

EXECUTIVE SUMMARY FOR PUBLIC HEARING

Production Enhancement of MS, Stainless Steel & Alloy Steel Billet/Ingot from 220 TPD to 750 TPD, MS, Stainless Steel & Alloy Steel Bar, Rods & Flat Bars from 125 TPD to 750 TPD & Proposed production of Bright Bars up to 75 TPD

Location – Gut no. 74 & 75, Pharola & Gut no 53 at Mharola, Paithan, Aurangabad, Maharashtra- 431107

Project Proponent



Environmental Consultant



M/S ENVIRO RESOURCES

(NABET Approved vide MOM for IA-222nd Meeting: July 20, 2018)

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Laboratory For Baseline Data

M/S S A ENCON PVT. LTD.

(NABL Cert No.: T-3769 & T-3861)

Gat No.1373/1, Shirke Colony, Near Govt. Hospital, Shirwal, Tal - Khandala, Dist - Satara, Maharashtra, India 412801

Baseline Period

October, 2017 to December, 2017

**Report No.: ER/EIA/JCAPL/D/01/00/2019
March, 2019**

EXECUTIVE SUMMARY

1.0 INTRODUCTION

M/s Jailaxmi Casting & Alloys Pvt. Ltd. herein after referred to as “JCAPL”, under the vision of the Chairman and Mr. Srinivas Palsudesai, Director is progressing well since its inception in 2004. JCAPL offers a comprehensive range of Steel grades for used in a wide variety of applications in automotive, engineering and industrial sectors. The product applications are into almost all the conventional to sophisticated industries.

Company was established in year 2004. Company have obtained consent to operate vide consent no: BO/JD (APC)/TB/UAN No: 0000047772/R/CC valid upto 30/04/2021 - provided as *Annexure 1*.

Now, considering the current market demand of Steel (MS, Stainless Steel & Alloy Steel Billet/Ingot Alloy Steel Bar, Rods, Flat Bars and Bright Bars), JCAPL is now proposing production capacity expansion from 345 TPD to 1575 TPD.

The proposed expansion falls under Schedule 3 (a) as per Environmental Impact Assessment (EIA) Notification, 2006 and its further amendments.

2.0 PROJECT LOCATION

The proposed project expansion will be done at existing plot no i.e. 74 & 75, Pharola Village with plot area of 45,000 m². Considering paucity of land for development of greenbelt, company has procured gut no 53 in adjacent village viz, Mharola with plot area of 43,200 m².

The toposheet map of the project site is as shown in **Figure 1**.

3.0 PROJECT DESCRIPTION

The company is proposing expansion of their existing steel manufacturing capacity of M.S. Billets and/or MS Structural Bars, Angle & Bright bars from 345 TPD to 1545 TPD.

Steel production using Induction Furnace is basically low pollution process as electricity is used as energy source in the process.

Molten steel is poured in ladle, where necessary treatment to adjust the quality is carried out. The ladle is taken to the billet caster for casting billets. These hot billets are transferred to the Rolling Mill to roll desired products.

the block diagram of the manufacturing process is as provided in **Figure 2** and the site layout plan is as shown in **Figure 3**.

