water. Minimum distance 500 m.</li> <li>One point upstream at higher elevation from plant site. Also at lower contour point at 3 locations.</li> </ul>	Quarterly

4	Soil	organic & inorganic matter	• Outside plant boundary at lower contour	Pre & post monsoon
5	Noise level, work zone (hourly)	Equivalent noise level-dB (A)	<ul style="list-style-type: none"> <li>• One location in furnace house.</li> <li>• One location near I.D. Fan.</li> <li>• Especially monitor noise during soot blowing.</li> <li>• Four locations around plant boundary</li> </ul>	Quarterly
6	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
7	Environmental Audit	As per Direction of ISO 14001	-	Once in a Year
8	Water utilization, m <sup>3</sup> /d	-	For process, domestic, cooling and boiler	Daily
9	Power utilization	-	For air pollution control facility at boilers and for STP	Daily

## 11. ADDITIONAL STUDIES

Additional Studies conducted as per revised ToR issued by SEAC-I in its 168<sup>th</sup> meeting dated 26<sup>th</sup> August 2019, are Risk Assessment and Disaster Management Plan. Public Hearing is to be conducted for the project.

### RISK ASSESSMENT

An industry with its complex nature of activities involving various plant machineries, raw materials, products, operations, intermediates and environmental discharge has a number of associated hazards. A minor failure can lead to major failure resulting into a disaster causing heavy losses to life, property and environmental. Risk assessment studies are being conducted to ensure safety and reliability of any new plant, through a systematic and scientific methods to identify possible failures and prevent their occurrences before they actually cause disasters and production loss.

#### Objectives of the risk assessment study

1. To identify the major hazards relating to fire, explosion and toxicity due to storage and handling of hazardous chemicals.
2. To visualize maximum credible accident scenarios
3. To analyze and quantify primary and secondary effects and damage potentials of the identified maximum credible accident scenarios using standard procedure.
4. To study the nature of exposures, pathways and consequences of maximum credible accident scenarios and characteristics of risk levels.
5. To provide guidelines for disaster management plan.

### DISASTER MANAGEMENT PLAN

A major disaster in a work is the one, which has potential to cause serious injury or loss of life. It may cause extensive damage to property and serious disruption both inside and outside the works. A Disaster would normally require the assistance of outside emergency services to handle it effectively. Whatever are the causative factors, like plant failure; human error; earthquake; vehicle crash; sabotage etc, they will normally manifest in three basic forms viz, fire, explosion, and *or* toxic release.

#### The objectives of disaster management plan include the following-

1. Controlling the disaster, localizing the disaster and eliminating the hazard

2. Welfare of person managing the disaster.
3. Head count and rescue operations.
4. Treatment of injured.
5. Safeguarding others by timely evacuation.
6. Minimizing damage to property and environment.
7. Informing and assisting relatives.
  - i. Informing and collaborating with statutory authorities.
  - ii. Informing the news media.
  - iii. Preserving records and organizing investigations.
  - iv. Ensuring safety of the works before personnel re-enter and resume work.
  - v. Investigating and taking steps to prevent recurrence.
  - vi. Resorting normalcy

## **12. PROJECT BENEFITS**

### **Implementation of proposed project will result in:**

- Improvement in the physical infrastructure
- Improvement in the social infrastructure
- Improvement in employment potential

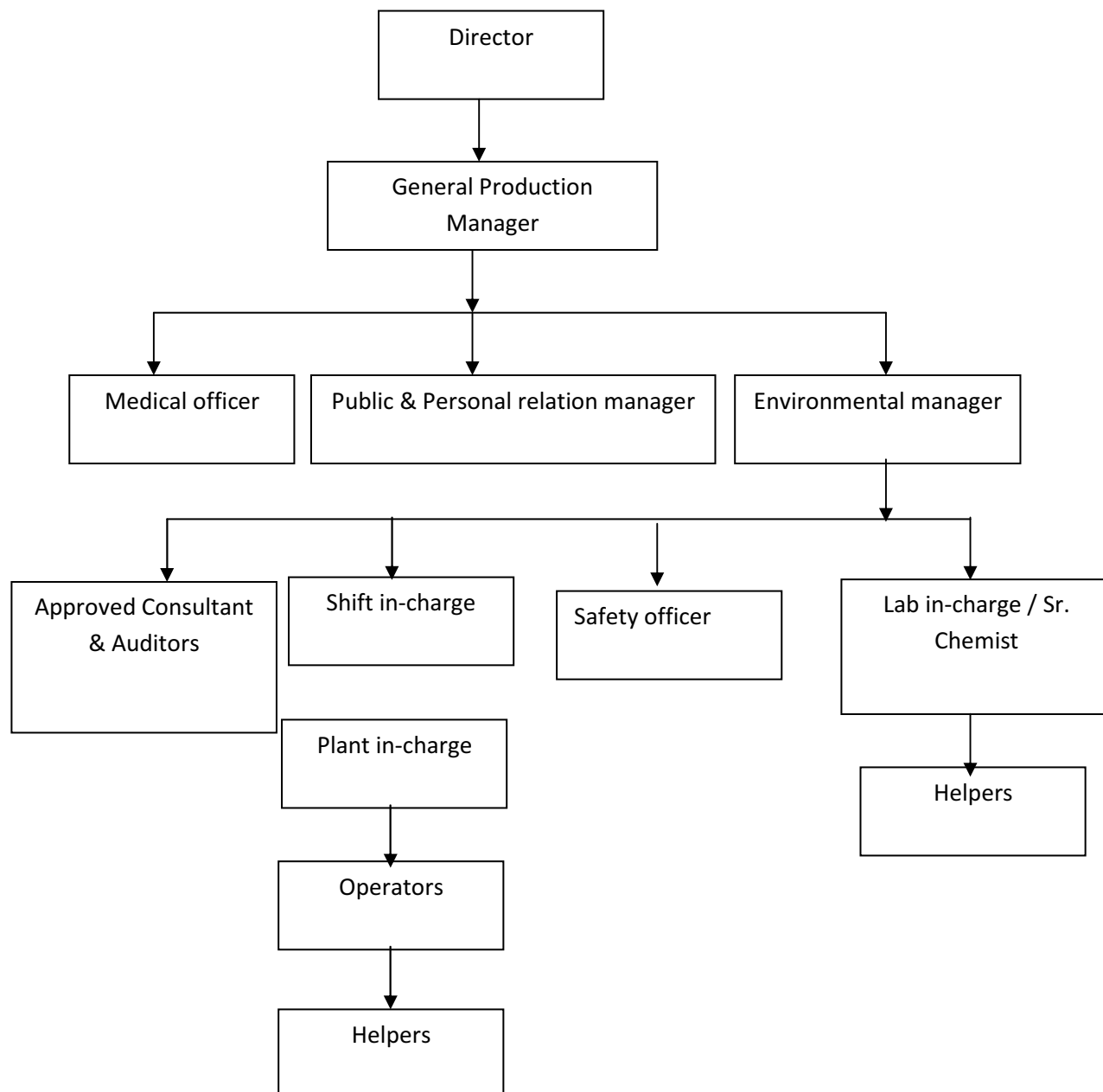
## **13. ENVIRONMENT MANAGEMENT PLAN**

Environmental Management Plan is detailed under the following heads:

- Air Quality Management
- Noise Management
- Waste Water Management
- Solid & Hazardous Waste Management
- Energy Conservation
- Greenbelt Development & Plantation Programme
- Occupational Health & Safety Measures.
- Enterprise social commitment (ESC)- Industry will utilize 1% of its project cost for ESC.

**Figure 2: Environment Management Cell**





**Table 8: 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
3	Quantity of effluent	To be measured daily and in-plant control. Not to exceed any time	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 ETP 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, bagasse to be baled, molasses not in open pits, press mud to be carted out every day	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
<b>Legends:</b> ENV-M- Environmental Manager, LAB- I- Lab incharge, ENV- C- Environmental Chemist.			

#### 14. CONCLUSION

The proposed 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.

# **EXECUTIVE SUMMARY**

**Of**

## **ENVIRONMENTAL IMPACT ASSESSMENT REPORT**

**FOR**

### **PUBLIC HEARING**

**OF**

## **Proposed Expansion of Existing Metallurgical Industry**

**By**

**M/s. SANT GYANESHWAR STEELS PVT. LTD.**

Gat No. 1076/77, Golegaon Road, Village – Markal, Taluka – Khed,  
District – Pune, Maharashtra

**SUBMITTED TO**

**MAHARSHTRA POLLUTION CONTROL BOARD**

**PREPARED BY**



**M/s SGM Enviro (I) Pvt. Ltd.**  
Saahil Apartments,1102/A/4B,Model Colony  
Lakaki Road,Opp. Kirloskar Bunglow,  
ShivajiNagar , Pune -411016  
QCI –NABET ACCREDITED

## EXECUTIVE SUMMARY

### 1. INTRODUCTION

M/s Sant Gyaneshwar Steel Pvt. Ltd. (SGSPL) Markal was incorporated on 21.06.1996 with Registration number 111927272. The industry is located at Gat No. 1076/77, Golegaon Road, Village – Markal, Taluka – Khed, District – Pune with the main object of manufacturing of M.S. Ingots &/or Billets & Runner Riser.

As per the EIA notification 2006 & its subsequent amendments existing project does not require Environmental Clearance. Existing industry have obtained consent to operate from Maharashtra Pollution Control Board (MPCB) & is complying with all the norms of CPCB & MPCB.

### 2. TYPE OF PROJECT

M/s. Sant Gyaneshwar Steel Pvt. Ltd. (SGSPL) is proposing to expand existing quantity of M.S. ingots &/or Billets manufacturing from 36,000 TPA to 1, 56,000 TPA & capacity of Runner Riser production will remain the same i.e. 720 MTA. This expansion activity will take place within the existing plant premises at Gat No. 1076/77, Golegaon Road, Village – Markal, Tal. - Khed, Dist. – Pune.

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

### 3. 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 SGSPL has identified this opportunity and has decided to become a competitive leader in boosting field of metallurgical sector.

### 4. SITE SELECTION & JUSTIFICATION THEREOF

Proposed expansion will be done within the existing plant 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.

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**Table 1: Brief Description of Nature, Size and Location of Existing & Proposed Project**

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1	Nature & size of existing project	Proposed Expansion of Existing Metallurgical unit by M/s Sant Gyaneshwar Steels Pvt. Ltd. for Production of MS Ingots &/or Billets & Runner Riser			
2 A	Total Area of project	Total plot area is 15700 Sq.m			
2 B	Area Details (Sq.m)	<b>Particular</b>	<b>Existing</b>	<b>Proposed</b>	<b>Total</b>
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4	Products & By-products (MTA)	MS Ingots &/or Billets	36,000	1,20,000	1,56,000
		Runner Riser	720	0	720
	Capacity of Electric Furnace (MT/Month)	-	6000 (At present, a furnace of 3000 MT is there, which will be upgraded to a Total Capacity of - 6000 MT/M)	7000	13000
	Power requirement	-	4990 KVA + Electricity requirement of existing furnace is 4500KWH/hr	10,000 KVA + Electricity requirement of proposed furnace is 9500 KWH/hr	14990 KVA + 14000 KWH/hr
5	Capacity of DG set (KVA)	-	1 x 250 KVA	1x250 KVA	2 x 250 each
6	Fuel Requirement (lit/hr)	Fuel Type- LDO	6 lit/hr	6 lit/hr	12 lit/hr
7	Stack Details	-	Existing Electric Furnace stack ht. 30 m	Proposed Electric Furnace stack ht. 30 m	Total- 2 stacks: 1 Stack of 30 m for existing furnace & 1 stack of 30 m for proposed furnace
		-	Existing D.G. Set (250 KVA) stack ht. 2 m	Proposed D.G. Set (250KVA) stack ht. 3 m	Total 2 No.s: (1 Existing + 1 Proposed)
8	Air Pollution Control Equipment for boiler	-	Proper stack height with Fume extraction system & dust collector is provided	Proper stack height with Fume extraction system & dust collector will be provided	-
9	Total water Requirement for unit (CMD)	Domestic	1.2	1.9	3.1
		Industrial Process	0	0	0
		Cooling Purpose	60	50	110
		Gardening	0.5	1.3	1.8
10	Waste water generation (CMD)	Domestic	1.0	1.7	2.7
		Industrial Process	0	0	0
		Cooling Purpose	0	0	0
		Gardening	0	0	0
11	Manpower		27	43	70
12	Solid Waste	Scrap	120	360	480

(MT/A)	Slag	1200	8400	9600
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**Table 2: Environmental settings of Project**

Sr. No	Particular	Description
<b>Location of the project site</b>		
1	Plot No.	1076/77
2	Village	Markal
3	Taluka	Khed
4	District	Pune
5	State	Maharashtra
6	Latitude/Longitude	Latitude 18 <sup>0</sup> 39'39.11" N Longitude: 73 <sup>0</sup> 57'29.10" E
7	Average altitude above mean MSL	1866 ft above MSL
8	Corner Co-ordinates of the plant site	Coordinates of the project site as follows A 18 <sup>0</sup> 39'45.27" N 73 <sup>0</sup> 57'29.39" E B 18 <sup>0</sup> 39'44.99" N 73 <sup>0</sup> 57'30.81" E C 18 <sup>0</sup> 39'33.69" N 73 <sup>0</sup> 57'27.49" E D 18 <sup>0</sup> 39'33.78" N 73 <sup>0</sup> 57'29.10" E
9	Toposheet Number	E43I2, E43H14
<b>Environmental setting details (with approximate aerial distance &amp; direction from the plant site)</b>		
10	Nearest village	Markal :1.46 km
11	Nearest National highway/ State highway	Pune – Nashik Highway (11.88 km in W Direction)
12	Nearest Railway station	Kasarwadi Railway station (15.88 km in SW Direction)
13	Nearest airport	Pune Airport 9.50 Km in SW direction
14	Nearest major city	Pimpri-Chinchwad : 17 km in SW direction
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	Indrayani River – 1.68 km away from project site in 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 15 km radius

## 6. MAJOR REQUIREMENT FOR THE PROPOSED PROJECT

### 6.1. RAW MATERIALS REQUIREMENT

**Table 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	3170	5800	8970	Locally available	Truck
2	Additives/ Ferro Alloys	30	110	140	Locally available	Truck
3	Bricks/ Reformatories	100	100	200	Locally available	Truck
4	Sponge Iron	0	5000	5000	Locally available	Truck

## 6.2 POWER REQUIREMENT

The power requirement of the existing unit is 4990 KVA. After expansion the power requirement will be 10,000 KVA. This demand will be met by sourcing the power from MSEDCL from nearby Sub-station. Electricity requirement of existing furnace is 4500KWH/hr & that of proposed furnace is 9500 KWH/hr.

## 6.3 MANPOWER REQUIREMENT

Additional manpower is needed to operate the expansion unit plant will be 43. More than 85 % 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 20. Construction workers will be from nearby villages. Residential facility will not be required for the construction personnel.

## 6.4 WATER REQUIREMENT FOR PROPOSED PROJECT

**Table 4: Water Budget of proposed expansion project**

Sr. No.	Particular	Quantity (m <sup>3</sup> / day)	
		Water Consumption	Effluent Generation
1	Domestic	1.9	1.7
2	Industrial	0	0
3	cooling	50	0
4	Gardening	1.3	0
<b>Total</b>		<b>53.2</b>	<b>1.7</b>

**Total water requirement for proposed expansion project = 53.2 m3/day**

**Fresh water requirement for proposed expansion project = 3.2 m3/day**

## 6.5 LANDREQUIREMENT

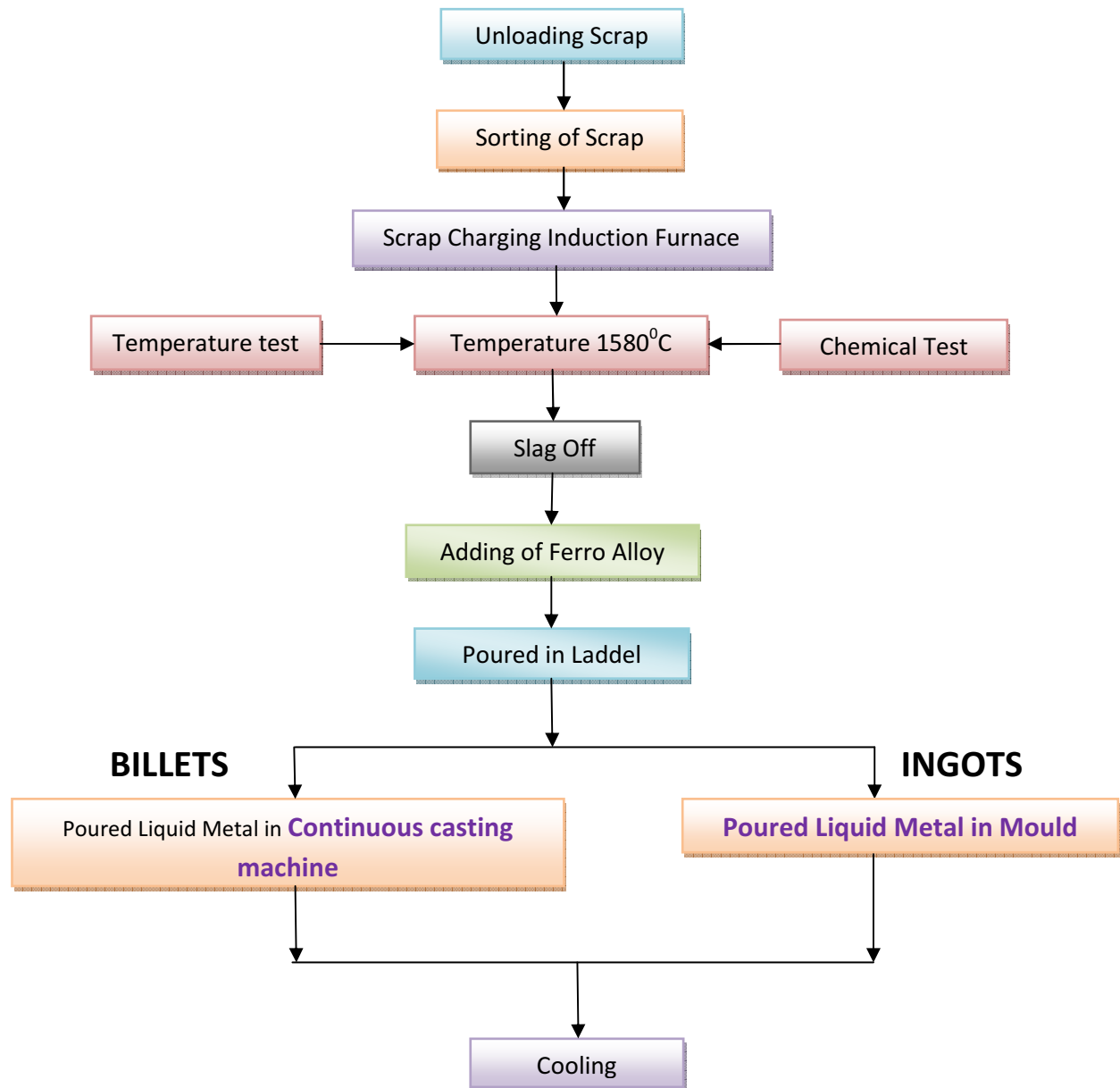
The Company site is located Gat No. 1076/77, Golegaon Road, and Village -Markal, Taluka- Khed, District – Pune. Total plot area of industry is 15700 Sq.m. The details of proposed land use is tabulated in following table-

**Table 5: Details of Land Use**

Sr. No.	Particular	Existing	Proposed	Total Area (Sq.m.)
1	Built up Area	2016.52	1616.94	3633.46
2	Road Area (Sq.m)	484.00	2462.68	2946.68
3	Garden/Open Area	3699.48	1471.19	5170.67

## 7. PROCESS DESCRIPTION ALONG WITH MAJOR EQUIPMENTS AND MACHINERIES, PROCESS FLOW SHEET (QUANTATIVE) FROM RAW MATERIAL TO PRODUCTS

Figure 1: Manufacturing process M.S. Ingots & Runner Riser



## 8. DESCRIPTION OF ENVIRONMENT

Baseline study in this Environmental Impact Assessment report was conducted for a period of three months during 1<sup>st</sup> March 2018 to 31<sup>st</sup> May 2018.

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.



Ambient air quality monitoring has been carried out at 8 stations in the study area on 24 hourly bases. Ambient Air Quality Monitoring reveals that the concentrations of PM<sub>10</sub> and PM<sub>2.5</sub> for all the 8 AAQM stations were found between 77.5 to 25 µg/m<sup>3</sup> and 35.5 to 12 µg/m<sup>3</sup>. The concentrations of SO<sub>2</sub> and NO<sub>x</sub> were found to be in range of 7.7 to 4 µg/m<sup>3</sup> and 41.1 to 21.5 µg/m<sup>3</sup> respectively. The concentration of CO is in range of 0.65 to 0.175 mg/m<sup>3</sup>. The resultant concentration of the parameters is well within the prescribed limits of GPCB & NAAQS.

Prediction of impacts on air environment has been carried out by employing a mathematical model. In the present case, **Industrial Source Complex Short-Term (ISCST3)** dispersion model based on steady state Gaussian plume dispersion, designed for multiple point sources for short term has been used for predicting the ground level concentrations. Results of mathematical modelling reveals that the maximum incremental short term 24 hourly ground level concentrations for PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub> and NO<sub>x</sub> likely to be encountered during pre-monsoon season are 2.38 µg/m<sup>3</sup>, 1.44 µg/m<sup>3</sup>, 4.06 µg/m<sup>3</sup> and 7.22 µg/m<sup>3</sup> respectively occurring at a distance of about 2-km in the South West direction.

Noise level monitoring has been carried out at 8 stations in the study area. Noise level varies from 49.7 to 56.75 Leq dB (A) during day time and from 44.15 to 49.55 Leq dB (A) during night time. 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.

Surface water sampling has been carried out at 1 station in the study area. SGSPL is going to achieve Zero liquid discharge in surface water for the proposed project & hence there is no effect on the river water quality due to this industry.

Ground water sampling has been carried out at 8 stations in the study area. Analysis results of ground water reveals that pH varies from 6.7 to 7.5, Total hardness varies from 281.88 to 411.68 mg/l, Total dissolved solids vary from 366 to 623 mg/l.

Soil samples collected from 8 identified locations indicate pH value ranges from 6.97 to 8.03, which shows that the soil is having near neutral pH. Water holding capacity ranges from 28.50 % to 61.76 % in the soil samples. Free Ammonical nitrogen is found in ranges from 0.14 % to 0.19 % and Potassium is found to be ranging from 1 mg/kg to 8 mg/kg. Soil of the area is found to be suitable for agricultural activities.

The study area is delineated in 10 km radius from the project site. The proposed project site is surrounded by agricultural land. There are no any national parks, wildlife sanctuaries, biosphere reserves or critically polluted areas in the 10 km radius from the proposed project site. No Archeological site is present within the study area. No forest is located in the study area. No Schedule - I fauna was found during the field survey. There is intense anthropogenic pressure on flora, fauna and forest resources, which are observed to be dwindling. However, no rare, endangered & threatened plant species was observed in the study area.

Population of study area is 114,796. Scheduled Caste fraction of the population of the study area (10 km) is 10,542 (9.18%) and Scheduled Tribe 3298 (2.87 %). Literacy rate of the area is 69.59 %. Population of the workers engaged in occupation is 45.80 %. Of these 49,153 (42.81 %) are main workers and 3426 (2.98 %) are marginal workers. Remaining, 62,215 (54.19 %) of the total population is considered as non-workers. The socio-economic analysis of the study area shows that in terms of education could be improved as the literacy rate is quite low i.e. 69.59 %. With a high dependency ratio, the overall socio-economic status of the target population could improve with increase in work participation rate. Hence, the long-term positive impacts on socio-economic conditions of the area are anticipated.

## 9. ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

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

**Table 6: 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 construction 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. Wherever required check dams and dykes will be provided for control of soil erosion.</li> <li>4. 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>5. Appropriate sanitation facilities will be provided for the workers to reduce impact on surface water quality.</li> <li>6. Construction wastes will not be discharged to surface or ground water bodies.</li> <li>7. 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. Vehicles with internal combustion engines will be provided with silencers and mufflers in order to reduce noise levels.</li> </ol> <p>Green belt will be developed to attenuate noise impacts and to reduce noise pollution</p>

4.	Soil	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. Litter disposal and collection points will be established around the work sites. Empty packaging materials, drums, glass, tin, paper, plastic, pet bottles, wood, thermocol and other packaging materials, etc. will be disposed through recyclers. The construction spoils will be temporarily stored at designated dumpsite located inside the plant premises.
<b>(B) Operation Phase</b>		
1.	Air	Adequate stack height to the proposed electric furnace, Fume extraction system & dust collector will be provided
2.	Fugitive	Internal roads paved, leveled, no undulations, no sharp curves, slow speed. Tree plantation on surrounding available area.
3.	Water and Waste Water	1. No effluent generation will take place from proposed industry. Hence no provision of ETP. 2. Rain Water Harvesting will be done.
4.	Solid Waste	100% collection every day. Segregated and treated/ disposed per SPCB norms.
6.	Noise	Smooth roads. Sturdy foundation. No Vibrations. Acoustic enclosures to existing DG Set as per manufacturers' design. Use as standby only. Trees are planted around. Side cladding. Large No. of tree barriers.
7.	Socio-economic	Employment generation, Community Skills Development, Improved Standard of Living, Community Organizational Capacity Development Economic Exposure and Development

## 10. ENVIRONMENTAL MONITORING PROGRAMME

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

**Table 7: Schedule for Environmental Monitoring**

Sr. No.	Particulars	Parameters	Location	Frequency
1	Flue gases from furnace	PM <sub>10</sub> , PM <sub>2.5</sub> , SO <sub>2</sub> and NO <sub>x</sub>	Stack monitoring	Monthly
2	Ambient air quality	PM <sub>10</sub> , PM <sub>2.5</sub> , SO <sub>2</sub> and NO <sub>x</sub> , CO.	<ul style="list-style-type: none"> <li>Check wind direction</li> <li>Select two point in upwind direction at 120° from site</li> <li>Take one point within site at down wind direction from furnace about 1 km distance</li> <li>Take two points beyond site in down wind direction about 2 km distance at 120° from site opposite to points taken in upwind direction.</li> </ul>	24 hrs sample, half yearly
3	Water (Ground Water and Surface Water)	As per drinking water standards	<ul style="list-style-type: none"> <li>Take one upstream and downstream sample of surface water. Minimum distance 500 m.</li> <li>One point upstream at higher elevation from plant site. Also at lower contour point at 3 locations.</li> </ul>	Quarterly

4	Soil	organic & inorganic matter	• Outside plant boundary at lower contour	Pre & post monsoon
5	Noise level, work zone (hourly)	Equivalent noise level-dB (A)	<ul style="list-style-type: none"> <li>• One location in furnace house.</li> <li>• One location near I.D. Fan.</li> <li>• Especially monitor noise during soot blowing.</li> <li>• Four locations around plant boundary</li> </ul>	Quarterly
6	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
7	Environmental Audit	As per Direction of ISO 14001	-	Once in a Year
8	Water utilization, m <sup>3</sup> /d	-	For process, domestic, cooling and boiler	Daily
9	Power utilization	-	For air pollution control facility at boilers and for STP	Daily

## 11. ADDITIONAL STUDIES

Additional Studies conducted as per revised ToR issued by SEAC-I in its 168<sup>th</sup> meeting dated 26<sup>th</sup> August 2019, are Risk Assessment and Disaster Management Plan. Public Hearing is to be conducted for the project.

### RISK ASSESSMENT

An industry with its complex nature of activities involving various plant machineries, raw materials, products, operations, intermediates and environmental discharge has a number of associated hazards. A minor failure can lead to major failure resulting into a disaster causing heavy losses to life, property and environmental. Risk assessment studies are being conducted to ensure safety and reliability of any new plant, through a systematic and scientific methods to identify possible failures and prevent their occurrences before they actually cause disasters and production loss.

#### Objectives of the risk assessment study

1. To identify the major hazards relating to fire, explosion and toxicity due to storage and handling of hazardous chemicals.
2. To visualize maximum credible accident scenarios
3. To analyze and quantify primary and secondary effects and damage potentials of the identified maximum credible accident scenarios using standard procedure.
4. To study the nature of exposures, pathways and consequences of maximum credible accident scenarios and characteristics of risk levels.
5. To provide guidelines for disaster management plan.

### DISASTER MANAGEMENT PLAN

A major disaster in a work is the one, which has potential to cause serious injury or loss of life. It may cause extensive damage to property and serious disruption both inside and outside the works. A Disaster would normally require the assistance of outside emergency services to handle it effectively. Whatever are the causative factors, like plant failure; human error; earthquake; vehicle crash; sabotage etc, they will normally manifest in three basic forms viz, fire, explosion, and *or* toxic release.

#### The objectives of disaster management plan include the following-

1. Controlling the disaster, localizing the disaster and eliminating the hazard

2. Welfare of person managing the disaster.
3. Head count and rescue operations.
4. Treatment of injured.
5. Safeguarding others by timely evacuation.
6. Minimizing damage to property and environment.
7. Informing and assisting relatives.
  - i. Informing and collaborating with statutory authorities.
  - ii. Informing the news media.
  - iii. Preserving records and organizing investigations.
  - iv. Ensuring safety of the works before personnel re-enter and resume work.
  - v. Investigating and taking steps to prevent recurrence.
  - vi. Resorting normalcy

## **12. PROJECT BENEFITS**

### **Implementation of proposed project will result in:**

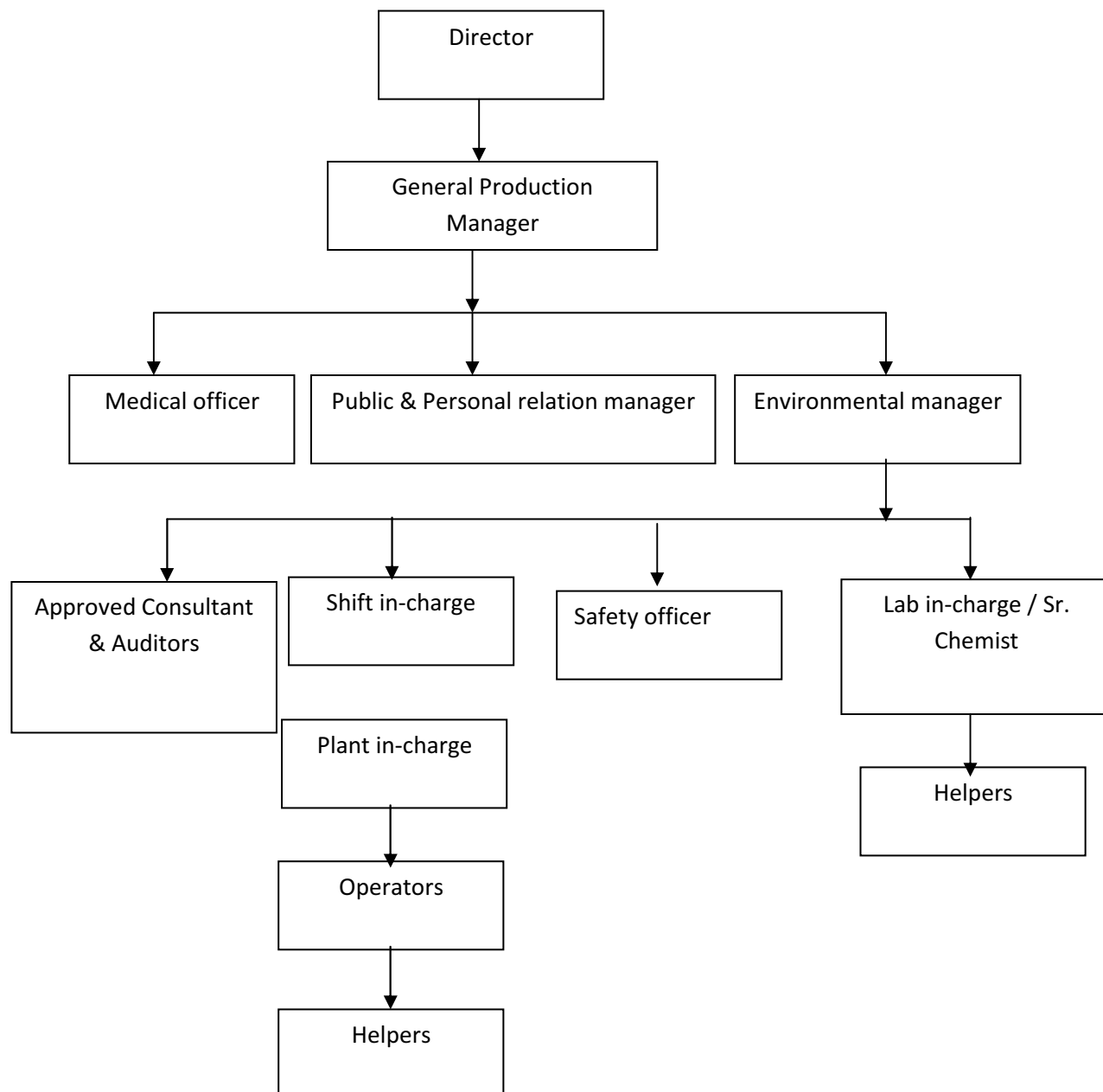
- Improvement in the physical infrastructure
- Improvement in the social infrastructure
- Improvement in employment potential

## **13. ENVIRONMENT MANAGEMENT PLAN**

Environmental Management Plan is detailed under the following heads:

- Air Quality Management
- Noise Management
- Waste Water Management
- Solid & Hazardous Waste Management
- Energy Conservation
- Greenbelt Development & Plantation Programme
- Occupational Health & Safety Measures.
- Enterprise social commitment (ESC)- Industry will utilize 1% of its project cost for ESC.

**Figure 2: Environment Management Cell**



**Table 8: 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
3	Quantity of effluent	To be measured daily and in-plant control. Not to exceed any time	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 ETP 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, bagasse to be baled, molasses not in open pits, press mud to be carted out every day	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
<b>Legends:</b> ENV-M- Environmental Manager, LAB- I- Lab incharge, ENV- C- Environmental Chemist.			

## 14. CONCLUSION

The proposed 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.

# **EXECUTIVE SUMMARY**

**Of**

## **ENVIRONMENTAL IMPACT ASSESSMENT REPORT**

**FOR**

### **PUBLIC HEARING**

**OF**

## **Proposed Expansion of Existing Metallurgical Industry**

**By**

**M/s. SANT GYANESHWAR STEELS PVT. LTD.**

Gat No. 1076/77, Golegaon Road, Village – Markal, Taluka – Khed,  
District – Pune, Maharashtra

**SUBMITTED TO**

**MAHARSHTRA POLLUTION CONTROL BOARD**

**PREPARED BY**



**M/s SGM Enviro (I) Pvt. Ltd.**  
Saahil Apartments,1102/A/4B,Model Colony  
Lakaki Road,Opp. Kirloskar Bunglow,  
ShivajiNagar , Pune -411016  
QCI –NABET ACCREDITED



## EXECUTIVE SUMMARY

### 1. INTRODUCTION

M/s Sant Gyaneshwar Steel Pvt. Ltd. (SGSPL) Markal was incorporated on 21.06.1996 with Registration number 111927272. The industry is located at Gat No. 1076/77, Golegaon Road, Village – Markal, Taluka – Khed, District – Pune with the main object of manufacturing of M.S. Ingots &/or Billets & Runner Riser.

As per the EIA notification 2006 & its subsequent amendments existing project does not require Environmental Clearance. Existing industry have obtained consent to operate from Maharashtra Pollution Control Board (MPCB) & is complying with all the norms of CPCB & MPCB.

### 2. TYPE OF PROJECT

M/s. Sant Gyaneshwar Steel Pvt. Ltd. (SGSPL) is proposing to expand existing quantity of M.S. ingots &/or Billets manufacturing from 36,000 TPA to 1, 56,000 TPA & capacity of Runner Riser production will remain the same i.e. 720 MTA. This expansion activity will take place within the existing plant premises at Gat No. 1076/77, Golegaon Road, Village – Markal, Tal. - Khed, Dist. – Pune.

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

### 3. 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 SGSPL has identified this opportunity and has decided to become a competitive leader in boosting field of metallurgical sector.

### 4. SITE SELECTION & JUSTIFICATION THEREOF

Proposed expansion will be done within the existing plant 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.

### 5. BRIEF DESCRIPTION OF NATURE, SIZE, LOCATION OF THE PROJECT AND ITS IMPORTANCE TO THE COUNTRY, REGION

**Table 1: Brief Description of Nature, Size and Location of Existing & Proposed Project**

Sr. No.	Particular	Description			
1	Nature & size of existing project	Proposed Expansion of Existing Metallurgical unit by M/s Sant Gyaneshwar Steels Pvt. Ltd. for Production of MS Ingots &/or Billets & Runner Riser			
2 A	Total Area of project	Total plot area is 15700 Sq.m			
2 B	Area Details (Sq.m)	<b>Particular</b>	<b>Existing</b>	<b>Proposed</b>	<b>Total</b>
		Built up Area	2016.52	1616.94	3633.46
		Road Area	484.00	2462.68	2946.68
		Garden/Open Area	3699.48	1471.19	5170.67

		Total	6200	5550.81	11750.81
3	Raw Materials (MT/M)	M.S. Scrap	3170	5800	8970
		Additives/ Ferro Alloys	30	110	140
		Bricks/Reformatories	100	100	200
		Sponge Iron	0	5000	5000
4	Products & By-products (MTA)	MS Ingots &/or Billets	36,000	1,20,000	1,56,000
		Runner Riser	720	0	720
	Capacity of Electric Furnace (MT/Month)	-	6000 (At present, a furnace of 3000 MT is there, which will be upgraded to a Total Capacity of - 6000 MT/M)	7000	13000
	Power requirement	-	4990 KVA + Electricity requirement of existing furnace is 4500KWH/hr	10,000 KVA + Electricity requirement of proposed furnace is 9500 KWH/hr	14990 KVA + 14000 KWH/hr
5	Capacity of DG set (KVA)	-	1 x 250 KVA	1x250 KVA	2 x 250 each
6	Fuel Requirement (lit/hr)	Fuel Type- LDO	6 lit/hr	6 lit/hr	12 lit/hr
7	Stack Details	-	Existing Electric Furnace stack ht. 30 m	Proposed Electric Furnace stack ht. 30 m	Total- 2 stacks: 1 Stack of 30 m for existing furnace & 1 stack of 30 m for proposed furnace
		-	Existing D.G. Set (250 KVA) stack ht. 2 m	Proposed D.G. Set (250KVA) stack ht. 3 m	Total 2 No.s: (1 Existing + 1 Proposed)
8	Air Pollution Control Equipment for boiler	-	Proper stack height with Fume extraction system & dust collector is provided	Proper stack height with Fume extraction system & dust collector will be provided	-
9	Total water Requirement for unit (CMD)	Domestic	1.2	1.9	3.1
		Industrial Process	0	0	0
		Cooling Purpose	60	50	110
		Gardening	0.5	1.3	1.8
10	Waste water generation (CMD)	Domestic	1.0	1.7	2.7
		Industrial Process	0	0	0
		Cooling Purpose	0	0	0
		Gardening	0	0	0
11	Manpower		27	43	70
12	Solid Waste	Scrap	120	360	480

(MT/A)	Slag	1200	8400	9600
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**Table 2: Environmental settings of Project**

Sr. No	Particular	Description
<b>Location of the project site</b>		
1	Plot No.	1076/77
2	Village	Markal
3	Taluka	Khed
4	District	Pune
5	State	Maharashtra
6	Latitude/Longitude	Latitude 18 <sup>0</sup> 39'39.11" N Longitude: 73 <sup>0</sup> 57'29.10" E
7	Average altitude above mean MSL	1866 ft above MSL
8	Corner Co-ordinates of the plant site	Coordinates of the project site as follows A 18 <sup>0</sup> 39'45.27" N 73 <sup>0</sup> 57'29.39" E B 18 <sup>0</sup> 39'44.99" N 73 <sup>0</sup> 57'30.81" E C 18 <sup>0</sup> 39'33.69" N 73 <sup>0</sup> 57'27.49" E D 18 <sup>0</sup> 39'33.78" N 73 <sup>0</sup> 57'29.10" E
9	Toposheet Number	E43I2, E43H14
<b>Environmental setting details (with approximate aerial distance &amp; direction from the plant site)</b>		
10	Nearest village	Markal :1.46 km
11	Nearest National highway/ State highway	Pune – Nashik Highway (11.88 km in W Direction)
12	Nearest Railway station	Kasarwadi Railway station (15.88 km in SW Direction)
13	Nearest airport	Pune Airport 9.50 Km in SW direction
14	Nearest major city	Pimpri-Chinchwad : 17 km in SW direction
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	Indrayani River – 1.68 km away from project site in 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 15 km radius

## 6. MAJOR REQUIREMENT FOR THE PROPOSED PROJECT

### 6.1. RAW MATERIALS REQUIREMENT

**Table 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	3170	5800	8970	Locally available	Truck
2	Additives/ Ferro Alloys	30	110	140	Locally available	Truck
3	Bricks/ Reformatories	100	100	200	Locally available	Truck
4	Sponge Iron	0	5000	5000	Locally available	Truck

## 6.2 POWER REQUIREMENT

The power requirement of the existing unit is 4990 KVA. After expansion the power requirement will be 10,000 KVA. This demand will be met by sourcing the power from MSEDCL from nearby Sub-station. Electricity requirement of existing furnace is 4500KWH/hr & that of proposed furnace is 9500 KWH/hr.

## 6.3 MANPOWER REQUIREMENT

Additional manpower is needed to operate the expansion unit plant will be 43. More than 85 % 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 20. Construction workers will be from nearby villages. Residential facility will not be required for the construction personnel.

## 6.4 WATER REQUIREMENT FOR PROPOSED PROJECT

**Table 4: Water Budget of proposed expansion project**

Sr. No.	Particular	Quantity (m <sup>3</sup> / day)	
		Water Consumption	Effluent Generation
1	Domestic	1.9	1.7
2	Industrial	0	0
3	cooling	50	0
4	Gardening	1.3	0
<b>Total</b>		<b>53.2</b>	<b>1.7</b>

**Total water requirement for proposed expansion project = 53.2 m3/day**

**Fresh water requirement for proposed expansion project = 3.2 m3/day**

## 6.5 LANDREQUIREMENT

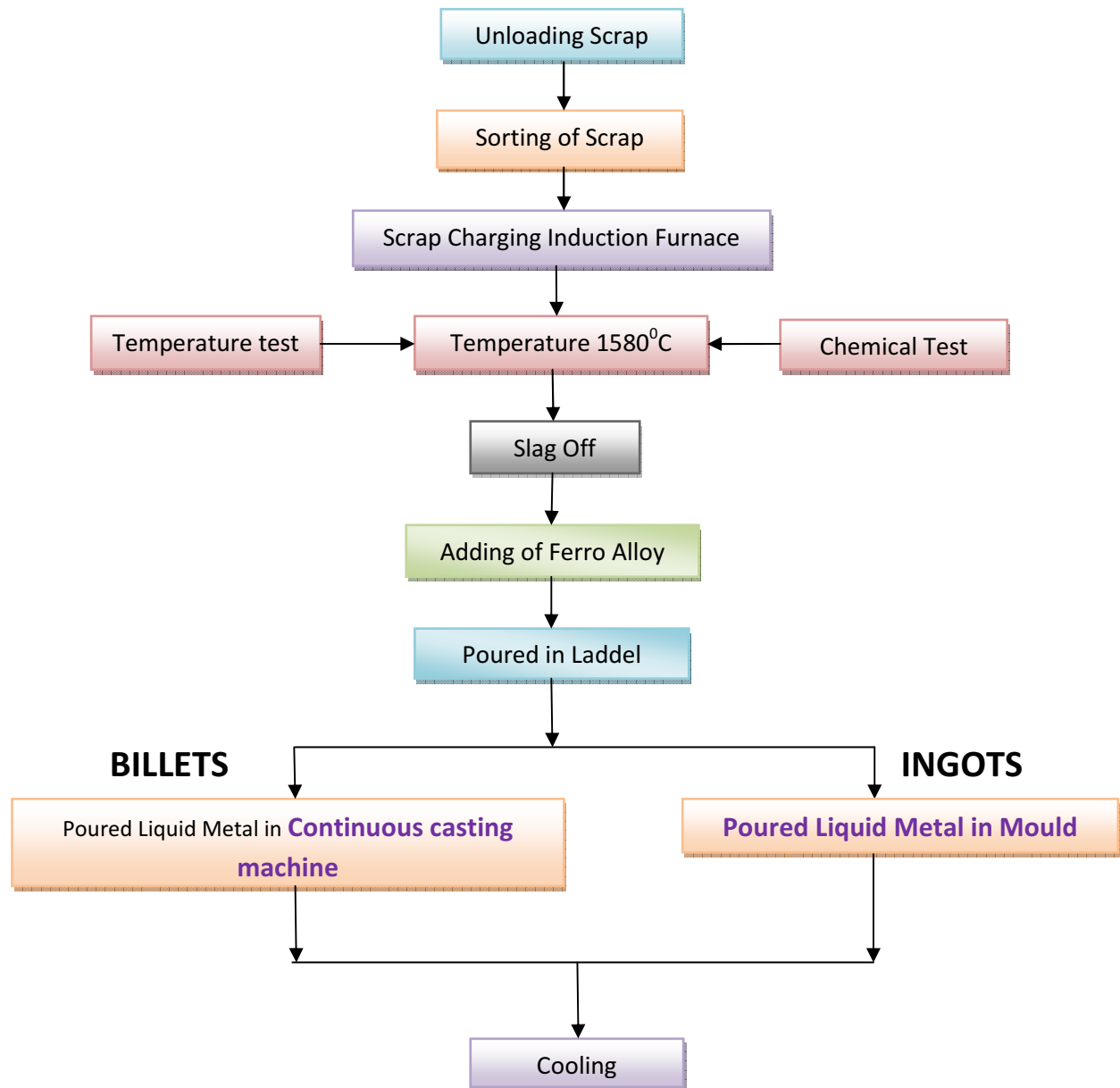
The Company site is located Gat No. 1076/77, Golegaon Road, and Village -Markal, Taluka- Khed, District – Pune. Total plot area of industry is 15700 Sq.m. The details of proposed land use is tabulated in following table-

**Table 5: Details of Land Use**

Sr. No.	Particular	Existing	Proposed	Total Area (Sq.m.)
1	Built up Area	2016.52	1616.94	3633.46
2	Road Area (Sq.m)	484.00	2462.68	2946.68
3	Garden/Open Area	3699.48	1471.19	5170.67

## 7. PROCESS DESCRIPTION ALONG WITH MAJOR EQUIPMENTS AND MACHINERIES, PROCESS FLOW SHEET (QUANTATIVE) FROM RAW MATERIAL TO PRODUCTS

Figure 1: Manufacturing process M.S. Ingots & Runner Riser



## 8. DESCRIPTION OF ENVIRONMENT

Baseline study in this Environmental Impact Assessment report was conducted for a period of three months during 1<sup>st</sup> March 2018 to 31<sup>st</sup> May 2018.

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.

