Executive Summary of Draft Environmental Impact Assessment Report For

The Proposed Expansion of CI & SG Iron casting Manufacturing Industry

By



NEOSYM INDUSTRY LIMITED

GAT NO. 201, VILLAGE – SANASWADI, TALUKA – SHIRUR, DISTRICT – PUNE, MAHARASHTRA

Prepared by:



ULTRA-TECH - Environmental Consultancy & Laboratory

Approved By: NABET- Quality Council of India **Certificate no.** NABET/EIA/2023/RA 0194_Rev 01 dated 26th February 2021

1.1 Introduction

M/s. Neosym Industry Limited having Registered Office at Industry House, First Floor, Backbay Reclamation, Churchgate, Mumbai 400 020. It is registered with the Registrar of Companies Mumbai having Registration No. U74999MH193PLC001910.

Neosym Industry Limited has its factory at Gat no. 201, Village Sanaswadi, Taluka – Shirur, District – Pune, State -Maharashtra, Pin code- 412208, Center coordinate- Latitude 18°40′53.86″N, Longitude 74° 7′26.46″E.

The nearest railway station is Pune Junction Railway Station 35 Km. Major airport is Pune International Airport located at 25 km from site. Pune Nagar Highway passes through Sanaswadi – Shikrapur Industrial belt.

After deductions, the Net plot area is 74546.40 sq. m. and capital investment for proposed project of Rs. 50 Crores. Neosym is located on private land in Notified Industrial zone as per Urban Development Department.

As per EIA Notification S.O. No 1533 dated 14th Sep 2006 the project falls under activity 3(a), Metallurgical industries, 'All other Non-Toxic Secondary Metallurgical Processing Industry', Category 'B' and requires prior Environmental clearance from SEIAA, for which Auto Standard Terms of Reference (ToR) granted vide File No. SIA/MH/IND1/ 428465 / 2023 on 11th May 2023 for conducting EIA studies.

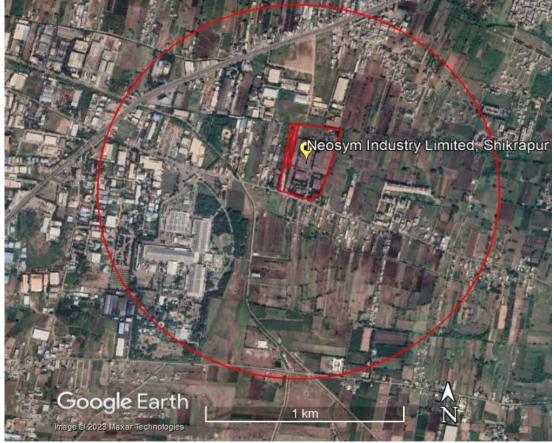


Fig 1.1 Location of Unit and surrounding 1 km radius area

1.2 Manufacturing process & Proposed products

S.G. Iron castings are made by melting mild steel scrap, Fe-Si, etc. in induction furnace. Once the melt is ready, it is inoculated with small addition of Magnesium or Chromium available in Ferro blends. The metal is then poured into moulds, cooled and fettled.

Grey cast Iron heavy castings are produced by melting pig iron and Cast Iron scrap in furnace. The molten metal is poured in dry sand molds. Cores are made of silicon sands dried and coated with graphite paste. Graphite paste is prepared from graphite powder and Bentonite mixed in water. The cores are dried in fired chamber properly before use in mold. Molten metal is poured in molds cavity with the help of a ladle. Castings are taken out of the mold after getting cooled. After breaking the runner and risers castings are fettled properly.

 No.
 Products
 Quantity (TPA)
 Uses/Applications

 1.
 SG Iron Castings
 40,000
 For Automobile, Non Automobile & Earth Moving Equipment & Machinery products

 2.
 Grey Iron Castings & Block & Heads
 32,000
 For Automobile & Non Automobile Manufacturing

Table 1.1 Proposed products with Quantities

Foundry industry produces heat, gases, dust, noise and wastes such as irreclaimable sands, ashes and slags. M/s Neosym has Consent to operate from MPCB and provided air Pollution control machinery in form of Bag filters and scrubbers wherever necessary. It is further proposed to upgrade the same as part of proposed expansion project.