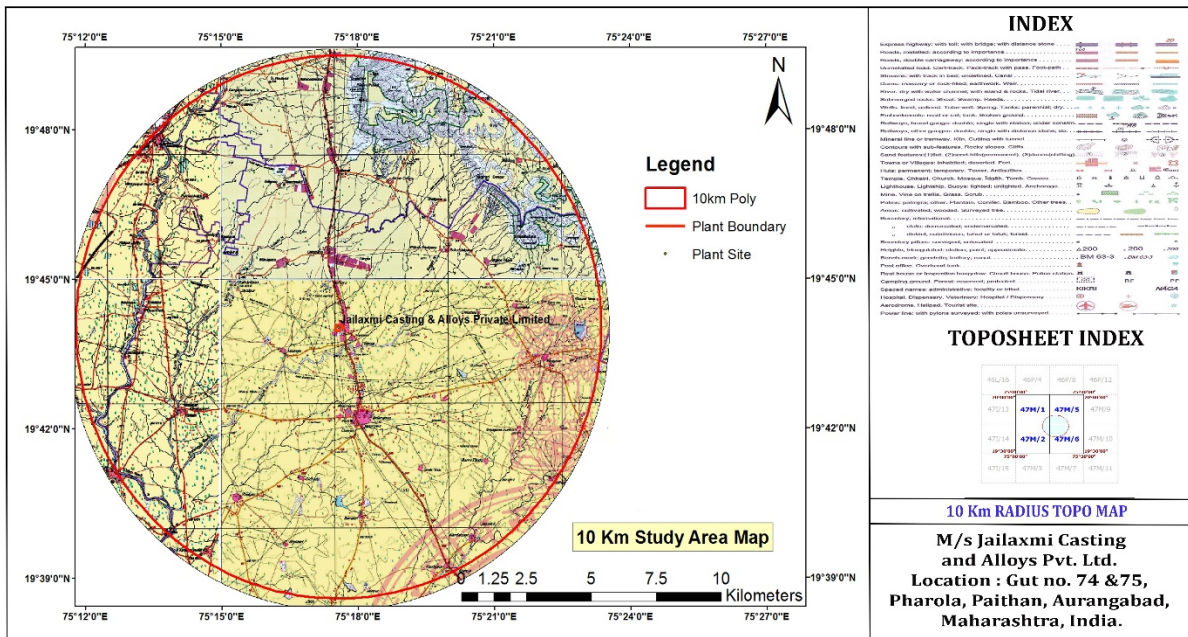


Figure 1: Topographical Base Map of the Study Area

(Toposheet No: 47M/1, 47M/2, 47M/5 & 47M/6, Scale: 1:50,000)