Ambient air quality monitoring has been carried out at 8 stations in the study area on 24 hourly bases. Ambient Air Quality Monitoring reveals that the concentrations of PM<sub>10</sub> and PM<sub>2.5</sub> for all the 8 AAQM stations were found between 77.5 to 25 µg/m<sup>3</sup> and 35.5 to 12 µg/m<sup>3</sup>. The concentrations of SO<sub>2</sub> and NO<sub>x</sub> were found to be in range of 7.7 to 4 µg/m<sup>3</sup> and 41.1 to 21.5 µg/m<sup>3</sup> respectively. The concentration of CO is in range of 0.65 to 0.175 mg/m<sup>3</sup>. The resultant concentration of the parameters is well within the prescribed limits of GPCB & NAAQS.

Prediction of impacts on air environment has been carried out by employing a mathematical model. In the present case, **Industrial Source Complex Short-Term (ISCST3)** dispersion model based on steady state Gaussian plume dispersion, designed for multiple point sources for short term has been used for predicting the ground level concentrations. Results of mathematical modelling reveals that the maximum incremental short term 24 hourly ground level concentrations for PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub> and NO<sub>x</sub> likely to be encountered during pre-monsoon season are 2.38 µg/m<sup>3</sup>, 1.44 µg/m<sup>3</sup>, 4.06 µg/m<sup>3</sup> and 7.22 µg/m<sup>3</sup> respectively occurring at a distance of about 2-km in the South West direction.

Noise level monitoring has been carried out at 8 stations in the study area. Noise level varies from 49.7 to 56.75 Leq dB (A) during day time and from 44.15 to 49.55 Leq dB (A) during night time. 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.

Surface water sampling has been carried out at 1 station in the study area. SGSPL is going to achieve Zero liquid discharge in surface water for the proposed project & hence there is no effect on the river water quality due to this industry.

Ground water sampling has been carried out at 8 stations in the study area. Analysis results of ground water reveals that pH varies from 6.7 to 7.5, Total hardness varies from 281.88 to 411.68 mg/l, Total dissolved solids vary from 366 to 623 mg/l.

Soil samples collected from 8 identified locations indicate pH value ranges from 6.97 to 8.03, which shows that the soil is having near neutral pH. Water holding capacity ranges from 28.50 % to 61.76 % in the soil samples. Free Ammonical nitrogen is found in ranges from 0.14 % to 0.19 % and Potassium is found to be ranging from 1 mg/kg to 8 mg/kg. Soil of the area is found to be suitable for agricultural activities.

The study area is delineated in 10 km radius from the project site. The proposed project site is surrounded by agricultural land. There are no any national parks, wildlife sanctuaries, biosphere reserves or critically polluted areas in the 10 km radius from the proposed project site. No Archeological site is present within the study area. No forest is located in the study area. No Schedule - I fauna was found during the field survey. There is intense anthropogenic pressure on flora, fauna and forest resources, which are observed to be dwindling. However, no rare, endangered & threatened plant species was observed in the study area.

Population of study area is 114,796. Scheduled Caste fraction of the population of the study area (10 km) is 10,542 (9.18%) and Scheduled Tribe 3298 (2.87 %). Literacy rate of the area is 69.59 %. Population of the workers engaged in occupation is 45.80 %. Of these 49,153 (42.81 %) are main workers and 3426 (2.98 %) are marginal workers. Remaining, 62,215 (54.19 %) of the total population is considered as non-workers. The socio-economic analysis of the study area shows that in terms of education could be improved as the literacy rate is quite low i.e. 69.59 %. With a high dependency ratio, the overall socio-economic status of the target population could improve with increase in work participation rate. Hence, the long-term positive impacts on socio-economic conditions of the area are anticipated.

## 9. ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

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

**Table 6: 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 construction 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. Wherever required check dams and dykes will be provided for control of soil erosion.</li> <li>4. 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>5. Appropriate sanitation facilities will be provided for the workers to reduce impact on surface water quality.</li> <li>6. Construction wastes will not be discharged to surface or ground water bodies.</li> <li>7. 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. Vehicles with internal combustion engines will be provided with silencers and mufflers in order to reduce noise levels.</li> </ol> <p>Green belt will be developed to attenuate noise impacts and to reduce noise pollution</p>



4.	Soil	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. Litter disposal and collection points will be established around the work sites. Empty packaging materials, drums, glass, tin, paper, plastic, pet bottles, wood, thermocol and other packaging materials, etc. will be disposed through recyclers. The construction spoils will be temporarily stored at designated dumpsite located inside the plant premises.
<b>(B) Operation Phase</b>		
1.	Air	Adequate stack height to the proposed electric furnace, Fume extraction system & dust collector will be provided
2.	Fugitive	Internal roads paved, leveled, no undulations, no sharp curves, slow speed. Tree plantation on surrounding available area.
3.	Water and Waste Water	1. No effluent generation will take place from proposed industry. Hence no provision of ETP. 2. Rain Water Harvesting will be done.
4.	Solid Waste	100% collection every day. Segregated and treated/ disposed per SPCB norms.
6.	Noise	Smooth roads. Sturdy foundation. No Vibrations. Acoustic enclosures to existing DG Set as per manufacturers' design. Use as standby only. Trees are planted around. Side cladding. Large No. of tree barriers.
7.	Socio-economic	Employment generation, Community Skills Development, Improved Standard of Living, Community Organizational Capacity Development Economic Exposure and Development

## 10. ENVIRONMENTAL MONITORING PROGRAMME

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

**Table 7: Schedule for Environmental Monitoring**

Sr. No.	Particulars	Parameters	Location	Frequency
1	Flue gases from furnace	PM <sub>10</sub> , PM <sub>2.5</sub> , SO <sub>2</sub> and NO <sub>x</sub>	Stack monitoring	Monthly
2	Ambient air quality	PM <sub>10</sub> , PM <sub>2.5</sub> , SO <sub>2</sub> and NO <sub>x</sub> , CO.	<ul style="list-style-type: none"> <li>Check wind direction</li> <li>Select two point in upwind direction at 120° from site</li> <li>Take one point within site at down wind direction from furnace about 1 km distance</li> <li>Take two points beyond site in down wind direction about 2 km distance at 120° from site opposite to points taken in upwind direction.</li> </ul>	24 hrs sample, half yearly
3	Water (Ground Water and Surface Water)	As per drinking water standards	<ul style="list-style-type: none"> <li>Take one upstream and downstream sample of surface water. Minimum distance 500 m.</li> <li>One point upstream at higher elevation from plant site. Also at lower contour point at 3 locations.</li> </ul>	Quarterly



4	Soil	organic & inorganic matter	• Outside plant boundary at lower contour	Pre & post monsoon
5	Noise level, work zone (hourly)	Equivalent noise level-dB (A)	<ul style="list-style-type: none"> <li>• One location in furnace house.</li> <li>• One location near I.D. Fan.</li> <li>• Especially monitor noise during soot blowing.</li> <li>• Four locations around plant boundary</li> </ul>	Quarterly
6	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
7	Environmental Audit	As per Direction of ISO 14001	-	Once in a Year
8	Water utilization, m <sup>3</sup> /d	-	For process, domestic, cooling and boiler	Daily
9	Power utilization	-	For air pollution control facility at boilers and for STP	Daily

## 11. ADDITIONAL STUDIES

Additional Studies conducted as per revised ToR issued by SEAC-I in its 168<sup>th</sup> meeting dated 26<sup>th</sup> August 2019, are Risk Assessment and Disaster Management Plan. Public Hearing is to be conducted for the project.

### RISK ASSESSMENT

An industry with its complex nature of activities involving various plant machineries, raw materials, products, operations, intermediates and environmental discharge has a number of associated hazards. A minor failure can lead to major failure resulting into a disaster causing heavy losses to life, property and environmental. Risk assessment studies are being conducted to ensure safety and reliability of any new plant, through a systematic and scientific methods to identify possible failures and prevent their occurrences before they actually cause disasters and production loss.

#### Objectives of the risk assessment study

1. To identify the major hazards relating to fire, explosion and toxicity due to storage and handling of hazardous chemicals.
2. To visualize maximum credible accident scenarios
3. To analyze and quantify primary and secondary effects and damage potentials of the identified maximum credible accident scenarios using standard procedure.
4. To study the nature of exposures, pathways and consequences of maximum credible accident scenarios and characteristics of risk levels.
5. To provide guidelines for disaster management plan.

### DISASTER MANAGEMENT PLAN

A major disaster in a work is the one, which has potential to cause serious injury or loss of life. It may cause extensive damage to property and serious disruption both inside and outside the works. A Disaster would normally require the assistance of outside emergency services to handle it effectively. Whatever are the causative factors, like plant failure; human error; earthquake; vehicle crash; sabotage etc, they will normally manifest in three basic forms viz, fire, explosion, and *or* toxic release.

#### The objectives of disaster management plan include the following-

1. Controlling the disaster, localizing the disaster and eliminating the hazard

2. Welfare of person managing the disaster.
3. Head count and rescue operations.
4. Treatment of injured.
5. Safeguarding others by timely evacuation.
6. Minimizing damage to property and environment.
7. Informing and assisting relatives.
  - i. Informing and collaborating with statutory authorities.
  - ii. Informing the news media.
  - iii. Preserving records and organizing investigations.
  - iv. Ensuring safety of the works before personnel re-enter and resume work.
  - v. Investigating and taking steps to prevent recurrence.
  - vi. Resorting normalcy

## **12. PROJECT BENEFITS**

### **Implementation of proposed project will result in:**

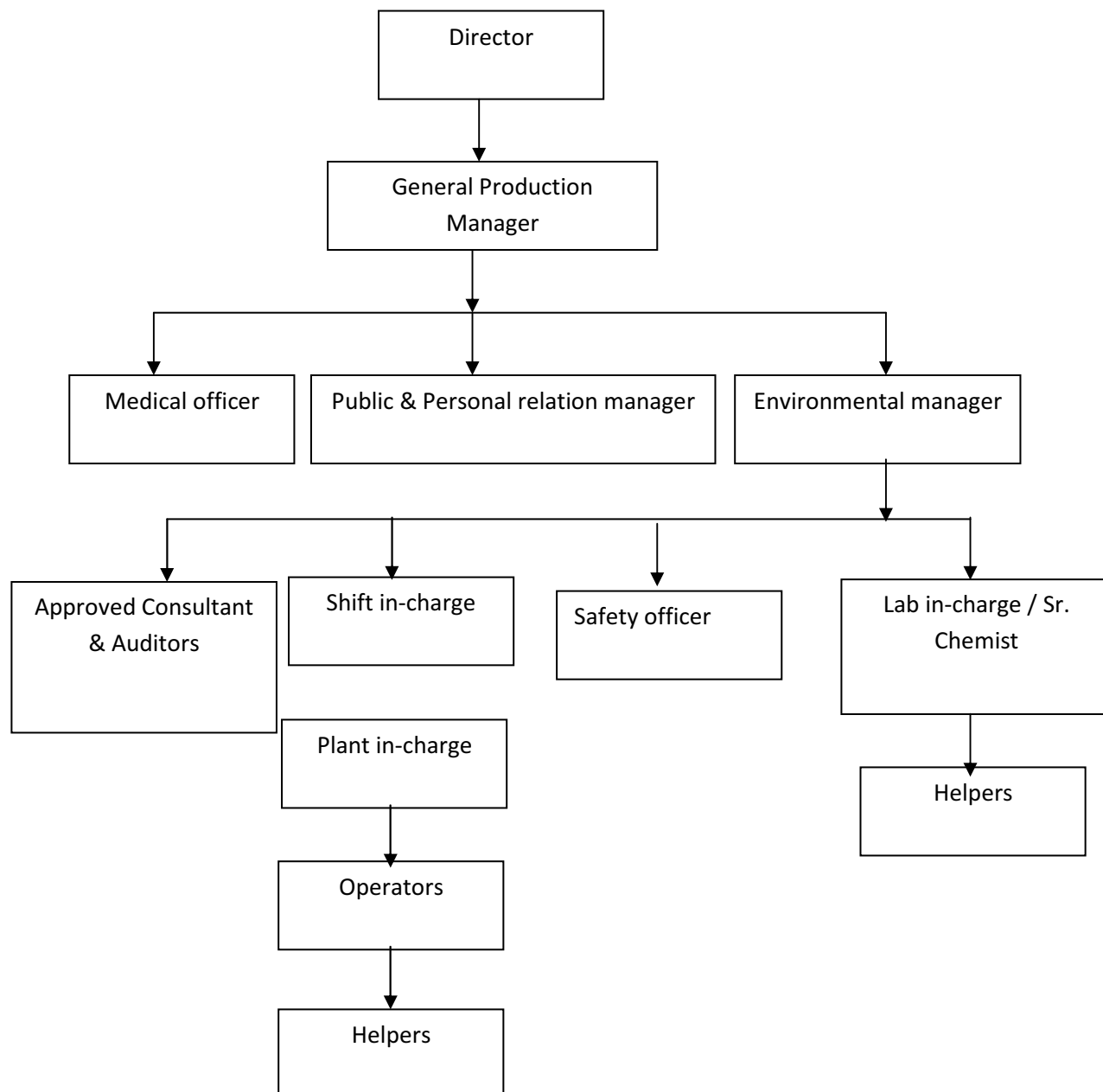
- Improvement in the physical infrastructure
- Improvement in the social infrastructure
- Improvement in employment potential

## **13. ENVIRONMENT MANAGEMENT PLAN**

Environmental Management Plan is detailed under the following heads:

- Air Quality Management
- Noise Management
- Waste Water Management
- Solid & Hazardous Waste Management
- Energy Conservation
- Greenbelt Development & Plantation Programme
- Occupational Health & Safety Measures.
- Enterprise social commitment (ESC)- Industry will utilize 1% of its project cost for ESC.

**Figure 2: Environment Management Cell**



**Table 8: 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
3	Quantity of effluent	To be measured daily and in-plant control. Not to exceed any time	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 ETP 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, bagasse to be baled, molasses not in open pits, press mud to be carted out every day	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
<b>Legends:</b> ENV-M- Environmental Manager, LAB- I- Lab incharge, ENV- C- Environmental Chemist.			

## 14. CONCLUSION

The proposed 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.

# **EXECUTIVE SUMMARY**

**Of**

## **ENVIRONMENTAL IMPACT ASSESSMENT REPORT**

**FOR**

### **PUBLIC HEARING**

**OF**

## **Proposed Expansion of Existing Metallurgical Industry**

**By**

**M/s. SANT GYANESHWAR STEELS PVT. LTD.**

Gat No. 1076/77, Golegaon Road, Village – Markal, Taluka – Khed,  
District – Pune, Maharashtra

**SUBMITTED TO**

**MAHARSHTRA POLLUTION CONTROL BOARD**

**PREPARED BY**



**M/s SGM Enviro (I) Pvt. Ltd.**  
Saahil Apartments,1102/A/4B,Model Colony  
Lakaki Road,Opp. Kirloskar Bunglow,  
ShivajiNagar , Pune -411016  
QCI –NABET ACCREDITED

## EXECUTIVE SUMMARY

### 1. INTRODUCTION

M/s Sant Gyaneshwar Steel Pvt. Ltd. (SGSPL) Markal was incorporated on 21.06.1996 with Registration number 111927272. The industry is located at Gat No. 1076/77, Golegaon Road, Village – Markal, Taluka – Khed, District – Pune with the main object of manufacturing of M.S. Ingots &/or Billets & Runner Riser.

As per the EIA notification 2006 & its subsequent amendments existing project does not require Environmental Clearance. Existing industry have obtained consent to operate from Maharashtra Pollution Control Board (MPCB) & is complying with all the norms of CPCB & MPCB.

### 2. TYPE OF PROJECT

M/s. Sant Gyaneshwar Steel Pvt. Ltd. (SGSPL) is proposing to expand existing quantity of M.S. ingots &/or Billets manufacturing from 36,000 TPA to 1, 56,000 TPA & capacity of Runner Riser production will remain the same i.e. 720 MTA. This expansion activity will take place within the existing plant premises at Gat No. 1076/77, Golegaon Road, Village – Markal, Tal. - Khed, Dist. – Pune.

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

### 3. 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 SGSPL has identified this opportunity and has decided to become a competitive leader in boosting field of metallurgical sector.

### 4. SITE SELECTION & JUSTIFICATION THEREOF

Proposed expansion will be done within the existing plant 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.

### 5. BRIEF DESCRIPTION OF NATURE, SIZE, LOCATION OF THE PROJECT AND ITS IMPORTANCE TO THE COUNTRY, REGION

**Table 1: Brief Description of Nature, Size and Location of Existing & Proposed Project**

Sr. No.	Particular	Description			
1	Nature & size of existing project	Proposed Expansion of Existing Metallurgical unit by M/s Sant Gyaneshwar Steels Pvt. Ltd. for Production of MS Ingots &/or Billets & Runner Riser			
2 A	Total Area of project	Total plot area is 15700 Sq.m			
2 B	Area Details (Sq.m)	<b>Particular</b>	<b>Existing</b>	<b>Proposed</b>	<b>Total</b>
		Built up Area	2016.52	1616.94	3633.46
		Road Area	484.00	2462.68	2946.68
		Garden/Open Area	3699.48	1471.19	5170.67

		Total	6200	5550.81	11750.81
3	Raw Materials (MT/M)	M.S. Scrap	3170	5800	8970
		Additives/ Ferro Alloys	30	110	140
		Bricks/Reformatories	100	100	200
		Sponge Iron	0	5000	5000
4	Products & By-products (MTA)	MS Ingots &/or Billets	36,000	1,20,000	1,56,000
		Runner Riser	720	0	720
	Capacity of Electric Furnace (MT/Month)	-	6000 (At present, a furnace of 3000 MT is there, which will be upgraded to a Total Capacity of - 6000 MT/M)	7000	13000
	Power requirement	-	4990 KVA + Electricity requirement of existing furnace is 4500KWH/hr	10,000 KVA + Electricity requirement of proposed furnace is 9500 KWH/hr	14990 KVA + 14000 KWH/hr
5	Capacity of DG set (KVA)	-	1 x 250 KVA	1x250 KVA	2 x 250 each
6	Fuel Requirement (lit/hr)	Fuel Type- LDO	6 lit/hr	6 lit/hr	12 lit/hr
7	Stack Details	-	Existing Electric Furnace stack ht. 30 m	Proposed Electric Furnace stack ht. 30 m	Total- 2 stacks: 1 Stack of 30 m for existing furnace & 1 stack of 30 m for proposed furnace
		-	Existing D.G. Set (250 KVA) stack ht. 2 m	Proposed D.G. Set (250KVA) stack ht. 3 m	Total 2 No.s: (1 Existing + 1 Proposed)
8	Air Pollution Control Equipment for boiler	-	Proper stack height with Fume extraction system & dust collector is provided	Proper stack height with Fume extraction system & dust collector will be provided	-
9	Total water Requirement for unit (CMD)	Domestic	1.2	1.9	3.1
		Industrial Process	0	0	0
		Cooling Purpose	60	50	110
		Gardening	0.5	1.3	1.8
10	Waste water generation (CMD)	Domestic	1.0	1.7	2.7
		Industrial Process	0	0	0
		Cooling Purpose	0	0	0
		Gardening	0	0	0
11	Manpower		27	43	70
12	Solid Waste	Scrap	120	360	480

(MT/A)	Slag	1200	8400	9600
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**Table 2: Environmental settings of Project**

Sr. No	Particular	Description
<b>Location of the project site</b>		
1	Plot No.	1076/77
2	Village	Markal
3	Taluka	Khed
4	District	Pune
5	State	Maharashtra
6	Latitude/Longitude	Latitude 18 <sup>0</sup> 39'39.11" N Longitude: 73 <sup>0</sup> 57'29.10" E
7	Average altitude above mean MSL	1866 ft above MSL
8	Corner Co-ordinates of the plant site	Coordinates of the project site as follows A 18 <sup>0</sup> 39'45.27" N 73 <sup>0</sup> 57'29.39" E B 18 <sup>0</sup> 39'44.99" N 73 <sup>0</sup> 57'30.81" E C 18 <sup>0</sup> 39'33.69" N 73 <sup>0</sup> 57'27.49" E D 18 <sup>0</sup> 39'33.78" N 73 <sup>0</sup> 57'29.10" E
9	Toposheet Number	E43I2, E43H14
<b>Environmental setting details (with approximate aerial distance &amp; direction from the plant site)</b>		
10	Nearest village	Markal :1.46 km
11	Nearest National highway/ State highway	Pune – Nashik Highway (11.88 km in W Direction)
12	Nearest Railway station	Kasarwadi Railway station (15.88 km in SW Direction)
13	Nearest airport	Pune Airport 9.50 Km in SW direction
14	Nearest major city	Pimpri-Chinchwad : 17 km in SW direction
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	Indrayani River – 1.68 km away from project site in 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 15 km radius

## 6. MAJOR REQUIREMENT FOR THE PROPOSED PROJECT

### 6.1. RAW MATERIALS REQUIREMENT

**Table 3: List of raw materials required and their source along with mode of transportation**

Sr. No.	Raw Material	Quantity (MT/M)			Source	Transportation
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## 6.2 POWER REQUIREMENT

The power requirement of the existing unit is 4990 KVA. After expansion the power requirement will be 10,000 KVA. This demand will be met by sourcing the power from MSEDCL from nearby Sub-station. Electricity requirement of existing furnace is 4500KWH/hr & that of proposed furnace is 9500 KWH/hr.

## 6.3 MANPOWER REQUIREMENT

Additional manpower is needed to operate the expansion unit plant will be 43. More than 85 % 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 20. Construction workers will be from nearby villages. Residential facility will not be required for the construction personnel.

## 6.4 WATER REQUIREMENT FOR PROPOSED PROJECT

**Table 4: Water Budget of proposed expansion project**

Sr. No.	Particular	Quantity (m <sup>3</sup> / day)	
		Water Consumption	Effluent Generation
1	Domestic	1.9	1.7
2	Industrial	0	0
3	cooling	50	0
4	Gardening	1.3	0
<b>Total</b>		<b>53.2</b>	<b>1.7</b>

**Total water requirement for proposed expansion project = 53.2 m3/day**

**Fresh water requirement for proposed expansion project = 3.2 m3/day**

## 6.5 LANDREQUIREMENT

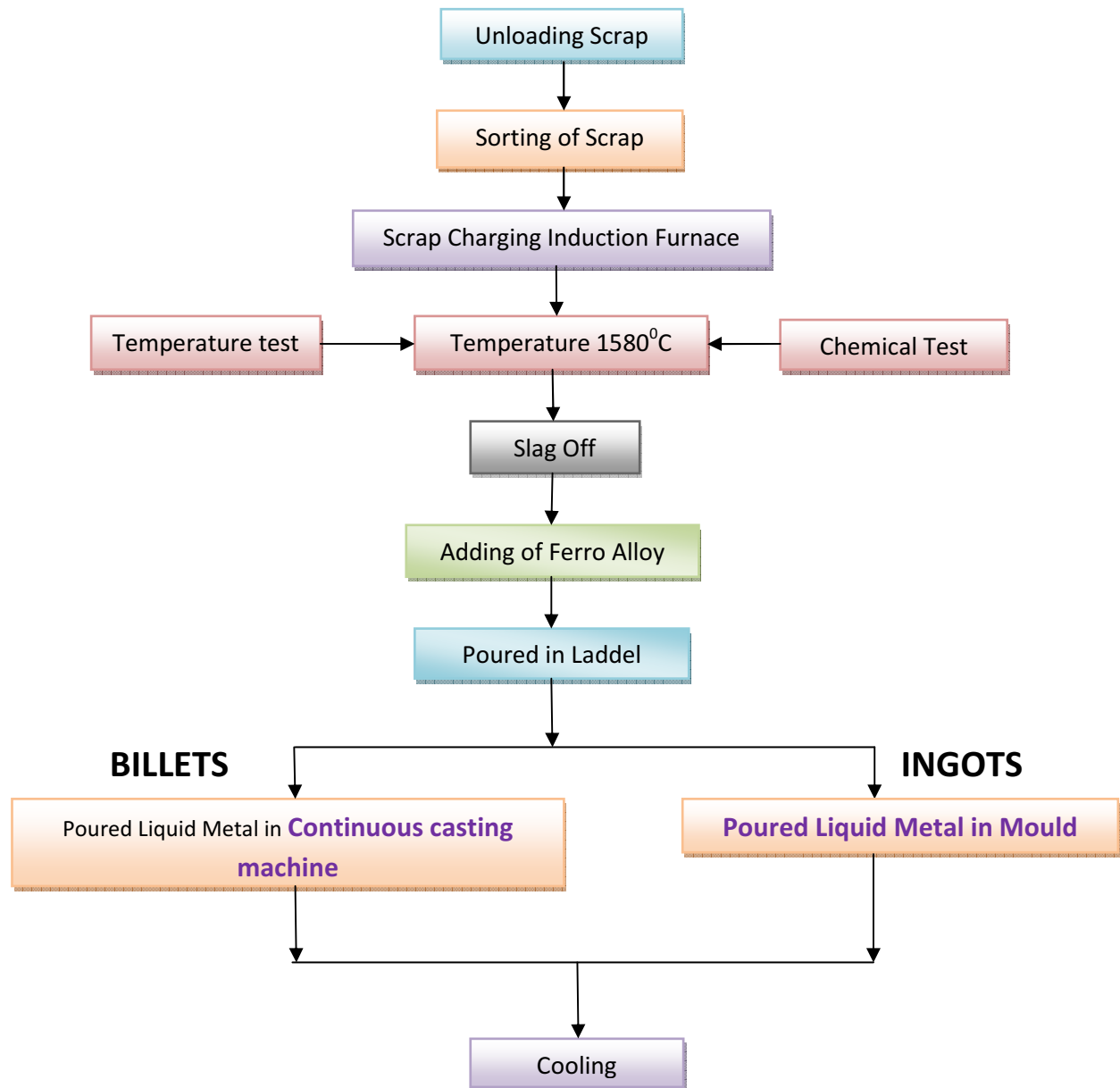
The Company site is located Gat No. 1076/77, Golegaon Road, and Village -Markal, Taluka- Khed, District – Pune. Total plot area of industry is 15700 Sq.m. The details of proposed land use is tabulated in following table-

**Table 5: Details of Land Use**

Sr. No.	Particular	Existing	Proposed	Total Area (Sq.m.)
1	Built up Area	2016.52	1616.94	3633.46
2	Road Area (Sq.m)	484.00	2462.68	2946.68
3	Garden/Open Area	3699.48	1471.19	5170.67

## 7. PROCESS DESCRIPTION ALONG WITH MAJOR EQUIPMENTS AND MACHINERIES, PROCESS FLOW SHEET (QUANTATIVE) FROM RAW MATERIAL TO PRODUCTS

Figure 1: Manufacturing process M.S. Ingots & Runner Riser



## 8. DESCRIPTION OF ENVIRONMENT

Baseline study in this Environmental Impact Assessment report was conducted for a period of three months during 1<sup>st</sup> March 2018 to 31<sup>st</sup> May 2018.

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.

Ambient air quality monitoring has been carried out at 8 stations in the study area on 24 hourly bases. Ambient Air Quality Monitoring reveals that the concentrations of PM<sub>10</sub> and PM<sub>2.5</sub> for all the 8 AAQM stations were found between 77.5 to 25 µg/m<sup>3</sup> and 35.5 to 12 µg/m<sup>3</sup>. The concentrations of SO<sub>2</sub> and NO<sub>x</sub> were found to be in range of 7.7 to 4 µg/m<sup>3</sup> and 41.1 to 21.5 µg/m<sup>3</sup> respectively. The concentration of CO is in range of 0.65 to 0.175 mg/m<sup>3</sup>. The resultant concentration of the parameters is well within the prescribed limits of GPCB & NAAQS.

Prediction of impacts on air environment has been carried out by employing a mathematical model. In the present case, **Industrial Source Complex Short-Term (ISCST3)** dispersion model based on steady state Gaussian plume dispersion, designed for multiple point sources for short term has been used for predicting the ground level concentrations. Results of mathematical modelling reveals that the maximum incremental short term 24 hourly ground level concentrations for PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub> and NO<sub>x</sub> likely to be encountered during pre-monsoon season are 2.38 µg/m<sup>3</sup>, 1.44 µg/m<sup>3</sup>, 4.06 µg/m<sup>3</sup> and 7.22 µg/m<sup>3</sup> respectively occurring at a distance of about 2-km in the South West direction.

Noise level monitoring has been carried out at 8 stations in the study area. Noise level varies from 49.7 to 56.75 Leq dB (A) during day time and from 44.15 to 49.55 Leq dB (A) during night time. 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.

Surface water sampling has been carried out at 1 station in the study area. SGSPL is going to achieve Zero liquid discharge in surface water for the proposed project & hence there is no effect on the river water quality due to this industry.

Ground water sampling has been carried out at 8 stations in the study area. Analysis results of ground water reveals that pH varies from 6.7 to 7.5, Total hardness varies from 281.88 to 411.68 mg/l, Total dissolved solids vary from 366 to 623 mg/l.

Soil samples collected from 8 identified locations indicate pH value ranges from 6.97 to 8.03, which shows that the soil is having near neutral pH. Water holding capacity ranges from 28.50 % to 61.76 % in the soil samples. Free Ammonical nitrogen is found in ranges from 0.14 % to 0.19 % and Potassium is found to be ranging from 1 mg/kg to 8 mg/kg. Soil of the area is found to be suitable for agricultural activities.

The study area is delineated in 10 km radius from the project site. The proposed project site is surrounded by agricultural land. There are no any national parks, wildlife sanctuaries, biosphere reserves or critically polluted areas in the 10 km radius from the proposed project site. No Archeological site is present within the study area. No forest is located in the study area. No Schedule - I fauna was found during the field survey. There is intense anthropogenic pressure on flora, fauna and forest resources, which are observed to be dwindling. However, no rare, endangered & threatened plant species was observed in the study area.

Population of study area is 114,796. Scheduled Caste fraction of the population of the study area (10 km) is 10,542 (9.18%) and Scheduled Tribe 3298 (2.87 %). Literacy rate of the area is 69.59 %. Population of the workers engaged in occupation is 45.80 %. Of these 49,153 (42.81 %) are main workers and 3426 (2.98 %) are marginal workers. Remaining, 62,215 (54.19 %) of the total population is considered as non-workers. The socio-economic analysis of the study area shows that in terms of education could be improved as the literacy rate is quite low i.e. 69.59 %. With a high dependency ratio, the overall socio-economic status of the target population could improve with increase in work participation rate. Hence, the long-term positive impacts on socio-economic conditions of the area are anticipated.

## 9. ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

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

**Table 6: 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 construction 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. Wherever required check dams and dykes will be provided for control of soil erosion.</li> <li>4. 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>5. Appropriate sanitation facilities will be provided for the workers to reduce impact on surface water quality.</li> <li>6. Construction wastes will not be discharged to surface or ground water bodies.</li> <li>7. 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. Vehicles with internal combustion engines will be provided with silencers and mufflers in order to reduce noise levels.</li> </ol> <p>Green belt will be developed to attenuate noise impacts and to reduce noise pollution</p>

4.	Soil	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. Litter disposal and collection points will be established around the work sites. Empty packaging materials, drums, glass, tin, paper, plastic, pet bottles, wood, thermocol and other packaging materials, etc. will be disposed through recyclers. The construction spoils will be temporarily stored at designated dumpsite located inside the plant premises.
<b>(B) Operation Phase</b>		
1.	Air	Adequate stack height to the proposed electric furnace, Fume extraction system & dust collector will be provided
2.	Fugitive	Internal roads paved, leveled, no undulations, no sharp curves, slow speed. Tree plantation on surrounding available area.
3.	Water and Waste Water	1. No effluent generation will take place from proposed industry. Hence no provision of ETP. 2. Rain Water Harvesting will be done.
4.	Solid Waste	100% collection every day. Segregated and treated/ disposed per SPCB norms.
6.	Noise	Smooth roads. Sturdy foundation. No Vibrations. Acoustic enclosures to existing DG Set as per manufacturers' design. Use as standby only. Trees are planted around. Side cladding. Large No. of tree barriers.
7.	Socio-economic	Employment generation, Community Skills Development, Improved Standard of Living, Community Organizational Capacity Development Economic Exposure and Development

## 10. ENVIRONMENTAL MONITORING PROGRAMME

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

**Table 7: Schedule for Environmental Monitoring**

Sr. No.	Particulars	Parameters	Location	Frequency
1	Flue gases from furnace	PM <sub>10</sub> , PM <sub>2.5</sub> , SO <sub>2</sub> and NO <sub>x</sub>	Stack monitoring	Monthly
2	Ambient air quality	PM <sub>10</sub> , PM <sub>2.5</sub> , SO <sub>2</sub> and NO <sub>x</sub> , CO.	<ul style="list-style-type: none"> <li>Check wind direction</li> <li>Select two point in upwind direction at 120° from site</li> <li>Take one point within site at down wind direction from furnace about 1 km distance</li> <li>Take two points beyond site in down wind direction about 2 km distance at 120° from site opposite to points taken in upwind direction.</li> </ul>	24 hrs sample, half yearly
3	Water (Ground Water and Surface Water)	As per drinking water standards	<ul style="list-style-type: none"> <li>Take one upstream and downstream sample of surface water. Minimum distance 500 m.</li> <li>One point upstream at higher elevation from plant site. Also at lower contour point at 3 locations.</li> </ul>	Quarterly

4	Soil	organic & inorganic matter	• Outside plant boundary at lower contour	Pre & post monsoon
5	Noise level, work zone (hourly)	Equivalent noise level-dB (A)	<ul style="list-style-type: none"> <li>• One location in furnace house.</li> <li>• One location near I.D. Fan.</li> <li>• Especially monitor noise during soot blowing.</li> <li>• Four locations around plant boundary</li> </ul>	Quarterly
6	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
7	Environmental Audit	As per Direction of ISO 14001	-	Once in a Year
8	Water utilization, m <sup>3</sup> /d	-	For process, domestic, cooling and boiler	Daily
9	Power utilization	-	For air pollution control facility at boilers and for STP	Daily

## 11. ADDITIONAL STUDIES

Additional Studies conducted as per revised ToR issued by SEAC-I in its 168<sup>th</sup> meeting dated 26<sup>th</sup> August 2019, are Risk Assessment and Disaster Management Plan. Public Hearing is to be conducted for the project.

### RISK ASSESSMENT

An industry with its complex nature of activities involving various plant machineries, raw materials, products, operations, intermediates and environmental discharge has a number of associated hazards. A minor failure can lead to major failure resulting into a disaster causing heavy losses to life, property and environmental. Risk assessment studies are being conducted to ensure safety and reliability of any new plant, through a systematic and scientific methods to identify possible failures and prevent their occurrences before they actually cause disasters and production loss.

#### Objectives of the risk assessment study

1. To identify the major hazards relating to fire, explosion and toxicity due to storage and handling of hazardous chemicals.
2. To visualize maximum credible accident scenarios
3. To analyze and quantify primary and secondary effects and damage potentials of the identified maximum credible accident scenarios using standard procedure.
4. To study the nature of exposures, pathways and consequences of maximum credible accident scenarios and characteristics of risk levels.
5. To provide guidelines for disaster management plan.

### DISASTER MANAGEMENT PLAN

A major disaster in a work is the one, which has potential to cause serious injury or loss of life. It may cause extensive damage to property and serious disruption both inside and outside the works. A Disaster would normally require the assistance of outside emergency services to handle it effectively. Whatever are the causative factors, like plant failure; human error; earthquake; vehicle crash; sabotage etc, they will normally manifest in three basic forms viz, fire, explosion, and *or* toxic release.

#### The objectives of disaster management plan include the following-

1. Controlling the disaster, localizing the disaster and eliminating the hazard

2. Welfare of person managing the disaster.
3. Head count and rescue operations.
4. Treatment of injured.
5. Safeguarding others by timely evacuation.
6. Minimizing damage to property and environment.
7. Informing and assisting relatives.
  - i. Informing and collaborating with statutory authorities.
  - ii. Informing the news media.
  - iii. Preserving records and organizing investigations.
  - iv. Ensuring safety of the works before personnel re-enter and resume work.
  - v. Investigating and taking steps to prevent recurrence.
  - vi. Resorting normalcy

## **12. PROJECT BENEFITS**

### **Implementation of proposed project will result in:**

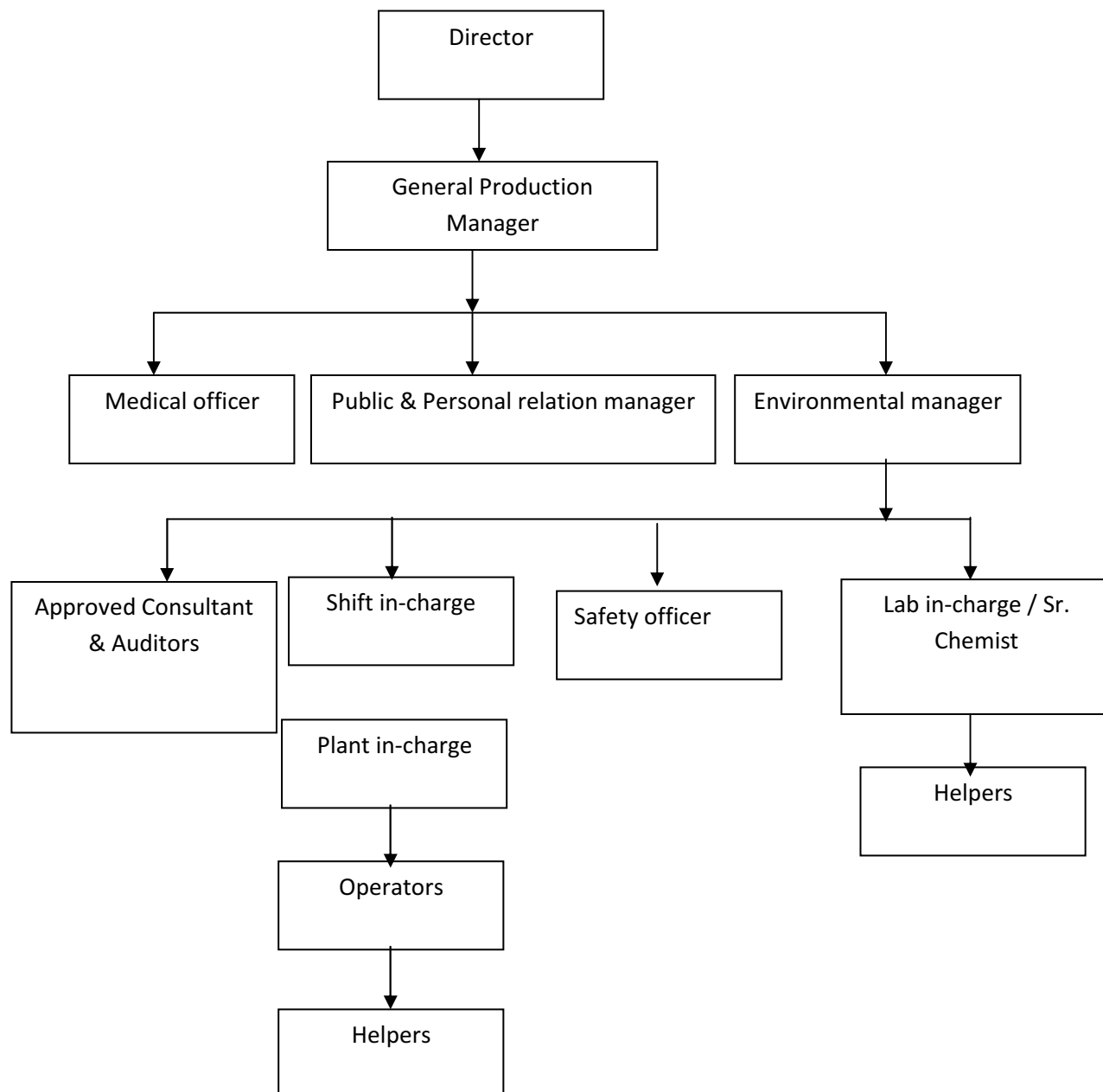
- Improvement in the physical infrastructure
- Improvement in the social infrastructure
- Improvement in employment potential

## **13. ENVIRONMENT MANAGEMENT PLAN**

Environmental Management Plan is detailed under the following heads:

- Air Quality Management
- Noise Management
- Waste Water Management
- Solid & Hazardous Waste Management
- Energy Conservation
- Greenbelt Development & Plantation Programme
- Occupational Health & Safety Measures.
- Enterprise social commitment (ESC)- Industry will utilize 1% of its project cost for ESC.

**Figure 2: Environment Management Cell**



**Table 8: 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
3	Quantity of effluent	To be measured daily and in-plant control. Not to exceed any time	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 ETP 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, bagasse to be baled, molasses not in open pits, press mud to be carted out every day	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
<b>Legends:</b> ENV-M- Environmental Manager, LAB- I- Lab incharge, ENV- C- Environmental Chemist.			

## 14. CONCLUSION

The proposed 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.

# **EXECUTIVE SUMMARY**

**Of**

## **ENVIRONMENTAL IMPACT ASSESSMENT REPORT**

**FOR**

### **PUBLIC HEARING**

**OF**

## **Proposed Expansion of Existing Metallurgical Industry**

**By**

**M/s. SANT GYANESHWAR STEELS PVT. LTD.**

Gat No. 1076/77, Golegaon Road, Village – Markal, Taluka – Khed,  
District – Pune, Maharashtra

**SUBMITTED TO**

**MAHARSHTRA POLLUTION CONTROL BOARD**

**PREPARED BY**



**M/s SGM Enviro (I) Pvt. Ltd.**  
Saahil Apartments,1102/A/4B,Model Colony  
Lakaki Road,Opp. Kirloskar Bunglow,  
ShivajiNagar , Pune -411016  
QCI –NABET ACCREDITED

## EXECUTIVE SUMMARY

### 1. INTRODUCTION

M/s Sant Gyaneshwar Steel Pvt. Ltd. (SGSPL) Markal was incorporated on 21.06.1996 with Registration number 111927272. The industry is located at Gat No. 1076/77, Golegaon Road, Village – Markal, Taluka – Khed, District – Pune with the main object of manufacturing of M.S. Ingots &/or Billets & Runner Riser.

As per the EIA notification 2006 & its subsequent amendments existing project does not require Environmental Clearance. Existing industry have obtained consent to operate from Maharashtra Pollution Control Board (MPCB) & is complying with all the norms of CPCB & MPCB.

### 2. TYPE OF PROJECT

M/s. Sant Gyaneshwar Steel Pvt. Ltd. (SGSPL) is proposing to expand existing quantity of M.S. ingots &/or Billets manufacturing from 36,000 TPA to 1, 56,000 TPA & capacity of Runner Riser production will remain the same i.e. 720 MTA. This expansion activity will take place within the existing plant premises at Gat No. 1076/77, Golegaon Road, Village – Markal, Tal. - Khed, Dist. – Pune.

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

### 3. 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 SGSPL has identified this opportunity and has decided to become a competitive leader in boosting field of metallurgical sector.

### 4. SITE SELECTION & JUSTIFICATION THEREOF

Proposed expansion will be done within the existing plant 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.

### 5. BRIEF DESCRIPTION OF NATURE, SIZE, LOCATION OF THE PROJECT AND ITS IMPORTANCE TO THE COUNTRY, REGION

**Table 1: Brief Description of Nature, Size and Location of Existing & Proposed Project**

Sr. No.	Particular	Description			
1	Nature & size of existing project	Proposed Expansion of Existing Metallurgical unit by M/s Sant Gyaneshwar Steels Pvt. Ltd. for Production of MS Ingots &/or Billets & Runner Riser			
2 A	Total Area of project	Total plot area is 15700 Sq.m			
2 B	Area Details (Sq.m)	<b>Particular</b>	<b>Existing</b>	<b>Proposed</b>	<b>Total</b>
		Built up Area	2016.52	1616.94	3633.46
		Road Area	484.00	2462.68	2946.68
		Garden/Open Area	3699.48	1471.19	5170.67

		Total	6200	5550.81	11750.81
3	Raw Materials (MT/M)	M.S. Scrap	3170	5800	8970
		Additives/ Ferro Alloys	30	110	140
		Bricks/Reformatories	100	100	200
		Sponge Iron	0	5000	5000
4	Products & By-products (MTA)	MS Ingots &/or Billets	36,000	1,20,000	1,56,000
		Runner Riser	720	0	720
	Capacity of Electric Furnace (MT/Month)	-	6000 (At present, a furnace of 3000 MT is there, which will be upgraded to a Total Capacity of - 6000 MT/M)	7000	13000
	Power requirement	-	4990 KVA + Electricity requirement of existing furnace is 4500KWH/hr	10,000 KVA + Electricity requirement of proposed furnace is 9500 KWH/hr	14990 KVA + 14000 KWH/hr
5	Capacity of DG set (KVA)	-	1 x 250 KVA	1x250 KVA	2 x 250 each
6	Fuel Requirement (lit/hr)	Fuel Type- LDO	6 lit/hr	6 lit/hr	12 lit/hr
7	Stack Details	-	Existing Electric Furnace stack ht. 30 m	Proposed Electric Furnace stack ht. 30 m	Total- 2 stacks: 1 Stack of 30 m for existing furnace & 1 stack of 30 m for proposed furnace
		-	Existing D.G. Set (250 KVA) stack ht. 2 m	Proposed D.G. Set (250KVA) stack ht. 3 m	Total 2 No.s: (1 Existing + 1 Proposed)
8	Air Pollution Control Equipment for boiler	-	Proper stack height with Fume extraction system & dust collector is provided	Proper stack height with Fume extraction system & dust collector will be provided	-
9	Total water Requirement for unit (CMD)	Domestic	1.2	1.9	3.1
		Industrial Process	0	0	0
		Cooling Purpose	60	50	110
		Gardening	0.5	1.3	1.8
10	Waste water generation (CMD)	Domestic	1.0	1.7	2.7
		Industrial Process	0	0	0
		Cooling Purpose	0	0	0
		Gardening	0	0	0
11	Manpower		27	43	70
12	Solid Waste	Scrap	120	360	480

(MT/A)	Slag	1200	8400	9600
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**Table 2: Environmental settings of Project**

Sr. No	Particular	Description
<b>Location of the project site</b>		
1	Plot No.	1076/77
2	Village	Markal
3	Taluka	Khed
4	District	Pune
5	State	Maharashtra
6	Latitude/Longitude	Latitude 18 <sup>0</sup> 39'39.11" N Longitude: 73 <sup>0</sup> 57'29.10" E
7	Average altitude above mean MSL	1866 ft above MSL
8	Corner Co-ordinates of the plant site	Coordinates of the project site as follows A 18 <sup>0</sup> 39'45.27" N 73 <sup>0</sup> 57'29.39" E B 18 <sup>0</sup> 39'44.99" N 73 <sup>0</sup> 57'30.81" E C 18 <sup>0</sup> 39'33.69" N 73 <sup>0</sup> 57'27.49" E D 18 <sup>0</sup> 39'33.78" N 73 <sup>0</sup> 57'29.10" E
9	Toposheet Number	E43I2, E43H14
<b>Environmental setting details (with approximate aerial distance &amp; direction from the plant site)</b>		
10	Nearest village	Markal :1.46 km
11	Nearest National highway/ State highway	Pune – Nashik Highway (11.88 km in W Direction)
12	Nearest Railway station	Kasarwadi Railway station (15.88 km in SW Direction)
13	Nearest airport	Pune Airport 9.50 Km in SW direction
14	Nearest major city	Pimpri-Chinchwad : 17 km in SW direction
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	Indrayani River – 1.68 km away from project site in 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 15 km radius

## 6. MAJOR REQUIREMENT FOR THE PROPOSED PROJECT

### 6.1. RAW MATERIALS REQUIREMENT

**Table 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	3170	5800	8970	Locally available	Truck
2	Additives/ Ferro Alloys	30	110	140	Locally available	Truck
3	Bricks/ Reformatories	100	100	200	Locally available	Truck
4	Sponge Iron	0	5000	5000	Locally available	Truck

## 6.2 POWER REQUIREMENT

The power requirement of the existing unit is 4990 KVA. After expansion the power requirement will be 10,000 KVA. This demand will be met by sourcing the power from MSEDCL from nearby Sub-station. Electricity requirement of existing furnace is 4500KWH/hr & that of proposed furnace is 9500 KWH/hr.