1.3 Energy requirements

The power requirement after the proposed expansion activity for the facility is 24,200 KW which will be source from MSEDCL grid through Express feeders with 100% stand by. It is proposed to install 1 No. of 500 KVA and 1 No. of 250 KVA DG sets respectively, as emergency backup during power outage.

Following are air pollution control measures will be installed for proposed project.

Sr Attached To Stack No. Attached To Stack Air **Pollution** Control No **Height System** (m) Secondary system for S-25 & **Moulding Line** 30 Scrubber for secondary system + Stack Air pollution Control 1 & Line 2 S-26 Scrubber Paint Booth Wet Scrubber + Stack S-27 30 Dust collector Rotoblast DES **Dust Extraction System** S-28 15 with bag house + stack

Table 1.2 Proposed stack details

1.4 Water requirement & Effluent generation

Total water requirement for Domestic purpose, Process, Cooling tower and green belt maintenance will be 645 cmd (existing & proposed add.). Out of the total water requirement, 555 cmd will be fresh from Borewell + Tanker and 90 cmd will be recycled from treated water. Fresh water will be sourced from Borewell and balance from tanker water supply. NOC from CGWA is received dated 06th November 2023.

Water Consumption **Purpose** Sr. of Water Quantity (CMD) **Source of Water** No. Consumption Existing | Proposed **Total** Industrial Cooling, Spraying in Bore well +Tanker + 1 420 80 500 mine pits or boiler Feed Treated Effluent Domestic Purpose Bore well + Tanker 2 45 30 75 Processing Whereby water 3 gets polluted & Pollutants are Bore well + Tanker 3 7 10 easily biodegradable 4 Green belt Treated sewage 34 26 60

Table 1.3 Total water requirement

1.5 Effluent generation

Trade Effluent Generation after the proposed expansion will be 30 CMD mainly from cooling tower blowdown (22.5 CMD) & balance from paint shop (7.5 CMD). ETP will upgraded with two stage RO and Evaporator and trade effluent completely recycled for cooling. In existing plant HRTS system is provided for disposal of treated effluent which is supplied by NEERI, Nagpur.

Domestic sewage of 60 CMD will be generated in post expansion activity. Two STPs of adequate capacities with MBBR technology are provided for treatment of sewage and treated water from STP will be recycled for green belt.

Details are given in Chapter 2 of EIA report.

Quantity in CMD Sr. No. Description Disposal Path Existing | Proposed | **Total** Liquid Discharge-Zero Treated effluent recycled for 1 Trade Effluent 2 28 30 cooling water STP Treated from 2 Domestic Sewage 34 26 60 recycled for Green belt

Table 1.4 Effluent generation, treatment and disposal

1.6 Solid waste generation & disposal

Wastes have been categorized as both Non-Hazardous waste and Hazardous waste as per the Hazardous Waste (Management, Handling and Trans boundary Movement) Rules 2016. Details of non-hazardous solid waste generation & its disposal is given in Chapter 2.

Table 1.5 Non- Hazardous Waste Generation & Disposal

Sr.	Type of		Quantity		HOM	Diamogal	
No.	Waste	Existing	Proposed	Total	UOM	Disposal	
1	Slag	150	450	600	Kg/Day	Magnetic separator - balance for landfill	
2	Sand	100	100	200	MT/Day	MPCB authorized Party	
3	Canteen waste	15	5	20	Kg/Day	Sent to PMC through Approved Vendor	
4	E- waste	0.57	1.43	02	MT/Annum	MPCB authorized e- waste recycler	
5	Battery Waste	36	14	50	Nos./Annum	Returned back to supplier	
6	Biomedical waste (OHC)	2	3	5	Kg/Month	MPCB authorized CBMWTSDF Ranjangaon	

Details of hazardous solid waste generation and disposal are given below:

Table 1.6 Hazardous Waste Generation and Disposal

Sr.	Sr.		Quantity			Treatme		
No	Type of Waste	Exis ting	Prop osed	Total	UOM	nt	Disposal	
1	5.1 Used or Spent Oil	100	300	400	Lit/M	Recycle	Sale to authorized Party	
2	5.2 Wastes or Residues & Sludge	100	300	400	Kg/M	Incinerati on	CHWTSDF (MEPL Ranjangaon)	
3	21.1 process Waste, residues & Sludge (Paint Sludge)	200	600	800	Kg/M	Recycle/ Incinerati on	Sale to authorized Party/ CHWTSDF (MEPL Ranjangaon)	
4	35.3 Chemical Sludge From Waste Water Treatment	50	150	200	Kg/M	Landfill	CHWTSDF (MEPL Ranjangaon)	
5	33.1 Empty Barrels/ Containers/ Liners contaminated with Hazardous Chemicals/ Wastes	100	300	400	No./ M	Decontam ination	·Sale to Authorized Party for recycle after decontamination ·CHWTDSF (MEPL Ranjangaon)	

1.7 Description of Environment

Considering the local and regional setting of the area surrounding the plant facility, surrounding area of $10\ \mathrm{km}$ of the plant site is considered as study area for setting up

environmental baseline to study/ predict the impacts in surroundings due to the proposed project, as per MoEFCC guidelines. Environmental data monitoring was done during Winter 2022 (October, November, December) for meteorology, air quality, water quality, noise levels and soil characteristics, by setting up monitoring stations as prescribed. Further, existing traffic study, ecological and socio-economic features were also studied.

1.7.1 Land Environment

The soil samples were collected at 8 locations having different land use.

- Results indicate that the soils in study area varied from silt to sand.
- The soil are slightly alkaline in nature
- Though the study area is part of "rain shadow' zone experiencing drought conditions, the black soil with deeps layers here, retains moisture for long hence sustainably overcomes the drought conditions and remains least impacted.
- The soil here is well drained while the fertility ranges from medium to low.
- The study area is being moderately exposed to Soil erosion (owing to run-off) along with low soil fertility and poor agricultural practices.

1.7.2 Meteorology & Climate

The temperature data recorded in study area is ranging from 8.6° C to 43° C (Average 27.6%). From the wind rose graph it was observed that average wind speed is 3.6 m/s. Out of total data 6.1% contributing as calm. The winds flow predominantly from directions North to Northeast and East during the winter season.

1.7.3 Air Environment

The baseline air quality was established by monitoring PM₁₀, PM_{2.5}, SO₂, NOx, CO, O3, NH₃, Pb, benzene, benzopyrene, Arsenic and Nickel at 8 locations in Winter 2022 (October, November, December). The air monitoring was carried out in Industrial and Residential area.

- Concentration of PM₁₀ ranged from 44.35 μ g/m³ to 66.47 μ g/m³. It is noted that the PM₁₀ results are within permissible limit of 100 μ g/m³ for 24 Hrs.
- Concentration of PM_{2.5} ranged from 29.71 μ g/m³ to 38.81 μ g/m³. It is noted that the PM_{2.5} results are within permissible limit of 60 μ g/m³ for 24 Hrs.
- Concentration of SO_2 ranged from $9.45 \mu g/m^3$ to $22.48 \mu g/m^3$. It is noted that the SO_2 results are within permissible limit of $80 \mu g/m^3$ for 24 Hrs.
- Concentration of Nox ranged from 11.41 μ g/m³ to 25.16 μ g/m³. It is noted that the Nox results are also within permissible limit of 80 μ g/m³ for 24 Hrs.
- Concentration of CO ranged from 0.3 mg/m³ to 0.9 mg/m³. It is noted that the CO results are also within permissible limit of 4 mg/m³ for 1 Hr.
- Concentration of O3 ranged from 9.1 μ g/m3 to 13.9 μ g/m3. It is noted that the O3 results are also within permissible limit of 180 μ g/m3 for 1 Hr.
- Concentration of NH3 ranged from 10.1 μ g/m3 to 17.2 μ g/m3. It is noted that the NH3 results are also within permissible limit of 400 μ g/m3 for 24 Hrs.