Figure 2: Process Flow Diagram

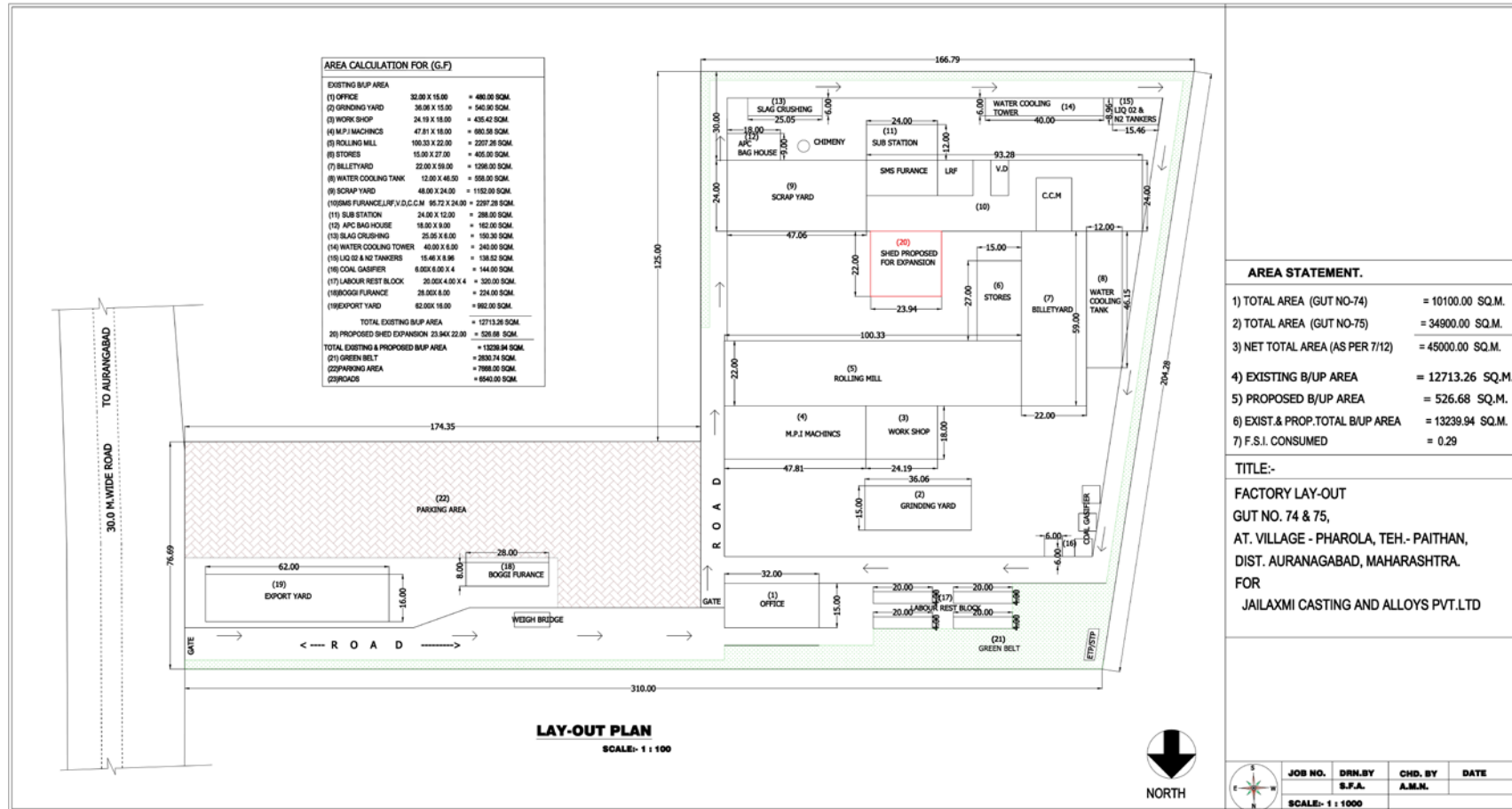


Figure 3: Site Layout Plan

Salient features of the project are presented in **Table 1**.

Table 1: Salient Features of the Project

SN	Particulars	Existing	Proposed	Total
Resource Requirement				
i.	Plot Area	Gut No. 74 & 75 - 45,000 m ²	Gut No. 53 - 43,200 m ²	Gut No. 74, 75 & 53 - 88,200 m ²
ii.	Manpower	160	400	560
iii.	Power (MW)	10	20	30
iv.	DG Set (kVA)	--	1x1000	1x1000
v.	Water (m ³ /day)	35	131	166
Furnace Requirement				
i.	Induction Furnace	25 MT X 1 Nos	--	25 MT X 1 Nos
ii.	Arc Furnace	--	30 MT X 1 Nos	30 MT X 1 Nos
iii.	Re-Heating Furnace	20 MT X 1 Nos	--	20 MT X 1 Nos
Fuel Requirement				
i.	HSD (DG Set)	--	200 Liters/hr	200 Liters/hr
ii.	Coal/FO for Re-Heating furnace	Coal: 10 TPD FO: 3.4 KLPD	Coal: 50 TPD FO: 16.6 KLPD	Coal: 60 TPD FO: 20 KLPD
Stack Details				
i.	Furnace Stack attached to	Induction Furnace: 30m, Reheating Furnace: 30m	Reheating Furnace: 40m	Induction & Arc Furnace: 30m, Reheating Furnace: 40m
ii.	D.G. Stack	--	6.4m above roof (1000 kVA)	6.4m above roof (1000 kVA)

4.0 DESCRIPTION OF THE ENVIRONMENT

Primary baseline environmental monitoring studies in 10-km radius study area were conducted through an NABL approved laboratory [SA Encon Pvt. Ltd.] during October 2017 – December 2017.

4.1 Topography, Land use & its Classification

The topography around the project site is mostly plain. Ground elevation at the site is 505 m above MSL. The land use and land cover of the study area analyzed based on multispectral satellite imagery reveals that the major land use category within the study area is represented by Agriculture (~75.4%), followed by Open land (~30.0%), Mining area (~0.56%), Barren Land (~3.72%), Forest (~2.97%), water bodies (~3.14%), and Built-up area (~14.2%).

4.2 Soil Environment

The soil quality was monitored at eight (8) locations within the study area. Soils in the area are brown in color. These soils are not very deep and are suitable for most of the crops. Some of the important soil parameters are summarized below.