## 6.3 MANPOWER REQUIREMENT

Additional manpower is needed to operate the expansion unit plant will be 43. More than 85 % 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 20. Construction workers will be from nearby villages. Residential facility will not be required for the construction personnel.

## 6.4 WATER REQUIREMENT FOR PROPOSED PROJECT

**Table 4: Water Budget of proposed expansion project**

Sr. No.	Particular	Quantity (m <sup>3</sup> / day)	
		Water Consumption	Effluent Generation
1	Domestic	1.9	1.7
2	Industrial	0	0
3	cooling	50	0
4	Gardening	1.3	0
<b>Total</b>		<b>53.2</b>	<b>1.7</b>

**Total water requirement for proposed expansion project = 53.2 m3/day**

**Fresh water requirement for proposed expansion project = 3.2 m3/day**

## 6.5 LANDREQUIREMENT

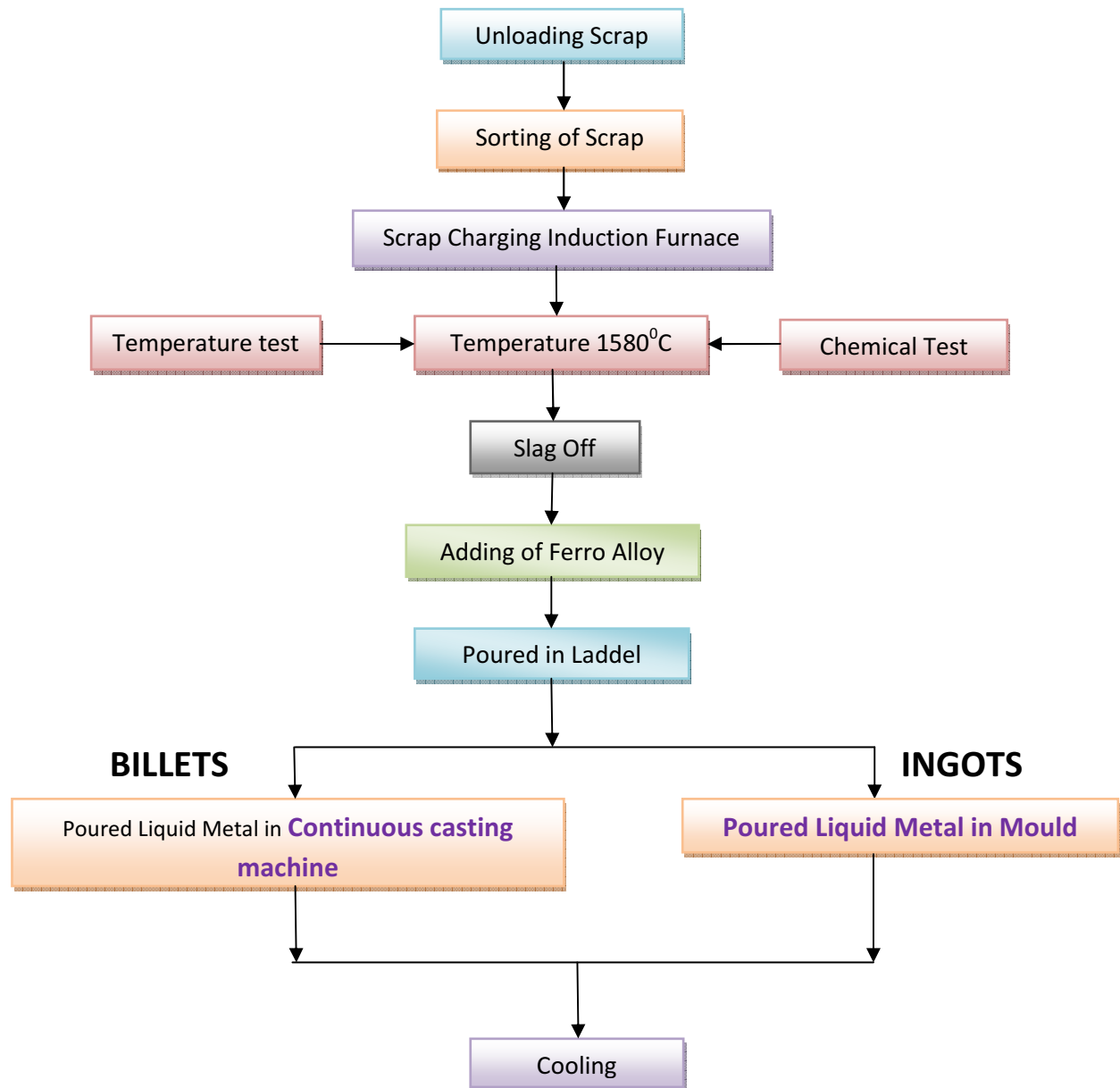
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Figure 1: Manufacturing process M.S. Ingots & Runner Riser



## 8. DESCRIPTION OF ENVIRONMENT

Baseline study in this Environmental Impact Assessment report was conducted for a period of three months during 1<sup>st</sup> March 2018 to 31<sup>st</sup> May 2018.

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.

Ambient air quality monitoring has been carried out at 8 stations in the study area on 24 hourly bases. Ambient Air Quality Monitoring reveals that the concentrations of PM<sub>10</sub> and PM<sub>2.5</sub> for all the 8 AAQM stations were found between 77.5 to 25 µg/m<sup>3</sup> and 35.5 to 12 µg/m<sup>3</sup>. The concentrations of SO<sub>2</sub> and NO<sub>x</sub> were found to be in range of 7.7 to 4 µg/m<sup>3</sup> and 41.1 to 21.5 µg/m<sup>3</sup> respectively. The concentration of CO is in range of 0.65 to 0.175 mg/m<sup>3</sup>. The resultant concentration of the parameters is well within the prescribed limits of GPCB & NAAQS.

Prediction of impacts on air environment has been carried out by employing a mathematical model. In the present case, **Industrial Source Complex Short-Term (ISCST3)** dispersion model based on steady state Gaussian plume dispersion, designed for multiple point sources for short term has been used for predicting the ground level concentrations. Results of mathematical modelling reveals that the maximum incremental short term 24 hourly ground level concentrations for PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub> and NO<sub>x</sub> likely to be encountered during pre-monsoon season are 2.38 µg/m<sup>3</sup>, 1.44 µg/m<sup>3</sup>, 4.06 µg/m<sup>3</sup> and 7.22 µg/m<sup>3</sup> respectively occurring at a distance of about 2-km in the South West direction.

Noise level monitoring has been carried out at 8 stations in the study area. Noise level varies from 49.7 to 56.75 Leq dB (A) during day time and from 44.15 to 49.55 Leq dB (A) during night time. 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.

Surface water sampling has been carried out at 1 station in the study area. SGSPL is going to achieve Zero liquid discharge in surface water for the proposed project & hence there is no effect on the river water quality due to this industry.

Ground water sampling has been carried out at 8 stations in the study area. Analysis results of ground water reveals that pH varies from 6.7 to 7.5, Total hardness varies from 281.88 to 411.68 mg/l, Total dissolved solids vary from 366 to 623 mg/l.

Soil samples collected from 8 identified locations indicate pH value ranges from 6.97 to 8.03, which shows that the soil is having near neutral pH. Water holding capacity ranges from 28.50 % to 61.76 % in the soil samples. Free Ammonical nitrogen is found in ranges from 0.14 % to 0.19 % and Potassium is found to be ranging from 1 mg/kg to 8 mg/kg. Soil of the area is found to be suitable for agricultural activities.

The study area is delineated in 10 km radius from the project site. The proposed project site is surrounded by agricultural land. There are no any national parks, wildlife sanctuaries, biosphere reserves or critically polluted areas in the 10 km radius from the proposed project site. No Archeological site is present within the study area. No forest is located in the study area. No Schedule - I fauna was found during the field survey. There is intense anthropogenic pressure on flora, fauna and forest resources, which are observed to be dwindling. However, no rare, endangered & threatened plant species was observed in the study area.

Population of study area is 114,796. Scheduled Caste fraction of the population of the study area (10 km) is 10,542 (9.18%) and Scheduled Tribe 3298 (2.87 %). Literacy rate of the area is 69.59 %. Population of the workers engaged in occupation is 45.80 %. Of these 49,153 (42.81 %) are main workers and 3426 (2.98 %) are marginal workers. Remaining, 62,215 (54.19 %) of the total population is considered as non-workers. The socio-economic analysis of the study area shows that in terms of education could be improved as the literacy rate is quite low i.e. 69.59 %. With a high dependency ratio, the overall socio-economic status of the target population could improve with increase in work participation rate. Hence, the long-term positive impacts on socio-economic conditions of the area are anticipated.



## 9. ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

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

**Table 6: 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 construction 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. Wherever required check dams and dykes will be provided for control of soil erosion.</li> <li>4. 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>5. Appropriate sanitation facilities will be provided for the workers to reduce impact on surface water quality.</li> <li>6. Construction wastes will not be discharged to surface or ground water bodies.</li> <li>7. 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. Vehicles with internal combustion engines will be provided with silencers and mufflers in order to reduce noise levels.</li> </ol> <p>Green belt will be developed to attenuate noise impacts and to reduce noise pollution</p>

4.	Soil	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. Litter disposal and collection points will be established around the work sites. Empty packaging materials, drums, glass, tin, paper, plastic, pet bottles, wood, thermocol and other packaging materials, etc. will be disposed through recyclers. The construction spoils will be temporarily stored at designated dumpsite located inside the plant premises.
<b>(B) Operation Phase</b>		
1.	Air	Adequate stack height to the proposed electric furnace, Fume extraction system & dust collector will be provided
2.	Fugitive	Internal roads paved, leveled, no undulations, no sharp curves, slow speed. Tree plantation on surrounding available area.
3.	Water and Waste Water	1. No effluent generation will take place from proposed industry. Hence no provision of ETP. 2. Rain Water Harvesting will be done.
4.	Solid Waste	100% collection every day. Segregated and treated/ disposed per SPCB norms.
6.	Noise	Smooth roads. Sturdy foundation. No Vibrations. Acoustic enclosures to existing DG Set as per manufacturers' design. Use as standby only. Trees are planted around. Side cladding. Large No. of tree barriers.
7.	Socio-economic	Employment generation, Community Skills Development, Improved Standard of Living, Community Organizational Capacity Development Economic Exposure and Development

## 10. ENVIRONMENTAL MONITORING PROGRAMME

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

**Table 7: Schedule for Environmental Monitoring**

Sr. No.	Particulars	Parameters	Location	Frequency
1	Flue gases from furnace	PM <sub>10</sub> , PM <sub>2.5</sub> , SO <sub>2</sub> and NO <sub>x</sub>	Stack monitoring	Monthly
2	Ambient air quality	PM <sub>10</sub> , PM <sub>2.5</sub> , SO <sub>2</sub> and NO <sub>x</sub> , CO.	<ul style="list-style-type: none"> <li>Check wind direction</li> <li>Select two point in upwind direction at 120° from site</li> <li>Take one point within site at down wind direction from furnace about 1 km distance</li> <li>Take two points beyond site in down wind direction about 2 km distance at 120° from site opposite to points taken in upwind direction.</li> </ul>	24 hrs sample, half yearly
3	Water (Ground Water and Surface Water)	As per drinking water standards	<ul style="list-style-type: none"> <li>Take one upstream and downstream sample of surface water. Minimum distance 500 m.</li> <li>One point upstream at higher elevation from plant site. Also at lower contour point at 3 locations.</li> </ul>	Quarterly

4	Soil	organic & inorganic matter	• Outside plant boundary at lower contour	Pre & post monsoon
5	Noise level, work zone (hourly)	Equivalent noise level-dB (A)	<ul style="list-style-type: none"> <li>• One location in furnace house.</li> <li>• One location near I.D. Fan.</li> <li>• Especially monitor noise during soot blowing.</li> <li>• Four locations around plant boundary</li> </ul>	Quarterly
6	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
7	Environmental Audit	As per Direction of ISO 14001	-	Once in a Year
8	Water utilization, m <sup>3</sup> /d	-	For process, domestic, cooling and boiler	Daily
9	Power utilization	-	For air pollution control facility at boilers and for STP	Daily

## 11. ADDITIONAL STUDIES

Additional Studies conducted as per revised ToR issued by SEAC-I in its 168<sup>th</sup> meeting dated 26<sup>th</sup> August 2019, are Risk Assessment and Disaster Management Plan. Public Hearing is to be conducted for the project.

### RISK ASSESSMENT

An industry with its complex nature of activities involving various plant machineries, raw materials, products, operations, intermediates and environmental discharge has a number of associated hazards. A minor failure can lead to major failure resulting into a disaster causing heavy losses to life, property and environmental. Risk assessment studies are being conducted to ensure safety and reliability of any new plant, through a systematic and scientific methods to identify possible failures and prevent their occurrences before they actually cause disasters and production loss.

#### Objectives of the risk assessment study

1. To identify the major hazards relating to fire, explosion and toxicity due to storage and handling of hazardous chemicals.
2. To visualize maximum credible accident scenarios
3. To analyze and quantify primary and secondary effects and damage potentials of the identified maximum credible accident scenarios using standard procedure.
4. To study the nature of exposures, pathways and consequences of maximum credible accident scenarios and characteristics of risk levels.
5. To provide guidelines for disaster management plan.

### DISASTER MANAGEMENT PLAN

A major disaster in a work is the one, which has potential to cause serious injury or loss of life. It may cause extensive damage to property and serious disruption both inside and outside the works. A Disaster would normally require the assistance of outside emergency services to handle it effectively. Whatever are the causative factors, like plant failure; human error; earthquake; vehicle crash; sabotage etc, they will normally manifest in three basic forms viz, fire, explosion, and *or* toxic release.

#### The objectives of disaster management plan include the following-

1. Controlling the disaster, localizing the disaster and eliminating the hazard

2. Welfare of person managing the disaster.
3. Head count and rescue operations.
4. Treatment of injured.
5. Safeguarding others by timely evacuation.
6. Minimizing damage to property and environment.
7. Informing and assisting relatives.
  - i. Informing and collaborating with statutory authorities.
  - ii. Informing the news media.
  - iii. Preserving records and organizing investigations.
  - iv. Ensuring safety of the works before personnel re-enter and resume work.
  - v. Investigating and taking steps to prevent recurrence.
  - vi. Resorting normalcy

## **12. PROJECT BENEFITS**

### **Implementation of proposed project will result in:**

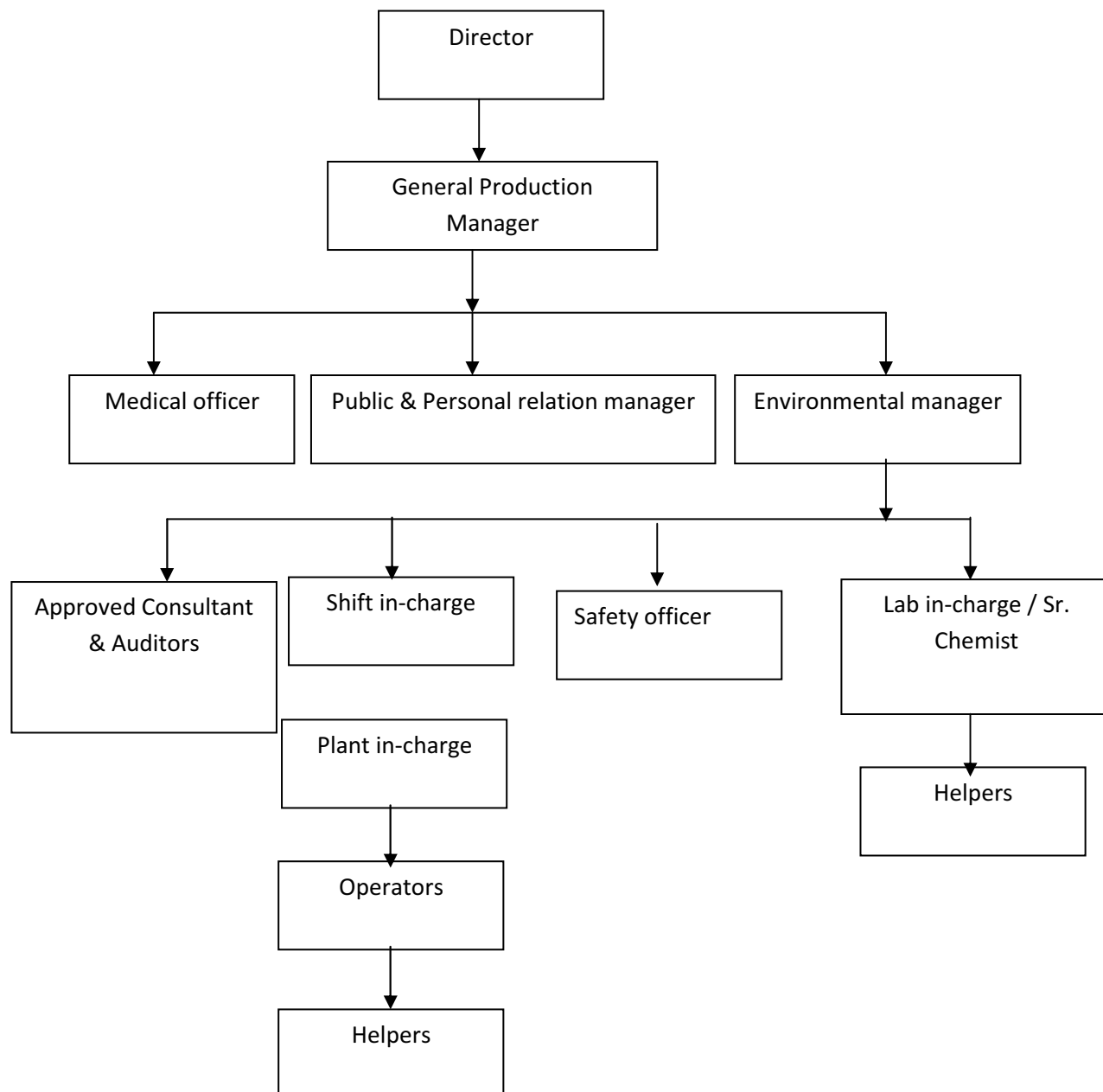
- Improvement in the physical infrastructure
- Improvement in the social infrastructure
- Improvement in employment potential

## **13. ENVIRONMENT MANAGEMENT PLAN**

Environmental Management Plan is detailed under the following heads:

- Air Quality Management
- Noise Management
- Waste Water Management
- Solid & Hazardous Waste Management
- Energy Conservation
- Greenbelt Development & Plantation Programme
- Occupational Health & Safety Measures.
- Enterprise social commitment (ESC)- Industry will utilize 1% of its project cost for ESC.

**Figure 2: Environment Management Cell**



**Table 8: 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
3	Quantity of effluent	To be measured daily and in-plant control. Not to exceed any time	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 ETP 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, bagasse to be baled, molasses not in open pits, press mud to be carted out every day	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
<b>Legends:</b> ENV-M- Environmental Manager, LAB- I- Lab incharge, ENV- C- Environmental Chemist.			

## 14. CONCLUSION

The proposed 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.

# **EXECUTIVE SUMMARY**

**Of**

## **ENVIRONMENTAL IMPACT ASSESSMENT REPORT**

**FOR**

### **PUBLIC HEARING**

**OF**

## **Proposed Expansion of Existing Metallurgical Industry**

**By**

**M/s. SANT GYANESHWAR STEELS PVT. LTD.**

Gat No. 1076/77, Golegaon Road, Village – Markal, Taluka – Khed,  
District – Pune, Maharashtra

**SUBMITTED TO**

**MAHARSHTRA POLLUTION CONTROL BOARD**

**PREPARED BY**



**M/s SGM Enviro (I) Pvt. Ltd.**  
Saahil Apartments,1102/A/4B,Model Colony  
Lakaki Road,Opp. Kirloskar Bunglow,  
ShivajiNagar , Pune -411016  
QCI –NABET ACCREDITED

## EXECUTIVE SUMMARY

### 1. INTRODUCTION

M/s Sant Gyaneshwar Steel Pvt. Ltd. (SGSPL) Markal was incorporated on 21.06.1996 with Registration number 111927272. The industry is located at Gat No. 1076/77, Golegaon Road, Village – Markal, Taluka – Khed, District – Pune with the main object of manufacturing of M.S. Ingots &/or Billets & Runner Riser.

As per the EIA notification 2006 & its subsequent amendments existing project does not require Environmental Clearance. Existing industry have obtained consent to operate from Maharashtra Pollution Control Board (MPCB) & is complying with all the norms of CPCB & MPCB.

### 2. TYPE OF PROJECT

M/s. Sant Gyaneshwar Steel Pvt. Ltd. (SGSPL) is proposing to expand existing quantity of M.S. ingots &/or Billets manufacturing from 36,000 TPA to 1, 56,000 TPA & capacity of Runner Riser production will remain the same i.e. 720 MTA. This expansion activity will take place within the existing plant premises at Gat No. 1076/77, Golegaon Road, Village – Markal, Tal. - Khed, Dist. – Pune.

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

### 3. 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 SGSPL has identified this opportunity and has decided to become a competitive leader in boosting field of metallurgical sector.

### 4. SITE SELECTION & JUSTIFICATION THEREOF

Proposed expansion will be done within the existing plant 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.

### 5. BRIEF DESCRIPTION OF NATURE, SIZE, LOCATION OF THE PROJECT AND ITS IMPORTANCE TO THE COUNTRY, REGION

**Table 1: Brief Description of Nature, Size and Location of Existing & Proposed Project**

Sr. No.	Particular	Description			
1	Nature & size of existing project	Proposed Expansion of Existing Metallurgical unit by M/s Sant Gyaneshwar Steels Pvt. Ltd. for Production of MS Ingots &/or Billets & Runner Riser			
2 A	Total Area of project	Total plot area is 15700 Sq.m			
2 B	Area Details (Sq.m)	<b>Particular</b>	<b>Existing</b>	<b>Proposed</b>	<b>Total</b>
		Built up Area	2016.52	1616.94	3633.46
		Road Area	484.00	2462.68	2946.68
		Garden/Open Area	3699.48	1471.19	5170.67



		Total	6200	5550.81	11750.81
3	Raw Materials (MT/M)	M.S. Scrap	3170	5800	8970
		Additives/ Ferro Alloys	30	110	140
		Bricks/Reformatories	100	100	200
		Sponge Iron	0	5000	5000
4	Products & By-products (MTA)	MS Ingots &/or Billets	36,000	1,20,000	1,56,000
		Runner Riser	720	0	720
	Capacity of Electric Furnace (MT/Month)	-	6000 (At present, a furnace of 3000 MT is there, which will be upgraded to a Total Capacity of - 6000 MT/M)	7000	13000
	Power requirement	-	4990 KVA + Electricity requirement of existing furnace is 4500KWH/hr	10,000 KVA + Electricity requirement of proposed furnace is 9500 KWH/hr	14990 KVA + 14000 KWH/hr
5	Capacity of DG set (KVA)	-	1 x 250 KVA	1x250 KVA	2 x 250 each
6	Fuel Requirement (lit/hr)	Fuel Type- LDO	6 lit/hr	6 lit/hr	12 lit/hr
7	Stack Details	-	Existing Electric Furnace stack ht. 30 m	Proposed Electric Furnace stack ht. 30 m	Total- 2 stacks: 1 Stack of 30 m for existing furnace & 1 stack of 30 m for proposed furnace
		-	Existing D.G. Set (250 KVA) stack ht. 2 m	Proposed D.G. Set (250KVA) stack ht. 3 m	Total 2 No.s: (1 Existing + 1 Proposed)
8	Air Pollution Control Equipment for boiler	-	Proper stack height with Fume extraction system & dust collector is provided	Proper stack height with Fume extraction system & dust collector will be provided	-
9	Total water Requirement for unit (CMD)	Domestic	1.2	1.9	3.1
		Industrial Process	0	0	0
		Cooling Purpose	60	50	110
		Gardening	0.5	1.3	1.8
10	Waste water generation (CMD)	Domestic	1.0	1.7	2.7
		Industrial Process	0	0	0
		Cooling Purpose	0	0	0
		Gardening	0	0	0
11	Manpower		27	43	70
12	Solid Waste	Scrap	120	360	480

(MT/A)	Slag	1200	8400	9600
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**Table 2: Environmental settings of Project**

Sr. No	Particular	Description
<b>Location of the project site</b>		
1	Plot No.	1076/77
2	Village	Markal
3	Taluka	Khed
4	District	Pune
5	State	Maharashtra
6	Latitude/Longitude	Latitude 18 <sup>0</sup> 39'39.11" N Longitude: 73 <sup>0</sup> 57'29.10" E
7	Average altitude above mean MSL	1866 ft above MSL
8	Corner Co-ordinates of the plant site	Coordinates of the project site as follows A 18 <sup>0</sup> 39'45.27" N 73 <sup>0</sup> 57'29.39" E B 18 <sup>0</sup> 39'44.99" N 73 <sup>0</sup> 57'30.81" E C 18 <sup>0</sup> 39'33.69" N 73 <sup>0</sup> 57'27.49" E D 18 <sup>0</sup> 39'33.78" N 73 <sup>0</sup> 57'29.10" E
9	Toposheet Number	E43I2, E43H14
<b>Environmental setting details (with approximate aerial distance &amp; direction from the plant site)</b>		
10	Nearest village	Markal :1.46 km
11	Nearest National highway/ State highway	Pune – Nashik Highway (11.88 km in W Direction)
12	Nearest Railway station	Kasarwadi Railway station (15.88 km in SW Direction)
13	Nearest airport	Pune Airport 9.50 Km in SW direction
14	Nearest major city	Pimpri-Chinchwad : 17 km in SW direction
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	Indrayani River – 1.68 km away from project site in 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 15 km radius

## 6. MAJOR REQUIREMENT FOR THE PROPOSED PROJECT

### 6.1. RAW MATERIALS REQUIREMENT

**Table 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	3170	5800	8970	Locally available	Truck
2	Additives/ Ferro Alloys	30	110	140	Locally available	Truck
3	Bricks/ Reformatories	100	100	200	Locally available	Truck
4	Sponge Iron	0	5000	5000	Locally available	Truck

## 6.2 POWER REQUIREMENT

The power requirement of the existing unit is 4990 KVA. After expansion the power requirement will be 10,000 KVA. This demand will be met by sourcing the power from MSEDCL from nearby Sub-station. Electricity requirement of existing furnace is 4500KWH/hr & that of proposed furnace is 9500 KWH/hr.

## 6.3 MANPOWER REQUIREMENT

Additional manpower is needed to operate the expansion unit plant will be 43. More than 85 % 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 20. Construction workers will be from nearby villages. Residential facility will not be required for the construction personnel.

## 6.4 WATER REQUIREMENT FOR PROPOSED PROJECT

**Table 4: Water Budget of proposed expansion project**

Sr. No.	Particular	Quantity (m <sup>3</sup> / day)	
		Water Consumption	Effluent Generation
1	Domestic	1.9	1.7
2	Industrial	0	0
3	cooling	50	0
4	Gardening	1.3	0
<b>Total</b>		<b>53.2</b>	<b>1.7</b>

**Total water requirement for proposed expansion project = 53.2 m3/day**

**Fresh water requirement for proposed expansion project = 3.2 m3/day**

## 6.5 LANDREQUIREMENT

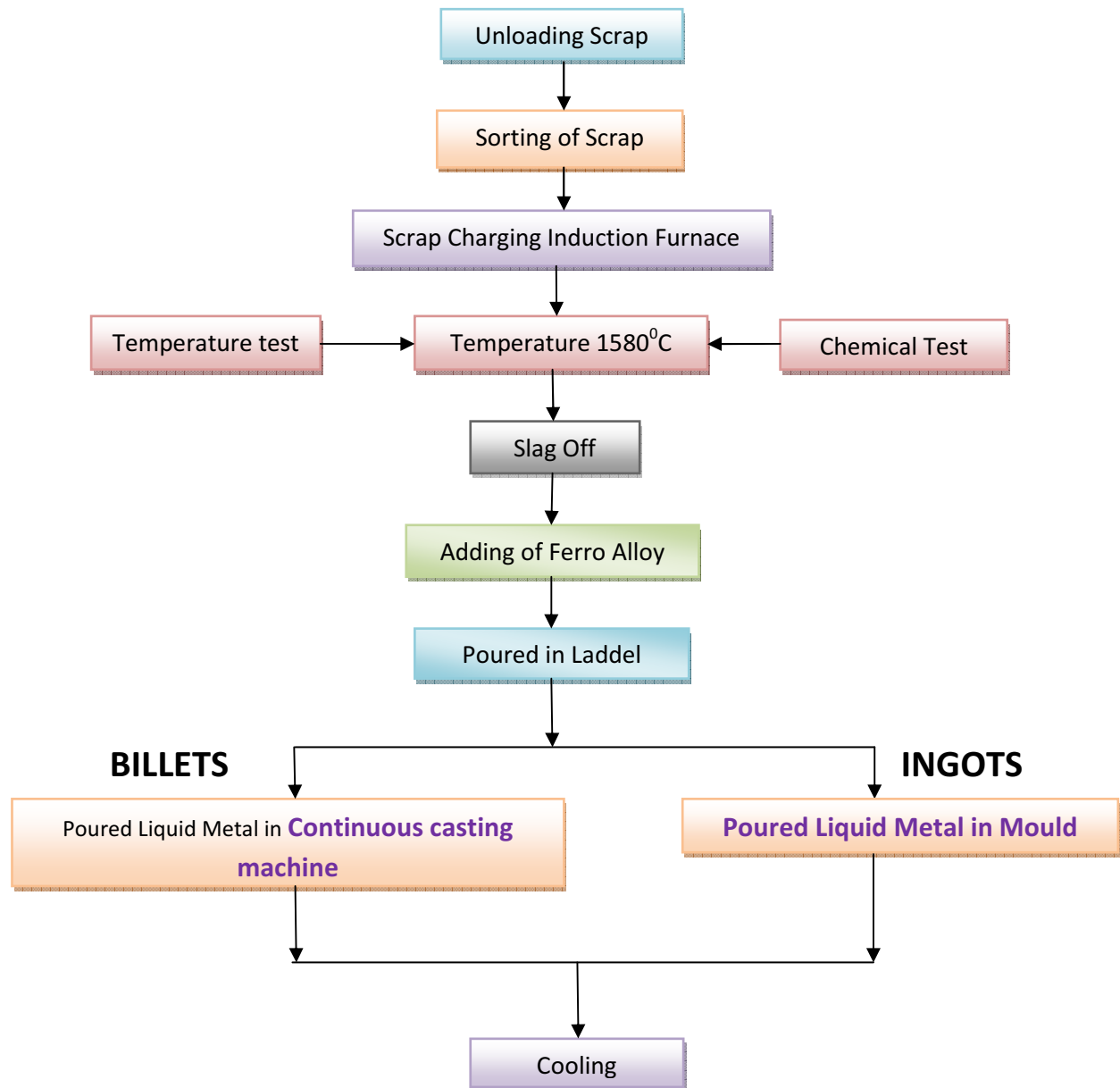
The Company site is located Gat No. 1076/77, Golegaon Road, and Village -Markal, Taluka- Khed, District – Pune. Total plot area of industry is 15700 Sq.m. The details of proposed land use is tabulated in following table-

**Table 5: Details of Land Use**

Sr. No.	Particular	Existing	Proposed	Total Area (Sq.m.)
1	Built up Area	2016.52	1616.94	3633.46
2	Road Area (Sq.m)	484.00	2462.68	2946.68
3	Garden/Open Area	3699.48	1471.19	5170.67

## 7. PROCESS DESCRIPTION ALONG WITH MAJOR EQUIPMENTS AND MACHINERIES, PROCESS FLOW SHEET (QUANTATIVE) FROM RAW MATERIAL TO PRODUCTS

Figure 1: Manufacturing process M.S. Ingots & Runner Riser



## 8. DESCRIPTION OF ENVIRONMENT

Baseline study in this Environmental Impact Assessment report was conducted for a period of three months during 1<sup>st</sup> March 2018 to 31<sup>st</sup> May 2018.

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.

Ambient air quality monitoring has been carried out at 8 stations in the study area on 24 hourly bases. Ambient Air Quality Monitoring reveals that the concentrations of PM<sub>10</sub> and PM<sub>2.5</sub> for all the 8 AAQM stations were found between 77.5 to 25 µg/m<sup>3</sup> and 35.5 to 12 µg/m<sup>3</sup>. The concentrations of SO<sub>2</sub> and NO<sub>x</sub> were found to be in range of 7.7 to 4 µg/m<sup>3</sup> and 41.1 to 21.5 µg/m<sup>3</sup> respectively. The concentration of CO is in range of 0.65 to 0.175 mg/m<sup>3</sup>. The resultant concentration of the parameters is well within the prescribed limits of GPCB & NAAQS.

Prediction of impacts on air environment has been carried out by employing a mathematical model. In the present case, **Industrial Source Complex Short-Term (ISCST3)** dispersion model based on steady state Gaussian plume dispersion, designed for multiple point sources for short term has been used for predicting the ground level concentrations. Results of mathematical modelling reveals that the maximum incremental short term 24 hourly ground level concentrations for PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub> and NO<sub>x</sub> likely to be encountered during pre-monsoon season are 2.38 µg/m<sup>3</sup>, 1.44 µg/m<sup>3</sup>, 4.06 µg/m<sup>3</sup> and 7.22 µg/m<sup>3</sup> respectively occurring at a distance of about 2-km in the South West direction.

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Surface water sampling has been carried out at 1 station in the study area. SGSPL is going to achieve Zero liquid discharge in surface water for the proposed project & hence there is no effect on the river water quality due to this industry.

Ground water sampling has been carried out at 8 stations in the study area. Analysis results of ground water reveals that pH varies from 6.7 to 7.5, Total hardness varies from 281.88 to 411.68 mg/l, Total dissolved solids vary from 366 to 623 mg/l.

Soil samples collected from 8 identified locations indicate pH value ranges from 6.97 to 8.03, which shows that the soil is having near neutral pH. Water holding capacity ranges from 28.50 % to 61.76 % in the soil samples. Free Ammonical nitrogen is found in ranges from 0.14 % to 0.19 % and Potassium is found to be ranging from 1 mg/kg to 8 mg/kg. Soil of the area is found to be suitable for agricultural activities.

The study area is delineated in 10 km radius from the project site. The proposed project site is surrounded by agricultural land. There are no any national parks, wildlife sanctuaries, biosphere reserves or critically polluted areas in the 10 km radius from the proposed project site. No Archeological site is present within the study area. No forest is located in the study area. No Schedule - I fauna was found during the field survey. There is intense anthropogenic pressure on flora, fauna and forest resources, which are observed to be dwindling. However, no rare, endangered & threatened plant species was observed in the study area.

Population of study area is 114,796. Scheduled Caste fraction of the population of the study area (10 km) is 10,542 (9.18%) and Scheduled Tribe 3298 (2.87 %). Literacy rate of the area is 69.59 %. Population of the workers engaged in occupation is 45.80 %. Of these 49,153 (42.81 %) are main workers and 3426 (2.98 %) are marginal workers. Remaining, 62,215 (54.19 %) of the total population is considered as non-workers. The socio-economic analysis of the study area shows that in terms of education could be improved as the literacy rate is quite low i.e. 69.59 %. With a high dependency ratio, the overall socio-economic status of the target population could improve with increase in work participation rate. Hence, the long-term positive impacts on socio-economic conditions of the area are anticipated.

## 9. ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

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

**Table 6: 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 construction 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. Wherever required check dams and dykes will be provided for control of soil erosion.</li> <li>4. 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>5. Appropriate sanitation facilities will be provided for the workers to reduce impact on surface water quality.</li> <li>6. Construction wastes will not be discharged to surface or ground water bodies.</li> <li>7. 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. Vehicles with internal combustion engines will be provided with silencers and mufflers in order to reduce noise levels.</li> </ol> <p>Green belt will be developed to attenuate noise impacts and to reduce noise pollution</p>

4.	Soil	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. Litter disposal and collection points will be established around the work sites. Empty packaging materials, drums, glass, tin, paper, plastic, pet bottles, wood, thermocol and other packaging materials, etc. will be disposed through recyclers. The construction spoils will be temporarily stored at designated dumpsite located inside the plant premises.
<b>(B) Operation Phase</b>		
1.	Air	Adequate stack height to the proposed electric furnace, Fume extraction system & dust collector will be provided
2.	Fugitive	Internal roads paved, leveled, no undulations, no sharp curves, slow speed. Tree plantation on surrounding available area.
3.	Water and Waste Water	1. No effluent generation will take place from proposed industry. Hence no provision of ETP. 2. Rain Water Harvesting will be done.
4.	Solid Waste	100% collection every day. Segregated and treated/ disposed per SPCB norms.
6.	Noise	Smooth roads. Sturdy foundation. No Vibrations. Acoustic enclosures to existing DG Set as per manufacturers' design. Use as standby only. Trees are planted around. Side cladding. Large No. of tree barriers.
7.	Socio-economic	Employment generation, Community Skills Development, Improved Standard of Living, Community Organizational Capacity Development Economic Exposure and Development

## 10. ENVIRONMENTAL MONITORING PROGRAMME

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

**Table 7: Schedule for Environmental Monitoring**

Sr. No.	Particulars	Parameters	Location	Frequency
1	Flue gases from furnace	PM <sub>10</sub> , PM <sub>2.5</sub> , SO <sub>2</sub> and NO <sub>x</sub>	Stack monitoring	Monthly
2	Ambient air quality	PM <sub>10</sub> , PM <sub>2.5</sub> , SO <sub>2</sub> and NO <sub>x</sub> , CO.	<ul style="list-style-type: none"> <li>• Check wind direction</li> <li>• Select two point in upwind direction at 120° from site</li> <li>• Take one point within site at down wind direction from furnace about 1 km distance</li> <li>• Take two points beyond site in down wind direction about 2 km distance at 120° from site opposite to points taken in upwind direction.</li> </ul>	24 hrs sample, half yearly
3	Water (Ground Water and Surface Water)	As per drinking water standards	<ul style="list-style-type: none"> <li>• Take one upstream and downstream sample of surface water. Minimum distance 500 m.</li> <li>• One point upstream at higher elevation from plant site. Also at lower contour point at 3 locations.</li> </ul>	Quarterly

4	Soil	organic & inorganic matter	• Outside plant boundary at lower contour	Pre & post monsoon
5	Noise level, work zone (hourly)	Equivalent noise level-dB (A)	<ul style="list-style-type: none"> <li>• One location in furnace house.</li> <li>• One location near I.D. Fan.</li> <li>• Especially monitor noise during soot blowing.</li> <li>• Four locations around plant boundary</li> </ul>	Quarterly
6	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
7	Environmental Audit	As per Direction of ISO 14001	-	Once in a Year
8	Water utilization, m <sup>3</sup> /d	-	For process, domestic, cooling and boiler	Daily
9	Power utilization	-	For air pollution control facility at boilers and for STP	Daily

## 11. ADDITIONAL STUDIES

Additional Studies conducted as per revised ToR issued by SEAC-I in its 168<sup>th</sup> meeting dated 26<sup>th</sup> August 2019, are Risk Assessment and Disaster Management Plan. Public Hearing is to be conducted for the project.

### RISK ASSESSMENT

An industry with its complex nature of activities involving various plant machineries, raw materials, products, operations, intermediates and environmental discharge has a number of associated hazards. A minor failure can lead to major failure resulting into a disaster causing heavy losses to life, property and environmental. Risk assessment studies are being conducted to ensure safety and reliability of any new plant, through a systematic and scientific methods to identify possible failures and prevent their occurrences before they actually cause disasters and production loss.

#### Objectives of the risk assessment study

1. To identify the major hazards relating to fire, explosion and toxicity due to storage and handling of hazardous chemicals.
2. To visualize maximum credible accident scenarios
3. To analyze and quantify primary and secondary effects and damage potentials of the identified maximum credible accident scenarios using standard procedure.
4. To study the nature of exposures, pathways and consequences of maximum credible accident scenarios and characteristics of risk levels.
5. To provide guidelines for disaster management plan.

### DISASTER MANAGEMENT PLAN

A major disaster in a work is the one, which has potential to cause serious injury or loss of life. It may cause extensive damage to property and serious disruption both inside and outside the works. A Disaster would normally require the assistance of outside emergency services to handle it effectively. Whatever are the causative factors, like plant failure; human error; earthquake; vehicle crash; sabotage etc, they will normally manifest in three basic forms viz, fire, explosion, and *or* toxic release.

#### The objectives of disaster management plan include the following-

1. Controlling the disaster, localizing the disaster and eliminating the hazard



2. Welfare of person managing the disaster.
3. Head count and rescue operations.
4. Treatment of injured.
5. Safeguarding others by timely evacuation.
6. Minimizing damage to property and environment.
7. Informing and assisting relatives.
  - i. Informing and collaborating with statutory authorities.
  - ii. Informing the news media.
  - iii. Preserving records and organizing investigations.
  - iv. Ensuring safety of the works before personnel re-enter and resume work.
  - v. Investigating and taking steps to prevent recurrence.
  - vi. Resorting normalcy

## **12. PROJECT BENEFITS**

### **Implementation of proposed project will result in:**

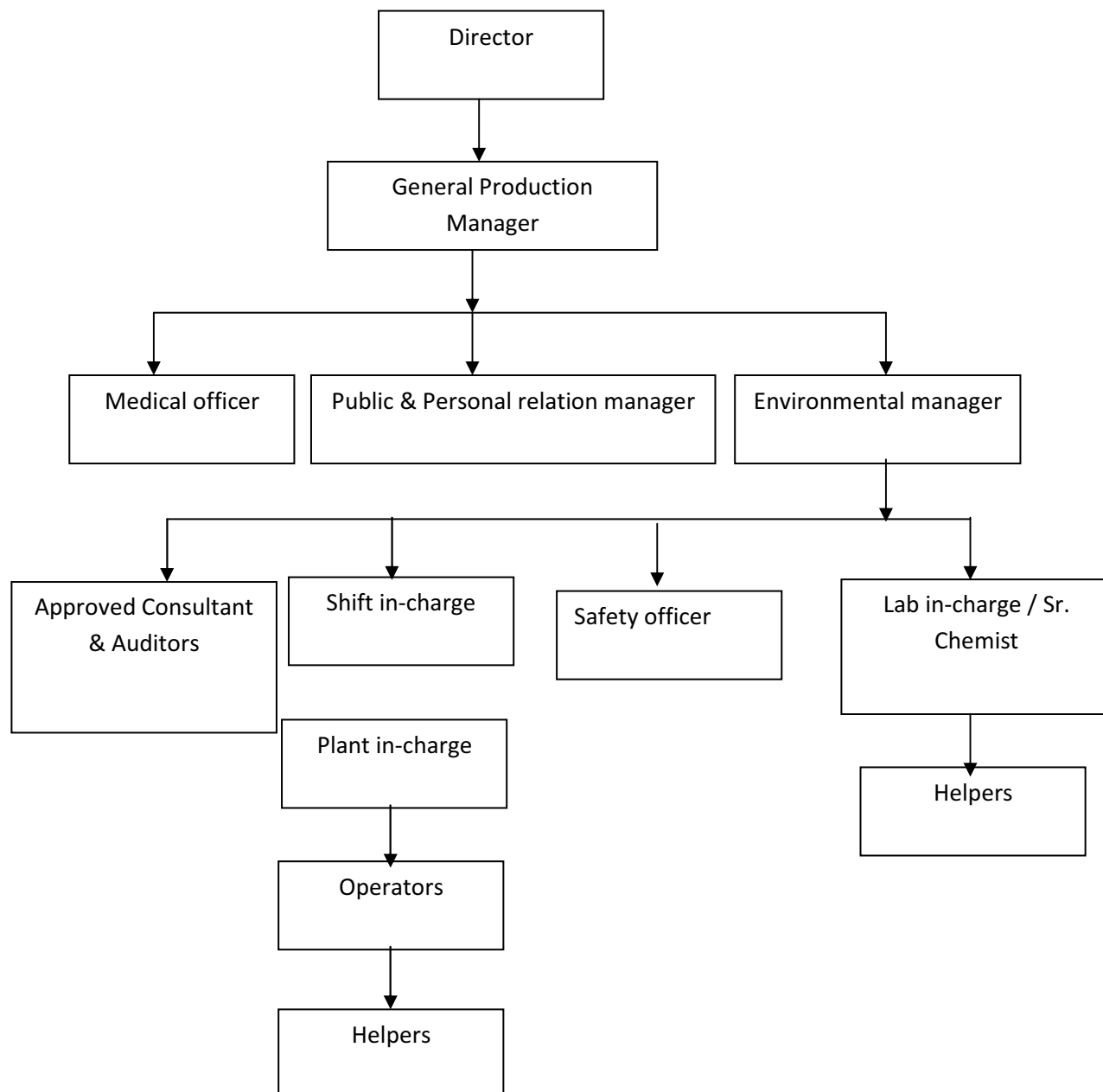
- Improvement in the physical infrastructure
- Improvement in the social infrastructure
- Improvement in employment potential

## **13. ENVIRONMENT MANAGEMENT PLAN**

Environmental Management Plan is detailed under the following heads:

- Air Quality Management
- Noise Management
- Waste Water Management
- Solid & Hazardous Waste Management
- Energy Conservation
- Greenbelt Development & Plantation Programme
- Occupational Health & Safety Measures.
- Enterprise social commitment (ESC)- Industry will utilize 1% of its project cost for ESC.

**Figure 2: Environment Management Cell**



**Table 8: 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
3	Quantity of effluent	To be measured daily and in-plant control. Not to exceed any time	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 ETP 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, bagasse to be baled, molasses not in open pits, press mud to be carted out every day	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
<b>Legends:</b> ENV-M- Environmental Manager, LAB- I- Lab incharge, ENV- C- Environmental Chemist.			

## 14. CONCLUSION

The proposed 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.

# **EXECUTIVE SUMMARY**

**Of**

## **ENVIRONMENTAL IMPACT ASSESSMENT REPORT**

**FOR**

### **PUBLIC HEARING**

**OF**

## **Proposed Expansion of Existing Metallurgical Industry**

**By**

**M/s. SANT GYANESHWAR STEELS PVT. LTD.**

Gat No. 1076/77, Golegaon Road, Village – Markal, Taluka – Khed,  
District – Pune, Maharashtra

**SUBMITTED TO**

**MAHARSHTRA POLLUTION CONTROL BOARD**

**PREPARED BY**



**M/s SGM Enviro (I) Pvt. Ltd.**  
Saahil Apartments,1102/A/4B,Model Colony  
Lakaki Road,Opp. Kirloskar Bunglow,  
ShivajiNagar , Pune -411016  
QCI –NABET ACCREDITED

## EXECUTIVE SUMMARY

### 1. INTRODUCTION

M/s Sant Gyaneshwar Steel Pvt. Ltd. (SGSPL) Markal was incorporated on 21.06.1996 with Registration number 111927272. The industry is located at Gat No. 1076/77, Golegaon Road, Village – Markal, Taluka – Khed, District – Pune with the main object of manufacturing of M.S. Ingots &/or Billets & Runner Riser.

As per the EIA notification 2006 & its subsequent amendments existing project does not require Environmental Clearance. Existing industry have obtained consent to operate from Maharashtra Pollution Control Board (MPCB) & is complying with all the norms of CPCB & MPCB.

### 2. TYPE OF PROJECT

M/s. Sant Gyaneshwar Steel Pvt. Ltd. (SGSPL) is proposing to expand existing quantity of M.S. ingots &/or Billets manufacturing from 36,000 TPA to 1, 56,000 TPA & capacity of Runner Riser production will remain the same i.e. 720 MTA. This expansion activity will take place within the existing plant premises at Gat No. 1076/77, Golegaon Road, Village – Markal, Tal. - Khed, Dist. – Pune.

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

### 3. 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 SGSPL has identified this opportunity and has decided to become a competitive leader in boosting field of metallurgical sector.

### 4. SITE SELECTION & JUSTIFICATION THEREOF

Proposed expansion will be done within the existing plant 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.

### 5. BRIEF DESCRIPTION OF NATURE, SIZE, LOCATION OF THE PROJECT AND ITS IMPORTANCE TO THE COUNTRY, REGION

**Table 1: Brief Description of Nature, Size and Location of Existing & Proposed Project**

Sr. No.	Particular	Description			
1	Nature & size of existing project	Proposed Expansion of Existing Metallurgical unit by M/s Sant Gyaneshwar Steels Pvt. Ltd. for Production of MS Ingots &/or Billets & Runner Riser			
2 A	Total Area of project	Total plot area is 15700 Sq.m			
2 B	Area Details (Sq.m)	<b>Particular</b>	<b>Existing</b>	<b>Proposed</b>	<b>Total</b>
		Built up Area	2016.52	1616.94	3633.46
		Road Area	484.00	2462.68	2946.68
		Garden/Open Area	3699.48	1471.19	5170.67

		Total	6200	5550.81	11750.81
3	Raw Materials (MT/M)	M.S. Scrap	3170	5800	8970
		Additives/ Ferro Alloys	30	110	140
		Bricks/Reformatories	100	100	200
		Sponge Iron	0	5000	5000
4	Products & By-products (MTA)	MS Ingots &/or Billets	36,000	1,20,000	1,56,000
		Runner Riser	720	0	720
	Capacity of Electric Furnace (MT/Month)	-	6000 (At present, a furnace of 3000 MT is there, which will be upgraded to a Total Capacity of - 6000 MT/M)	7000	13000
	Power requirement	-	4990 KVA + Electricity requirement of existing furnace is 4500KWH/hr	10,000 KVA + Electricity requirement of proposed furnace is 9500 KWH/hr	14990 KVA + 14000 KWH/hr
5	Capacity of DG set (KVA)	-	1 x 250 KVA	1x250 KVA	2 x 250 each
6	Fuel Requirement (lit/hr)	Fuel Type- LDO	6 lit/hr	6 lit/hr	12 lit/hr
7	Stack Details	-	Existing Electric Furnace stack ht. 30 m	Proposed Electric Furnace stack ht. 30 m	Total- 2 stacks: 1 Stack of 30 m for existing furnace & 1 stack of 30 m for proposed furnace
		-	Existing D.G. Set (250 KVA) stack ht. 2 m	Proposed D.G. Set (250KVA) stack ht. 3 m	Total 2 No.s: (1 Existing + 1 Proposed)
8	Air Pollution Control Equipment for boiler	-	Proper stack height with Fume extraction system & dust collector is provided	Proper stack height with Fume extraction system & dust collector will be provided	-
9	Total water Requirement for unit (CMD)	Domestic	1.2	1.9	3.1
		Industrial Process	0	0	0
		Cooling Purpose	60	50	110
		Gardening	0.5	1.3	1.8
10	Waste water generation (CMD)	Domestic	1.0	1.7	2.7
		Industrial Process	0	0	0
		Cooling Purpose	0	0	0
		Gardening	0	0	0
11	Manpower		27	43	70
12	Solid Waste	Scrap	120	360	480

(MT/A)	Slag	1200	8400	9600
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**Table 2: Environmental settings of Project**

Sr. No	Particular	Description
<b>Location of the project site</b>		
1	Plot No.	1076/77
2	Village	Markal
3	Taluka	Khed
4	District	Pune
5	State	Maharashtra
6	Latitude/Longitude	Latitude 18 <sup>0</sup> 39'39.11" N Longitude: 73 <sup>0</sup> 57'29.10" E
7	Average altitude above mean MSL	1866 ft above MSL
8	Corner Co-ordinates of the plant site	Coordinates of the project site as follows A 18 <sup>0</sup> 39'45.27" N 73 <sup>0</sup> 57'29.39" E B 18 <sup>0</sup> 39'44.99" N 73 <sup>0</sup> 57'30.81" E C 18 <sup>0</sup> 39'33.69" N 73 <sup>0</sup> 57'27.49" E D 18 <sup>0</sup> 39'33.78" N 73 <sup>0</sup> 57'29.10" E
9	Toposheet Number	E43I2, E43H14
<b>Environmental setting details (with approximate aerial distance &amp; direction from the plant site)</b>		
10	Nearest village	Markal :1.46 km
11	Nearest National highway/ State highway	Pune – Nashik Highway (11.88 km in W Direction)
12	Nearest Railway station	Kasarwadi Railway station (15.88 km in SW Direction)
13	Nearest airport	Pune Airport 9.50 Km in SW direction
14	Nearest major city	Pimpri-Chinchwad : 17 km in SW direction
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	Indrayani River – 1.68 km away from project site in 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 15 km radius

## 6. MAJOR REQUIREMENT FOR THE PROPOSED PROJECT

### 6.1. RAW MATERIALS REQUIREMENT

**Table 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	3170	5800	8970	Locally available	Truck
2	Additives/ Ferro Alloys	30	110	140	Locally available	Truck
3	Bricks/ Reformatories	100	100	200	Locally available	Truck
4	Sponge Iron	0	5000	5000	Locally available	Truck

## 6.2 POWER REQUIREMENT

The power requirement of the existing unit is 4990 KVA. After expansion the power requirement will be 10,000 KVA. This demand will be met by sourcing the power from MSEDCL from nearby Sub-station. Electricity requirement of existing furnace is 4500KWH/hr & that of proposed furnace is 9500 KWH/hr.

## 6.3 MANPOWER REQUIREMENT

Additional manpower is needed to operate the expansion unit plant will be 43. More than 85 % 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 20. Construction workers will be from nearby villages. Residential facility will not be required for the construction personnel.

## 6.4 WATER REQUIREMENT FOR PROPOSED PROJECT

**Table 4: Water Budget of proposed expansion project**

Sr. No.	Particular	Quantity (m <sup>3</sup> / day)	
		Water Consumption	Effluent Generation
1	Domestic	1.9	1.7
2	Industrial	0	0
3	cooling	50	0
4	Gardening	1.3	0
<b>Total</b>		<b>53.2</b>	<b>1.7</b>

**Total water requirement for proposed expansion project = 53.2 m3/day**

**Fresh water requirement for proposed expansion project = 3.2 m3/day**

## 6.5 LANDREQUIREMENT

The Company site is located Gat No. 1076/77, Golegaon Road, and Village -Markal, Taluka- Khed, District – Pune. Total plot area of industry is 15700 Sq.m. The details of proposed land use is tabulated in following table-

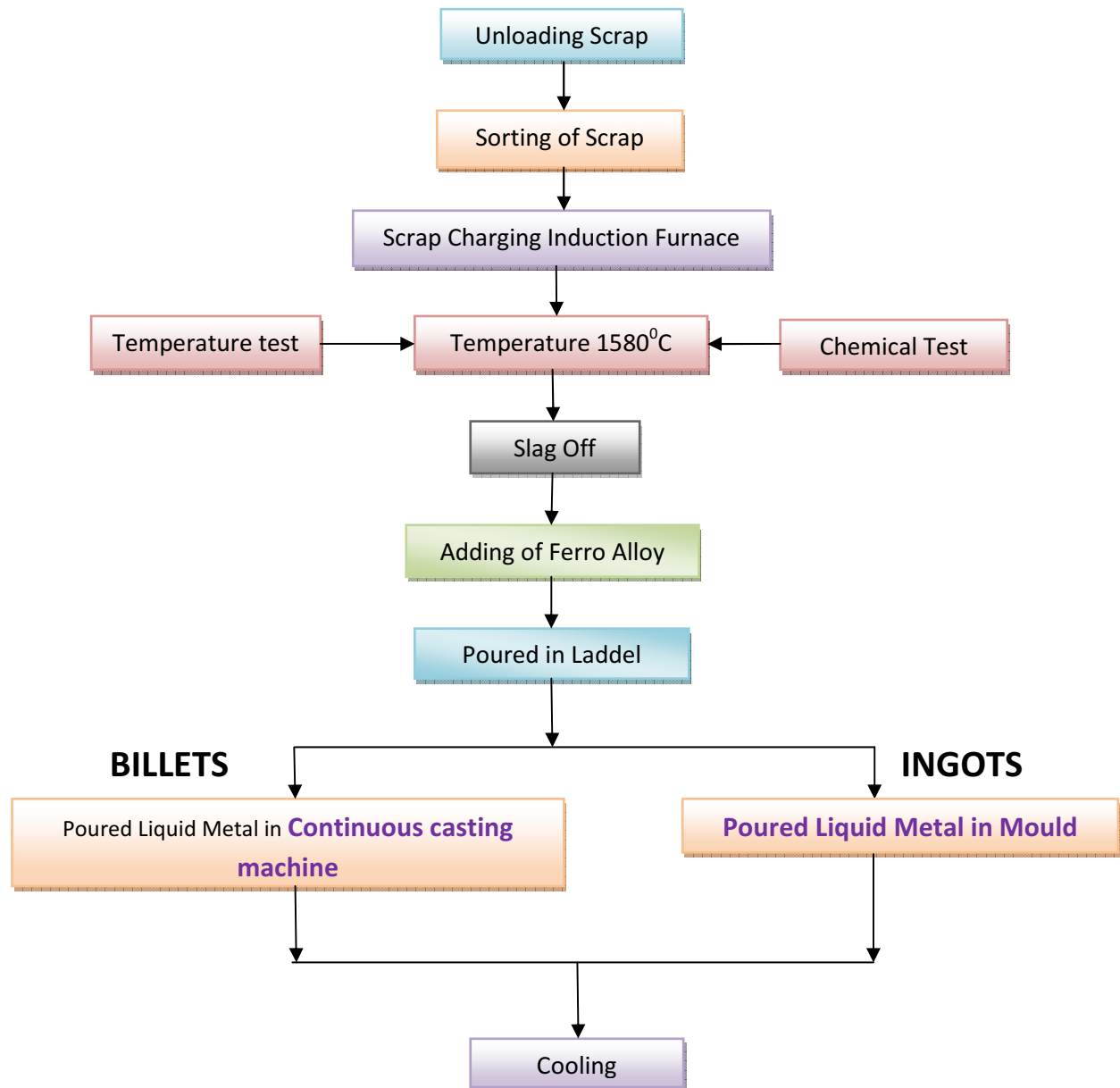
**Table 5: Details of Land Use**

Sr. No.	Particular	Existing	Proposed	Total Area (Sq.m.)
1	Built up Area	2016.52	1616.94	3633.46
2	Road Area (Sq.m)	484.00	2462.68	2946.68
3	Garden/Open Area	3699.48	1471.19	5170.67



## 7. PROCESS DESCRIPTION ALONG WITH MAJOR EQUIPMENTS AND MACHINERIES, PROCESS FLOW SHEET (QUANTATIVE) FROM RAW MATERIAL TO PRODUCTS

Figure 1: Manufacturing process M.S. Ingots & Runner Riser



## 8. DESCRIPTION OF ENVIRONMENT

Baseline study in this Environmental Impact Assessment report was conducted for a period of three months during 1<sup>st</sup> March 2018 to 31<sup>st</sup> May 2018.

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.

Ambient air quality monitoring has been carried out at 8 stations in the study area on 24 hourly bases. Ambient Air Quality Monitoring reveals that the concentrations of PM<sub>10</sub> and PM<sub>2.5</sub> for all the 8 AAQM stations were found between 77.5 to 25 µg/m<sup>3</sup> and 35.5 to 12 µg/m<sup>3</sup>. The concentrations of SO<sub>2</sub> and NO<sub>x</sub> were found to be in range of 7.7 to 4 µg/m<sup>3</sup> and 41.1 to 21.5 µg/m<sup>3</sup> respectively. The concentration of CO is in range of 0.65 to 0.175 mg/m<sup>3</sup>. The resultant concentration of the parameters is well within the prescribed limits of GPCB & NAAQS.

Prediction of impacts on air environment has been carried out by employing a mathematical model. In the present case, **Industrial Source Complex Short-Term (ISCST3)** dispersion model based on steady state Gaussian plume dispersion, designed for multiple point sources for short term has been used for predicting the ground level concentrations. Results of mathematical modelling reveals that the maximum incremental short term 24 hourly ground level concentrations for PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub> and NO<sub>x</sub> likely to be encountered during pre-monsoon season are 2.38 µg/m<sup>3</sup>, 1.44 µg/m<sup>3</sup>, 4.06 µg/m<sup>3</sup> and 7.22 µg/m<sup>3</sup> respectively occurring at a distance of about 2-km in the South West direction.

Noise level monitoring has been carried out at 8 stations in the study area. Noise level varies from 49.7 to 56.75 Leq dB (A) during day time and from 44.15 to 49.55 Leq dB (A) during night time. 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.

Surface water sampling has been carried out at 1 station in the study area. SGSPL is going to achieve Zero liquid discharge in surface water for the proposed project & hence there is no effect on the river water quality due to this industry.

Ground water sampling has been carried out at 8 stations in the study area. Analysis results of ground water reveals that pH varies from 6.7 to 7.5, Total hardness varies from 281.88 to 411.68 mg/l, Total dissolved solids vary from 366 to 623 mg/l.

Soil samples collected from 8 identified locations indicate pH value ranges from 6.97 to 8.03, which shows that the soil is having near neutral pH. Water holding capacity ranges from 28.50 % to 61.76 % in the soil samples. Free Ammonical nitrogen is found in ranges from 0.14 % to 0.19 % and Potassium is found to be ranging from 1 mg/kg to 8 mg/kg. Soil of the area is found to be suitable for agricultural activities.

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Population of study area is 114,796. Scheduled Caste fraction of the population of the study area (10 km) is 10,542 (9.18%) and Scheduled Tribe 3298 (2.87 %). Literacy rate of the area is 69.59 %. Population of the workers engaged in occupation is 45.80 %. Of these 49,153 (42.81 %) are main workers and 3426 (2.98 %) are marginal workers. Remaining, 62,215 (54.19 %) of the total population is considered as non-workers. The socio-economic analysis of the study area shows that in terms of education could be improved as the literacy rate is quite low i.e. 69.59 %. With a high dependency ratio, the overall socio-economic status of the target population could improve with increase in work participation rate. Hence, the long-term positive impacts on socio-economic conditions of the area are anticipated.

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<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 construction 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. Wherever required check dams and dykes will be provided for control of soil erosion.</li> <li>4. 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>5. Appropriate sanitation facilities will be provided for the workers to reduce impact on surface water quality.</li> <li>6. Construction wastes will not be discharged to surface or ground water bodies.</li> <li>7. 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. Vehicles with internal combustion engines will be provided with silencers and mufflers in order to reduce noise levels.</li> </ol> <p>Green belt will be developed to attenuate noise impacts and to reduce noise pollution</p>

4.	Soil	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. Litter disposal and collection points will be established around the work sites. Empty packaging materials, drums, glass, tin, paper, plastic, pet bottles, wood, thermocol and other packaging materials, etc. will be disposed through recyclers. The construction spoils will be temporarily stored at designated dumpsite located inside the plant premises.
<b>(B) Operation Phase</b>		
1.	Air	Adequate stack height to the proposed electric furnace, Fume extraction system & dust collector will be provided
2.	Fugitive	Internal roads paved, leveled, no undulations, no sharp curves, slow speed. Tree plantation on surrounding available area.
3.	Water and Waste Water	1. No effluent generation will take place from proposed industry. Hence no provision of ETP. 2. Rain Water Harvesting will be done.
4.	Solid Waste	100% collection every day. Segregated and treated/ disposed per SPCB norms.
6.	Noise	Smooth roads. Sturdy foundation. No Vibrations. Acoustic enclosures to existing DG Set as per manufacturers' design. Use as standby only. Trees are planted around. Side cladding. Large No. of tree barriers.
7.	Socio-economic	Employment generation, Community Skills Development, Improved Standard of Living, Community Organizational Capacity Development Economic Exposure and Development

## 10. ENVIRONMENTAL MONITORING PROGRAMME

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

**Table 7: Schedule for Environmental Monitoring**

Sr. No.	Particulars	Parameters	Location	Frequency
1	Flue gases from furnace	PM <sub>10</sub> , PM <sub>2.5</sub> , SO <sub>2</sub> and NO <sub>x</sub>	Stack monitoring	Monthly
2	Ambient air quality	PM <sub>10</sub> , PM <sub>2.5</sub> , SO <sub>2</sub> and NO <sub>x</sub> , CO.	<ul style="list-style-type: none"> <li>Check wind direction</li> <li>Select two point in upwind direction at 120° from site</li> <li>Take one point within site at down wind direction from furnace about 1 km distance</li> <li>Take two points beyond site in down wind direction about 2 km distance at 120° from site opposite to points taken in upwind direction.</li> </ul>	24 hrs sample, half yearly
3	Water (Ground Water and Surface Water)	As per drinking water standards	<ul style="list-style-type: none"> <li>Take one upstream and downstream sample of surface water. Minimum distance 500 m.</li> <li>One point upstream at higher elevation from plant site. Also at lower contour point at 3 locations.</li> </ul>	Quarterly

4	Soil	organic & inorganic matter	• Outside plant boundary at lower contour	Pre & post monsoon
5	Noise level, work zone (hourly)	Equivalent noise level-dB (A)	<ul style="list-style-type: none"> <li>• One location in furnace house.</li> <li>• One location near I.D. Fan.</li> <li>• Especially monitor noise during soot blowing.</li> <li>• Four locations around plant boundary</li> </ul>	Quarterly
6	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
7	Environmental Audit	As per Direction of ISO 14001	-	Once in a Year
8	Water utilization, m <sup>3</sup> /d	-	For process, domestic, cooling and boiler	Daily
9	Power utilization	-	For air pollution control facility at boilers and for STP	Daily

## 11. ADDITIONAL STUDIES

Additional Studies conducted as per revised ToR issued by SEAC-I in its 168<sup>th</sup> meeting dated 26<sup>th</sup> August 2019, are Risk Assessment and Disaster Management Plan. Public Hearing is to be conducted for the project.

### RISK ASSESSMENT

An industry with its complex nature of activities involving various plant machineries, raw materials, products, operations, intermediates and environmental discharge has a number of associated hazards. A minor failure can lead to major failure resulting into a disaster causing heavy losses to life, property and environmental. Risk assessment studies are being conducted to ensure safety and reliability of any new plant, through a systematic and scientific methods to identify possible failures and prevent their occurrences before they actually cause disasters and production loss.

#### Objectives of the risk assessment study

1. To identify the major hazards relating to fire, explosion and toxicity due to storage and handling of hazardous chemicals.
2. To visualize maximum credible accident scenarios
3. To analyze and quantify primary and secondary effects and damage potentials of the identified maximum credible accident scenarios using standard procedure.
4. To study the nature of exposures, pathways and consequences of maximum credible accident scenarios and characteristics of risk levels.
5. To provide guidelines for disaster management plan.

### DISASTER MANAGEMENT PLAN

A major disaster in a work is the one, which has potential to cause serious injury or loss of life. It may cause extensive damage to property and serious disruption both inside and outside the works. A Disaster would normally require the assistance of outside emergency services to handle it effectively. Whatever are the causative factors, like plant failure; human error; earthquake; vehicle crash; sabotage etc, they will normally manifest in three basic forms viz, fire, explosion, and *or* toxic release.

#### The objectives of disaster management plan include the following-

1. Controlling the disaster, localizing the disaster and eliminating the hazard

2. Welfare of person managing the disaster.
3. Head count and rescue operations.
4. Treatment of injured.
5. Safeguarding others by timely evacuation.
6. Minimizing damage to property and environment.
7. Informing and assisting relatives.
  - i. Informing and collaborating with statutory authorities.
  - ii. Informing the news media.
  - iii. Preserving records and organizing investigations.
  - iv. Ensuring safety of the works before personnel re-enter and resume work.
  - v. Investigating and taking steps to prevent recurrence.
  - vi. Resorting normalcy

## **12. PROJECT BENEFITS**

### **Implementation of proposed project will result in:**

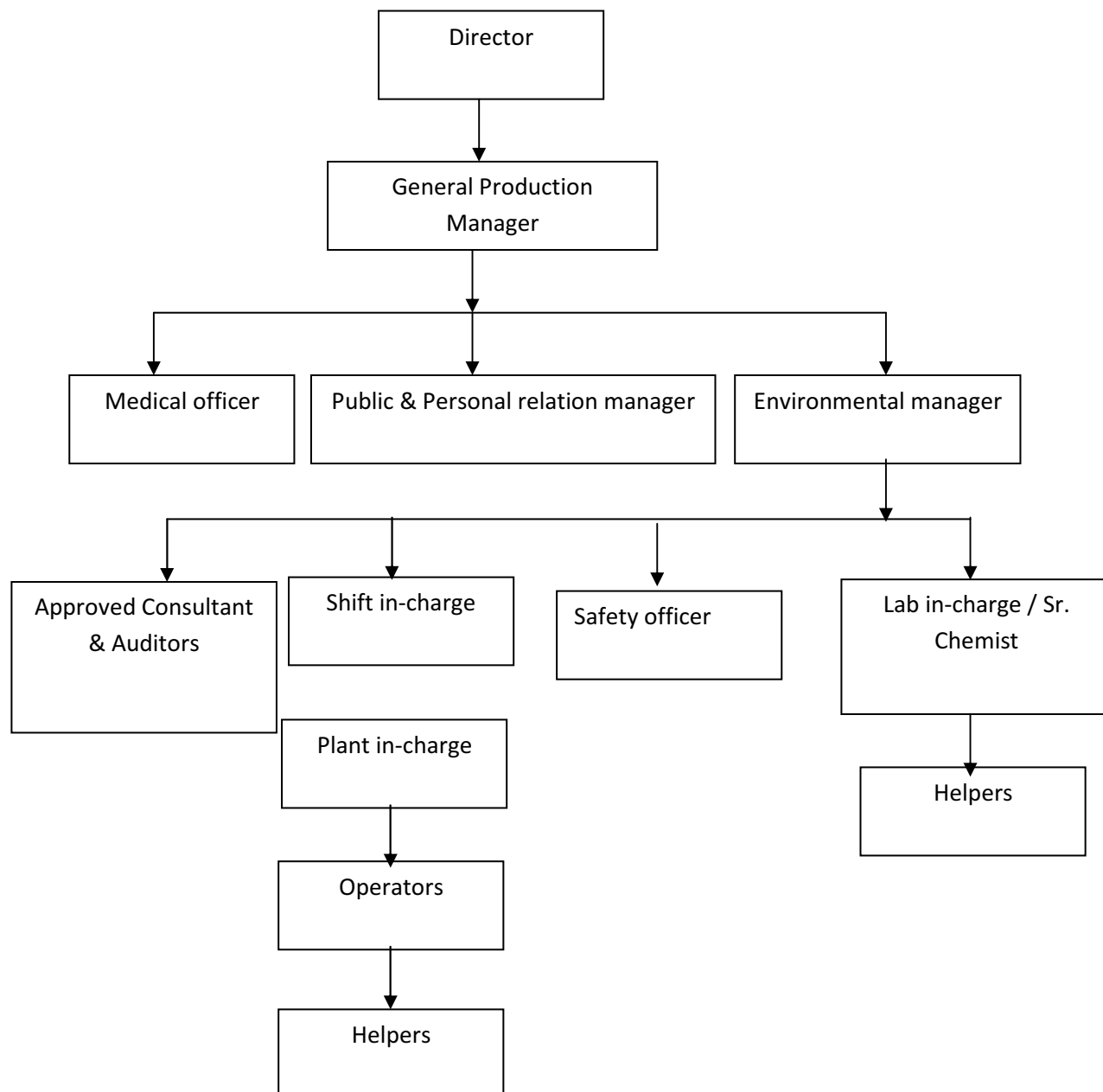
- Improvement in the physical infrastructure
- Improvement in the social infrastructure
- Improvement in employment potential

## **13. ENVIRONMENT MANAGEMENT PLAN**

Environmental Management Plan is detailed under the following heads:

- Air Quality Management
- Noise Management
- Waste Water Management
- Solid & Hazardous Waste Management
- Energy Conservation
- Greenbelt Development & Plantation Programme
- Occupational Health & Safety Measures.
- Enterprise social commitment (ESC)- Industry will utilize 1% of its project cost for ESC.

**Figure 2: Environment Management Cell**



**Table 8: 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
3	Quantity of effluent	To be measured daily and in-plant control. Not to exceed any time	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 ETP 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, bagasse to be baled, molasses not in open pits, press mud to be carted out every day	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
<b>Legends:</b> ENV-M- Environmental Manager, LAB- I- Lab incharge, ENV- C- Environmental Chemist.			

## 14. CONCLUSION

The proposed 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.



# **EXECUTIVE SUMMARY**

**Of**

## **ENVIRONMENTAL IMPACT ASSESSMENT REPORT**

**FOR**

### **PUBLIC HEARING**

**OF**

## **Proposed Expansion of Existing Metallurgical Industry**

**By**

**M/s. SANT GYANESHWAR STEELS PVT. LTD.**

Gat No. 1076/77, Golegaon Road, Village – Markal, Taluka – Khed,  
District – Pune, Maharashtra

**SUBMITTED TO**

**MAHARSHTRA POLLUTION CONTROL BOARD**

**PREPARED BY**



**M/s SGM Enviro (I) Pvt. Ltd.**  
Saahil Apartments,1102/A/4B,Model Colony  
Lakaki Road,Opp. Kirloskar Bunglow,  
ShivajiNagar , Pune -411016  
QCI –NABET ACCREDITED

## EXECUTIVE SUMMARY

### 1. INTRODUCTION

M/s Sant Gyaneshwar Steel Pvt. Ltd. (SGSPL) Markal was incorporated on 21.06.1996 with Registration number 111927272. The industry is located at Gat No. 1076/77, Golegaon Road, Village – Markal, Taluka – Khed, District – Pune with the main object of manufacturing of M.S. Ingots &/or Billets & Runner Riser.

As per the EIA notification 2006 & its subsequent amendments existing project does not require Environmental Clearance. Existing industry have obtained consent to operate from Maharashtra Pollution Control Board (MPCB) & is complying with all the norms of CPCB & MPCB.

### 2. TYPE OF PROJECT

M/s. Sant Gyaneshwar Steel Pvt. Ltd. (SGSPL) is proposing to expand existing quantity of M.S. ingots &/or Billets manufacturing from 36,000 TPA to 1, 56,000 TPA & capacity of Runner Riser production will remain the same i.e. 720 MTA. This expansion activity will take place within the existing plant premises at Gat No. 1076/77, Golegaon Road, Village – Markal, Tal. - Khed, Dist. – Pune.

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

### 3. 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 SGSPL has identified this opportunity and has decided to become a competitive leader in boosting field of metallurgical sector.

### 4. SITE SELECTION & JUSTIFICATION THEREOF

Proposed expansion will be done within the existing plant 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.

### 5. BRIEF DESCRIPTION OF NATURE, SIZE, LOCATION OF THE PROJECT AND ITS IMPORTANCE TO THE COUNTRY, REGION

**Table 1: Brief Description of Nature, Size and Location of Existing & Proposed Project**

Sr. No.	Particular	Description			
1	Nature & size of existing project	Proposed Expansion of Existing Metallurgical unit by M/s Sant Gyaneshwar Steels Pvt. Ltd. for Production of MS Ingots &/or Billets & Runner Riser			
2 A	Total Area of project	Total plot area is 15700 Sq.m			
2 B	Area Details (Sq.m)	<b>Particular</b>	<b>Existing</b>	<b>Proposed</b>	<b>Total</b>
		Built up Area	2016.52	1616.94	3633.46
		Road Area	484.00	2462.68	2946.68
		Garden/Open Area	3699.48	1471.19	5170.67

		Total	6200	5550.81	11750.81
3	Raw Materials (MT/M)	M.S. Scrap	3170	5800	8970
		Additives/ Ferro Alloys	30	110	140
		Bricks/Reformatories	100	100	200
		Sponge Iron	0	5000	5000
4	Products & By-products (MTA)	MS Ingots &/or Billets	36,000	1,20,000	1,56,000
		Runner Riser	720	0	720
	Capacity of Electric Furnace (MT/Month)	-	6000 (At present, a furnace of 3000 MT is there, which will be upgraded to a Total Capacity of - 6000 MT/M)	7000	13000
	Power requirement	-	4990 KVA + Electricity requirement of existing furnace is 4500KWH/hr	10,000 KVA + Electricity requirement of proposed furnace is 9500 KWH/hr	14990 KVA + 14000 KWH/hr
5	Capacity of DG set (KVA)	-	1 x 250 KVA	1x250 KVA	2 x 250 each
6	Fuel Requirement (lit/hr)	Fuel Type- LDO	6 lit/hr	6 lit/hr	12 lit/hr
7	Stack Details	-	Existing Electric Furnace stack ht. 30 m	Proposed Electric Furnace stack ht. 30 m	Total- 2 stacks: 1 Stack of 30 m for existing furnace & 1 stack of 30 m for proposed furnace
		-	Existing D.G. Set (250 KVA) stack ht. 2 m	Proposed D.G. Set (250KVA) stack ht. 3 m	Total 2 No.s: (1 Existing + 1 Proposed)
8	Air Pollution Control Equipment for boiler	-	Proper stack height with Fume extraction system & dust collector is provided	Proper stack height with Fume extraction system & dust collector will be provided	-
9	Total water Requirement for unit (CMD)	Domestic	1.2	1.9	3.1
		Industrial Process	0	0	0
		Cooling Purpose	60	50	110
		Gardening	0.5	1.3	1.8
10	Waste water generation (CMD)	Domestic	1.0	1.7	2.7
		Industrial Process	0	0	0
		Cooling Purpose	0	0	0
		Gardening	0	0	0
11	Manpower		27	43	70
12	Solid Waste	Scrap	120	360	480

(MT/A)	Slag	1200	8400	9600
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**Table 2: Environmental settings of Project**

Sr. No	Particular	Description
<b>Location of the project site</b>		
1	Plot No.	1076/77
2	Village	Markal
3	Taluka	Khed
4	District	Pune
5	State	Maharashtra
6	Latitude/Longitude	Latitude 18 <sup>0</sup> 39'39.11" N Longitude: 73 <sup>0</sup> 57'29.10" E
7	Average altitude above mean MSL	1866 ft above MSL
8	Corner Co-ordinates of the plant site	Coordinates of the project site as follows A 18 <sup>0</sup> 39'45.27" N 73 <sup>0</sup> 57'29.39" E B 18 <sup>0</sup> 39'44.99" N 73 <sup>0</sup> 57'30.81" E C 18 <sup>0</sup> 39'33.69" N 73 <sup>0</sup> 57'27.49" E D 18 <sup>0</sup> 39'33.78" N 73 <sup>0</sup> 57'29.10" E
9	Toposheet Number	E43I2, E43H14
<b>Environmental setting details (with approximate aerial distance &amp; direction from the plant site)</b>		
10	Nearest village	Markal :1.46 km
11	Nearest National highway/ State highway	Pune – Nashik Highway (11.88 km in W Direction)
12	Nearest Railway station	Kasarwadi Railway station (15.88 km in SW Direction)
13	Nearest airport	Pune Airport 9.50 Km in SW direction
14	Nearest major city	Pimpri-Chinchwad : 17 km in SW direction
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	Indrayani River – 1.68 km away from project site in 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 15 km radius

## 6. MAJOR REQUIREMENT FOR THE PROPOSED PROJECT

### 6.1. RAW MATERIALS REQUIREMENT

**Table 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	3170	5800	8970	Locally available	Truck
2	Additives/ Ferro Alloys	30	110	140	Locally available	Truck
3	Bricks/ Reformatories	100	100	200	Locally available	Truck
4	Sponge Iron	0	5000	5000	Locally available	Truck

## 6.2 POWER REQUIREMENT

The power requirement of the existing unit is 4990 KVA. After expansion the power requirement will be 10,000 KVA. This demand will be met by sourcing the power from MSEDCL from nearby Sub-station. Electricity requirement of existing furnace is 4500KWH/hr & that of proposed furnace is 9500 KWH/hr.

## 6.3 MANPOWER REQUIREMENT

Additional manpower is needed to operate the expansion unit plant will be 43. More than 85 % 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 20. Construction workers will be from nearby villages. Residential facility will not be required for the construction personnel.

## 6.4 WATER REQUIREMENT FOR PROPOSED PROJECT

**Table 4: Water Budget of proposed expansion project**

Sr. No.	Particular	Quantity (m <sup>3</sup> / day)	
		Water Consumption	Effluent Generation
1	Domestic	1.9	1.7
2	Industrial	0	0
3	cooling	50	0
4	Gardening	1.3	0
<b>Total</b>		<b>53.2</b>	<b>1.7</b>

**Total water requirement for proposed expansion project = 53.2 m3/day**

**Fresh water requirement for proposed expansion project = 3.2 m3/day**

## 6.5 LANDREQUIREMENT

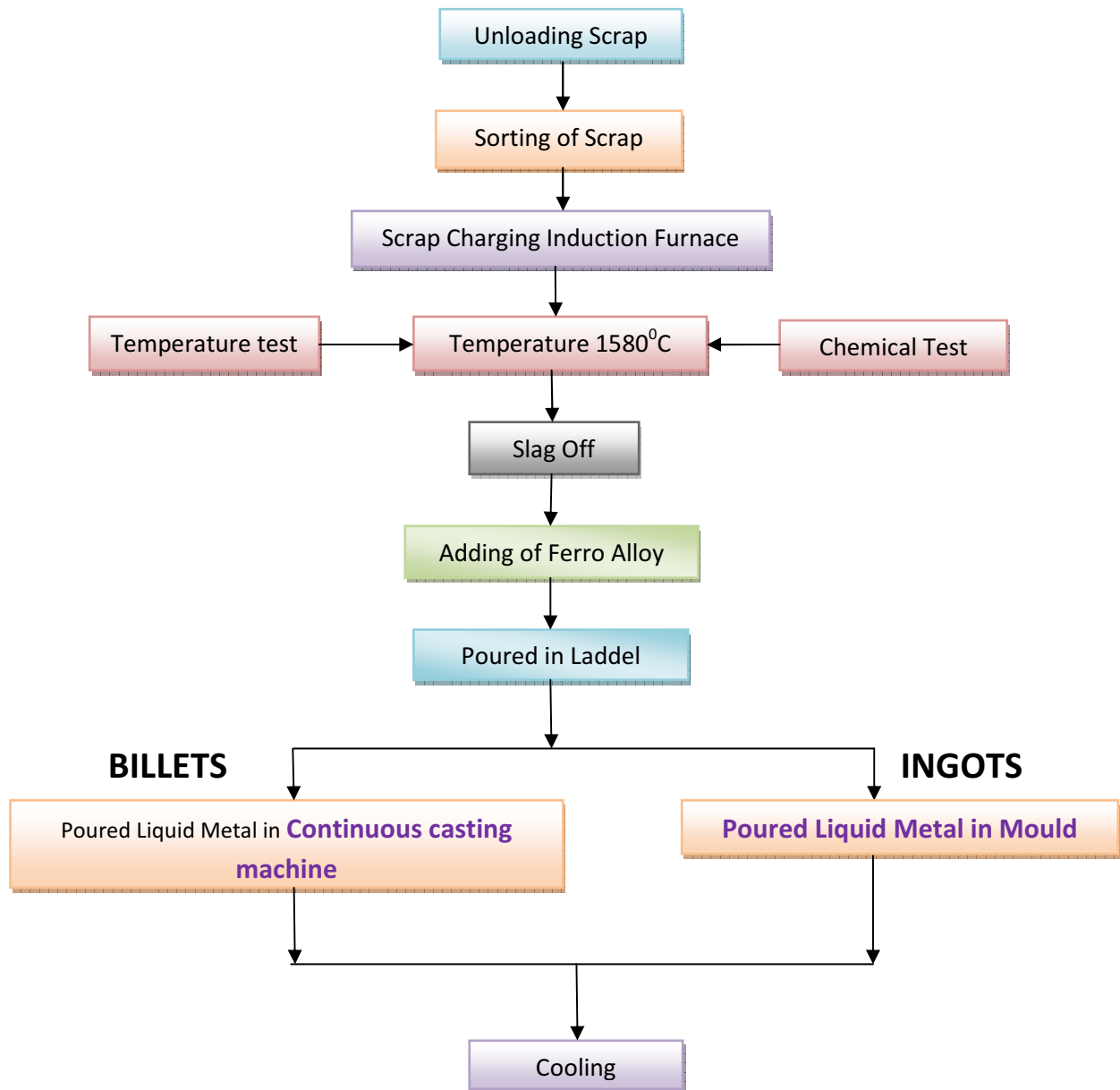
The Company site is located Gat No. 1076/77, Golegaon Road, and Village -Markal, Taluka- Khed, District – Pune. Total plot area of industry is 15700 Sq.m. The details of proposed land use is tabulated in following table-

**Table 5: Details of Land Use**

Sr. No.	Particular	Existing	Proposed	Total Area (Sq.m.)
1	Built up Area	2016.52	1616.94	3633.46
2	Road Area (Sq.m)	484.00	2462.68	2946.68
3	Garden/Open Area	3699.48	1471.19	5170.67

## 7. PROCESS DESCRIPTION ALONG WITH MAJOR EQUIPMENTS AND MACHINERIES, PROCESS FLOW SHEET (QUANTATIVE) FROM RAW MATERIAL TO PRODUCTS

Figure 1: Manufacturing process M.S. Ingots & Runner Riser



## 8. DESCRIPTION OF ENVIRONMENT

Baseline study in this Environmental Impact Assessment report was conducted for a period of three months during 1<sup>st</sup> March 2018 to 31<sup>st</sup> May 2018.

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.

Ambient air quality monitoring has been carried out at 8 stations in the study area on 24 hourly bases. Ambient Air Quality Monitoring reveals that the concentrations of PM<sub>10</sub> and PM<sub>2.5</sub> for all the 8 AAQM stations were found between 77.5 to 25 µg/m<sup>3</sup> and 35.5 to 12 µg/m<sup>3</sup>. The concentrations of SO<sub>2</sub> and NO<sub>x</sub> were found to be in range of 7.7 to 4 µg/m<sup>3</sup> and 41.1 to 21.5 µg/m<sup>3</sup> respectively. The concentration of CO is in range of 0.65 to 0.175 mg/m<sup>3</sup>. The resultant concentration of the parameters is well within the prescribed limits of GPCB & NAAQS.

Prediction of impacts on air environment has been carried out by employing a mathematical model. In the present case, **Industrial Source Complex Short-Term (ISCST3)** dispersion model based on steady state Gaussian plume dispersion, designed for multiple point sources for short term has been used for predicting the ground level concentrations. Results of mathematical modelling reveals that the maximum incremental short term 24 hourly ground level concentrations for PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub> and NO<sub>x</sub> likely to be encountered during pre-monsoon season are 2.38 µg/m<sup>3</sup>, 1.44 µg/m<sup>3</sup>, 4.06 µg/m<sup>3</sup> and 7.22 µg/m<sup>3</sup> respectively occurring at a distance of about 2-km in the South West direction.

Noise level monitoring has been carried out at 8 stations in the study area. Noise level varies from 49.7 to 56.75 Leq dB (A) during day time and from 44.15 to 49.55 Leq dB (A) during night time. 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.

Surface water sampling has been carried out at 1 station in the study area. SGSPL is going to achieve Zero liquid discharge in surface water for the proposed project & hence there is no effect on the river water quality due to this industry.

Ground water sampling has been carried out at 8 stations in the study area. Analysis results of ground water reveals that pH varies from 6.7 to 7.5, Total hardness varies from 281.88 to 411.68 mg/l, Total dissolved solids vary from 366 to 623 mg/l.

Soil samples collected from 8 identified locations indicate pH value ranges from 6.97 to 8.03, which shows that the soil is having near neutral pH. Water holding capacity ranges from 28.50 % to 61.76 % in the soil samples. Free Ammonical nitrogen is found in ranges from 0.14 % to 0.19 % and Potassium is found to be ranging from 1 mg/kg to 8 mg/kg. Soil of the area is found to be suitable for agricultural activities.

The study area is delineated in 10 km radius from the project site. The proposed project site is surrounded by agricultural land. There are no any national parks, wildlife sanctuaries, biosphere reserves or critically polluted areas in the 10 km radius from the proposed project site. No Archeological site is present within the study area. No forest is located in the study area. No Schedule - I fauna was found during the field survey. There is intense anthropogenic pressure on flora, fauna and forest resources, which are observed to be dwindling. However, no rare, endangered & threatened plant species was observed in the study area.

Population of study area is 114,796. Scheduled Caste fraction of the population of the study area (10 km) is 10,542 (9.18%) and Scheduled Tribe 3298 (2.87 %). Literacy rate of the area is 69.59 %. Population of the workers engaged in occupation is 45.80 %. Of these 49,153 (42.81 %) are main workers and 3426 (2.98 %) are marginal workers. Remaining, 62,215 (54.19 %) of the total population is considered as non-workers. The socio-economic analysis of the study area shows that in terms of education could be improved as the literacy rate is quite low i.e. 69.59 %. With a high dependency ratio, the overall socio-economic status of the target population could improve with increase in work participation rate. Hence, the long-term positive impacts on socio-economic conditions of the area are anticipated.

## 9. ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

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

**Table 6: 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 construction 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. Wherever required check dams and dykes will be provided for control of soil erosion.</li> <li>4. 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>5. Appropriate sanitation facilities will be provided for the workers to reduce impact on surface water quality.</li> <li>6. Construction wastes will not be discharged to surface or ground water bodies.</li> <li>7. 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. Vehicles with internal combustion engines will be provided with silencers and mufflers in order to reduce noise levels.</li> </ol> <p>Green belt will be developed to attenuate noise impacts and to reduce noise pollution</p>



4.	Soil	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. Litter disposal and collection points will be established around the work sites. Empty packaging materials, drums, glass, tin, paper, plastic, pet bottles, wood, thermocol and other packaging materials, etc. will be disposed through recyclers. The construction spoils will be temporarily stored at designated dumpsite located inside the plant premises.
<b>(B) Operation Phase</b>		
1.	Air	Adequate stack height to the proposed electric furnace, Fume extraction system & dust collector will be provided
2.	Fugitive	Internal roads paved, leveled, no undulations, no sharp curves, slow speed. Tree plantation on surrounding available area.
3.	Water and Waste Water	1. No effluent generation will take place from proposed industry. Hence no provision of ETP. 2. Rain Water Harvesting will be done.
4.	Solid Waste	100% collection every day. Segregated and treated/ disposed per SPCB norms.
6.	Noise	Smooth roads. Sturdy foundation. No Vibrations. Acoustic enclosures to existing DG Set as per manufacturers' design. Use as standby only. Trees are planted around. Side cladding. Large No. of tree barriers.
7.	Socio-economic	Employment generation, Community Skills Development, Improved Standard of Living, Community Organizational Capacity Development Economic Exposure and Development

## 10. ENVIRONMENTAL MONITORING PROGRAMME

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

**Table 7: Schedule for Environmental Monitoring**

Sr. No.	Particulars	Parameters	Location	Frequency
1	Flue gases from furnace	PM <sub>10</sub> , PM <sub>2.5</sub> , SO <sub>2</sub> and NO <sub>x</sub>	Stack monitoring	Monthly
2	Ambient air quality	PM <sub>10</sub> , PM <sub>2.5</sub> , SO <sub>2</sub> and NO <sub>x</sub> , CO.	<ul style="list-style-type: none"> <li>• Check wind direction</li> <li>• Select two point in upwind direction at 120° from site</li> <li>• Take one point within site at down wind direction from furnace about 1 km distance</li> <li>• Take two points beyond site in down wind direction about 2 km distance at 120° from site opposite to points taken in upwind direction.</li> </ul>	24 hrs sample, half yearly
3	Water (Ground Water and Surface Water)	As per drinking water standards	<ul style="list-style-type: none"> <li>• Take one upstream and downstream sample of surface water. Minimum distance 500 m.</li> <li>• One point upstream at higher elevation from plant site. Also at lower contour point at 3 locations.</li> </ul>	Quarterly

4	Soil	organic & inorganic matter	• Outside plant boundary at lower contour	Pre & post monsoon
5	Noise level, work zone (hourly)	Equivalent noise level-dB (A)	<ul style="list-style-type: none"> <li>• One location in furnace house.</li> <li>• One location near I.D. Fan.</li> <li>• Especially monitor noise during soot blowing.</li> <li>• Four locations around plant boundary</li> </ul>	Quarterly
6	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
7	Environmental Audit	As per Direction of ISO 14001	-	Once in a Year
8	Water utilization, m <sup>3</sup> /d	-	For process, domestic, cooling and boiler	Daily
9	Power utilization	-	For air pollution control facility at boilers and for STP	Daily

## 11. ADDITIONAL STUDIES

Additional Studies conducted as per revised ToR issued by SEAC-I in its 168<sup>th</sup> meeting dated 26<sup>th</sup> August 2019, are Risk Assessment and Disaster Management Plan. Public Hearing is to be conducted for the project.

### RISK ASSESSMENT

An industry with its complex nature of activities involving various plant machineries, raw materials, products, operations, intermediates and environmental discharge has a number of associated hazards. A minor failure can lead to major failure resulting into a disaster causing heavy losses to life, property and environmental. Risk assessment studies are being conducted to ensure safety and reliability of any new plant, through a systematic and scientific methods to identify possible failures and prevent their occurrences before they actually cause disasters and production loss.

#### Objectives of the risk assessment study

1. To identify the major hazards relating to fire, explosion and toxicity due to storage and handling of hazardous chemicals.
2. To visualize maximum credible accident scenarios
3. To analyze and quantify primary and secondary effects and damage potentials of the identified maximum credible accident scenarios using standard procedure.
4. To study the nature of exposures, pathways and consequences of maximum credible accident scenarios and characteristics of risk levels.
5. To provide guidelines for disaster management plan.