Table 2: Summary of Soil Analysis

Parameter	Value
pH	7.82-8.25
Nitrogen kg/ha	291-483
Phosphorus kg/ha	21.42-25.65
Potassium kg/ha	438-516
Electrical Conductivity ($\mu\text{mhos/cm}$)	310-522

4.3 Air Environment

The Ambient Air quality was monitored for PM₁₀, PM_{2.5}, NO_x, SO₂, CO, NH₃, C₆H₆, BaP, O₃, Pb and Ni, at eight locations in the study area.

Table 3: Summary of AAQM Results

Parameters	Minimum	Maximum	98 th %tile	NAAQS
PM _{2.5} $\mu\text{g/m}^3$	19.65	41.74	39.96	60
PM ₁₀ $\mu\text{g/m}^3$	71.94	87.12	86.83	100
SO ₂ $\mu\text{g/m}^3$	18.58	29.55	28.02	80
NO _x $\mu\text{g/m}^3$	31.54	41.74	39.69	80
CO mg/m^3	0.31	1.0	0.95	4

In general, the ambient air quality is satisfactory with respect to all major pollutants. The 98th percentile values of all pollutants were found to be below NAAQS. The other parameters such as Ammonia (NH₃), Benzene, Benzo- α -Pyrene (BAP), Ozone (O₃), Lead (Pb) and Nickel (Ni) were found to be below respective detection limits.

4.4 Noise Environment

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

Table 4: Summary of Ambient Noise Monitoring Results

Category	Leq daytime		Leq night time		Day time Standard	Night time Standard
	Min	Max	Min	Max		
Residential	50.7	51.6	41.8	43	55	45
Industrial	60.5		52.9		75	70

The noise quality in the study area was found to be satisfactory and well within the prescribed statutory limits.

4.5 Water Environment

Surface water samples were collected once during the study period at Six (6) locations to assess the baseline water quality in the study area. The samples were compared with the CPCB's surface water classification and they conform to Class D Water Quality Criteria. Some of the important parameters are summarized below.

Table 5: Summary of Surface Water Analysis

Parameter	Value
pH	7.16-7.32
Chemical Oxygen Demand mg/l	10-32
Biochemical Oxygen Demand mg/l	4
Total Hardness as CaCO ₃	117-185

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

Table 6: Summary of Ground Water Analysis

Parameter	Value
pH	6.98-7.29
Turbidity NTU	BDL to 0.26
Total Dissolved Solids mg/l	251-347
Total Hardness as CaCO ₃ mg/l	117-167
Alkalinity	125-154
Fluoride as F mg/l	0.12-0.44
Nitrate as NO ₃ mg/l	11-22

4.6 Biological Environment

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

Flora: 17 species of Trees, 10 species of Shrubs and 8 species of Herbs were identified.

Fauna: 23 species of birds, 41 species of Butterflies were identified.

Avifauna: 21 species were identified within the Study Area.

None of the identified species within the study area are Schedule I species of the Indian Wildlife Protection Act, 1972 or listed in IUCN Red List of Threatened Species. There are no legally protected areas such as National Parks or Wildlife Sanctuaries within 10 km of the Project Site.

4.7 Socio-Economic Environment

The study area is spread over Aurangabad district. There are total 48 villages in the study area. The study area is essentially rural in nature with moderate inhabitation. The nearest town is Aurangabad from the Project Site, towards east. The socio economics of study area is studied through primary and secondary survey. The socio-economic aspects of the study area are summarized in the table given below.

Table 7: Summary of Socio-Economic Aspects

Parameters	Study area (10 km)
Total No. of Villages	48
Total No. of Households	18420
Total Population	88790
Sex ratio	925
SC/ST population	12.48% (SC) & 2.46% (ST)
Literacy Rate	64.05%

The primary survey revealed that study area is having education facilities primarily in the form of Anganwadi and Primary Schools. Colleges and other diploma courses are available at Aurangabad city about 14-15 km away from the project site. There are only nine healthcare facilities available in the study area. In some of the villages, primary health sub centers were available. The main water supply in the surveyed villages is through well, tap water, hand pump, and tube well. All villages are availing electricity facility for all purpose.