### DISASTER MANAGEMENT PLAN

A major disaster in a work is the one, which has potential to cause serious injury or loss of life. It may cause extensive damage to property and serious disruption both inside and outside the works. A Disaster would normally require the assistance of outside emergency services to handle it effectively. Whatever are the causative factors, like plant failure; human error; earthquake; vehicle crash; sabotage etc, they will normally manifest in three basic forms viz, fire, explosion, and *or* toxic release.

#### The objectives of disaster management plan include the following-

1. Controlling the disaster, localizing the disaster and eliminating the hazard

2. Welfare of person managing the disaster.
3. Head count and rescue operations.
4. Treatment of injured.
5. Safeguarding others by timely evacuation.
6. Minimizing damage to property and environment.
7. Informing and assisting relatives.
  - i. Informing and collaborating with statutory authorities.
  - ii. Informing the news media.
  - iii. Preserving records and organizing investigations.
  - iv. Ensuring safety of the works before personnel re-enter and resume work.
  - v. Investigating and taking steps to prevent recurrence.
  - vi. Resorting normalcy

## **12. PROJECT BENEFITS**

### **Implementation of proposed project will result in:**

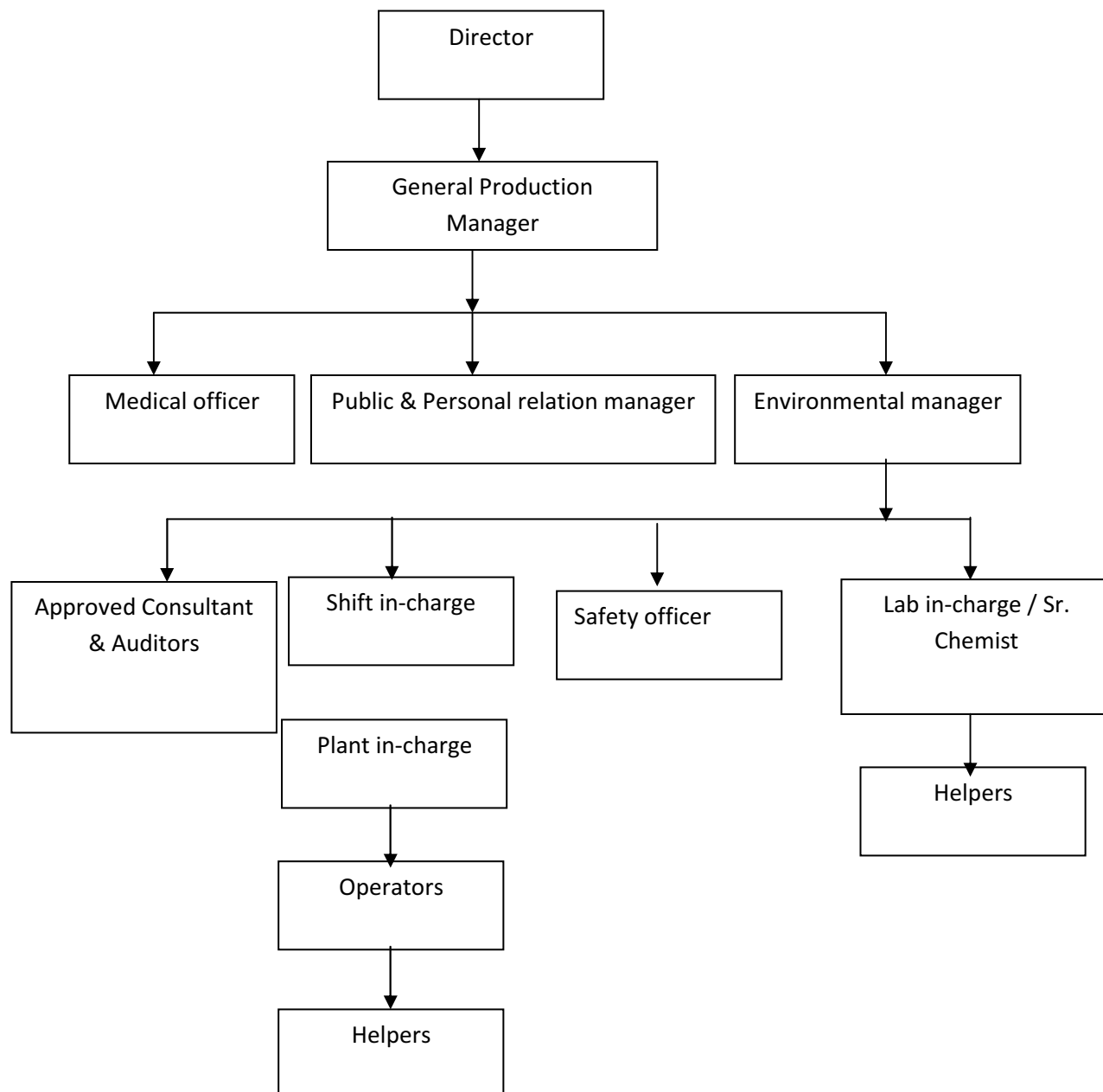
- Improvement in the physical infrastructure
- Improvement in the social infrastructure
- Improvement in employment potential

## **13. ENVIRONMENT MANAGEMENT PLAN**

Environmental Management Plan is detailed under the following heads:

- Air Quality Management
- Noise Management
- Waste Water Management
- Solid & Hazardous Waste Management
- Energy Conservation
- Greenbelt Development & Plantation Programme
- Occupational Health & Safety Measures.
- Enterprise social commitment (ESC)- Industry will utilize 1% of its project cost for ESC.

**Figure 2: Environment Management Cell**



**Table 8: 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
3	Quantity of effluent	To be measured daily and in-plant control. Not to exceed any time	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 ETP 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, bagasse to be baled, molasses not in open pits, press mud to be carted out every day	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
<b>Legends:</b> ENV-M- Environmental Manager, LAB- I- Lab incharge, ENV- C- Environmental Chemist.			

## 14. CONCLUSION

The proposed 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.

# **EXECUTIVE SUMMARY**

**Of**

## **ENVIRONMENTAL IMPACT ASSESSMENT REPORT**

**FOR**

### **PUBLIC HEARING**

**OF**

## **Proposed Expansion of Existing Metallurgical Industry**

**By**

**M/s. SANT GYANESHWAR STEELS PVT. LTD.**

Gat No. 1076/77, Golegaon Road, Village – Markal, Taluka – Khed,  
District – Pune, Maharashtra

**SUBMITTED TO**

**MAHARSHTRA POLLUTION CONTROL BOARD**

**PREPARED BY**



**M/s SGM Enviro (I) Pvt. Ltd.**  
Saahil Apartments,1102/A/4B,Model Colony  
Lakaki Road,Opp. Kirloskar Bunglow,  
ShivajiNagar , Pune -411016  
QCI –NABET ACCREDITED

## EXECUTIVE SUMMARY

### 1. INTRODUCTION

M/s Sant Gyaneshwar Steel Pvt. Ltd. (SGSPL) Markal was incorporated on 21.06.1996 with Registration number 111927272. The industry is located at Gat No. 1076/77, Golegaon Road, Village – Markal, Taluka – Khed, District – Pune with the main object of manufacturing of M.S. Ingots &/or Billets & Runner Riser.

As per the EIA notification 2006 & its subsequent amendments existing project does not require Environmental Clearance. Existing industry have obtained consent to operate from Maharashtra Pollution Control Board (MPCB) & is complying with all the norms of CPCB & MPCB.

### 2. TYPE OF PROJECT

M/s. Sant Gyaneshwar Steel Pvt. Ltd. (SGSPL) is proposing to expand existing quantity of M.S. ingots &/or Billets manufacturing from 36,000 TPA to 1, 56,000 TPA & capacity of Runner Riser production will remain the same i.e. 720 MTA. This expansion activity will take place within the existing plant premises at Gat No. 1076/77, Golegaon Road, Village – Markal, Tal. - Khed, Dist. – Pune.

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

### 3. 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 SGSPL has identified this opportunity and has decided to become a competitive leader in boosting field of metallurgical sector.

### 4. SITE SELECTION & JUSTIFICATION THEREOF

Proposed expansion will be done within the existing plant 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.

### 5. BRIEF DESCRIPTION OF NATURE, SIZE, LOCATION OF THE PROJECT AND ITS IMPORTANCE TO THE COUNTRY, REGION

**Table 1: Brief Description of Nature, Size and Location of Existing & Proposed Project**

Sr. No.	Particular	Description			
1	Nature & size of existing project	Proposed Expansion of Existing Metallurgical unit by M/s Sant Gyaneshwar Steels Pvt. Ltd. for Production of MS Ingots &/or Billets & Runner Riser			
2 A	Total Area of project	Total plot area is 15700 Sq.m			
2 B	Area Details (Sq.m)	<b>Particular</b>	<b>Existing</b>	<b>Proposed</b>	<b>Total</b>
		Built up Area	2016.52	1616.94	3633.46
		Road Area	484.00	2462.68	2946.68
		Garden/Open Area	3699.48	1471.19	5170.67

		Total	6200	5550.81	11750.81
3	Raw Materials (MT/M)	M.S. Scrap	3170	5800	8970
		Additives/ Ferro Alloys	30	110	140
		Bricks/Reformatories	100	100	200
		Sponge Iron	0	5000	5000
4	Products & By-products (MTA)	MS Ingots &/or Billets	36,000	1,20,000	1,56,000
		Runner Riser	720	0	720
	Capacity of Electric Furnace (MT/Month)	-	6000 (At present, a furnace of 3000 MT is there, which will be upgraded to a Total Capacity of - 6000 MT/M)	7000	13000
	Power requirement	-	4990 KVA + Electricity requirement of existing furnace is 4500KWH/hr	10,000 KVA + Electricity requirement of proposed furnace is 9500 KWH/hr	14990 KVA + 14000 KWH/hr
5	Capacity of DG set (KVA)	-	1 x 250 KVA	1x250 KVA	2 x 250 each
6	Fuel Requirement (lit/hr)	Fuel Type- LDO	6 lit/hr	6 lit/hr	12 lit/hr
7	Stack Details	-	Existing Electric Furnace stack ht. 30 m	Proposed Electric Furnace stack ht. 30 m	Total- 2 stacks: 1 Stack of 30 m for existing furnace & 1 stack of 30 m for proposed furnace
		-	Existing D.G. Set (250 KVA) stack ht. 2 m	Proposed D.G. Set (250KVA) stack ht. 3 m	Total 2 No.s: (1 Existing + 1 Proposed)
8	Air Pollution Control Equipment for boiler	-	Proper stack height with Fume extraction system & dust collector is provided	Proper stack height with Fume extraction system & dust collector will be provided	-
9	Total water Requirement for unit (CMD)	Domestic	1.2	1.9	3.1
		Industrial Process	0	0	0
		Cooling Purpose	60	50	110
		Gardening	0.5	1.3	1.8
10	Waste water generation (CMD)	Domestic	1.0	1.7	2.7
		Industrial Process	0	0	0
		Cooling Purpose	0	0	0
		Gardening	0	0	0
11	Manpower		27	43	70
12	Solid Waste	Scrap	120	360	480



(MT/A)	Slag	1200	8400	9600
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**Table 2: Environmental settings of Project**

Sr. No	Particular	Description
<b>Location of the project site</b>		
1	Plot No.	1076/77
2	Village	Markal
3	Taluka	Khed
4	District	Pune
5	State	Maharashtra
6	Latitude/Longitude	Latitude 18 <sup>0</sup> 39'39.11" N Longitude: 73 <sup>0</sup> 57'29.10" E
7	Average altitude above mean MSL	1866 ft above MSL
8	Corner Co-ordinates of the plant site	Coordinates of the project site as follows A 18 <sup>0</sup> 39'45.27" N 73 <sup>0</sup> 57'29.39" E B 18 <sup>0</sup> 39'44.99" N 73 <sup>0</sup> 57'30.81" E C 18 <sup>0</sup> 39'33.69" N 73 <sup>0</sup> 57'27.49" E D 18 <sup>0</sup> 39'33.78" N 73 <sup>0</sup> 57'29.10" E
9	Toposheet Number	E43I2, E43H14
<b>Environmental setting details (with approximate aerial distance &amp; direction from the plant site)</b>		
10	Nearest village	Markal :1.46 km
11	Nearest National highway/ State highway	Pune – Nashik Highway (11.88 km in W Direction)
12	Nearest Railway station	Kasarwadi Railway station (15.88 km in SW Direction)
13	Nearest airport	Pune Airport 9.50 Km in SW direction
14	Nearest major city	Pimpri-Chinchwad : 17 km in SW direction
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	Indrayani River – 1.68 km away from project site in 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 15 km radius

## 6. MAJOR REQUIREMENT FOR THE PROPOSED PROJECT

### 6.1. RAW MATERIALS REQUIREMENT

**Table 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	3170	5800	8970	Locally available	Truck
2	Additives/ Ferro Alloys	30	110	140	Locally available	Truck
3	Bricks/ Reformatories	100	100	200	Locally available	Truck
4	Sponge Iron	0	5000	5000	Locally available	Truck

## 6.2 POWER REQUIREMENT

The power requirement of the existing unit is 4990 KVA. After expansion the power requirement will be 10,000 KVA. This demand will be met by sourcing the power from MSEDCL from nearby Sub-station. Electricity requirement of existing furnace is 4500KWH/hr & that of proposed furnace is 9500 KWH/hr.

## 6.3 MANPOWER REQUIREMENT

Additional manpower is needed to operate the expansion unit plant will be 43. More than 85 % 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 20. Construction workers will be from nearby villages. Residential facility will not be required for the construction personnel.

## 6.4 WATER REQUIREMENT FOR PROPOSED PROJECT

**Table 4: Water Budget of proposed expansion project**

Sr. No.	Particular	Quantity (m <sup>3</sup> / day)	
		Water Consumption	Effluent Generation
1	Domestic	1.9	1.7
2	Industrial	0	0
3	cooling	50	0
4	Gardening	1.3	0
<b>Total</b>		<b>53.2</b>	<b>1.7</b>

**Total water requirement for proposed expansion project = 53.2 m3/day**

**Fresh water requirement for proposed expansion project = 3.2 m3/day**

## 6.5 LANDREQUIREMENT

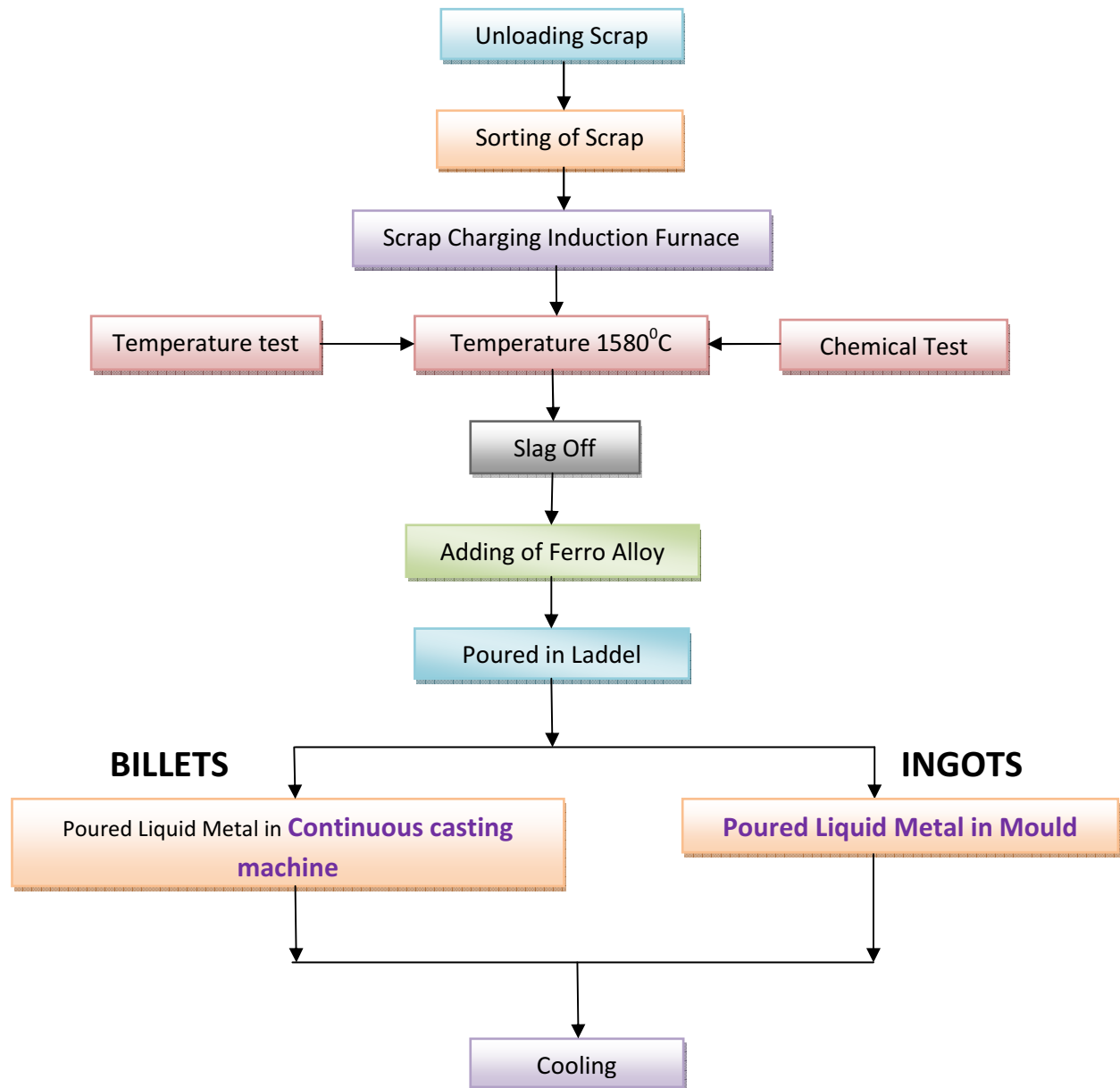
The Company site is located Gat No. 1076/77, Golegaon Road, and Village -Markal, Taluka- Khed, District – Pune. Total plot area of industry is 15700 Sq.m. The details of proposed land use is tabulated in following table-

**Table 5: Details of Land Use**

Sr. No.	Particular	Existing	Proposed	Total Area (Sq.m.)
1	Built up Area	2016.52	1616.94	3633.46
2	Road Area (Sq.m)	484.00	2462.68	2946.68
3	Garden/Open Area	3699.48	1471.19	5170.67

## 7. PROCESS DESCRIPTION ALONG WITH MAJOR EQUIPMENTS AND MACHINERIES, PROCESS FLOW SHEET (QUANTATIVE) FROM RAW MATERIAL TO PRODUCTS

Figure 1: Manufacturing process M.S. Ingots & Runner Riser



## 8. DESCRIPTION OF ENVIRONMENT

Baseline study in this Environmental Impact Assessment report was conducted for a period of three months during 1<sup>st</sup> March 2018 to 31<sup>st</sup> May 2018.

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.

Ambient air quality monitoring has been carried out at 8 stations in the study area on 24 hourly bases. Ambient Air Quality Monitoring reveals that the concentrations of PM<sub>10</sub> and PM<sub>2.5</sub> for all the 8 AAQM stations were found between 77.5 to 25 µg/m<sup>3</sup> and 35.5 to 12 µg/m<sup>3</sup>. The concentrations of SO<sub>2</sub> and NO<sub>x</sub> were found to be in range of 7.7 to 4 µg/m<sup>3</sup> and 41.1 to 21.5 µg/m<sup>3</sup> respectively. The concentration of CO is in range of 0.65 to 0.175 mg/m<sup>3</sup>. The resultant concentration of the parameters is well within the prescribed limits of GPCB & NAAQS.

Prediction of impacts on air environment has been carried out by employing a mathematical model. In the present case, **Industrial Source Complex Short-Term (ISCST3)** dispersion model based on steady state Gaussian plume dispersion, designed for multiple point sources for short term has been used for predicting the ground level concentrations. Results of mathematical modelling reveals that the maximum incremental short term 24 hourly ground level concentrations for PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub> and NO<sub>x</sub> likely to be encountered during pre-monsoon season are 2.38 µg/m<sup>3</sup>, 1.44 µg/m<sup>3</sup>, 4.06 µg/m<sup>3</sup> and 7.22 µg/m<sup>3</sup> respectively occurring at a distance of about 2-km in the South West direction.

Noise level monitoring has been carried out at 8 stations in the study area. Noise level varies from 49.7 to 56.75 Leq dB (A) during day time and from 44.15 to 49.55 Leq dB (A) during night time. 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.

Surface water sampling has been carried out at 1 station in the study area. SGSPL is going to achieve Zero liquid discharge in surface water for the proposed project & hence there is no effect on the river water quality due to this industry.

Ground water sampling has been carried out at 8 stations in the study area. Analysis results of ground water reveals that pH varies from 6.7 to 7.5, Total hardness varies from 281.88 to 411.68 mg/l, Total dissolved solids vary from 366 to 623 mg/l.

Soil samples collected from 8 identified locations indicate pH value ranges from 6.97 to 8.03, which shows that the soil is having near neutral pH. Water holding capacity ranges from 28.50 % to 61.76 % in the soil samples. Free Ammonical nitrogen is found in ranges from 0.14 % to 0.19 % and Potassium is found to be ranging from 1 mg/kg to 8 mg/kg. Soil of the area is found to be suitable for agricultural activities.

The study area is delineated in 10 km radius from the project site. The proposed project site is surrounded by agricultural land. There are no any national parks, wildlife sanctuaries, biosphere reserves or critically polluted areas in the 10 km radius from the proposed project site. No Archeological site is present within the study area. No forest is located in the study area. No Schedule - I fauna was found during the field survey. There is intense anthropogenic pressure on flora, fauna and forest resources, which are observed to be dwindling. However, no rare, endangered & threatened plant species was observed in the study area.

Population of study area is 114,796. Scheduled Caste fraction of the population of the study area (10 km) is 10,542 (9.18%) and Scheduled Tribe 3298 (2.87 %). Literacy rate of the area is 69.59 %. Population of the workers engaged in occupation is 45.80 %. Of these 49,153 (42.81 %) are main workers and 3426 (2.98 %) are marginal workers. Remaining, 62,215 (54.19 %) of the total population is considered as non-workers. The socio-economic analysis of the study area shows that in terms of education could be improved as the literacy rate is quite low i.e. 69.59 %. With a high dependency ratio, the overall socio-economic status of the target population could improve with increase in work participation rate. Hence, the long-term positive impacts on socio-economic conditions of the area are anticipated.

## 9. ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

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

**Table 6: 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 construction 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. Wherever required check dams and dykes will be provided for control of soil erosion.</li> <li>4. 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>5. Appropriate sanitation facilities will be provided for the workers to reduce impact on surface water quality.</li> <li>6. Construction wastes will not be discharged to surface or ground water bodies.</li> <li>7. 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. Vehicles with internal combustion engines will be provided with silencers and mufflers in order to reduce noise levels.</li> </ol> <p>Green belt will be developed to attenuate noise impacts and to reduce noise pollution</p>

4.	Soil	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. Litter disposal and collection points will be established around the work sites. Empty packaging materials, drums, glass, tin, paper, plastic, pet bottles, wood, thermocol and other packaging materials, etc. will be disposed through recyclers. The construction spoils will be temporarily stored at designated dumpsite located inside the plant premises.
<b>(B) Operation Phase</b>		
1.	Air	Adequate stack height to the proposed electric furnace, Fume extraction system & dust collector will be provided
2.	Fugitive	Internal roads paved, leveled, no undulations, no sharp curves, slow speed. Tree plantation on surrounding available area.
3.	Water and Waste Water	1. No effluent generation will take place from proposed industry. Hence no provision of ETP. 2. Rain Water Harvesting will be done.
4.	Solid Waste	100% collection every day. Segregated and treated/ disposed per SPCB norms.
6.	Noise	Smooth roads. Sturdy foundation. No Vibrations. Acoustic enclosures to existing DG Set as per manufacturers' design. Use as standby only. Trees are planted around. Side cladding. Large No. of tree barriers.
7.	Socio-economic	Employment generation, Community Skills Development, Improved Standard of Living, Community Organizational Capacity Development Economic Exposure and Development

## 10. ENVIRONMENTAL MONITORING PROGRAMME

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

**Table 7: Schedule for Environmental Monitoring**

Sr. No.	Particulars	Parameters	Location	Frequency
1	Flue gases from furnace	PM <sub>10</sub> , PM <sub>2.5</sub> , SO <sub>2</sub> and NO <sub>x</sub>	Stack monitoring	Monthly
2	Ambient air quality	PM <sub>10</sub> , PM <sub>2.5</sub> , SO <sub>2</sub> and NO <sub>x</sub> , CO.	<ul style="list-style-type: none"> <li>Check wind direction</li> <li>Select two point in upwind direction at 120° from site</li> <li>Take one point within site at down wind direction from furnace about 1 km distance</li> <li>Take two points beyond site in down wind direction about 2 km distance at 120° from site opposite to points taken in upwind direction.</li> </ul>	24 hrs sample, half yearly
3	Water (Ground Water and Surface Water)	As per drinking water standards	<ul style="list-style-type: none"> <li>Take one upstream and downstream sample of surface water. Minimum distance 500 m.</li> <li>One point upstream at higher elevation from plant site. Also at lower contour point at 3 locations.</li> </ul>	Quarterly

4	Soil	organic & inorganic matter	• Outside plant boundary at lower contour	Pre & post monsoon
5	Noise level, work zone (hourly)	Equivalent noise level-dB (A)	<ul style="list-style-type: none"> <li>• One location in furnace house.</li> <li>• One location near I.D. Fan.</li> <li>• Especially monitor noise during soot blowing.</li> <li>• Four locations around plant boundary</li> </ul>	Quarterly
6	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
7	Environmental Audit	As per Direction of ISO 14001	-	Once in a Year
8	Water utilization, m <sup>3</sup> /d	-	For process, domestic, cooling and boiler	Daily
9	Power utilization	-	For air pollution control facility at boilers and for STP	Daily

## 11. ADDITIONAL STUDIES

Additional Studies conducted as per revised ToR issued by SEAC-I in its 168<sup>th</sup> meeting dated 26<sup>th</sup> August 2019, are Risk Assessment and Disaster Management Plan. Public Hearing is to be conducted for the project.

### RISK ASSESSMENT

An industry with its complex nature of activities involving various plant machineries, raw materials, products, operations, intermediates and environmental discharge has a number of associated hazards. A minor failure can lead to major failure resulting into a disaster causing heavy losses to life, property and environmental. Risk assessment studies are being conducted to ensure safety and reliability of any new plant, through a systematic and scientific methods to identify possible failures and prevent their occurrences before they actually cause disasters and production loss.

#### Objectives of the risk assessment study

1. To identify the major hazards relating to fire, explosion and toxicity due to storage and handling of hazardous chemicals.
2. To visualize maximum credible accident scenarios
3. To analyze and quantify primary and secondary effects and damage potentials of the identified maximum credible accident scenarios using standard procedure.
4. To study the nature of exposures, pathways and consequences of maximum credible accident scenarios and characteristics of risk levels.
5. To provide guidelines for disaster management plan.

### DISASTER MANAGEMENT PLAN

A major disaster in a work is the one, which has potential to cause serious injury or loss of life. It may cause extensive damage to property and serious disruption both inside and outside the works. A Disaster would normally require the assistance of outside emergency services to handle it effectively. Whatever are the causative factors, like plant failure; human error; earthquake; vehicle crash; sabotage etc, they will normally manifest in three basic forms viz, fire, explosion, and *or* toxic release.

#### The objectives of disaster management plan include the following-

1. Controlling the disaster, localizing the disaster and eliminating the hazard

2. Welfare of person managing the disaster.
3. Head count and rescue operations.
4. Treatment of injured.
5. Safeguarding others by timely evacuation.
6. Minimizing damage to property and environment.
7. Informing and assisting relatives.
  - i. Informing and collaborating with statutory authorities.
  - ii. Informing the news media.
  - iii. Preserving records and organizing investigations.
  - iv. Ensuring safety of the works before personnel re-enter and resume work.
  - v. Investigating and taking steps to prevent recurrence.
  - vi. Resorting normalcy

## **12. PROJECT BENEFITS**

### **Implementation of proposed project will result in:**

- Improvement in the physical infrastructure
- Improvement in the social infrastructure
- Improvement in employment potential

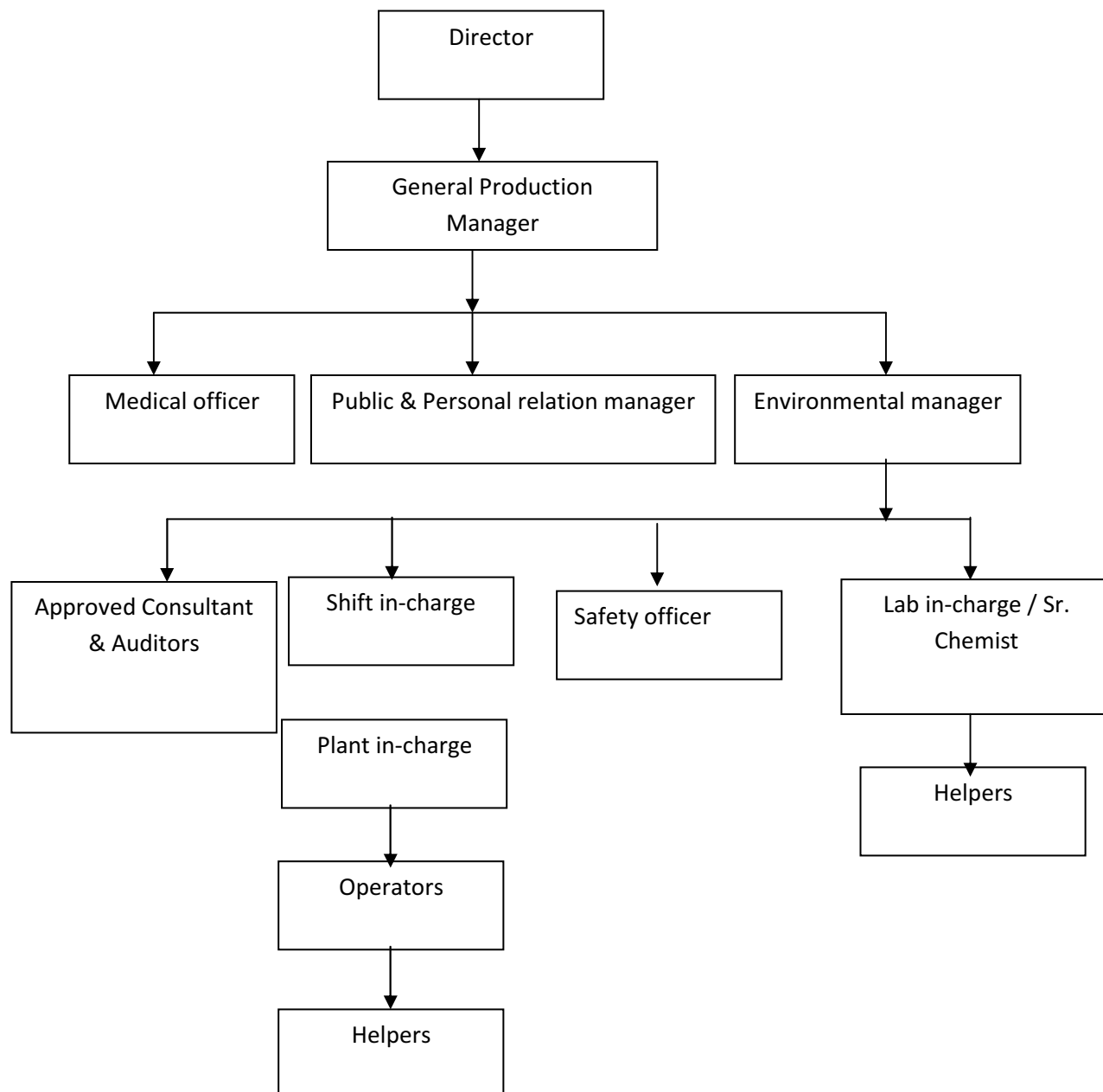
## **13. ENVIRONMENT MANAGEMENT PLAN**

Environmental Management Plan is detailed under the following heads:

- Air Quality Management
- Noise Management
- Waste Water Management
- Solid & Hazardous Waste Management
- Energy Conservation
- Greenbelt Development & Plantation Programme
- Occupational Health & Safety Measures.
- Enterprise social commitment (ESC)- Industry will utilize 1% of its project cost for ESC.

**Figure 2: Environment Management Cell**





**Table 8: 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
3	Quantity of effluent	To be measured daily and in-plant control. Not to exceed any time	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 ETP 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, bagasse to be baled, molasses not in open pits, press mud to be carted out every day	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
<b>Legends:</b> ENV-M- Environmental Manager, LAB- I- Lab incharge, ENV- C- Environmental Chemist.			

## 14. CONCLUSION

The proposed 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.

# **EXECUTIVE SUMMARY**

**Of**

## **ENVIRONMENTAL IMPACT ASSESSMENT REPORT**

**FOR**

### **PUBLIC HEARING**

**OF**

## **Proposed Expansion of Existing Metallurgical Industry**

**By**

**M/s. SANT GYANESHWAR STEELS PVT. LTD.**

Gat No. 1076/77, Golegaon Road, Village – Markal, Taluka – Khed,  
District – Pune, Maharashtra

**SUBMITTED TO**

**MAHARSHTRA POLLUTION CONTROL BOARD**

**PREPARED BY**



**M/s SGM Enviro (I) Pvt. Ltd.**  
Saahil Apartments,1102/A/4B,Model Colony  
Lakaki Road,Opp. Kirloskar Bunglow,  
ShivajiNagar , Pune -411016  
QCI –NABET ACCREDITED

## EXECUTIVE SUMMARY

### 1. INTRODUCTION

M/s Sant Gyaneshwar Steel Pvt. Ltd. (SGSPL) Markal was incorporated on 21.06.1996 with Registration number 111927272. The industry is located at Gat No. 1076/77, Golegaon Road, Village – Markal, Taluka – Khed, District – Pune with the main object of manufacturing of M.S. Ingots &/or Billets & Runner Riser.

As per the EIA notification 2006 & its subsequent amendments existing project does not require Environmental Clearance. Existing industry have obtained consent to operate from Maharashtra Pollution Control Board (MPCB) & is complying with all the norms of CPCB & MPCB.

### 2. TYPE OF PROJECT

M/s. Sant Gyaneshwar Steel Pvt. Ltd. (SGSPL) is proposing to expand existing quantity of M.S. ingots &/or Billets manufacturing from 36,000 TPA to 1, 56,000 TPA & capacity of Runner Riser production will remain the same i.e. 720 MTA. This expansion activity will take place within the existing plant premises at Gat No. 1076/77, Golegaon Road, Village – Markal, Tal. - Khed, Dist. – Pune.

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

### 3. 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 SGSPL has identified this opportunity and has decided to become a competitive leader in boosting field of metallurgical sector.

### 4. SITE SELECTION & JUSTIFICATION THEREOF

Proposed expansion will be done within the existing plant 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.

### 5. BRIEF DESCRIPTION OF NATURE, SIZE, LOCATION OF THE PROJECT AND ITS IMPORTANCE TO THE COUNTRY, REGION

**Table 1: Brief Description of Nature, Size and Location of Existing & Proposed Project**

Sr. No.	Particular	Description			
1	Nature & size of existing project	Proposed Expansion of Existing Metallurgical unit by M/s Sant Gyaneshwar Steels Pvt. Ltd. for Production of MS Ingots &/or Billets & Runner Riser			
2 A	Total Area of project	Total plot area is 15700 Sq.m			
2 B	Area Details (Sq.m)	<b>Particular</b>	<b>Existing</b>	<b>Proposed</b>	<b>Total</b>
		Built up Area	2016.52	1616.94	3633.46
		Road Area	484.00	2462.68	2946.68
		Garden/Open Area	3699.48	1471.19	5170.67

		Total	6200	5550.81	11750.81
3	Raw Materials (MT/M)	M.S. Scrap	3170	5800	8970
		Additives/ Ferro Alloys	30	110	140
		Bricks/Reformatories	100	100	200
		Sponge Iron	0	5000	5000
4	Products & By-products (MTA)	MS Ingots &/or Billets	36,000	1,20,000	1,56,000
		Runner Riser	720	0	720
	Capacity of Electric Furnace (MT/Month)	-	6000 (At present, a furnace of 3000 MT is there, which will be upgraded to a Total Capacity of - 6000 MT/M)	7000	13000
	Power requirement	-	4990 KVA + Electricity requirement of existing furnace is 4500KWH/hr	10,000 KVA + Electricity requirement of proposed furnace is 9500 KWH/hr	14990 KVA + 14000 KWH/hr
5	Capacity of DG set (KVA)	-	1 x 250 KVA	1x250 KVA	2 x 250 each
6	Fuel Requirement (lit/hr)	Fuel Type- LDO	6 lit/hr	6 lit/hr	12 lit/hr
7	Stack Details	-	Existing Electric Furnace stack ht. 30 m	Proposed Electric Furnace stack ht. 30 m	Total- 2 stacks: 1 Stack of 30 m for existing furnace & 1 stack of 30 m for proposed furnace
		-	Existing D.G. Set (250 KVA) stack ht. 2 m	Proposed D.G. Set (250KVA) stack ht. 3 m	Total 2 No.s: (1 Existing + 1 Proposed)
8	Air Pollution Control Equipment for boiler	-	Proper stack height with Fume extraction system & dust collector is provided	Proper stack height with Fume extraction system & dust collector will be provided	-
9	Total water Requirement for unit (CMD)	Domestic	1.2	1.9	3.1
		Industrial Process	0	0	0
		Cooling Purpose	60	50	110
		Gardening	0.5	1.3	1.8
10	Waste water generation (CMD)	Domestic	1.0	1.7	2.7
		Industrial Process	0	0	0
		Cooling Purpose	0	0	0
		Gardening	0	0	0
11	Manpower		27	43	70
12	Solid Waste	Scrap	120	360	480

(MT/A)	Slag	1200	8400	9600
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**Table 2: Environmental settings of Project**

Sr. No	Particular	Description
<b>Location of the project site</b>		
1	Plot No.	1076/77
2	Village	Markal
3	Taluka	Khed
4	District	Pune
5	State	Maharashtra
6	Latitude/Longitude	Latitude 18 <sup>0</sup> 39'39.11" N Longitude: 73 <sup>0</sup> 57'29.10" E
7	Average altitude above mean MSL	1866 ft above MSL
8	Corner Co-ordinates of the plant site	Coordinates of the project site as follows A 18 <sup>0</sup> 39'45.27" N 73 <sup>0</sup> 57'29.39" E B 18 <sup>0</sup> 39'44.99" N 73 <sup>0</sup> 57'30.81" E C 18 <sup>0</sup> 39'33.69" N 73 <sup>0</sup> 57'27.49" E D 18 <sup>0</sup> 39'33.78" N 73 <sup>0</sup> 57'29.10" E
9	Toposheet Number	E43I2, E43H14
<b>Environmental setting details (with approximate aerial distance &amp; direction from the plant site)</b>		
10	Nearest village	Markal :1.46 km
11	Nearest National highway/ State highway	Pune – Nashik Highway (11.88 km in W Direction)
12	Nearest Railway station	Kasarwadi Railway station (15.88 km in SW Direction)
13	Nearest airport	Pune Airport 9.50 Km in SW direction
14	Nearest major city	Pimpri-Chinchwad : 17 km in SW direction
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	Indrayani River – 1.68 km away from project site in 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 15 km radius

## 6. MAJOR REQUIREMENT FOR THE PROPOSED PROJECT

### 6.1. RAW MATERIALS REQUIREMENT

**Table 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	3170	5800	8970	Locally available	Truck
2	Additives/ Ferro Alloys	30	110	140	Locally available	Truck
3	Bricks/ Reformatories	100	100	200	Locally available	Truck
4	Sponge Iron	0	5000	5000	Locally available	Truck

## 6.2 POWER REQUIREMENT

The power requirement of the existing unit is 4990 KVA. After expansion the power requirement will be 10,000 KVA. This demand will be met by sourcing the power from MSEDCL from nearby Sub-station. Electricity requirement of existing furnace is 4500KWH/hr & that of proposed furnace is 9500 KWH/hr.

## 6.3 MANPOWER REQUIREMENT

Additional manpower is needed to operate the expansion unit plant will be 43. More than 85 % 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 20. Construction workers will be from nearby villages. Residential facility will not be required for the construction personnel.

## 6.4 WATER REQUIREMENT FOR PROPOSED PROJECT

**Table 4: Water Budget of proposed expansion project**

Sr. No.	Particular	Quantity (m <sup>3</sup> / day)	
		Water Consumption	Effluent Generation
1	Domestic	1.9	1.7
2	Industrial	0	0
3	cooling	50	0
4	Gardening	1.3	0
<b>Total</b>		<b>53.2</b>	<b>1.7</b>

**Total water requirement for proposed expansion project = 53.2 m3/day**

**Fresh water requirement for proposed expansion project = 3.2 m3/day**

## 6.5 LANDREQUIREMENT

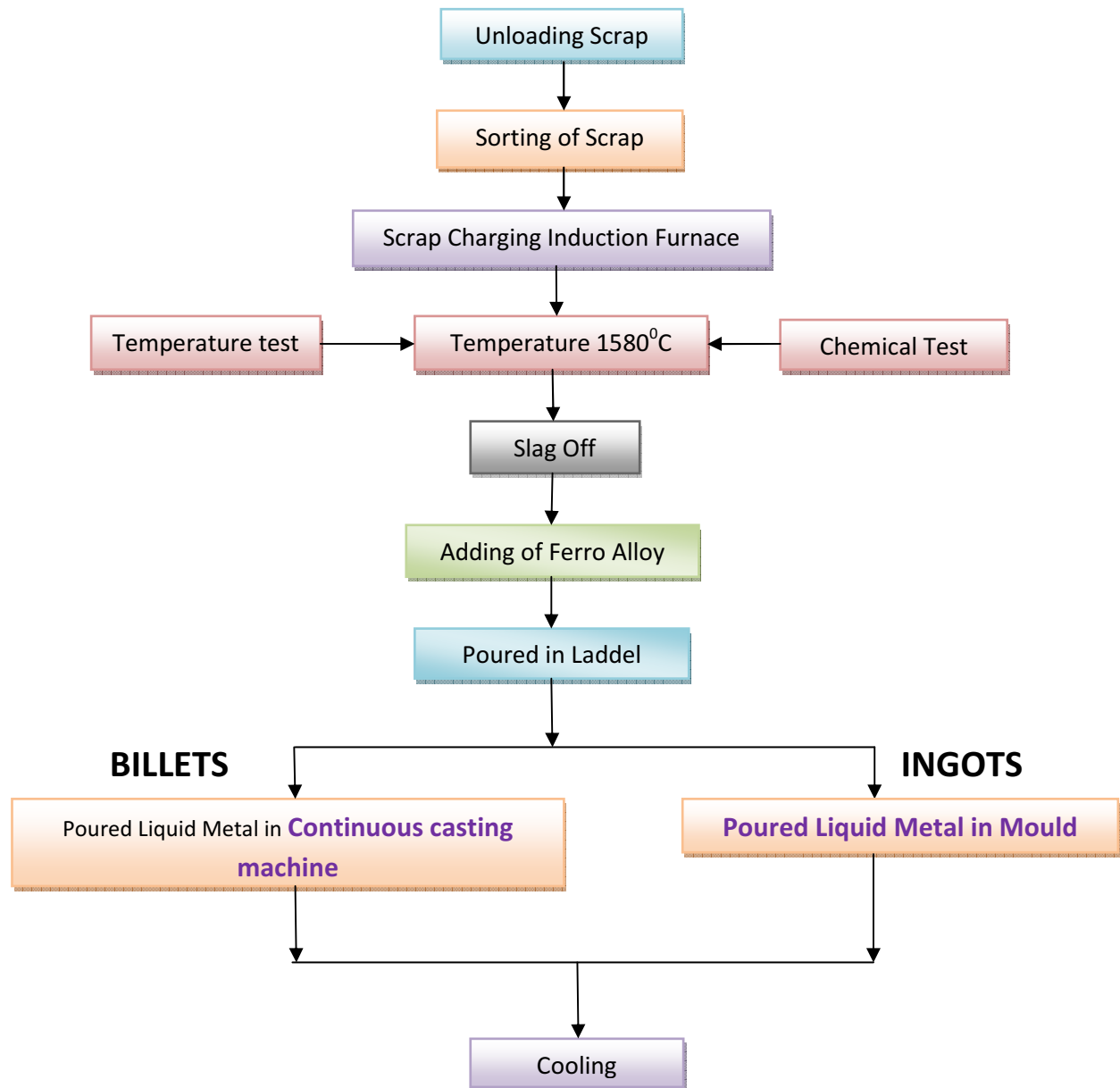
The Company site is located Gat No. 1076/77, Golegaon Road, and Village -Markal, Taluka- Khed, District – Pune. Total plot area of industry is 15700 Sq.m. The details of proposed land use is tabulated in following table-

**Table 5: Details of Land Use**

Sr. No.	Particular	Existing	Proposed	Total Area (Sq.m.)
1	Built up Area	2016.52	1616.94	3633.46
2	Road Area (Sq.m)	484.00	2462.68	2946.68
3	Garden/Open Area	3699.48	1471.19	5170.67

## 7. PROCESS DESCRIPTION ALONG WITH MAJOR EQUIPMENTS AND MACHINERIES, PROCESS FLOW SHEET (QUANTATIVE) FROM RAW MATERIAL TO PRODUCTS

Figure 1: Manufacturing process M.S. Ingots & Runner Riser



## 8. DESCRIPTION OF ENVIRONMENT

Baseline study in this Environmental Impact Assessment report was conducted for a period of three months during 1<sup>st</sup> March 2018 to 31<sup>st</sup> May 2018.

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.



Ambient air quality monitoring has been carried out at 8 stations in the study area on 24 hourly bases. Ambient Air Quality Monitoring reveals that the concentrations of PM<sub>10</sub> and PM<sub>2.5</sub> for all the 8 AAQM stations were found between 77.5 to 25 µg/m<sup>3</sup> and 35.5 to 12 µg/m<sup>3</sup>. The concentrations of SO<sub>2</sub> and NO<sub>x</sub> were found to be in range of 7.7 to 4 µg/m<sup>3</sup> and 41.1 to 21.5 µg/m<sup>3</sup> respectively. The concentration of CO is in range of 0.65 to 0.175 mg/m<sup>3</sup>. The resultant concentration of the parameters is well within the prescribed limits of GPCB & NAAQS.

Prediction of impacts on air environment has been carried out by employing a mathematical model. In the present case, **Industrial Source Complex Short-Term (ISCST3)** dispersion model based on steady state Gaussian plume dispersion, designed for multiple point sources for short term has been used for predicting the ground level concentrations. Results of mathematical modelling reveals that the maximum incremental short term 24 hourly ground level concentrations for PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub> and NO<sub>x</sub> likely to be encountered during pre-monsoon season are 2.38 µg/m<sup>3</sup>, 1.44 µg/m<sup>3</sup>, 4.06 µg/m<sup>3</sup> and 7.22 µg/m<sup>3</sup> respectively occurring at a distance of about 2-km in the South West direction.

Noise level monitoring has been carried out at 8 stations in the study area. Noise level varies from 49.7 to 56.75 Leq dB (A) during day time and from 44.15 to 49.55 Leq dB (A) during night time. 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.