4.8 Traffic Scenario

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

The traffic movement was monitored once in both directions at the aforesaid locations continuously for 24 hours. The monitored vehicles were categorized into two wheelers, three wheelers, cars, heavy vehicles, etc. The volume of vehicles moving through the roads of the project site were estimated as PCUs and compared with the level of service based on IRC guidelines. The average volume in PCUs during morning and evening peak hours was 689.72 and 590.31 respectively at TS1; 566.22 & 528.73 respectively at TS2; and 658.84 & 563.13 respectively at TS3. The level of service is falling under Category C (Good) and D (Fair) as per IRC guidelines.

5.0 ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

5.1 Construction Phase

The construction phase of the proposed project will be of short duration for about 10-12 months.

The potential impacts will be localized, limited and temporary. Fugitive dust, noise due machine operation, surface water runoff, etc are expected during this phase. Water spray will be done to control fugitive dust. Excavation will be limited during day time by properly serviced machines.

5.2 Operation Phase

Activities during operation phase are similar and are an extension to the existing operations since 2008.

Air Environment:

The air pollution caused by steel industry is mainly from dust and fumes during charging (of scrap) and tapping of the furnace. Additionally, there will be emissions from vehicular traffic and from DG Sets as and when operated.

Air quality modeling was conducted to know the incremental values of PM using AERMOD Cloud software. The max Incremental Values (IV) obtained for PM, SO₂,NO_x & CO are 0.52 µg/m³, 1.8 µg/m³, 1.4 µg/m³ & 0.03 mg/m³ respectively. . The maximum IV's for PM were observed in west direction at distance of 2.20 km from project site.

Mitigation Measures:

- Emissions from melting process like PM will be subjected to Cyclone Separator followed by Bagfilters
- Furnace and DG set stacks with adequate height to ensure dispersion of pollutants
- Fugitive emissions to be monitored regularly and records to be maintained
- Strengthening and maintaining existing greenbelt
- Paving of internal access roads
- Regular water sprinkling

Water Environment:

Water is required for cooling water makeup and domestic purposes.

Domestic wastewater shall be treated in Sewage Treatment Plant of 25 m³/day capacity. Treated wastewater shall be used for landscaping after disinfection.

Mitigation Measures:

- To spread awareness to the workers about the importance of water quantity measurements and resource conservation
- Shop-floor supervisors are trained for good house-keeping.

- Rain water Harvesting is planned.

Noise Environment:

Noise will generate due to operation of induction & arc furnace, vehicular movement, DG sets (in case of power failure) and blowers used in plants etc. To estimate the overall noise dispersion from the center of the project, Noise modeling was done using Cusic 3.2. As per results obtained The drop down in the decibels is calculated by the modeling software. As per results obtained The Noise level at the plant boundary during the operational phase in the north direction will be 20.69 dB (A). Towards the east boundary it will be 20.27 dB (A). The noise levels will be up to 20.23 (A) & 19.97 dB (A) levels respectively in the south & west directions of the project plot. The drop down noise level at 500 meters distance from center of the project will be 15.98 dB(A)

Mitigation Measures:

- Selection of CPCB specs DG sets
- Regular maintenance of equipment, pumps shall be undertaken
- Employees shall be provided with personal protective equipment's such as ear plugs or ear muffs
- Regular Noise monitoring shall be carried out all around the periphery of the plant facility & records maintained

Solid Waste Management:

The potential impacts envisaged due to the operation of the proposed project are due to spillages/leakages from operation and waste disposal.

Details of hazardous and non-hazardous waste are as presented in below tables.

Table 8: Details of Hazardous Waste

SN	Description of Waste	Category as per Schedule-1	Generation Quantity	Disposal Methods
1	Spent Oil	5.1	10 Lit/Year	Sell to authorized recycler

Table 9: Details of Non Hazardous Waste

SN	Waste	Quantity	Disposal
1	Office Waste	15 kg/M	Dry waste from office viz. waste papers etc. will be disposed through authorized vendor.
2	STP Sludhe	~3 kg/day	Sludge generated from STP will be utilized as manure for onsite and offsite greenbelt area of the company

SN	Waste	Quantity	Disposal
3	Slag	60 TPD	Slag will be crushed onsite and ferrous material from slag will be recovered using magnetic field for reuse of it in process; while nonferrous material from crushed slag will be disposed as Building construction material & for road making
4	Ash	8.4 TPD	Sell to Brick Manufacturer

Mitigation Measures:

- Used/waste oil to be sold to registered recyclers/re-processors approved by (registered with) MoEF&CC having valid consents of MPCB
- Slag to be covered at all times and ensure no dispersion in the air environment

Ecological Environment:

The predicted pollution load after the proposed project will be within the stipulated standards and therefore there will be minimum or no disturbance to surrounding habitat.