Surface water sampling has been carried out at 1 station in the study area. SGSPL is going to achieve Zero liquid discharge in surface water for the proposed project & hence there is no effect on the river water quality due to this industry.

Ground water sampling has been carried out at 8 stations in the study area. Analysis results of ground water reveals that pH varies from 6.7 to 7.5, Total hardness varies from 281.88 to 411.68 mg/l, Total dissolved solids vary from 366 to 623 mg/l.

Soil samples collected from 8 identified locations indicate pH value ranges from 6.97 to 8.03, which shows that the soil is having near neutral pH. Water holding capacity ranges from 28.50 % to 61.76 % in the soil samples. Free Ammonical nitrogen is found in ranges from 0.14 % to 0.19 % and Potassium is found to be ranging from 1 mg/kg to 8 mg/kg. Soil of the area is found to be suitable for agricultural activities.

The study area is delineated in 10 km radius from the project site. The proposed project site is surrounded by agricultural land. There are no any national parks, wildlife sanctuaries, biosphere reserves or critically polluted areas in the 10 km radius from the proposed project site. No Archeological site is present within the study area. No forest is located in the study area. No Schedule - I fauna was found during the field survey. There is intense anthropogenic pressure on flora, fauna and forest resources, which are observed to be dwindling. However, no rare, endangered & threatened plant species was observed in the study area.

Population of study area is 114,796. Scheduled Caste fraction of the population of the study area (10 km) is 10,542 (9.18%) and Scheduled Tribe 3298 (2.87 %). Literacy rate of the area is 69.59 %. Population of the workers engaged in occupation is 45.80 %. Of these 49,153 (42.81 %) are main workers and 3426 (2.98 %) are marginal workers. Remaining, 62,215 (54.19 %) of the total population is considered as non-workers. The socio-economic analysis of the study area shows that in terms of education could be improved as the literacy rate is quite low i.e. 69.59 %. With a high dependency ratio, the overall socio-economic status of the target population could improve with increase in work participation rate. Hence, the long-term positive impacts on socio-economic conditions of the area are anticipated.

## 9. ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

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

**Table 6: 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 construction 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. Wherever required check dams and dykes will be provided for control of soil erosion.</li> <li>4. 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>5. Appropriate sanitation facilities will be provided for the workers to reduce impact on surface water quality.</li> <li>6. Construction wastes will not be discharged to surface or ground water bodies.</li> <li>7. 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. Vehicles with internal combustion engines will be provided with silencers and mufflers in order to reduce noise levels.</li> </ol> <p>Green belt will be developed to attenuate noise impacts and to reduce noise pollution</p>

4.	Soil	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. Litter disposal and collection points will be established around the work sites. Empty packaging materials, drums, glass, tin, paper, plastic, pet bottles, wood, thermocol and other packaging materials, etc. will be disposed through recyclers. The construction spoils will be temporarily stored at designated dumpsite located inside the plant premises.
<b>(B) Operation Phase</b>		
1.	Air	Adequate stack height to the proposed electric furnace, Fume extraction system & dust collector will be provided
2.	Fugitive	Internal roads paved, leveled, no undulations, no sharp curves, slow speed. Tree plantation on surrounding available area.
3.	Water and Waste Water	1. No effluent generation will take place from proposed industry. Hence no provision of ETP. 2. Rain Water Harvesting will be done.
4.	Solid Waste	100% collection every day. Segregated and treated/ disposed per SPCB norms.
6.	Noise	Smooth roads. Sturdy foundation. No Vibrations. Acoustic enclosures to existing DG Set as per manufacturers' design. Use as standby only. Trees are planted around. Side cladding. Large No. of tree barriers.
7.	Socio-economic	Employment generation, Community Skills Development, Improved Standard of Living, Community Organizational Capacity Development Economic Exposure and Development

## 10. ENVIRONMENTAL MONITORING PROGRAMME

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

**Table 7: Schedule for Environmental Monitoring**

Sr. No.	Particulars	Parameters	Location	Frequency
1	Flue gases from furnace	PM <sub>10</sub> , PM <sub>2.5</sub> , SO <sub>2</sub> and NO <sub>x</sub>	Stack monitoring	Monthly
2	Ambient air quality	PM <sub>10</sub> , PM <sub>2.5</sub> , SO <sub>2</sub> and NO <sub>x</sub> , CO.	<ul style="list-style-type: none"> <li>• Check wind direction</li> <li>• Select two point in upwind direction at 120° from site</li> <li>• Take one point within site at down wind direction from furnace about 1 km distance</li> <li>• Take two points beyond site in down wind direction about 2 km distance at 120° from site opposite to points taken in upwind direction.</li> </ul>	24 hrs sample, half yearly
3	Water (Ground Water and Surface Water)	As per drinking water standards	<ul style="list-style-type: none"> <li>• Take one upstream and downstream sample of surface water. Minimum distance 500 m.</li> <li>• One point upstream at higher elevation from plant site. Also at lower contour point at 3 locations.</li> </ul>	Quarterly

4	Soil	organic & inorganic matter	• Outside plant boundary at lower contour	Pre & post monsoon
5	Noise level, work zone (hourly)	Equivalent noise level-dB (A)	<ul style="list-style-type: none"> <li>• One location in furnace house.</li> <li>• One location near I.D. Fan.</li> <li>• Especially monitor noise during soot blowing.</li> <li>• Four locations around plant boundary</li> </ul>	Quarterly
6	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
7	Environmental Audit	As per Direction of ISO 14001	-	Once in a Year
8	Water utilization, m <sup>3</sup> /d	-	For process, domestic, cooling and boiler	Daily
9	Power utilization	-	For air pollution control facility at boilers and for STP	Daily

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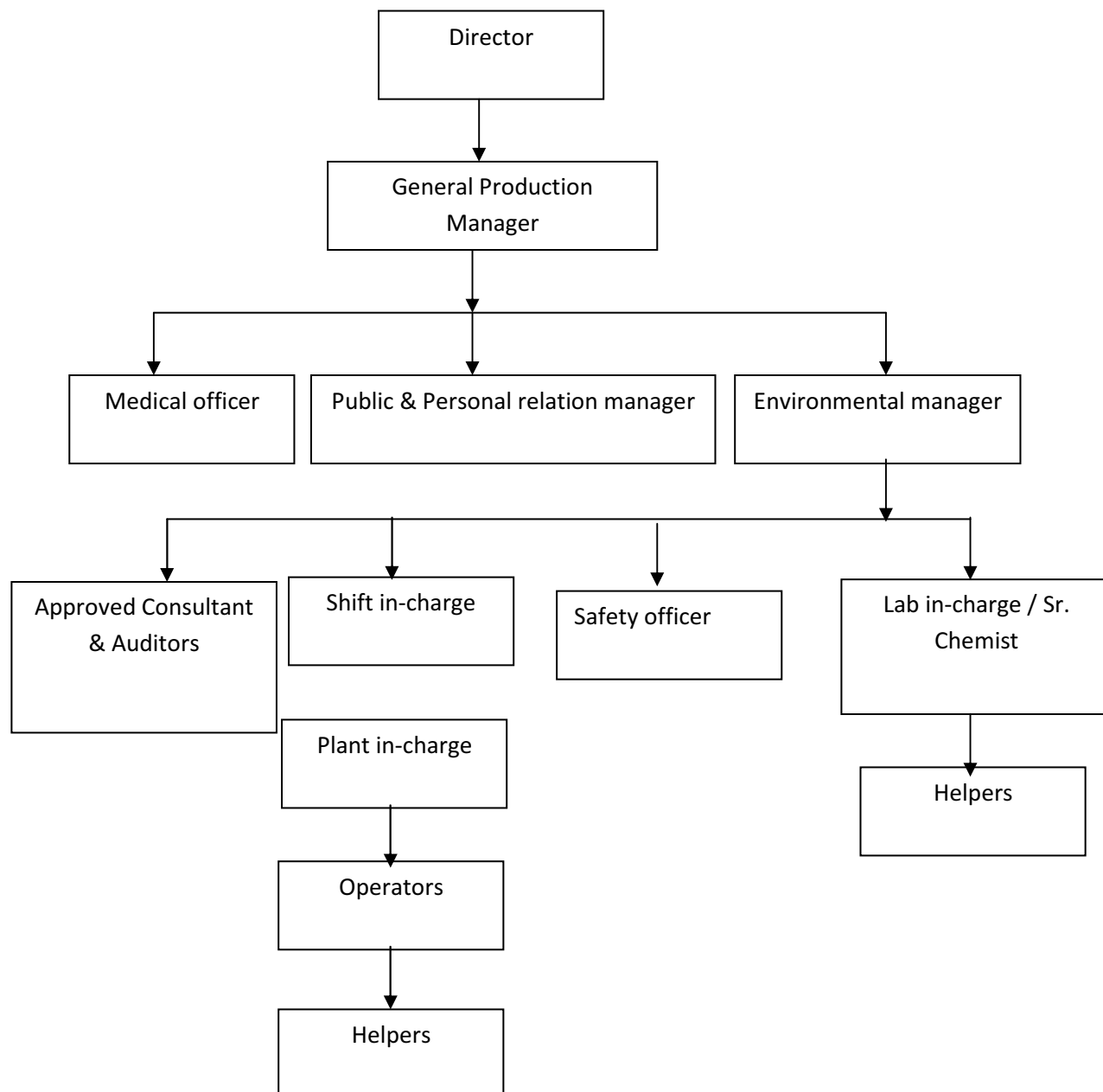
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- Enterprise social commitment (ESC)- Industry will utilize 1% of its project cost for ESC.

**Figure 2: Environment Management Cell**



**Table 8: 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
3	Quantity of effluent	To be measured daily and in-plant control. Not to exceed any time	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 ETP 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, bagasse to be baled, molasses not in open pits, press mud to be carted out every day	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
<b>Legends:</b> ENV-M- Environmental Manager, LAB- I- Lab incharge, ENV- C- Environmental Chemist.			

## 14. CONCLUSION

The proposed 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.

# **EXECUTIVE SUMMARY**

**Of**

## **ENVIRONMENTAL IMPACT ASSESSMENT REPORT**

**FOR**

### **PUBLIC HEARING**

**OF**

## **Proposed Expansion of Existing Metallurgical Industry**

**By**

**M/s. SANT GYANESHWAR STEELS PVT. LTD.**

Gat No. 1076/77, Golegaon Road, Village – Markal, Taluka – Khed,  
District – Pune, Maharashtra

**SUBMITTED TO**

**MAHARSHTRA POLLUTION CONTROL BOARD**

**PREPARED BY**



**M/s SGM Enviro (I) Pvt. Ltd.**  
Saahil Apartments,1102/A/4B,Model Colony  
Lakaki Road,Opp. Kirloskar Bunglow,  
ShivajiNagar , Pune -411016  
QCI –NABET ACCREDITED



## EXECUTIVE SUMMARY

### 1. INTRODUCTION

M/s Sant Gyaneshwar Steel Pvt. Ltd. (SGSPL) Markal was incorporated on 21.06.1996 with Registration number 111927272. The industry is located at Gat No. 1076/77, Golegaon Road, Village – Markal, Taluka – Khed, District – Pune with the main object of manufacturing of M.S. Ingots &/or Billets & Runner Riser.

As per the EIA notification 2006 & its subsequent amendments existing project does not require Environmental Clearance. Existing industry have obtained consent to operate from Maharashtra Pollution Control Board (MPCB) & is complying with all the norms of CPCB & MPCB.

### 2. TYPE OF PROJECT

M/s. Sant Gyaneshwar Steel Pvt. Ltd. (SGSPL) is proposing to expand existing quantity of M.S. ingots &/or Billets manufacturing from 36,000 TPA to 1, 56,000 TPA & capacity of Runner Riser production will remain the same i.e. 720 MTA. This expansion activity will take place within the existing plant premises at Gat No. 1076/77, Golegaon Road, Village – Markal, Tal. - Khed, Dist. – Pune.

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

### 3. 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 SGSPL has identified this opportunity and has decided to become a competitive leader in boosting field of metallurgical sector.

### 4. SITE SELECTION & JUSTIFICATION THEREOF

Proposed expansion will be done within the existing plant 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.

### 5. BRIEF DESCRIPTION OF NATURE, SIZE, LOCATION OF THE PROJECT AND ITS IMPORTANCE TO THE COUNTRY, REGION

**Table 1: Brief Description of Nature, Size and Location of Existing & Proposed Project**

Sr. No.	Particular	Description			
1	Nature & size of existing project	Proposed Expansion of Existing Metallurgical unit by M/s Sant Gyaneshwar Steels Pvt. Ltd. for Production of MS Ingots &/or Billets & Runner Riser			
2 A	Total Area of project	Total plot area is 15700 Sq.m			
2 B	Area Details (Sq.m)	<b>Particular</b>	<b>Existing</b>	<b>Proposed</b>	<b>Total</b>
		Built up Area	2016.52	1616.94	3633.46
		Road Area	484.00	2462.68	2946.68
		Garden/Open Area	3699.48	1471.19	5170.67

		Total	6200	5550.81	11750.81
3	Raw Materials (MT/M)	M.S. Scrap	3170	5800	8970
		Additives/ Ferro Alloys	30	110	140
		Bricks/Reformatories	100	100	200
		Sponge Iron	0	5000	5000
4	Products & By-products (MTA)	MS Ingots &/or Billets	36,000	1,20,000	1,56,000
		Runner Riser	720	0	720
	Capacity of Electric Furnace (MT/Month)	-	6000 (At present, a furnace of 3000 MT is there, which will be upgraded to a Total Capacity of - 6000 MT/M)	7000	13000
	Power requirement	-	4990 KVA + Electricity requirement of existing furnace is 4500KWH/hr	10,000 KVA + Electricity requirement of proposed furnace is 9500 KWH/hr	14990 KVA + 14000 KWH/hr
5	Capacity of DG set (KVA)	-	1 x 250 KVA	1x250 KVA	2 x 250 each
6	Fuel Requirement (lit/hr)	Fuel Type- LDO	6 lit/hr	6 lit/hr	12 lit/hr
7	Stack Details	-	Existing Electric Furnace stack ht. 30 m	Proposed Electric Furnace stack ht. 30 m	Total- 2 stacks: 1 Stack of 30 m for existing furnace & 1 stack of 30 m for proposed furnace
		-	Existing D.G. Set (250 KVA) stack ht. 2 m	Proposed D.G. Set (250KVA) stack ht. 3 m	Total 2 No.s: (1 Existing + 1 Proposed)
8	Air Pollution Control Equipment for boiler	-	Proper stack height with Fume extraction system & dust collector is provided	Proper stack height with Fume extraction system & dust collector will be provided	-
9	Total water Requirement for unit (CMD)	Domestic	1.2	1.9	3.1
		Industrial Process	0	0	0
		Cooling Purpose	60	50	110
		Gardening	0.5	1.3	1.8
10	Waste water generation (CMD)	Domestic	1.0	1.7	2.7
		Industrial Process	0	0	0
		Cooling Purpose	0	0	0
		Gardening	0	0	0
11	Manpower		27	43	70
12	Solid Waste	Scrap	120	360	480

(MT/A)	Slag	1200	8400	9600
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**Table 2: Environmental settings of Project**

Sr. No	Particular	Description
<b>Location of the project site</b>		
1	Plot No.	1076/77
2	Village	Markal
3	Taluka	Khed
4	District	Pune
5	State	Maharashtra
6	Latitude/Longitude	Latitude 18 <sup>0</sup> 39'39.11" N Longitude: 73 <sup>0</sup> 57'29.10" E
7	Average altitude above mean MSL	1866 ft above MSL
8	Corner Co-ordinates of the plant site	Coordinates of the project site as follows A 18 <sup>0</sup> 39'45.27" N 73 <sup>0</sup> 57'29.39" E B 18 <sup>0</sup> 39'44.99" N 73 <sup>0</sup> 57'30.81" E C 18 <sup>0</sup> 39'33.69" N 73 <sup>0</sup> 57'27.49" E D 18 <sup>0</sup> 39'33.78" N 73 <sup>0</sup> 57'29.10" E
9	Toposheet Number	E43I2, E43H14
<b>Environmental setting details (with approximate aerial distance &amp; direction from the plant site)</b>		
10	Nearest village	Markal :1.46 km
11	Nearest National highway/ State highway	Pune – Nashik Highway (11.88 km in W Direction)
12	Nearest Railway station	Kasarwadi Railway station (15.88 km in SW Direction)
13	Nearest airport	Pune Airport 9.50 Km in SW direction
14	Nearest major city	Pimpri-Chinchwad : 17 km in SW direction
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	Indrayani River – 1.68 km away from project site in 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 15 km radius

## 6. MAJOR REQUIREMENT FOR THE PROPOSED PROJECT

### 6.1. RAW MATERIALS REQUIREMENT

**Table 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	3170	5800	8970	Locally available	Truck
2	Additives/ Ferro Alloys	30	110	140	Locally available	Truck
3	Bricks/ Reformatories	100	100	200	Locally available	Truck
4	Sponge Iron	0	5000	5000	Locally available	Truck

## 6.2 POWER REQUIREMENT

The power requirement of the existing unit is 4990 KVA. After expansion the power requirement will be 10,000 KVA. This demand will be met by sourcing the power from MSEDCL from nearby Sub-station. Electricity requirement of existing furnace is 4500KWH/hr & that of proposed furnace is 9500 KWH/hr.

## 6.3 MANPOWER REQUIREMENT

Additional manpower is needed to operate the expansion unit plant will be 43. More than 85 % 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 20. Construction workers will be from nearby villages. Residential facility will not be required for the construction personnel.

## 6.4 WATER REQUIREMENT FOR PROPOSED PROJECT

**Table 4: Water Budget of proposed expansion project**

Sr. No.	Particular	Quantity (m <sup>3</sup> / day)	
		Water Consumption	Effluent Generation
1	Domestic	1.9	1.7
2	Industrial	0	0
3	cooling	50	0
4	Gardening	1.3	0
<b>Total</b>		<b>53.2</b>	<b>1.7</b>

**Total water requirement for proposed expansion project = 53.2 m3/day**

**Fresh water requirement for proposed expansion project = 3.2 m3/day**

## 6.5 LANDREQUIREMENT

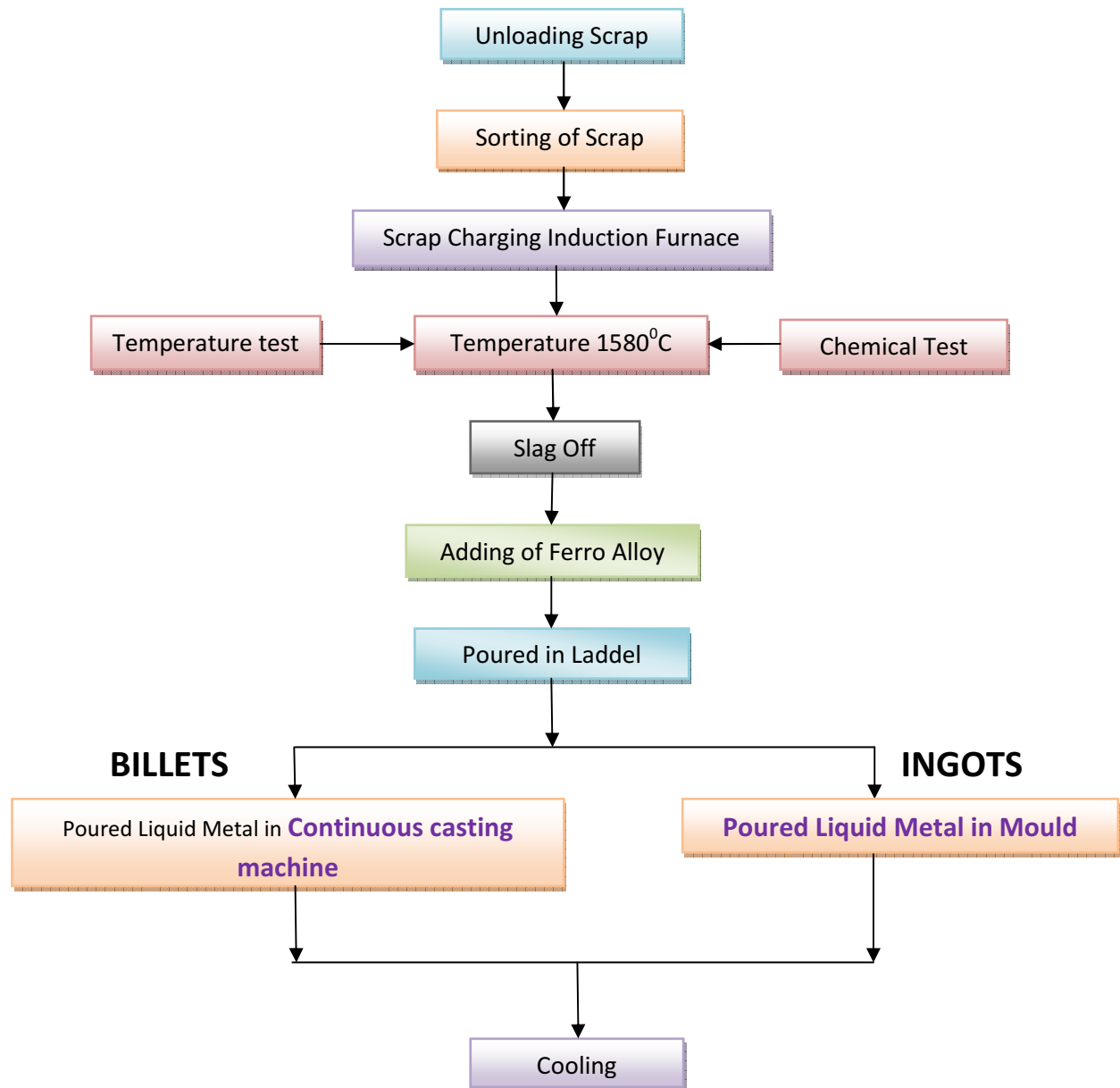
The Company site is located Gat No. 1076/77, Golegaon Road, and Village -Markal, Taluka- Khed, District – Pune. Total plot area of industry is 15700 Sq.m. The details of proposed land use is tabulated in following table-

**Table 5: Details of Land Use**

Sr. No.	Particular	Existing	Proposed	Total Area (Sq.m.)
1	Built up Area	2016.52	1616.94	3633.46
2	Road Area (Sq.m)	484.00	2462.68	2946.68
3	Garden/Open Area	3699.48	1471.19	5170.67

## 7. PROCESS DESCRIPTION ALONG WITH MAJOR EQUIPMENTS AND MACHINERIES, PROCESS FLOW SHEET (QUANTATIVE) FROM RAW MATERIAL TO PRODUCTS

Figure 1: Manufacturing process M.S. Ingots & Runner Riser



## 8. DESCRIPTION OF ENVIRONMENT

Baseline study in this Environmental Impact Assessment report was conducted for a period of three months during 1<sup>st</sup> March 2018 to 31<sup>st</sup> May 2018.

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.

Ambient air quality monitoring has been carried out at 8 stations in the study area on 24 hourly bases. Ambient Air Quality Monitoring reveals that the concentrations of PM<sub>10</sub> and PM<sub>2.5</sub> for all the 8 AAQM stations were found between 77.5 to 25 µg/m<sup>3</sup> and 35.5 to 12 µg/m<sup>3</sup>. The concentrations of SO<sub>2</sub> and NO<sub>x</sub> were found to be in range of 7.7 to 4 µg/m<sup>3</sup> and 41.1 to 21.5 µg/m<sup>3</sup> respectively. The concentration of CO is in range of 0.65 to 0.175 mg/m<sup>3</sup>. The resultant concentration of the parameters is well within the prescribed limits of GPCB & NAAQS.

Prediction of impacts on air environment has been carried out by employing a mathematical model. In the present case, **Industrial Source Complex Short-Term (ISCST3)** dispersion model based on steady state Gaussian plume dispersion, designed for multiple point sources for short term has been used for predicting the ground level concentrations. Results of mathematical modelling reveals that the maximum incremental short term 24 hourly ground level concentrations for PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub> and NO<sub>x</sub> likely to be encountered during pre-monsoon season are 2.38 µg/m<sup>3</sup>, 1.44 µg/m<sup>3</sup>, 4.06 µg/m<sup>3</sup> and 7.22 µg/m<sup>3</sup> respectively occurring at a distance of about 2-km in the South West direction.

Noise level monitoring has been carried out at 8 stations in the study area. Noise level varies from 49.7 to 56.75 Leq dB (A) during day time and from 44.15 to 49.55 Leq dB (A) during night time. 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.

Surface water sampling has been carried out at 1 station in the study area. SGSPL is going to achieve Zero liquid discharge in surface water for the proposed project & hence there is no effect on the river water quality due to this industry.

Ground water sampling has been carried out at 8 stations in the study area. Analysis results of ground water reveals that pH varies from 6.7 to 7.5, Total hardness varies from 281.88 to 411.68 mg/l, Total dissolved solids vary from 366 to 623 mg/l.

Soil samples collected from 8 identified locations indicate pH value ranges from 6.97 to 8.03, which shows that the soil is having near neutral pH. Water holding capacity ranges from 28.50 % to 61.76 % in the soil samples. Free Ammonical nitrogen is found in ranges from 0.14 % to 0.19 % and Potassium is found to be ranging from 1 mg/kg to 8 mg/kg. Soil of the area is found to be suitable for agricultural activities.

The study area is delineated in 10 km radius from the project site. The proposed project site is surrounded by agricultural land. There are no any national parks, wildlife sanctuaries, biosphere reserves or critically polluted areas in the 10 km radius from the proposed project site. No Archeological site is present within the study area. No forest is located in the study area. No Schedule - I fauna was found during the field survey. There is intense anthropogenic pressure on flora, fauna and forest resources, which are observed to be dwindling. However, no rare, endangered & threatened plant species was observed in the study area.

Population of study area is 114,796. Scheduled Caste fraction of the population of the study area (10 km) is 10,542 (9.18%) and Scheduled Tribe 3298 (2.87 %). Literacy rate of the area is 69.59 %. Population of the workers engaged in occupation is 45.80 %. Of these 49,153 (42.81 %) are main workers and 3426 (2.98 %) are marginal workers. Remaining, 62,215 (54.19 %) of the total population is considered as non-workers. The socio-economic analysis of the study area shows that in terms of education could be improved as the literacy rate is quite low i.e. 69.59 %. With a high dependency ratio, the overall socio-economic status of the target population could improve with increase in work participation rate. Hence, the long-term positive impacts on socio-economic conditions of the area are anticipated.

## 9. ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

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

**Table 6: 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 construction 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. Wherever required check dams and dykes will be provided for control of soil erosion.</li> <li>4. 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>5. Appropriate sanitation facilities will be provided for the workers to reduce impact on surface water quality.</li> <li>6. Construction wastes will not be discharged to surface or ground water bodies.</li> <li>7. 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. Vehicles with internal combustion engines will be provided with silencers and mufflers in order to reduce noise levels.</li> </ol> <p>Green belt will be developed to attenuate noise impacts and to reduce noise pollution</p>



4.	Soil	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. Litter disposal and collection points will be established around the work sites. Empty packaging materials, drums, glass, tin, paper, plastic, pet bottles, wood, thermocol and other packaging materials, etc. will be disposed through recyclers. The construction spoils will be temporarily stored at designated dumpsite located inside the plant premises.
<b>(B) Operation Phase</b>		
1.	Air	Adequate stack height to the proposed electric furnace, Fume extraction system & dust collector will be provided
2.	Fugitive	Internal roads paved, leveled, no undulations, no sharp curves, slow speed. Tree plantation on surrounding available area.
3.	Water and Waste Water	1. No effluent generation will take place from proposed industry. Hence no provision of ETP. 2. Rain Water Harvesting will be done.
4.	Solid Waste	100% collection every day. Segregated and treated/ disposed per SPCB norms.
6.	Noise	Smooth roads. Sturdy foundation. No Vibrations. Acoustic enclosures to existing DG Set as per manufacturers' design. Use as standby only. Trees are planted around. Side cladding. Large No. of tree barriers.
7.	Socio-economic	Employment generation, Community Skills Development, Improved Standard of Living, Community Organizational Capacity Development Economic Exposure and Development

## 10. ENVIRONMENTAL MONITORING PROGRAMME

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

**Table 7: Schedule for Environmental Monitoring**

Sr. No.	Particulars	Parameters	Location	Frequency
1	Flue gases from furnace	PM <sub>10</sub> , PM <sub>2.5</sub> , SO <sub>2</sub> and NO <sub>x</sub>	Stack monitoring	Monthly
2	Ambient air quality	PM <sub>10</sub> , PM <sub>2.5</sub> , SO <sub>2</sub> and NO <sub>x</sub> , CO.	<ul style="list-style-type: none"> <li>Check wind direction</li> <li>Select two point in upwind direction at 120° from site</li> <li>Take one point within site at down wind direction from furnace about 1 km distance</li> <li>Take two points beyond site in down wind direction about 2 km distance at 120° from site opposite to points taken in upwind direction.</li> </ul>	24 hrs sample, half yearly
3	Water (Ground Water and Surface Water)	As per drinking water standards	<ul style="list-style-type: none"> <li>Take one upstream and downstream sample of surface water. Minimum distance 500 m.</li> <li>One point upstream at higher elevation from plant site. Also at lower contour point at 3 locations.</li> </ul>	Quarterly



4	Soil	organic & inorganic matter	• Outside plant boundary at lower contour	Pre & post monsoon
5	Noise level, work zone (hourly)	Equivalent noise level-dB (A)	<ul style="list-style-type: none"> <li>• One location in furnace house.</li> <li>• One location near I.D. Fan.</li> <li>• Especially monitor noise during soot blowing.</li> <li>• Four locations around plant boundary</li> </ul>	Quarterly
6	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
7	Environmental Audit	As per Direction of ISO 14001	-	Once in a Year
8	Water utilization, m <sup>3</sup> /d	-	For process, domestic, cooling and boiler	Daily
9	Power utilization	-	For air pollution control facility at boilers and for STP	Daily

## 11. ADDITIONAL STUDIES

Additional Studies conducted as per revised ToR issued by SEAC-I in its 168<sup>th</sup> meeting dated 26<sup>th</sup> August 2019, are Risk Assessment and Disaster Management Plan. Public Hearing is to be conducted for the project.

### RISK ASSESSMENT

An industry with its complex nature of activities involving various plant machineries, raw materials, products, operations, intermediates and environmental discharge has a number of associated hazards. A minor failure can lead to major failure resulting into a disaster causing heavy losses to life, property and environmental. Risk assessment studies are being conducted to ensure safety and reliability of any new plant, through a systematic and scientific methods to identify possible failures and prevent their occurrences before they actually cause disasters and production loss.

#### Objectives of the risk assessment study

1. To identify the major hazards relating to fire, explosion and toxicity due to storage and handling of hazardous chemicals.
2. To visualize maximum credible accident scenarios
3. To analyze and quantify primary and secondary effects and damage potentials of the identified maximum credible accident scenarios using standard procedure.
4. To study the nature of exposures, pathways and consequences of maximum credible accident scenarios and characteristics of risk levels.
5. To provide guidelines for disaster management plan.

### DISASTER MANAGEMENT PLAN

A major disaster in a work is the one, which has potential to cause serious injury or loss of life. It may cause extensive damage to property and serious disruption both inside and outside the works. A Disaster would normally require the assistance of outside emergency services to handle it effectively. Whatever are the causative factors, like plant failure; human error; earthquake; vehicle crash; sabotage etc, they will normally manifest in three basic forms viz, fire, explosion, and *or* toxic release.

#### The objectives of disaster management plan include the following-

1. Controlling the disaster, localizing the disaster and eliminating the hazard

2. Welfare of person managing the disaster.
3. Head count and rescue operations.
4. Treatment of injured.
5. Safeguarding others by timely evacuation.
6. Minimizing damage to property and environment.
7. Informing and assisting relatives.
  - i. Informing and collaborating with statutory authorities.
  - ii. Informing the news media.
  - iii. Preserving records and organizing investigations.
  - iv. Ensuring safety of the works before personnel re-enter and resume work.
  - v. Investigating and taking steps to prevent recurrence.
  - vi. Resorting normalcy

## **12. PROJECT BENEFITS**

### **Implementation of proposed project will result in:**

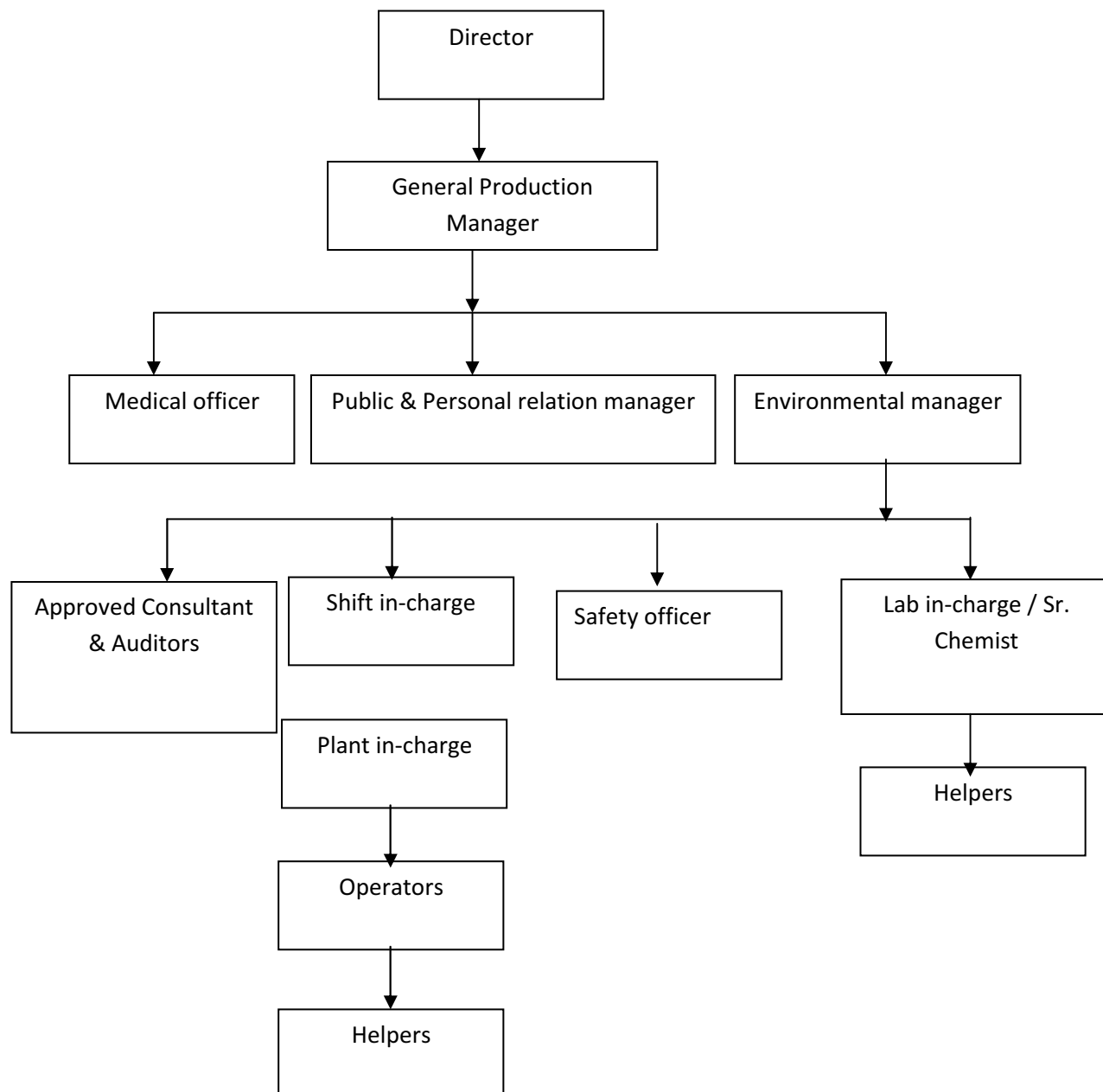
- Improvement in the physical infrastructure
- Improvement in the social infrastructure
- Improvement in employment potential

## **13. ENVIRONMENT MANAGEMENT PLAN**

Environmental Management Plan is detailed under the following heads:

- Air Quality Management
- Noise Management
- Waste Water Management
- Solid & Hazardous Waste Management
- Energy Conservation
- Greenbelt Development & Plantation Programme
- Occupational Health & Safety Measures.
- Enterprise social commitment (ESC)- Industry will utilize 1% of its project cost for ESC.

**Figure 2: Environment Management Cell**



**Table 8: Responsibility distribution for compliance of Consent conditions of proposed unit**

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6	Quality of Effluents	By running ETP 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,
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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
<b>Legends:</b> ENV-M- Environmental Manager, LAB- I- Lab incharge, ENV- C- Environmental Chemist.			

## 14. CONCLUSION

The proposed 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.

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Gat No. 1076/77, Golegaon Road, Village – Markal, Taluka – Khed,  
District – Pune, Maharashtra

**SUBMITTED TO**

**MAHARSHTRA POLLUTION CONTROL BOARD**

**PREPARED BY**



**M/s SGM Enviro (I) Pvt. Ltd.**  
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Lakaki Road,Opp. Kirloskar Bunglow,  
ShivajiNagar , Pune -411016  
QCI –NABET ACCREDITED

## EXECUTIVE SUMMARY

### 1. INTRODUCTION

M/s Sant Gyaneshwar Steel Pvt. Ltd. (SGSPL) Markal was incorporated on 21.06.1996 with Registration number 111927272. The industry is located at Gat No. 1076/77, Golegaon Road, Village – Markal, Taluka – Khed, District – Pune with the main object of manufacturing of M.S. Ingots &/or Billets & Runner Riser.

As per the EIA notification 2006 & its subsequent amendments existing project does not require Environmental Clearance. Existing industry have obtained consent to operate from Maharashtra Pollution Control Board (MPCB) & is complying with all the norms of CPCB & MPCB.

### 2. TYPE OF PROJECT

M/s. Sant Gyaneshwar Steel Pvt. Ltd. (SGSPL) is proposing to expand existing quantity of M.S. ingots &/or Billets manufacturing from 36,000 TPA to 1, 56,000 TPA & capacity of Runner Riser production will remain the same i.e. 720 MTA. This expansion activity will take place within the existing plant premises at Gat No. 1076/77, Golegaon Road, Village – Markal, Tal. - Khed, Dist. – Pune.

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

### 3. 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 SGSPL has identified this opportunity and has decided to become a competitive leader in boosting field of metallurgical sector.

### 4. SITE SELECTION & JUSTIFICATION THEREOF

Proposed expansion will be done within the existing plant 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.

### 5. BRIEF DESCRIPTION OF NATURE, SIZE, LOCATION OF THE PROJECT AND ITS IMPORTANCE TO THE COUNTRY, REGION

**Table 1: Brief Description of Nature, Size and Location of Existing & Proposed Project**

Sr. No.	Particular	Description			
1	Nature & size of existing project	Proposed Expansion of Existing Metallurgical unit by M/s Sant Gyaneshwar Steels Pvt. Ltd. for Production of MS Ingots &/or Billets & Runner Riser			
2 A	Total Area of project	Total plot area is 15700 Sq.m			
2 B	Area Details (Sq.m)	<b>Particular</b>	<b>Existing</b>	<b>Proposed</b>	<b>Total</b>
		Built up Area	2016.52	1616.94	3633.46
		Road Area	484.00	2462.68	2946.68
		Garden/Open Area	3699.48	1471.19	5170.67

		Total	6200	5550.81	11750.81
3	Raw Materials (MT/M)	M.S. Scrap	3170	5800	8970
		Additives/ Ferro Alloys	30	110	140
		Bricks/Reformatories	100	100	200
		Sponge Iron	0	5000	5000
4	Products & By-products (MTA)	MS Ingots &/or Billets	36,000	1,20,000	1,56,000
		Runner Riser	720	0	720
	Capacity of Electric Furnace (MT/Month)	-	6000 (At present, a furnace of 3000 MT is there, which will be upgraded to a Total Capacity of - 6000 MT/M)	7000	13000
	Power requirement	-	4990 KVA + Electricity requirement of existing furnace is 4500KWH/hr	10,000 KVA + Electricity requirement of proposed furnace is 9500 KWH/hr	14990 KVA + 14000 KWH/hr
5	Capacity of DG set (KVA)	-	1 x 250 KVA	1x250 KVA	2 x 250 each
6	Fuel Requirement (lit/hr)	Fuel Type- LDO	6 lit/hr	6 lit/hr	12 lit/hr
7	Stack Details	-	Existing Electric Furnace stack ht. 30 m	Proposed Electric Furnace stack ht. 30 m	Total- 2 stacks: 1 Stack of 30 m for existing furnace & 1 stack of 30 m for proposed furnace
		-	Existing D.G. Set (250 KVA) stack ht. 2 m	Proposed D.G. Set (250KVA) stack ht. 3 m	Total 2 No.s: (1 Existing + 1 Proposed)
8	Air Pollution Control Equipment for boiler	-	Proper stack height with Fume extraction system & dust collector is provided	Proper stack height with Fume extraction system & dust collector will be provided	-
9	Total water Requirement for unit (CMD)	Domestic	1.2	1.9	3.1
		Industrial Process	0	0	0
		Cooling Purpose	60	50	110
		Gardening	0.5	1.3	1.8
10	Waste water generation (CMD)	Domestic	1.0	1.7	2.7
		Industrial Process	0	0	0
		Cooling Purpose	0	0	0
		Gardening	0	0	0
11	Manpower		27	43	70
12	Solid Waste	Scrap	120	360	480

(MT/A)	Slag	1200	8400	9600
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**Table 2: Environmental settings of Project**

Sr. No	Particular	Description
<b>Location of the project site</b>		
1	Plot No.	1076/77
2	Village	Markal
3	Taluka	Khed
4	District	Pune
5	State	Maharashtra
6	Latitude/Longitude	Latitude 18 <sup>0</sup> 39'39.11" N Longitude: 73 <sup>0</sup> 57'29.10" E
7	Average altitude above mean MSL	1866 ft above MSL
8	Corner Co-ordinates of the plant site	Coordinates of the project site as follows A 18 <sup>0</sup> 39'45.27" N 73 <sup>0</sup> 57'29.39" E B 18 <sup>0</sup> 39'44.99" N 73 <sup>0</sup> 57'30.81" E C 18 <sup>0</sup> 39'33.69" N 73 <sup>0</sup> 57'27.49" E D 18 <sup>0</sup> 39'33.78" N 73 <sup>0</sup> 57'29.10" E
9	Toposheet Number	E43I2, E43H14
<b>Environmental setting details (with approximate aerial distance &amp; direction from the plant site)</b>		
10	Nearest village	Markal :1.46 km
11	Nearest National highway/ State highway	Pune – Nashik Highway (11.88 km in W Direction)
12	Nearest Railway station	Kasarwadi Railway station (15.88 km in SW Direction)
13	Nearest airport	Pune Airport 9.50 Km in SW direction
14	Nearest major city	Pimpri-Chinchwad : 17 km in SW direction
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	Indrayani River – 1.68 km away from project site in 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 15 km radius

## 6. MAJOR REQUIREMENT FOR THE PROPOSED PROJECT

### 6.1. RAW MATERIALS REQUIREMENT

**Table 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	3170	5800	8970	Locally available	Truck
2	Additives/ Ferro Alloys	30	110	140	Locally available	Truck
3	Bricks/ Reformatories	100	100	200	Locally available	Truck
4	Sponge Iron	0	5000	5000	Locally available	Truck



## 6.2 POWER REQUIREMENT

The power requirement of the existing unit is 4990 KVA. After expansion the power requirement will be 10,000 KVA. This demand will be met by sourcing the power from MSEDCL from nearby Sub-station. Electricity requirement of existing furnace is 4500KWH/hr & that of proposed furnace is 9500 KWH/hr.

## 6.3 MANPOWER REQUIREMENT

Additional manpower is needed to operate the expansion unit plant will be 43. More than 85 % 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 20. Construction workers will be from nearby villages. Residential facility will not be required for the construction personnel.

## 6.4 WATER REQUIREMENT FOR PROPOSED PROJECT

**Table 4: Water Budget of proposed expansion project**

Sr. No.	Particular	Quantity (m <sup>3</sup> / day)	
		Water Consumption	Effluent Generation
1	Domestic	1.9	1.7
2	Industrial	0	0
3	cooling	50	0
4	Gardening	1.3	0
<b>Total</b>		<b>53.2</b>	<b>1.7</b>

**Total water requirement for proposed expansion project = 53.2 m3/day**

**Fresh water requirement for proposed expansion project = 3.2 m3/day**

## 6.5 LANDREQUIREMENT

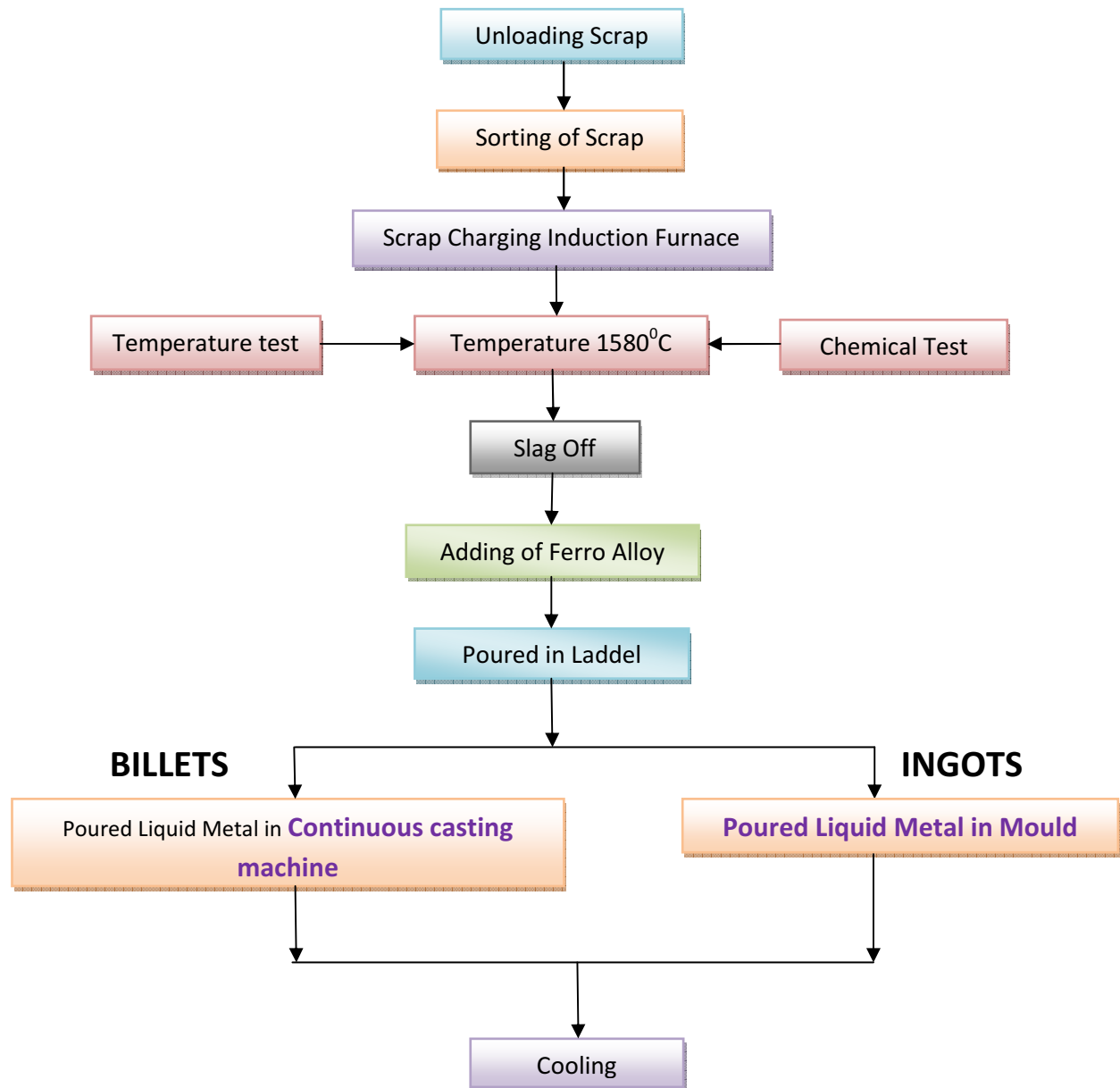
The Company site is located Gat No. 1076/77, Golegaon Road, and Village -Markal, Taluka- Khed, District – Pune. Total plot area of industry is 15700 Sq.m. The details of proposed land use is tabulated in following table-

**Table 5: Details of Land Use**

Sr. No.	Particular	Existing	Proposed	Total Area (Sq.m.)
1	Built up Area	2016.52	1616.94	3633.46
2	Road Area (Sq.m)	484.00	2462.68	2946.68
3	Garden/Open Area	3699.48	1471.19	5170.67

## 7. PROCESS DESCRIPTION ALONG WITH MAJOR EQUIPMENTS AND MACHINERIES, PROCESS FLOW SHEET (QUANTATIVE) FROM RAW MATERIAL TO PRODUCTS

Figure 1: Manufacturing process M.S. Ingots & Runner Riser



## 8. DESCRIPTION OF ENVIRONMENT

Baseline study in this Environmental Impact Assessment report was conducted for a period of three months during 1<sup>st</sup> March 2018 to 31<sup>st</sup> May 2018.

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.

Ambient air quality monitoring has been carried out at 8 stations in the study area on 24 hourly bases. Ambient Air Quality Monitoring reveals that the concentrations of PM<sub>10</sub> and PM<sub>2.5</sub> for all the 8 AAQM stations were found between 77.5 to 25 µg/m<sup>3</sup> and 35.5 to 12 µg/m<sup>3</sup>. The concentrations of SO<sub>2</sub> and NO<sub>x</sub> were found to be in range of 7.7 to 4 µg/m<sup>3</sup> and 41.1 to 21.5 µg/m<sup>3</sup> respectively. The concentration of CO is in range of 0.65 to 0.175 mg/m<sup>3</sup>. The resultant concentration of the parameters is well within the prescribed limits of GPCB & NAAQS.

Prediction of impacts on air environment has been carried out by employing a mathematical model. In the present case, **Industrial Source Complex Short-Term (ISCST3)** dispersion model based on steady state Gaussian plume dispersion, designed for multiple point sources for short term has been used for predicting the ground level concentrations. Results of mathematical modelling reveals that the maximum incremental short term 24 hourly ground level concentrations for PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub> and NO<sub>x</sub> likely to be encountered during pre-monsoon season are 2.38 µg/m<sup>3</sup>, 1.44 µg/m<sup>3</sup>, 4.06 µg/m<sup>3</sup> and 7.22 µg/m<sup>3</sup> respectively occurring at a distance of about 2-km in the South West direction.

Noise level monitoring has been carried out at 8 stations in the study area. Noise level varies from 49.7 to 56.75 Leq dB (A) during day time and from 44.15 to 49.55 Leq dB (A) during night time. 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.

Surface water sampling has been carried out at 1 station in the study area. SGSPL is going to achieve Zero liquid discharge in surface water for the proposed project & hence there is no effect on the river water quality due to this industry.

Ground water sampling has been carried out at 8 stations in the study area. Analysis results of ground water reveals that pH varies from 6.7 to 7.5, Total hardness varies from 281.88 to 411.68 mg/l, Total dissolved solids vary from 366 to 623 mg/l.

Soil samples collected from 8 identified locations indicate pH value ranges from 6.97 to 8.03, which shows that the soil is having near neutral pH. Water holding capacity ranges from 28.50 % to 61.76 % in the soil samples. Free Ammonical nitrogen is found in ranges from 0.14 % to 0.19 % and Potassium is found to be ranging from 1 mg/kg to 8 mg/kg. Soil of the area is found to be suitable for agricultural activities.

The study area is delineated in 10 km radius from the project site. The proposed project site is surrounded by agricultural land. There are no any national parks, wildlife sanctuaries, biosphere reserves or critically polluted areas in the 10 km radius from the proposed project site. No Archeological site is present within the study area. No forest is located in the study area. No Schedule - I fauna was found during the field survey. There is intense anthropogenic pressure on flora, fauna and forest resources, which are observed to be dwindling. However, no rare, endangered & threatened plant species was observed in the study area.

Population of study area is 114,796. Scheduled Caste fraction of the population of the study area (10 km) is 10,542 (9.18%) and Scheduled Tribe 3298 (2.87 %). Literacy rate of the area is 69.59 %. Population of the workers engaged in occupation is 45.80 %. Of these 49,153 (42.81 %) are main workers and 3426 (2.98 %) are marginal workers. Remaining, 62,215 (54.19 %) of the total population is considered as non-workers. The socio-economic analysis of the study area shows that in terms of education could be improved as the literacy rate is quite low i.e. 69.59 %. With a high dependency ratio, the overall socio-economic status of the target population could improve with increase in work participation rate. Hence, the long-term positive impacts on socio-economic conditions of the area are anticipated.

## 9. ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

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

**Table 6: 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 construction 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. Wherever required check dams and dykes will be provided for control of soil erosion.</li> <li>4. 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>5. Appropriate sanitation facilities will be provided for the workers to reduce impact on surface water quality.</li> <li>6. Construction wastes will not be discharged to surface or ground water bodies.</li> <li>7. 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. Vehicles with internal combustion engines will be provided with silencers and mufflers in order to reduce noise levels.</li> </ol> <p>Green belt will be developed to attenuate noise impacts and to reduce noise pollution</p>

4.	Soil	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. Litter disposal and collection points will be established around the work sites. Empty packaging materials, drums, glass, tin, paper, plastic, pet bottles, wood, thermocol and other packaging materials, etc. will be disposed through recyclers. The construction spoils will be temporarily stored at designated dumpsite located inside the plant premises.
<b>(B) Operation Phase</b>		
1.	Air	Adequate stack height to the proposed electric furnace, Fume extraction system & dust collector will be provided
2.	Fugitive	Internal roads paved, leveled, no undulations, no sharp curves, slow speed. Tree plantation on surrounding available area.
3.	Water and Waste Water	1. No effluent generation will take place from proposed industry. Hence no provision of ETP. 2. Rain Water Harvesting will be done.
4.	Solid Waste	100% collection every day. Segregated and treated/ disposed per SPCB norms.
6.	Noise	Smooth roads. Sturdy foundation. No Vibrations. Acoustic enclosures to existing DG Set as per manufacturers' design. Use as standby only. Trees are planted around. Side cladding. Large No. of tree barriers.
7.	Socio-economic	Employment generation, Community Skills Development, Improved Standard of Living, Community Organizational Capacity Development Economic Exposure and Development

## 10. ENVIRONMENTAL MONITORING PROGRAMME

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

**Table 7: Schedule for Environmental Monitoring**

Sr. No.	Particulars	Parameters	Location	Frequency
1	Flue gases from furnace	PM <sub>10</sub> , PM <sub>2.5</sub> , SO <sub>2</sub> and NO <sub>x</sub>	Stack monitoring	Monthly
2	Ambient air quality	PM <sub>10</sub> , PM <sub>2.5</sub> , SO <sub>2</sub> and NO <sub>x</sub> , CO.	<ul style="list-style-type: none"> <li>Check wind direction</li> <li>Select two point in upwind direction at 120° from site</li> <li>Take one point within site at down wind direction from furnace about 1 km distance</li> <li>Take two points beyond site in down wind direction about 2 km distance at 120° from site opposite to points taken in upwind direction.</li> </ul>	24 hrs sample, half yearly
3	Water (Ground Water and Surface Water)	As per drinking water standards	<ul style="list-style-type: none"> <li>Take one upstream and downstream sample of surface water. Minimum distance 500 m.</li> <li>One point upstream at higher elevation from plant site. Also at lower contour point at 3 locations.</li> </ul>	Quarterly

4	Soil	organic & inorganic matter	• Outside plant boundary at lower contour	Pre & post monsoon
5	Noise level, work zone (hourly)	Equivalent noise level-dB (A)	<ul style="list-style-type: none"> <li>• One location in furnace house.</li> <li>• One location near I.D. Fan.</li> <li>• Especially monitor noise during soot blowing.</li> <li>• Four locations around plant boundary</li> </ul>	Quarterly
6	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
7	Environmental Audit	As per Direction of ISO 14001	-	Once in a Year
8	Water utilization, m <sup>3</sup> /d	-	For process, domestic, cooling and boiler	Daily
9	Power utilization	-	For air pollution control facility at boilers and for STP	Daily

## 11. ADDITIONAL STUDIES

Additional Studies conducted as per revised ToR issued by SEAC-I in its 168<sup>th</sup> meeting dated 26<sup>th</sup> August 2019, are Risk Assessment and Disaster Management Plan. Public Hearing is to be conducted for the project.

### RISK ASSESSMENT

An industry with its complex nature of activities involving various plant machineries, raw materials, products, operations, intermediates and environmental discharge has a number of associated hazards. A minor failure can lead to major failure resulting into a disaster causing heavy losses to life, property and environmental. Risk assessment studies are being conducted to ensure safety and reliability of any new plant, through a systematic and scientific methods to identify possible failures and prevent their occurrences before they actually cause disasters and production loss.

#### Objectives of the risk assessment study

1. To identify the major hazards relating to fire, explosion and toxicity due to storage and handling of hazardous chemicals.
2. To visualize maximum credible accident scenarios
3. To analyze and quantify primary and secondary effects and damage potentials of the identified maximum credible accident scenarios using standard procedure.
4. To study the nature of exposures, pathways and consequences of maximum credible accident scenarios and characteristics of risk levels.
5. To provide guidelines for disaster management plan.

### DISASTER MANAGEMENT PLAN

A major disaster in a work is the one, which has potential to cause serious injury or loss of life. It may cause extensive damage to property and serious disruption both inside and outside the works. A Disaster would normally require the assistance of outside emergency services to handle it effectively. Whatever are the causative factors, like plant failure; human error; earthquake; vehicle crash; sabotage etc, they will normally manifest in three basic forms viz, fire, explosion, and *or* toxic release.

#### The objectives of disaster management plan include the following-

1. Controlling the disaster, localizing the disaster and eliminating the hazard

2. Welfare of person managing the disaster.
3. Head count and rescue operations.
4. Treatment of injured.
5. Safeguarding others by timely evacuation.
6. Minimizing damage to property and environment.
7. Informing and assisting relatives.
  - i. Informing and collaborating with statutory authorities.
  - ii. Informing the news media.
  - iii. Preserving records and organizing investigations.
  - iv. Ensuring safety of the works before personnel re-enter and resume work.
  - v. Investigating and taking steps to prevent recurrence.
  - vi. Resorting normalcy

## **12. PROJECT BENEFITS**

### **Implementation of proposed project will result in:**

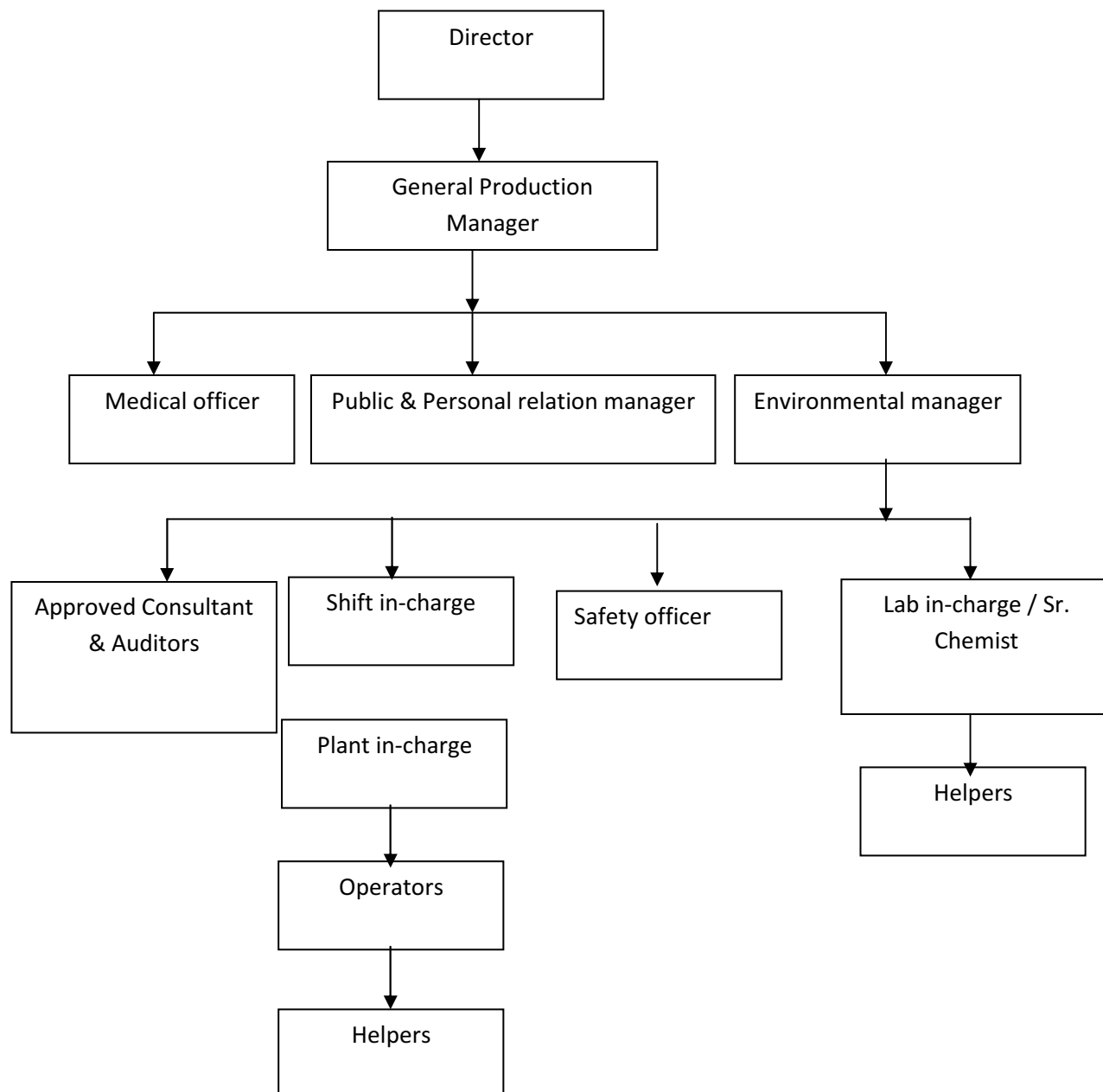
- Improvement in the physical infrastructure
- Improvement in the social infrastructure
- Improvement in employment potential

## **13. ENVIRONMENT MANAGEMENT PLAN**

Environmental Management Plan is detailed under the following heads:

- Air Quality Management
- Noise Management
- Waste Water Management
- Solid & Hazardous Waste Management
- Energy Conservation
- Greenbelt Development & Plantation Programme
- Occupational Health & Safety Measures.
- Enterprise social commitment (ESC)- Industry will utilize 1% of its project cost for ESC.

**Figure 2: Environment Management Cell**



**Table 8: 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
3	Quantity of effluent	To be measured daily and in-plant control. Not to exceed any time	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 ETP 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, bagasse to be baled, molasses not in open pits, press mud to be carted out every day	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
<b>Legends:</b> ENV-M- Environmental Manager, LAB- I- Lab incharge, ENV- C- Environmental Chemist.			

## 14. CONCLUSION

The proposed 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.

# **EXECUTIVE SUMMARY**

**Of**

## **ENVIRONMENTAL IMPACT ASSESSMENT REPORT**

**FOR**

### **PUBLIC HEARING**

**OF**

## **Proposed Expansion of Existing Metallurgical Industry**

**By**

**M/s. SANT GYANESHWAR STEELS PVT. LTD.**

Gat No. 1076/77, Golegaon Road, Village – Markal, Taluka – Khed,  
District – Pune, Maharashtra

**SUBMITTED TO**

**MAHARSHTRA POLLUTION CONTROL BOARD**

**PREPARED BY**



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Sr. No.	Particular	Description			
1	Nature & size of existing project	Proposed Expansion of Existing Metallurgical unit by M/s Sant Gyaneshwar Steels Pvt. Ltd. for Production of MS Ingots &/or Billets & Runner Riser			
2 A	Total Area of project	Total plot area is 15700 Sq.m			
2 B	Area Details (Sq.m)	<b>Particular</b>	<b>Existing</b>	<b>Proposed</b>	<b>Total</b>
		Built up Area	2016.52	1616.94	3633.46
		Road Area	484.00	2462.68	2946.68
		Garden/Open Area	3699.48	1471.19	5170.67

		Total	6200	5550.81	11750.81
3	Raw Materials (MT/M)	M.S. Scrap	3170	5800	8970
		Additives/ Ferro Alloys	30	110	140
		Bricks/Reformatories	100	100	200
		Sponge Iron	0	5000	5000
4	Products & By-products (MTA)	MS Ingots &/or Billets	36,000	1,20,000	1,56,000
		Runner Riser	720	0	720
	Capacity of Electric Furnace (MT/Month)	-	6000 (At present, a furnace of 3000 MT is there, which will be upgraded to a Total Capacity of - 6000 MT/M)	7000	13000
	Power requirement	-	4990 KVA + Electricity requirement of existing furnace is 4500KWH/hr	10,000 KVA + Electricity requirement of proposed furnace is 9500 KWH/hr	14990 KVA + 14000 KWH/hr
5	Capacity of DG set (KVA)	-	1 x 250 KVA	1x250 KVA	2 x 250 each
6	Fuel Requirement (lit/hr)	Fuel Type- LDO	6 lit/hr	6 lit/hr	12 lit/hr
7	Stack Details	-	Existing Electric Furnace stack ht. 30 m	Proposed Electric Furnace stack ht. 30 m	Total- 2 stacks: 1 Stack of 30 m for existing furnace & 1 stack of 30 m for proposed furnace
		-	Existing D.G. Set (250 KVA) stack ht. 2 m	Proposed D.G. Set (250KVA) stack ht. 3 m	Total 2 No.s: (1 Existing + 1 Proposed)
8	Air Pollution Control Equipment for boiler	-	Proper stack height with Fume extraction system & dust collector is provided	Proper stack height with Fume extraction system & dust collector will be provided	-
9	Total water Requirement for unit (CMD)	Domestic	1.2	1.9	3.1
		Industrial Process	0	0	0
		Cooling Purpose	60	50	110
		Gardening	0.5	1.3	1.8
10	Waste water generation (CMD)	Domestic	1.0	1.7	2.7
		Industrial Process	0	0	0
		Cooling Purpose	0	0	0
		Gardening	0	0	0
11	Manpower		27	43	70
12	Solid Waste	Scrap	120	360	480

(MT/A)	Slag	1200	8400	9600
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**Table 2: Environmental settings of Project**

Sr. No	Particular	Description
<b>Location of the project site</b>		
1	Plot No.	1076/77
2	Village	Markal
3	Taluka	Khed
4	District	Pune
5	State	Maharashtra
6	Latitude/Longitude	Latitude 18 <sup>0</sup> 39'39.11" N Longitude: 73 <sup>0</sup> 57'29.10" E
7	Average altitude above mean MSL	1866 ft above MSL
8	Corner Co-ordinates of the plant site	Coordinates of the project site as follows A 18 <sup>0</sup> 39'45.27" N 73 <sup>0</sup> 57'29.39" E B 18 <sup>0</sup> 39'44.99" N 73 <sup>0</sup> 57'30.81" E C 18 <sup>0</sup> 39'33.69" N 73 <sup>0</sup> 57'27.49" E D 18 <sup>0</sup> 39'33.78" N 73 <sup>0</sup> 57'29.10" E
9	Toposheet Number	E43I2, E43H14
<b>Environmental setting details (with approximate aerial distance &amp; direction from the plant site)</b>		
10	Nearest village	Markal :1.46 km
11	Nearest National highway/ State highway	Pune – Nashik Highway (11.88 km in W Direction)
12	Nearest Railway station	Kasarwadi Railway station (15.88 km in SW Direction)
13	Nearest airport	Pune Airport 9.50 Km in SW direction
14	Nearest major city	Pimpri-Chinchwad : 17 km in SW direction
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	Indrayani River – 1.68 km away from project site in 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 15 km radius

## 6. MAJOR REQUIREMENT FOR THE PROPOSED PROJECT

### 6.1. RAW MATERIALS REQUIREMENT

**Table 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	3170	5800	8970	Locally available	Truck
2	Additives/ Ferro Alloys	30	110	140	Locally available	Truck
3	Bricks/ Reformatories	100	100	200	Locally available	Truck
4	Sponge Iron	0	5000	5000	Locally available	Truck

## 6.2 POWER REQUIREMENT

The power requirement of the existing unit is 4990 KVA. After expansion the power requirement will be 10,000 KVA. This demand will be met by sourcing the power from MSEDCL from nearby Sub-station. Electricity requirement of existing furnace is 4500KWH/hr & that of proposed furnace is 9500 KWH/hr.

## 6.3 MANPOWER REQUIREMENT

Additional manpower is needed to operate the expansion unit plant will be 43. More than 85 % 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 20. Construction workers will be from nearby villages. Residential facility will not be required for the construction personnel.

## 6.4 WATER REQUIREMENT FOR PROPOSED PROJECT

**Table 4: Water Budget of proposed expansion project**

Sr. No.	Particular	Quantity (m <sup>3</sup> / day)	
		Water Consumption	Effluent Generation
1	Domestic	1.9	1.7
2	Industrial	0	0
3	cooling	50	0
4	Gardening	1.3	0
<b>Total</b>		<b>53.2</b>	<b>1.7</b>

**Total water requirement for proposed expansion project = 53.2 m3/day**

**Fresh water requirement for proposed expansion project = 3.2 m3/day**

## 6.5 LANDREQUIREMENT

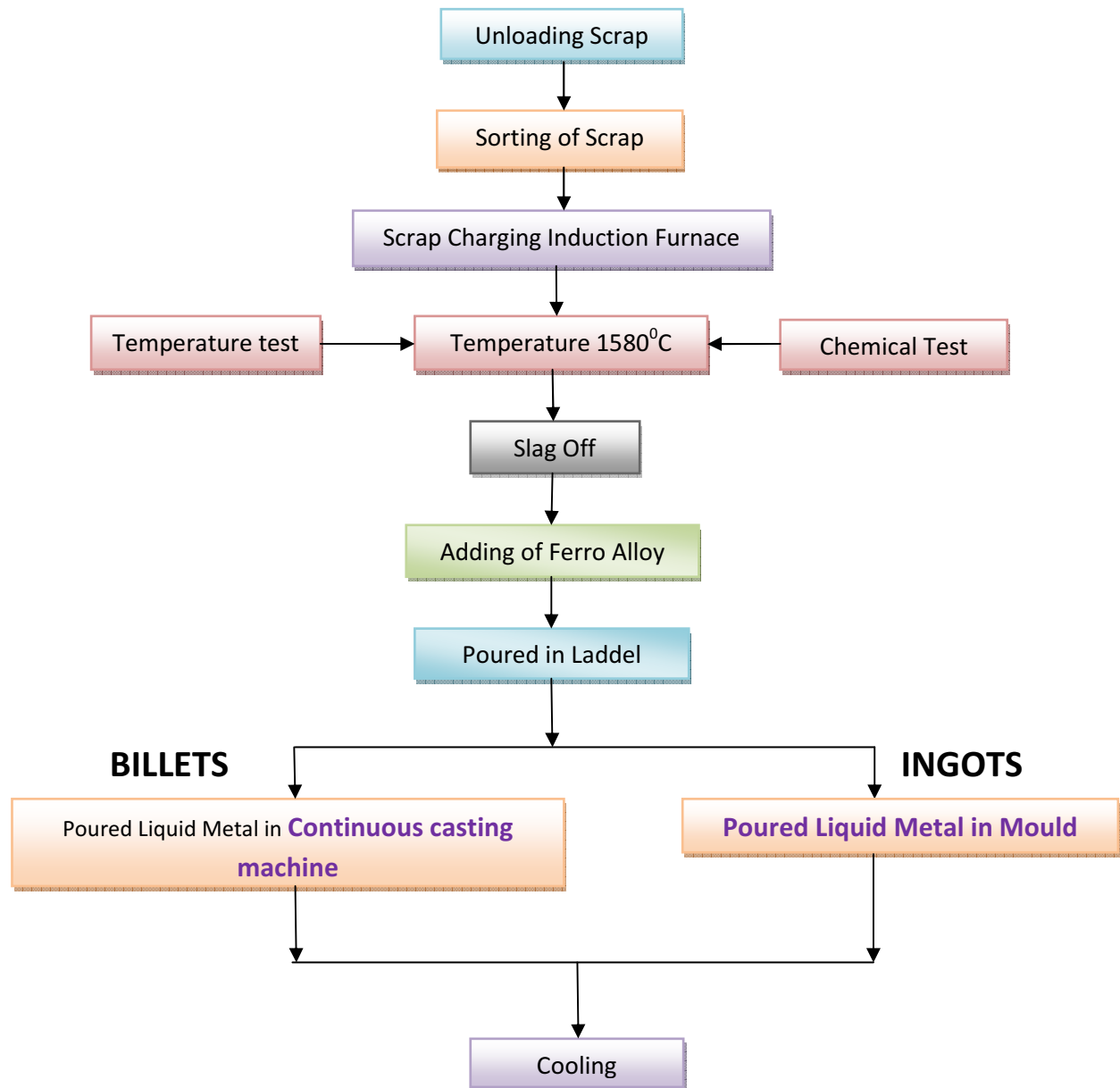
The Company site is located Gat No. 1076/77, Golegaon Road, and Village -Markal, Taluka- Khed, District – Pune. Total plot area of industry is 15700 Sq.m. The details of proposed land use is tabulated in following table-

**Table 5: Details of Land Use**

Sr. No.	Particular	Existing	Proposed	Total Area (Sq.m.)
1	Built up Area	2016.52	1616.94	3633.46
2	Road Area (Sq.m)	484.00	2462.68	2946.68
3	Garden/Open Area	3699.48	1471.19	5170.67

## 7. PROCESS DESCRIPTION ALONG WITH MAJOR EQUIPMENTS AND MACHINERIES, PROCESS FLOW SHEET (QUANTATIVE) FROM RAW MATERIAL TO PRODUCTS

Figure 1: Manufacturing process M.S. Ingots & Runner Riser



## 8. DESCRIPTION OF ENVIRONMENT

Baseline study in this Environmental Impact Assessment report was conducted for a period of three months during 1<sup>st</sup> March 2018 to 31<sup>st</sup> May 2018.

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.

Ambient air quality monitoring has been carried out at 8 stations in the study area on 24 hourly bases. Ambient Air Quality Monitoring reveals that the concentrations of PM<sub>10</sub> and PM<sub>2.5</sub> for all the 8 AAQM stations were found between 77.5 to 25 µg/m<sup>3</sup> and 35.5 to 12 µg/m<sup>3</sup>. The concentrations of SO<sub>2</sub> and NO<sub>x</sub> were found to be in range of 7.7 to 4 µg/m<sup>3</sup> and 41.1 to 21.5 µg/m<sup>3</sup> respectively. The concentration of CO is in range of 0.65 to 0.175 mg/m<sup>3</sup>. The resultant concentration of the parameters is well within the prescribed limits of GPCB & NAAQS.

Prediction of impacts on air environment has been carried out by employing a mathematical model. In the present case, **Industrial Source Complex Short-Term (ISCST3)** dispersion model based on steady state Gaussian plume dispersion, designed for multiple point sources for short term has been used for predicting the ground level concentrations. Results of mathematical modelling reveals that the maximum incremental short term 24 hourly ground level concentrations for PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub> and NO<sub>x</sub> likely to be encountered during pre-monsoon season are 2.38 µg/m<sup>3</sup>, 1.44 µg/m<sup>3</sup>, 4.06 µg/m<sup>3</sup> and 7.22 µg/m<sup>3</sup> respectively occurring at a distance of about 2-km in the South West direction.

Noise level monitoring has been carried out at 8 stations in the study area. Noise level varies from 49.7 to 56.75 Leq dB (A) during day time and from 44.15 to 49.55 Leq dB (A) during night time. 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.

Surface water sampling has been carried out at 1 station in the study area. SGSPL is going to achieve Zero liquid discharge in surface water for the proposed project & hence there is no effect on the river water quality due to this industry.

Ground water sampling has been carried out at 8 stations in the study area. Analysis results of ground water reveals that pH varies from 6.7 to 7.5, Total hardness varies from 281.88 to 411.68 mg/l, Total dissolved solids vary from 366 to 623 mg/l.

Soil samples collected from 8 identified locations indicate pH value ranges from 6.97 to 8.03, which shows that the soil is having near neutral pH. Water holding capacity ranges from 28.50 % to 61.76 % in the soil samples. Free Ammonical nitrogen is found in ranges from 0.14 % to 0.19 % and Potassium is found to be ranging from 1 mg/kg to 8 mg/kg. Soil of the area is found to be suitable for agricultural activities.

The study area is delineated in 10 km radius from the project site. The proposed project site is surrounded by agricultural land. There are no any national parks, wildlife sanctuaries, biosphere reserves or critically polluted areas in the 10 km radius from the proposed project site. No Archeological site is present within the study area. No forest is located in the study area. No Schedule - I fauna was found during the field survey. There is intense anthropogenic pressure on flora, fauna and forest resources, which are observed to be dwindling. However, no rare, endangered & threatened plant species was observed in the study area.

Population of study area is 114,796. Scheduled Caste fraction of the population of the study area (10 km) is 10,542 (9.18%) and Scheduled Tribe 3298 (2.87 %). Literacy rate of the area is 69.59 %. Population of the workers engaged in occupation is 45.80 %. Of these 49,153 (42.81 %) are main workers and 3426 (2.98 %) are marginal workers. Remaining, 62,215 (54.19 %) of the total population is considered as non-workers. The socio-economic analysis of the study area shows that in terms of education could be improved as the literacy rate is quite low i.e. 69.59 %. With a high dependency ratio, the overall socio-economic status of the target population could improve with increase in work participation rate. Hence, the long-term positive impacts on socio-economic conditions of the area are anticipated.



## 9. ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

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

**Table 6: 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 construction 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. Wherever required check dams and dykes will be provided for control of soil erosion.</li> <li>4. 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>5. Appropriate sanitation facilities will be provided for the workers to reduce impact on surface water quality.</li> <li>6. Construction wastes will not be discharged to surface or ground water bodies.</li> <li>7. 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. Vehicles with internal combustion engines will be provided with silencers and mufflers in order to reduce noise levels.</li> </ol> <p>Green belt will be developed to attenuate noise impacts and to reduce noise pollution</p>

4.	Soil	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. Litter disposal and collection points will be established around the work sites. Empty packaging materials, drums, glass, tin, paper, plastic, pet bottles, wood, thermocol and other packaging materials, etc. will be disposed through recyclers. The construction spoils will be temporarily stored at designated dumpsite located inside the plant premises.
<b>(B) Operation Phase</b>		
1.	Air	Adequate stack height to the proposed electric furnace, Fume extraction system & dust collector will be provided
2.	Fugitive	Internal roads paved, leveled, no undulations, no sharp curves, slow speed. Tree plantation on surrounding available area.
3.	Water and Waste Water	1. No effluent generation will take place from proposed industry. Hence no provision of ETP. 2. Rain Water Harvesting will be done.
4.	Solid Waste	100% collection every day. Segregated and treated/ disposed per SPCB norms.
6.	Noise	Smooth roads. Sturdy foundation. No Vibrations. Acoustic enclosures to existing DG Set as per manufacturers' design. Use as standby only. Trees are planted around. Side cladding. Large No. of tree barriers.
7.	Socio-economic	Employment generation, Community Skills Development, Improved Standard of Living, Community Organizational Capacity Development Economic Exposure and Development

## 10. ENVIRONMENTAL MONITORING PROGRAMME

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

**Table 7: Schedule for Environmental Monitoring**

Sr. No.	Particulars	Parameters	Location	Frequency
1	Flue gases from furnace	PM <sub>10</sub> , PM <sub>2.5</sub> , SO <sub>2</sub> and NO <sub>x</sub>	Stack monitoring	Monthly
2	Ambient air quality	PM <sub>10</sub> , PM <sub>2.5</sub> , SO <sub>2</sub> and NO <sub>x</sub> , CO.	<ul style="list-style-type: none"> <li>Check wind direction</li> <li>Select two point in upwind direction at 120° from site</li> <li>Take one point within site at down wind direction from furnace about 1 km distance</li> <li>Take two points beyond site in down wind direction about 2 km distance at 120° from site opposite to points taken in upwind direction.</li> </ul>	24 hrs sample, half yearly
3	Water (Ground Water and Surface Water)	As per drinking water standards	<ul style="list-style-type: none"> <li>Take one upstream and downstream sample of surface water. Minimum distance 500 m.</li> <li>One point upstream at higher elevation from plant site. Also at lower contour point at 3 locations.</li> </ul>	Quarterly

4	Soil	organic & inorganic matter	• Outside plant boundary at lower contour	Pre & post monsoon
5	Noise level, work zone (hourly)	Equivalent noise level-dB (A)	<ul style="list-style-type: none"> <li>• One location in furnace house.</li> <li>• One location near I.D. Fan.</li> <li>• Especially monitor noise during soot blowing.</li> <li>• Four locations around plant boundary</li> </ul>	Quarterly
6	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
7	Environmental Audit	As per Direction of ISO 14001	-	Once in a Year
8	Water utilization, m <sup>3</sup> /d	-	For process, domestic, cooling and boiler	Daily
9	Power utilization	-	For air pollution control facility at boilers and for STP	Daily

## 11. ADDITIONAL STUDIES

Additional Studies conducted as per revised ToR issued by SEAC-I in its 168<sup>th</sup> meeting dated 26<sup>th</sup> August 2019, are Risk Assessment and Disaster Management Plan. Public Hearing is to be conducted for the project.

### RISK ASSESSMENT

An industry with its complex nature of activities involving various plant machineries, raw materials, products, operations, intermediates and environmental discharge has a number of associated hazards. A minor failure can lead to major failure resulting into a disaster causing heavy losses to life, property and environmental. Risk assessment studies are being conducted to ensure safety and reliability of any new plant, through a systematic and scientific methods to identify possible failures and prevent their occurrences before they actually cause disasters and production loss.

#### Objectives of the risk assessment study

1. To identify the major hazards relating to fire, explosion and toxicity due to storage and handling of hazardous chemicals.
2. To visualize maximum credible accident scenarios
3. To analyze and quantify primary and secondary effects and damage potentials of the identified maximum credible accident scenarios using standard procedure.
4. To study the nature of exposures, pathways and consequences of maximum credible accident scenarios and characteristics of risk levels.
5. To provide guidelines for disaster management plan.

### DISASTER MANAGEMENT PLAN

A major disaster in a work is the one, which has potential to cause serious injury or loss of life. It may cause extensive damage to property and serious disruption both inside and outside the works. A Disaster would normally require the assistance of outside emergency services to handle it effectively. Whatever are the causative factors, like plant failure; human error; earthquake; vehicle crash; sabotage etc, they will normally manifest in three basic forms viz, fire, explosion, and *or* toxic release.

#### The objectives of disaster management plan include the following-

1. Controlling the disaster, localizing the disaster and eliminating the hazard

2. Welfare of person managing the disaster.
3. Head count and rescue operations.
4. Treatment of injured.
5. Safeguarding others by timely evacuation.
6. Minimizing damage to property and environment.
7. Informing and assisting relatives.
  - i. Informing and collaborating with statutory authorities.
  - ii. Informing the news media.
  - iii. Preserving records and organizing investigations.
  - iv. Ensuring safety of the works before personnel re-enter and resume work.
  - v. Investigating and taking steps to prevent recurrence.
  - vi. Resorting normalcy

## **12. PROJECT BENEFITS**

### **Implementation of proposed project will result in:**

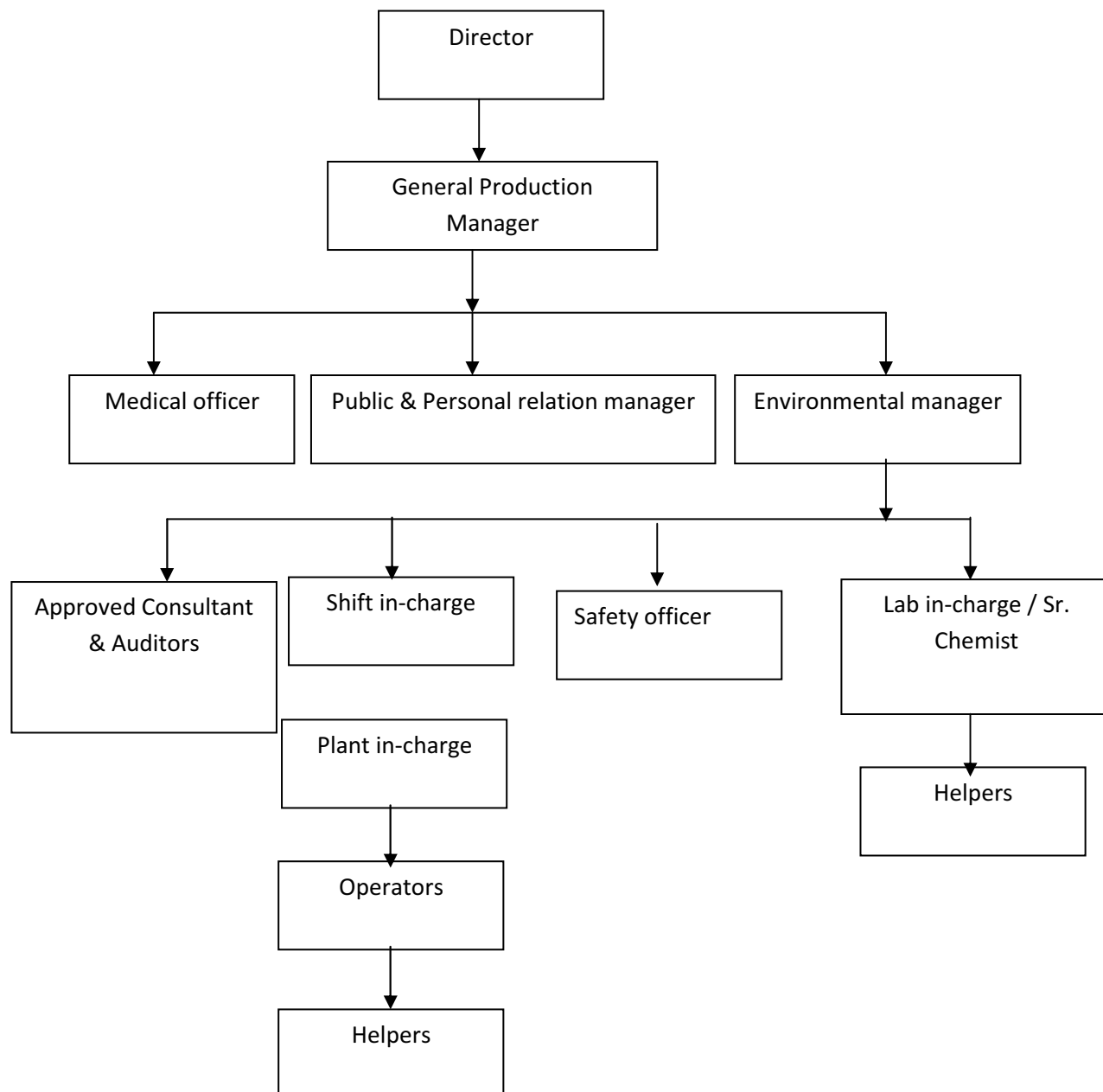
- Improvement in the physical infrastructure
- Improvement in the social infrastructure
- Improvement in employment potential

## **13. ENVIRONMENT MANAGEMENT PLAN**

Environmental Management Plan is detailed under the following heads:

- Air Quality Management
- Noise Management
- Waste Water Management
- Solid & Hazardous Waste Management
- Energy Conservation
- Greenbelt Development & Plantation Programme
- Occupational Health & Safety Measures.
- Enterprise social commitment (ESC)- Industry will utilize 1% of its project cost for ESC.

**Figure 2: Environment Management Cell**



**Table 8: 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
3	Quantity of effluent	To be measured daily and in-plant control. Not to exceed any time	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 ETP 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, bagasse to be baled, molasses not in open pits, press mud to be carted out every day	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
<b>Legends:</b> ENV-M- Environmental Manager, LAB- I- Lab incharge, ENV- C- Environmental Chemist.			

## 14. CONCLUSION

The proposed 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.

# **EXECUTIVE SUMMARY**

**Of**

## **ENVIRONMENTAL IMPACT ASSESSMENT REPORT**

**FOR**

### **PUBLIC HEARING**

**OF**

## **Proposed Expansion of Existing Metallurgical Industry**

**By**

**M/s. SANT GYANESHWAR STEELS PVT. LTD.**

Gat No. 1076/77, Golegaon Road, Village – Markal, Taluka – Khed,  
District – Pune, Maharashtra

**SUBMITTED TO**

**MAHARSHTRA POLLUTION CONTROL BOARD**

**PREPARED BY**



**M/s SGM Enviro (I) Pvt. Ltd.**  
Saahil Apartments,1102/A/4B,Model Colony  
Lakaki Road,Opp. Kirloskar Bunglow,  
ShivajiNagar , Pune -411016  
QCI –NABET ACCREDITED

## EXECUTIVE SUMMARY

### 1. INTRODUCTION

M/s Sant Gyaneshwar Steel Pvt. Ltd. (SGSPL) Markal was incorporated on 21.06.1996 with Registration number 111927272. The industry is located at Gat No. 1076/77, Golegaon Road, Village – Markal, Taluka – Khed, District – Pune with the main object of manufacturing of M.S. Ingots &/or Billets & Runner Riser.

As per the EIA notification 2006 & its subsequent amendments existing project does not require Environmental Clearance. Existing industry have obtained consent to operate from Maharashtra Pollution Control Board (MPCB) & is complying with all the norms of CPCB & MPCB.

### 2. TYPE OF PROJECT

M/s. Sant Gyaneshwar Steel Pvt. Ltd. (SGSPL) is proposing to expand existing quantity of M.S. ingots &/or Billets manufacturing from 36,000 TPA to 1, 56,000 TPA & capacity of Runner Riser production will remain the same i.e. 720 MTA. This expansion activity will take place within the existing plant premises at Gat No. 1076/77, Golegaon Road, Village – Markal, Tal. - Khed, Dist. – Pune.

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

### 3. 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 SGSPL has identified this opportunity and has decided to become a competitive leader in boosting field of metallurgical sector.

### 4. SITE SELECTION & JUSTIFICATION THEREOF

Proposed expansion will be done within the existing plant 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.

### 5. BRIEF DESCRIPTION OF NATURE, SIZE, LOCATION OF THE PROJECT AND ITS IMPORTANCE TO THE COUNTRY, REGION

**Table 1: Brief Description of Nature, Size and Location of Existing & Proposed Project**

Sr. No.	Particular	Description			
1	Nature & size of existing project	Proposed Expansion of Existing Metallurgical unit by M/s Sant Gyaneshwar Steels Pvt. Ltd. for Production of MS Ingots &/or Billets & Runner Riser			
2 A	Total Area of project	Total plot area is 15700 Sq.m			
2 B	Area Details (Sq.m)	<b>Particular</b>	<b>Existing</b>	<b>Proposed</b>	<b>Total</b>
		Built up Area	2016.52	1616.94	3633.46
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		Runner Riser	720	0	720
	Capacity of Electric Furnace (MT/Month)	-	6000 (At present, a furnace of 3000 MT is there, which will be upgraded to a Total Capacity of - 6000 MT/M)	7000	13000
	Power requirement	-	4990 KVA + Electricity requirement of existing furnace is 4500KWH/hr	10,000 KVA + Electricity requirement of proposed furnace is 9500 KWH/hr	14990 KVA + 14000 KWH/hr
5	Capacity of DG set (KVA)	-	1 x 250 KVA	1x250 KVA	2 x 250 each
6	Fuel Requirement (lit/hr)	Fuel Type- LDO	6 lit/hr	6 lit/hr	12 lit/hr
7	Stack Details	-	Existing Electric Furnace stack ht. 30 m	Proposed Electric Furnace stack ht. 30 m	Total- 2 stacks: 1 Stack of 30 m for existing furnace & 1 stack of 30 m for proposed furnace
		-	Existing D.G. Set (250 KVA) stack ht. 2 m	Proposed D.G. Set (250KVA) stack ht. 3 m	Total 2 No.s: (1 Existing + 1 Proposed)
8	Air Pollution Control Equipment for boiler	-	Proper stack height with Fume extraction system & dust collector is provided	Proper stack height with Fume extraction system & dust collector will be provided	-
9	Total water Requirement for unit (CMD)	Domestic	1.2	1.9	3.1
		Industrial Process	0	0	0
		Cooling Purpose	60	50	110
		Gardening	0.5	1.3	1.8
10	Waste water generation (CMD)	Domestic	1.0	1.7	2.7
		Industrial Process	0	0	0
		Cooling Purpose	0	0	0
		Gardening	0	0	0
11	Manpower		27	43	70
12	Solid Waste	Scrap	120	360	480

(MT/A)	Slag	1200	8400	9600
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**Table 2: Environmental settings of Project**

Sr. No	Particular	Description
<b>Location of the project site</b>		
1	Plot No.	1076/77
2	Village	Markal
3	Taluka	Khed
4	District	Pune
5	State	Maharashtra
6	Latitude/Longitude	Latitude 18 <sup>0</sup> 39'39.11" N Longitude: 73 <sup>0</sup> 57'29.10" E
7	Average altitude above mean MSL	1866 ft above MSL
8	Corner Co-ordinates of the plant site	Coordinates of the project site as follows A 18 <sup>0</sup> 39'45.27" N 73 <sup>0</sup> 57'29.39" E B 18 <sup>0</sup> 39'44.99" N 73 <sup>0</sup> 57'30.81" E C 18 <sup>0</sup> 39'33.69" N 73 <sup>0</sup> 57'27.49" E D 18 <sup>0</sup> 39'33.78" N 73 <sup>0</sup> 57'29.10" E
9	Toposheet Number	E43I2, E43H14
<b>Environmental setting details (with approximate aerial distance &amp; direction from the plant site)</b>		
10	Nearest village	Markal :1.46 km
11	Nearest National highway/ State highway	Pune – Nashik Highway (11.88 km in W Direction)
12	Nearest Railway station	Kasarwadi Railway station (15.88 km in SW Direction)
13	Nearest airport	Pune Airport 9.50 Km in SW direction
14	Nearest major city	Pimpri-Chinchwad : 17 km in SW direction
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	Indrayani River – 1.68 km away from project site in 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 15 km radius

## 6. MAJOR REQUIREMENT FOR THE PROPOSED PROJECT

### 6.1. RAW MATERIALS REQUIREMENT

**Table 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	3170	5800	8970	Locally available	Truck
2	Additives/ Ferro Alloys	30	110	140	Locally available	Truck
3	Bricks/ Reformatories	100	100	200	Locally available	Truck
4	Sponge Iron	0	5000	5000	Locally available	Truck

## 6.2 POWER REQUIREMENT

The power requirement of the existing unit is 4990 KVA. After expansion the power requirement will be 10,000 KVA. This demand will be met by sourcing the power from MSEDCL from nearby Sub-station. Electricity requirement of existing furnace is 4500KWH/hr & that of proposed furnace is 9500 KWH/hr.