Mitigation Measures:

- Strengthening of existing greenbelt
- Causality replacement and gap plantation to be taken up
- Developing avenue plantation

Socio-Economic Environment:

The proposed project is planned within the existing premises. The additional land is also within MIDC area; no R&R is involved. This proposed project will generate local direct & indirect employment in terms of contracts, truck transport related activities etc. Therefore, impact on employment generation aspect is seen as positive.

Traffic Scenario:

During the proposed project an addition of ~ 114 trips per day of trucks is envisaged. The impact on the existing access roads due to this addition trips were carried out by accessing the level of service. The modified level of service will continue to be Good as per the IRC guidelines. Traffic will continue to run smoothly without congestion and no widening of road is required.

Mitigation Measures:

- Plant to operate an automated scheduling system which aims to eliminating waiting times and improving efficiency of trucks accessing the plant this
- Provision of adequate truck parking facility

6.0 RISK AND MITIGATION MEASURES

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



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

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

7.0 DISASTER MANAGEMENT PLAN

Disaster Management Plan will be implemented in consultation with the District Administration to take care of health and safety during any untoward incident.

In view of handling of processes in industry, On-site Emergency Plans are important and hence has been prepared for the industry. Additionally recommendations for and Off-site shall be provided to the District Administration. During operational phase, surrounding population shall be made aware of safety precautions to be taken in case of any emergency situation due to the overall project activity.

8.0 OCCUPATIONAL SAFETY & HEALTH MANAGEMENT

Company is and shall continue to strictly adhere to the rules of Factories Act 1948 & the Maharashtra Factories Rules, 1963 regarding the occupational health facilities to be provided to the workers of the company.

- The industry has provided decontamination facilities for the workers. The health records of the workers are being maintained.
- For the continuous and continual development, company will continue to train & educate the operators and workers with the environment, health & safety rules & regulation, procedure and measures.
- Periodic medical checkup are and shall continue to be carried out to ensure the health status of the all workers.
- Job rotation will be done to avoid continuous exposure to heat radiation.

9.0 POST PROJECT ENVIRONMENTAL MONITORING PLAN

The sampling, analysis and frequency of environmental attributes including monitoring locations will be as per the guidelines provided by MoEF/CPCB/MPCB. The monitoring shall be carried out by third party laboratories that are accredited by NABL or MoEF.

10.0 ENVIRONMENTAL MANAGEMENT PLAN

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

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

All recommendations given in the EIA report including that of occupational health, risk mitigation and safety will be complied. JCAPL have allocated INR 264 Lacs as environmental pollution control measures; which is 3.58% of total project expansion cost.

11.0 PROJECT BENEFITS

The following benefits are expected from the proposed project:

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

12.0 CORPORATE ENVIRONMENT RESPONSIBILITY (CER) ACTION PLAN

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

JCAPL proposes to allocate 1% of their total expansion cost for CER activities as suggested in MoEFCC O.M. regarding Corporate Environment Responsibility vide. F.No. 22-65/2017-IA III. The total cost of expansion for the project is around 73.72 Cr. And 1% (i.e. 0.7372 Cr.) has been allocated for CER Action Plan. The same shall be implemented over a period of 5 years.



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

13.0 PROJECT SCHEDULE & COST

The proposed project is scheduled to be commissioned within 10-12 months after Environment Clearance (EC) and other statutory approvals are granted. The estimated cost of the expansion is Rs. 73.72 Crores.



Draft EIA Report for Proposed Capacity Enhancement Project located at Gut No. 74, 75 & 53, Pharola, Paithan, Aurangabad, Maharashtra, India

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