## 6.3 MANPOWER REQUIREMENT

Additional manpower is needed to operate the expansion unit plant will be 43. More than 85 % 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 20. Construction workers will be from nearby villages. Residential facility will not be required for the construction personnel.

## 6.4 WATER REQUIREMENT FOR PROPOSED PROJECT

**Table 4: Water Budget of proposed expansion project**

Sr. No.	Particular	Quantity (m <sup>3</sup> / day)	
		Water Consumption	Effluent Generation
1	Domestic	1.9	1.7
2	Industrial	0	0
3	cooling	50	0
4	Gardening	1.3	0
<b>Total</b>		<b>53.2</b>	<b>1.7</b>

**Total water requirement for proposed expansion project = 53.2 m3/day**

**Fresh water requirement for proposed expansion project = 3.2 m3/day**

## 6.5 LANDREQUIREMENT

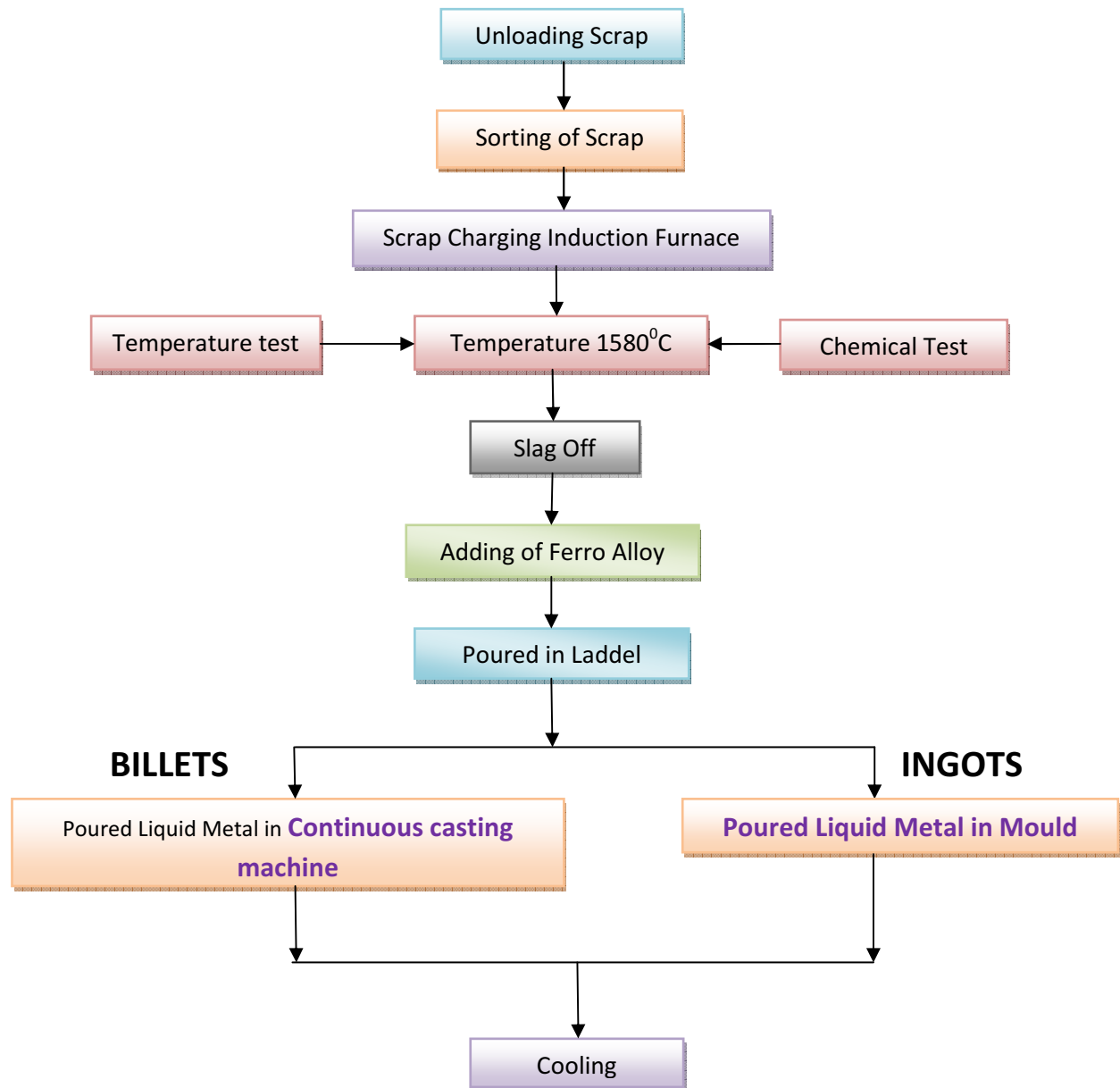
The Company site is located Gat No. 1076/77, Golegaon Road, and Village -Markal, Taluka- Khed, District – Pune. Total plot area of industry is 15700 Sq.m. The details of proposed land use is tabulated in following table-

**Table 5: Details of Land Use**

Sr. No.	Particular	Existing	Proposed	Total Area (Sq.m.)
1	Built up Area	2016.52	1616.94	3633.46
2	Road Area (Sq.m)	484.00	2462.68	2946.68
3	Garden/Open Area	3699.48	1471.19	5170.67

## 7. PROCESS DESCRIPTION ALONG WITH MAJOR EQUIPMENTS AND MACHINERIES, PROCESS FLOW SHEET (QUANTATIVE) FROM RAW MATERIAL TO PRODUCTS

Figure 1: Manufacturing process M.S. Ingots & Runner Riser



## 8. DESCRIPTION OF ENVIRONMENT

Baseline study in this Environmental Impact Assessment report was conducted for a period of three months during 1<sup>st</sup> March 2018 to 31<sup>st</sup> May 2018.

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.

Ambient air quality monitoring has been carried out at 8 stations in the study area on 24 hourly bases. Ambient Air Quality Monitoring reveals that the concentrations of PM<sub>10</sub> and PM<sub>2.5</sub> for all the 8 AAQM stations were found between 77.5 to 25 µg/m<sup>3</sup> and 35.5 to 12 µg/m<sup>3</sup>. The concentrations of SO<sub>2</sub> and NO<sub>x</sub> were found to be in range of 7.7 to 4 µg/m<sup>3</sup> and 41.1 to 21.5 µg/m<sup>3</sup> respectively. The concentration of CO is in range of 0.65 to 0.175 mg/m<sup>3</sup>. The resultant concentration of the parameters is well within the prescribed limits of GPCB & NAAQS.

Prediction of impacts on air environment has been carried out by employing a mathematical model. In the present case, **Industrial Source Complex Short-Term (ISCST3)** dispersion model based on steady state Gaussian plume dispersion, designed for multiple point sources for short term has been used for predicting the ground level concentrations. Results of mathematical modelling reveals that the maximum incremental short term 24 hourly ground level concentrations for PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub> and NO<sub>x</sub> likely to be encountered during pre-monsoon season are 2.38 µg/m<sup>3</sup>, 1.44 µg/m<sup>3</sup>, 4.06 µg/m<sup>3</sup> and 7.22 µg/m<sup>3</sup> respectively occurring at a distance of about 2-km in the South West direction.

Noise level monitoring has been carried out at 8 stations in the study area. Noise level varies from 49.7 to 56.75 Leq dB (A) during day time and from 44.15 to 49.55 Leq dB (A) during night time. 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.

Surface water sampling has been carried out at 1 station in the study area. SGSPL is going to achieve Zero liquid discharge in surface water for the proposed project & hence there is no effect on the river water quality due to this industry.

Ground water sampling has been carried out at 8 stations in the study area. Analysis results of ground water reveals that pH varies from 6.7 to 7.5, Total hardness varies from 281.88 to 411.68 mg/l, Total dissolved solids vary from 366 to 623 mg/l.

Soil samples collected from 8 identified locations indicate pH value ranges from 6.97 to 8.03, which shows that the soil is having near neutral pH. Water holding capacity ranges from 28.50 % to 61.76 % in the soil samples. Free Ammonical nitrogen is found in ranges from 0.14 % to 0.19 % and Potassium is found to be ranging from 1 mg/kg to 8 mg/kg. Soil of the area is found to be suitable for agricultural activities.

The study area is delineated in 10 km radius from the project site. The proposed project site is surrounded by agricultural land. There are no any national parks, wildlife sanctuaries, biosphere reserves or critically polluted areas in the 10 km radius from the proposed project site. No Archeological site is present within the study area. No forest is located in the study area. No Schedule - I fauna was found during the field survey. There is intense anthropogenic pressure on flora, fauna and forest resources, which are observed to be dwindling. However, no rare, endangered & threatened plant species was observed in the study area.

Population of study area is 114,796. Scheduled Caste fraction of the population of the study area (10 km) is 10,542 (9.18%) and Scheduled Tribe 3298 (2.87 %). Literacy rate of the area is 69.59 %. Population of the workers engaged in occupation is 45.80 %. Of these 49,153 (42.81 %) are main workers and 3426 (2.98 %) are marginal workers. Remaining, 62,215 (54.19 %) of the total population is considered as non-workers. The socio-economic analysis of the study area shows that in terms of education could be improved as the literacy rate is quite low i.e. 69.59 %. With a high dependency ratio, the overall socio-economic status of the target population could improve with increase in work participation rate. Hence, the long-term positive impacts on socio-economic conditions of the area are anticipated.

## 9. ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

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

**Table 6: 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 construction 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. Wherever required check dams and dykes will be provided for control of soil erosion.</li> <li>4. 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>5. Appropriate sanitation facilities will be provided for the workers to reduce impact on surface water quality.</li> <li>6. Construction wastes will not be discharged to surface or ground water bodies.</li> <li>7. 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. Vehicles with internal combustion engines will be provided with silencers and mufflers in order to reduce noise levels.</li> </ol> <p>Green belt will be developed to attenuate noise impacts and to reduce noise pollution</p>

4.	Soil	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. Litter disposal and collection points will be established around the work sites. Empty packaging materials, drums, glass, tin, paper, plastic, pet bottles, wood, thermocol and other packaging materials, etc. will be disposed through recyclers. The construction spoils will be temporarily stored at designated dumpsite located inside the plant premises.
<b>(B) Operation Phase</b>		
1.	Air	Adequate stack height to the proposed electric furnace, Fume extraction system & dust collector will be provided
2.	Fugitive	Internal roads paved, leveled, no undulations, no sharp curves, slow speed. Tree plantation on surrounding available area.
3.	Water and Waste Water	1. No effluent generation will take place from proposed industry. Hence no provision of ETP. 2. Rain Water Harvesting will be done.
4.	Solid Waste	100% collection every day. Segregated and treated/ disposed per SPCB norms.
6.	Noise	Smooth roads. Sturdy foundation. No Vibrations. Acoustic enclosures to existing DG Set as per manufacturers' design. Use as standby only. Trees are planted around. Side cladding. Large No. of tree barriers.
7.	Socio-economic	Employment generation, Community Skills Development, Improved Standard of Living, Community Organizational Capacity Development Economic Exposure and Development

## 10. ENVIRONMENTAL MONITORING PROGRAMME

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

**Table 7: Schedule for Environmental Monitoring**

Sr. No.	Particulars	Parameters	Location	Frequency
1	Flue gases from furnace	PM <sub>10</sub> , PM <sub>2.5</sub> , SO <sub>2</sub> and NO <sub>x</sub>	Stack monitoring	Monthly
2	Ambient air quality	PM <sub>10</sub> , PM <sub>2.5</sub> , SO <sub>2</sub> and NO <sub>x</sub> , CO.	<ul style="list-style-type: none"> <li>• Check wind direction</li> <li>• Select two point in upwind direction at 120° from site</li> <li>• Take one point within site at down wind direction from furnace about 1 km distance</li> <li>• Take two points beyond site in down wind direction about 2 km distance at 120° from site opposite to points taken in upwind direction.</li> </ul>	24 hrs sample, half yearly
3	Water (Ground Water and Surface Water)	As per drinking water standards	<ul style="list-style-type: none"> <li>• Take one upstream and downstream sample of surface water. Minimum distance 500 m.</li> <li>• One point upstream at higher elevation from plant site. Also at lower contour point at 3 locations.</li> </ul>	Quarterly

4	Soil	organic & inorganic matter	• Outside plant boundary at lower contour	Pre & post monsoon
5	Noise level, work zone (hourly)	Equivalent noise level-dB (A)	<ul style="list-style-type: none"> <li>• One location in furnace house.</li> <li>• One location near I.D. Fan.</li> <li>• Especially monitor noise during soot blowing.</li> <li>• Four locations around plant boundary</li> </ul>	Quarterly
6	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
7	Environmental Audit	As per Direction of ISO 14001	-	Once in a Year
8	Water utilization, m <sup>3</sup> /d	-	For process, domestic, cooling and boiler	Daily
9	Power utilization	-	For air pollution control facility at boilers and for STP	Daily

## 11. ADDITIONAL STUDIES

Additional Studies conducted as per revised ToR issued by SEAC-I in its 168<sup>th</sup> meeting dated 26<sup>th</sup> August 2019, are Risk Assessment and Disaster Management Plan. Public Hearing is to be conducted for the project.

### RISK ASSESSMENT

An industry with its complex nature of activities involving various plant machineries, raw materials, products, operations, intermediates and environmental discharge has a number of associated hazards. A minor failure can lead to major failure resulting into a disaster causing heavy losses to life, property and environmental. Risk assessment studies are being conducted to ensure safety and reliability of any new plant, through a systematic and scientific methods to identify possible failures and prevent their occurrences before they actually cause disasters and production loss.

#### Objectives of the risk assessment study

1. To identify the major hazards relating to fire, explosion and toxicity due to storage and handling of hazardous chemicals.
2. To visualize maximum credible accident scenarios
3. To analyze and quantify primary and secondary effects and damage potentials of the identified maximum credible accident scenarios using standard procedure.
4. To study the nature of exposures, pathways and consequences of maximum credible accident scenarios and characteristics of risk levels.
5. To provide guidelines for disaster management plan.

### DISASTER MANAGEMENT PLAN

A major disaster in a work is the one, which has potential to cause serious injury or loss of life. It may cause extensive damage to property and serious disruption both inside and outside the works. A Disaster would normally require the assistance of outside emergency services to handle it effectively. Whatever are the causative factors, like plant failure; human error; earthquake; vehicle crash; sabotage etc, they will normally manifest in three basic forms viz, fire, explosion, and *or* toxic release.

#### The objectives of disaster management plan include the following-

1. Controlling the disaster, localizing the disaster and eliminating the hazard



2. Welfare of person managing the disaster.
3. Head count and rescue operations.
4. Treatment of injured.
5. Safeguarding others by timely evacuation.
6. Minimizing damage to property and environment.
7. Informing and assisting relatives.
  - i. Informing and collaborating with statutory authorities.
  - ii. Informing the news media.
  - iii. Preserving records and organizing investigations.
  - iv. Ensuring safety of the works before personnel re-enter and resume work.
  - v. Investigating and taking steps to prevent recurrence.
  - vi. Resorting normalcy

## **12. PROJECT BENEFITS**

### **Implementation of proposed project will result in:**

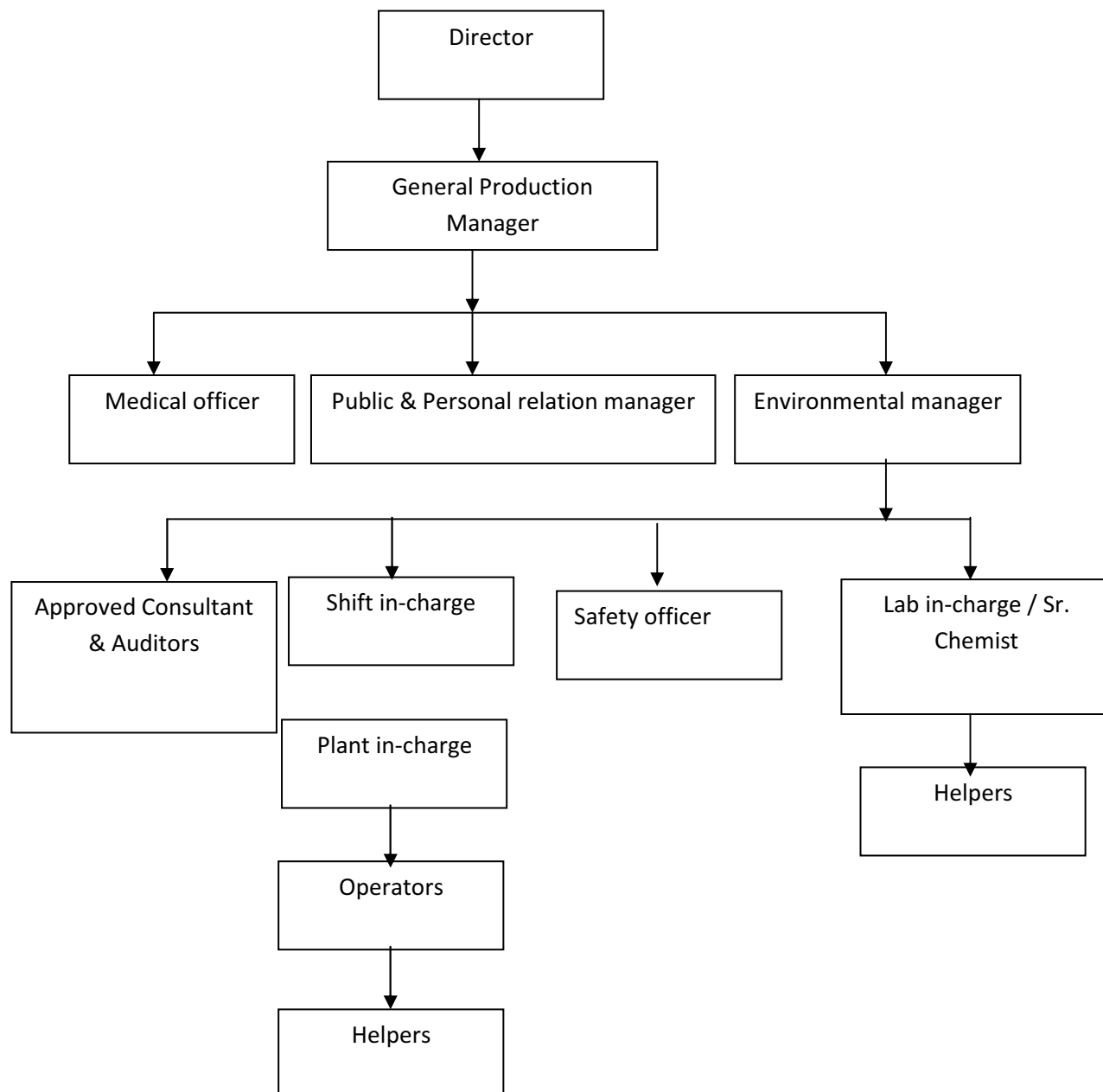
- Improvement in the physical infrastructure
- Improvement in the social infrastructure
- Improvement in employment potential

## **13. ENVIRONMENT MANAGEMENT PLAN**

Environmental Management Plan is detailed under the following heads:

- Air Quality Management
- Noise Management
- Waste Water Management
- Solid & Hazardous Waste Management
- Energy Conservation
- Greenbelt Development & Plantation Programme
- Occupational Health & Safety Measures.
- Enterprise social commitment (ESC)- Industry will utilize 1% of its project cost for ESC.

**Figure 2: Environment Management Cell**



**Table 8: 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
3	Quantity of effluent	To be measured daily and in-plant control. Not to exceed any time	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 ETP 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, bagasse to be baled, molasses not in open pits, press mud to be carted out every day	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
<b>Legends:</b> ENV-M- Environmental Manager, LAB- I- Lab incharge, ENV- C- Environmental Chemist.			

## 14. CONCLUSION

The proposed 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.

# **EXECUTIVE SUMMARY**

**Of**

## **ENVIRONMENTAL IMPACT ASSESSMENT REPORT**

**FOR**

### **PUBLIC HEARING**

**OF**

## **Proposed Expansion of Existing Metallurgical Industry**

**By**

**M/s. SANT GYANESHWAR STEELS PVT. LTD.**

Gat No. 1076/77, Golegaon Road, Village – Markal, Taluka – Khed,  
District – Pune, Maharashtra

**SUBMITTED TO**

**MAHARSHTRA POLLUTION CONTROL BOARD**

**PREPARED BY**



**M/s SGM Enviro (I) Pvt. Ltd.**  
Saahil Apartments,1102/A/4B,Model Colony  
Lakaki Road,Opp. Kirloskar Bunglow,  
ShivajiNagar , Pune -411016  
QCI –NABET ACCREDITED

## EXECUTIVE SUMMARY

### 1. INTRODUCTION

M/s Sant Gyaneshwar Steel Pvt. Ltd. (SGSPL) Markal was incorporated on 21.06.1996 with Registration number 111927272. The industry is located at Gat No. 1076/77, Golegaon Road, Village – Markal, Taluka – Khed, District – Pune with the main object of manufacturing of M.S. Ingots &/or Billets & Runner Riser.

As per the EIA notification 2006 & its subsequent amendments existing project does not require Environmental Clearance. Existing industry have obtained consent to operate from Maharashtra Pollution Control Board (MPCB) & is complying with all the norms of CPCB & MPCB.

### 2. TYPE OF PROJECT

M/s. Sant Gyaneshwar Steel Pvt. Ltd. (SGSPL) is proposing to expand existing quantity of M.S. ingots &/or Billets manufacturing from 36,000 TPA to 1, 56,000 TPA & capacity of Runner Riser production will remain the same i.e. 720 MTA. This expansion activity will take place within the existing plant premises at Gat No. 1076/77, Golegaon Road, Village – Markal, Tal. - Khed, Dist. – Pune.

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

### 3. 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 SGSPL has identified this opportunity and has decided to become a competitive leader in boosting field of metallurgical sector.

### 4. SITE SELECTION & JUSTIFICATION THEREOF

Proposed expansion will be done within the existing plant 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.

### 5. BRIEF DESCRIPTION OF NATURE, SIZE, LOCATION OF THE PROJECT AND ITS IMPORTANCE TO THE COUNTRY, REGION

**Table 1: Brief Description of Nature, Size and Location of Existing & Proposed Project**

Sr. No.	Particular	Description			
1	Nature & size of existing project	Proposed Expansion of Existing Metallurgical unit by M/s Sant Gyaneshwar Steels Pvt. Ltd. for Production of MS Ingots &/or Billets & Runner Riser			
2 A	Total Area of project	Total plot area is 15700 Sq.m			
2 B	Area Details (Sq.m)	<b>Particular</b>	<b>Existing</b>	<b>Proposed</b>	<b>Total</b>
		Built up Area	2016.52	1616.94	3633.46
		Road Area	484.00	2462.68	2946.68
		Garden/Open Area	3699.48	1471.19	5170.67

		Total	6200	5550.81	11750.81
3	Raw Materials (MT/M)	M.S. Scrap	3170	5800	8970
		Additives/ Ferro Alloys	30	110	140
		Bricks/Reformatories	100	100	200
		Sponge Iron	0	5000	5000
4	Products & By-products (MTA)	MS Ingots &/or Billets	36,000	1,20,000	1,56,000
		Runner Riser	720	0	720
	Capacity of Electric Furnace (MT/Month)	-	6000 (At present, a furnace of 3000 MT is there, which will be upgraded to a Total Capacity of - 6000 MT/M)	7000	13000
	Power requirement	-	4990 KVA + Electricity requirement of existing furnace is 4500KWH/hr	10,000 KVA + Electricity requirement of proposed furnace is 9500 KWH/hr	14990 KVA + 14000 KWH/hr
5	Capacity of DG set (KVA)	-	1 x 250 KVA	1x250 KVA	2 x 250 each
6	Fuel Requirement (lit/hr)	Fuel Type- LDO	6 lit/hr	6 lit/hr	12 lit/hr
7	Stack Details	-	Existing Electric Furnace stack ht. 30 m	Proposed Electric Furnace stack ht. 30 m	Total- 2 stacks: 1 Stack of 30 m for existing furnace & 1 stack of 30 m for proposed furnace
		-	Existing D.G. Set (250 KVA) stack ht. 2 m	Proposed D.G. Set (250KVA) stack ht. 3 m	Total 2 No.s: (1 Existing + 1 Proposed)
8	Air Pollution Control Equipment for boiler	-	Proper stack height with Fume extraction system & dust collector is provided	Proper stack height with Fume extraction system & dust collector will be provided	-
9	Total water Requirement for unit (CMD)	Domestic	1.2	1.9	3.1
		Industrial Process	0	0	0
		Cooling Purpose	60	50	110
		Gardening	0.5	1.3	1.8
10	Waste water generation (CMD)	Domestic	1.0	1.7	2.7
		Industrial Process	0	0	0
		Cooling Purpose	0	0	0
		Gardening	0	0	0
11	Manpower		27	43	70
12	Solid Waste	Scrap	120	360	480

(MT/A)	Slag	1200	8400	9600
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**Table 2: Environmental settings of Project**

Sr. No	Particular	Description
<b>Location of the project site</b>		
1	Plot No.	1076/77
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7	Average altitude above mean MSL	1866 ft above MSL
8	Corner Co-ordinates of the plant site	Coordinates of the project site as follows A 18 <sup>0</sup> 39'45.27" N 73 <sup>0</sup> 57'29.39" E B 18 <sup>0</sup> 39'44.99" N 73 <sup>0</sup> 57'30.81" E C 18 <sup>0</sup> 39'33.69" N 73 <sup>0</sup> 57'27.49" E D 18 <sup>0</sup> 39'33.78" N 73 <sup>0</sup> 57'29.10" E
9	Toposheet Number	E43I2, E43H14
<b>Environmental setting details (with approximate aerial distance &amp; direction from the plant site)</b>		
10	Nearest village	Markal :1.46 km
11	Nearest National highway/ State highway	Pune – Nashik Highway (11.88 km in W Direction)
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14	Nearest major city	Pimpri-Chinchwad : 17 km in SW direction
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17	Nearest water body within 10 km radius	Indrayani River – 1.68 km away from project site in West direction
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## 6. MAJOR REQUIREMENT FOR THE PROPOSED PROJECT

### 6.1. RAW MATERIALS REQUIREMENT

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2	Additives/ Ferro Alloys	30	110	140	Locally available	Truck
3	Bricks/ Reformatories	100	100	200	Locally available	Truck
4	Sponge Iron	0	5000	5000	Locally available	Truck

## 6.2 POWER REQUIREMENT

The power requirement of the existing unit is 4990 KVA. After expansion the power requirement will be 10,000 KVA. This demand will be met by sourcing the power from MSEDCL from nearby Sub-station. Electricity requirement of existing furnace is 4500KWH/hr & that of proposed furnace is 9500 KWH/hr.

## 6.3 MANPOWER REQUIREMENT

Additional manpower is needed to operate the expansion unit plant will be 43. More than 85 % 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 20. Construction workers will be from nearby villages. Residential facility will not be required for the construction personnel.

## 6.4 WATER REQUIREMENT FOR PROPOSED PROJECT

**Table 4: Water Budget of proposed expansion project**

Sr. No.	Particular	Quantity (m <sup>3</sup> / day)	
		Water Consumption	Effluent Generation
1	Domestic	1.9	1.7
2	Industrial	0	0
3	cooling	50	0
4	Gardening	1.3	0
<b>Total</b>		<b>53.2</b>	<b>1.7</b>

**Total water requirement for proposed expansion project = 53.2 m3/day**

**Fresh water requirement for proposed expansion project = 3.2 m3/day**

## 6.5 LANDREQUIREMENT

The Company site is located Gat No. 1076/77, Golegaon Road, and Village -Markal, Taluka- Khed, District – Pune. Total plot area of industry is 15700 Sq.m. The details of proposed land use is tabulated in following table-

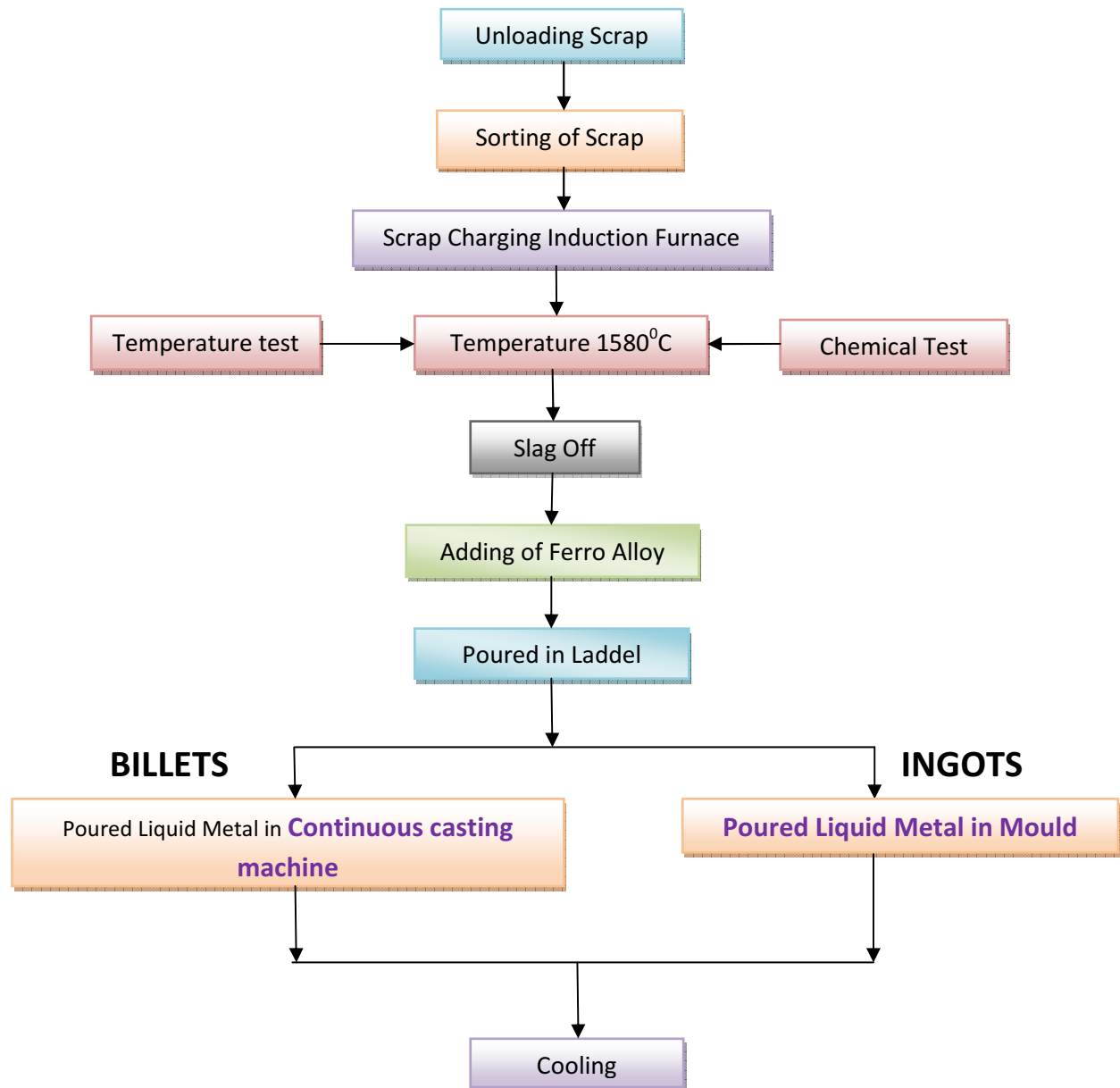
**Table 5: Details of Land Use**

Sr. No.	Particular	Existing	Proposed	Total Area (Sq.m.)
1	Built up Area	2016.52	1616.94	3633.46
2	Road Area (Sq.m)	484.00	2462.68	2946.68
3	Garden/Open Area	3699.48	1471.19	5170.67



## 7. PROCESS DESCRIPTION ALONG WITH MAJOR EQUIPMENTS AND MACHINERIES, PROCESS FLOW SHEET (QUANTATIVE) FROM RAW MATERIAL TO PRODUCTS

Figure 1: Manufacturing process M.S. Ingots & Runner Riser



## 8. DESCRIPTION OF ENVIRONMENT

Baseline study in this Environmental Impact Assessment report was conducted for a period of three months during 1<sup>st</sup> March 2018 to 31<sup>st</sup> May 2018.

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.

Ambient air quality monitoring has been carried out at 8 stations in the study area on 24 hourly bases. Ambient Air Quality Monitoring reveals that the concentrations of PM<sub>10</sub> and PM<sub>2.5</sub> for all the 8 AAQM stations were found between 77.5 to 25 µg/m<sup>3</sup> and 35.5 to 12 µg/m<sup>3</sup>. The concentrations of SO<sub>2</sub> and NO<sub>x</sub> were found to be in range of 7.7 to 4 µg/m<sup>3</sup> and 41.1 to 21.5 µg/m<sup>3</sup> respectively. The concentration of CO is in range of 0.65 to 0.175 mg/m<sup>3</sup>. The resultant concentration of the parameters is well within the prescribed limits of GPCB & NAAQS.

Prediction of impacts on air environment has been carried out by employing a mathematical model. In the present case, **Industrial Source Complex Short-Term (ISCST3)** dispersion model based on steady state Gaussian plume dispersion, designed for multiple point sources for short term has been used for predicting the ground level concentrations. Results of mathematical modelling reveals that the maximum incremental short term 24 hourly ground level concentrations for PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub> and NO<sub>x</sub> likely to be encountered during pre-monsoon season are 2.38 µg/m<sup>3</sup>, 1.44 µg/m<sup>3</sup>, 4.06 µg/m<sup>3</sup> and 7.22 µg/m<sup>3</sup> respectively occurring at a distance of about 2-km in the South West direction.

Noise level monitoring has been carried out at 8 stations in the study area. Noise level varies from 49.7 to 56.75 Leq dB (A) during day time and from 44.15 to 49.55 Leq dB (A) during night time. 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.

Surface water sampling has been carried out at 1 station in the study area. SGSPL is going to achieve Zero liquid discharge in surface water for the proposed project & hence there is no effect on the river water quality due to this industry.

Ground water sampling has been carried out at 8 stations in the study area. Analysis results of ground water reveals that pH varies from 6.7 to 7.5, Total hardness varies from 281.88 to 411.68 mg/l, Total dissolved solids vary from 366 to 623 mg/l.

Soil samples collected from 8 identified locations indicate pH value ranges from 6.97 to 8.03, which shows that the soil is having near neutral pH. Water holding capacity ranges from 28.50 % to 61.76 % in the soil samples. Free Ammonical nitrogen is found in ranges from 0.14 % to 0.19 % and Potassium is found to be ranging from 1 mg/kg to 8 mg/kg. Soil of the area is found to be suitable for agricultural activities.

The study area is delineated in 10 km radius from the project site. The proposed project site is surrounded by agricultural land. There are no any national parks, wildlife sanctuaries, biosphere reserves or critically polluted areas in the 10 km radius from the proposed project site. No Archeological site is present within the study area. No forest is located in the study area. No Schedule - I fauna was found during the field survey. There is intense anthropogenic pressure on flora, fauna and forest resources, which are observed to be dwindling. However, no rare, endangered & threatened plant species was observed in the study area.

Population of study area is 114,796. Scheduled Caste fraction of the population of the study area (10 km) is 10,542 (9.18%) and Scheduled Tribe 3298 (2.87 %). Literacy rate of the area is 69.59 %. Population of the workers engaged in occupation is 45.80 %. Of these 49,153 (42.81 %) are main workers and 3426 (2.98 %) are marginal workers. Remaining, 62,215 (54.19 %) of the total population is considered as non-workers. The socio-economic analysis of the study area shows that in terms of education could be improved as the literacy rate is quite low i.e. 69.59 %. With a high dependency ratio, the overall socio-economic status of the target population could improve with increase in work participation rate. Hence, the long-term positive impacts on socio-economic conditions of the area are anticipated.

## 9. ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

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

**Table 6: 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 construction 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. Wherever required check dams and dykes will be provided for control of soil erosion.</li> <li>4. 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>5. Appropriate sanitation facilities will be provided for the workers to reduce impact on surface water quality.</li> <li>6. Construction wastes will not be discharged to surface or ground water bodies.</li> <li>7. 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. Vehicles with internal combustion engines will be provided with silencers and mufflers in order to reduce noise levels.</li> </ol> <p>Green belt will be developed to attenuate noise impacts and to reduce noise pollution</p>

4.	Soil	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. Litter disposal and collection points will be established around the work sites. Empty packaging materials, drums, glass, tin, paper, plastic, pet bottles, wood, thermocol and other packaging materials, etc. will be disposed through recyclers. The construction spoils will be temporarily stored at designated dumpsite located inside the plant premises.
<b>(B) Operation Phase</b>		
1.	Air	Adequate stack height to the proposed electric furnace, Fume extraction system & dust collector will be provided
2.	Fugitive	Internal roads paved, leveled, no undulations, no sharp curves, slow speed. Tree plantation on surrounding available area.
3.	Water and Waste Water	1. No effluent generation will take place from proposed industry. Hence no provision of ETP. 2. Rain Water Harvesting will be done.
4.	Solid Waste	100% collection every day. Segregated and treated/ disposed per SPCB norms.
6.	Noise	Smooth roads. Sturdy foundation. No Vibrations. Acoustic enclosures to existing DG Set as per manufacturers' design. Use as standby only. Trees are planted around. Side cladding. Large No. of tree barriers.
7.	Socio-economic	Employment generation, Community Skills Development, Improved Standard of Living, Community Organizational Capacity Development Economic Exposure and Development

## 10. ENVIRONMENTAL MONITORING PROGRAMME

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

**Table 7: Schedule for Environmental Monitoring**

Sr. No.	Particulars	Parameters	Location	Frequency
1	Flue gases from furnace	PM <sub>10</sub> , PM <sub>2.5</sub> , SO <sub>2</sub> and NO <sub>x</sub>	Stack monitoring	Monthly
2	Ambient air quality	PM <sub>10</sub> , PM <sub>2.5</sub> , SO <sub>2</sub> and NO <sub>x</sub> , CO.	<ul style="list-style-type: none"> <li>• Check wind direction</li> <li>• Select two point in upwind direction at 120° from site</li> <li>• Take one point within site at down wind direction from furnace about 1 km distance</li> <li>• Take two points beyond site in down wind direction about 2 km distance at 120° from site opposite to points taken in upwind direction.</li> </ul>	24 hrs sample, half yearly
3	Water (Ground Water and Surface Water)	As per drinking water standards	<ul style="list-style-type: none"> <li>• Take one upstream and downstream sample of surface water. Minimum distance 500 m.</li> <li>• One point upstream at higher elevation from plant site. Also at lower contour point at 3 locations.</li> </ul>	Quarterly

4	Soil	organic & inorganic matter	• Outside plant boundary at lower contour	Pre & post monsoon
5	Noise level, work zone (hourly)	Equivalent noise level-dB (A)	<ul style="list-style-type: none"> <li>• One location in furnace house.</li> <li>• One location near I.D. Fan.</li> <li>• Especially monitor noise during soot blowing.</li> <li>• Four locations around plant boundary</li> </ul>	Quarterly
6	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
7	Environmental Audit	As per Direction of ISO 14001	-	Once in a Year
8	Water utilization, m <sup>3</sup> /d	-	For process, domestic, cooling and boiler	Daily
9	Power utilization	-	For air pollution control facility at boilers and for STP	Daily

## 11. ADDITIONAL STUDIES

Additional Studies conducted as per revised ToR issued by SEAC-I in its 168<sup>th</sup> meeting dated 26<sup>th</sup> August 2019, are Risk Assessment and Disaster Management Plan. Public Hearing is to be conducted for the project.

### RISK ASSESSMENT

An industry with its complex nature of activities involving various plant machineries, raw materials, products, operations, intermediates and environmental discharge has a number of associated hazards. A minor failure can lead to major failure resulting into a disaster causing heavy losses to life, property and environmental. Risk assessment studies are being conducted to ensure safety and reliability of any new plant, through a systematic and scientific methods to identify possible failures and prevent their occurrences before they actually cause disasters and production loss.

#### Objectives of the risk assessment study

1. To identify the major hazards relating to fire, explosion and toxicity due to storage and handling of hazardous chemicals.
2. To visualize maximum credible accident scenarios
3. To analyze and quantify primary and secondary effects and damage potentials of the identified maximum credible accident scenarios using standard procedure.
4. To study the nature of exposures, pathways and consequences of maximum credible accident scenarios and characteristics of risk levels.
5. To provide guidelines for disaster management plan.

### DISASTER MANAGEMENT PLAN

A major disaster in a work is the one, which has potential to cause serious injury or loss of life. It may cause extensive damage to property and serious disruption both inside and outside the works. A Disaster would normally require the assistance of outside emergency services to handle it effectively. Whatever are the causative factors, like plant failure; human error; earthquake; vehicle crash; sabotage etc, they will normally manifest in three basic forms viz, fire, explosion, and *or* toxic release.

#### The objectives of disaster management plan include the following-

1. Controlling the disaster, localizing the disaster and eliminating the hazard

2. Welfare of person managing the disaster.
3. Head count and rescue operations.
4. Treatment of injured.
5. Safeguarding others by timely evacuation.
6. Minimizing damage to property and environment.
7. Informing and assisting relatives.
  - i. Informing and collaborating with statutory authorities.
  - ii. Informing the news media.
  - iii. Preserving records and organizing investigations.
  - iv. Ensuring safety of the works before personnel re-enter and resume work.
  - v. Investigating and taking steps to prevent recurrence.
  - vi. Resorting normalcy

## **12. PROJECT BENEFITS**

### **Implementation of proposed project will result in:**

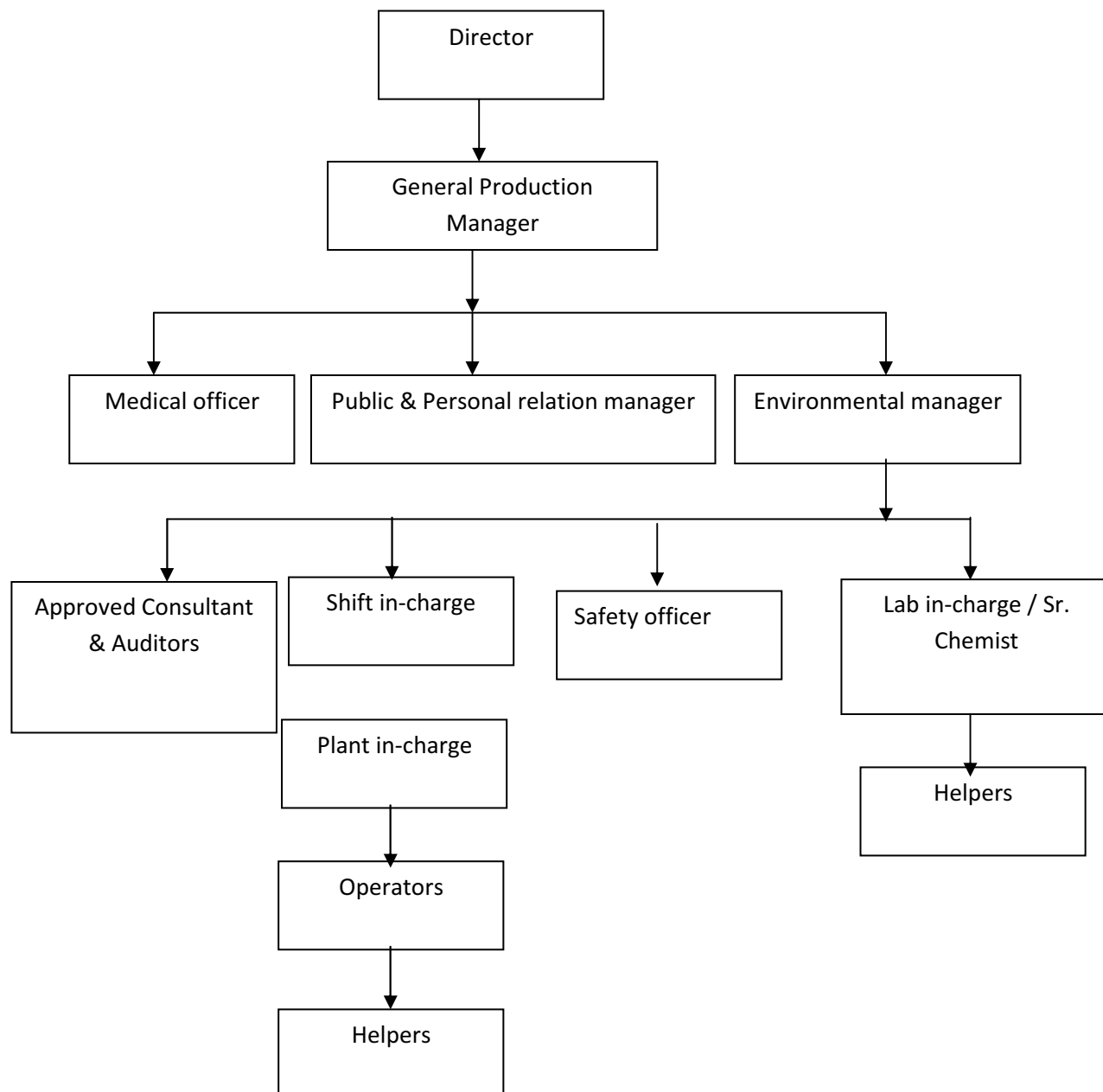
- Improvement in the physical infrastructure
- Improvement in the social infrastructure
- Improvement in employment potential

## **13. ENVIRONMENT MANAGEMENT PLAN**

Environmental Management Plan is detailed under the following heads:

- Air Quality Management
- Noise Management
- Waste Water Management
- Solid & Hazardous Waste Management
- Energy Conservation
- Greenbelt Development & Plantation Programme
- Occupational Health & Safety Measures.
- Enterprise social commitment (ESC)- Industry will utilize 1% of its project cost for ESC.

**Figure 2: Environment Management Cell**



**Table 8: 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
3	Quantity of effluent	To be measured daily and in-plant control. Not to exceed any time	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 ETP 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, bagasse to be baled, molasses not in open pits, press mud to be carted out every day	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
<b>Legends:</b> ENV-M- Environmental Manager, LAB- I- Lab incharge, ENV- C- Environmental Chemist.			

## 14. CONCLUSION

The proposed 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.