• Lead, Benzene, Benzo(a)pyrene, Arsenic, Nickel are found to be BDL.

Results are compared with National Ambient Air Quality Standards (NAAQS) in respect of monitored parameters. As can be seen from the results, ambient air is well within the NAAQS standards for Industrial and Residential areas.

1.7.4 Noise Environment

Noise levels were monitored at 8 locations.

From monitoring results, it is observed that, noise levels for Dutta mandir area and L & T Phata were found to be Higher as per schedule VI of EP Act 1986. Higher Noise levels due to high vehicular movement.

1.7.5 Water Environment

Ground water sampling includes collection of Borewell water and Open well water at 5 locations.

Ground water quality is within specified Drinking Water quality standards as per IS (10500: 2012).

Surface water sampling was mainly carried out for 5 samples from Welu river, Sanaswadi Lake and Bhima river.

- The pH value was observed to be ranging from 6.8 to 7.6, within prescribed standard.
- Dissolved oxygen is in range of 5.5 mg/l to 6.8 mg/l. Dissolve oxygen is within standard.
- Boron is present in < 0.15 mg/l in all samples.
- Electrical conductivity in all samples were ranging from 451 μ S/cm to 525 μ S/cm, within standard. Electrical conductivity is specified only for Class E water quality.
- Biochemical Oxygen Demand ranging from 1.8 mg/l to 2.8 mg/l.

From above, it is observed that Samples were meeting other class of B to E as per CPCB.

Aquatic ecology sampling was mainly carried out for 5 samples from Welu river, Sanaswadi Lake and Bhima river.

- Phytoplanktonic Generic diversity was lower at stations SW 1 & SW 2; and higher generic diversity was observed at SW 3.
- The study shows that the waterbody supports zooplankton population.
- No major fishing activity were noted in study area, the villagers only catch fish for their consumption and not for selling.

1.7.6 Traffic survey

Site is accessible by State Highway (SH) 27 which connects Pune and Ahmednagar. Road considered for traffic study is State Highway (SH) 27 and internal road connects to site.

As per the IRC: 106-1990, PCUs for SH-27 are well within recommended design service and is under "Excellent" category (V/C ratio- 0.2).

As per the IRC: 106-1990, PCUs for internal road to site are well within recommended design service and is under "Excellent" category (V/C ratio- 0.2).

The calculated PCUs per hour is 1184.3, which is well within recommended design service volume (PCU/Hour) by IRC.

1.7.7 Biological Environment

According to 'India State of Forest Report, 2021', Forest Survey of India; forest cover in Pune district is about 10.97% of total geographical area.

The study area possesses habitats like Reserve forest, water bodies, agricultural fields and human settlements. These habitats have different characteristics which support typical composition of flora and fauna within them.

- Floral composition in Human settlement is found to be contributed majorly by shrubs followed by herbs and trees. This indicates Shrubs are planted mainly for beautification purpose.
- Floral composition in hilly area is found to be contributed majorly by Trees and shrubs followed by herbs. This indicates considerable presence of low soil cover-open areas.
- Floral composition in water bodies is found to be contributed majorly by Trees followed by shrubs and herbs. This indicates considerable presence of low soil cover-open areas during summer season.

1.7.8 Socio Economic Environment

In the 10 km radius study area there were 2 taluka area covered from 1 district. Out of the total settlements in the study area, 93% area comes from rural area &7% area comes from urban area. 79% of the settlements in the study area covered Shirur taluka and 21% from Haveli taluka from Pune district.

As per 2011 census record:

- In the study area Total population of the study area is 127455, out of total population male population is 53% & the female population is 47%.
- The average population density of 26 villages is 313 persons to per sq. km. and for 2 CT's (urban area) it is 728 persons to per sq. km.
- According to the census 2001 & 2011 census details, the decadal population growth in the study area is 36.65%. As per the growth rate, the projected population of the study area in the year 2021 will be 174167.
- As per 2011 census record, study area sex ratio is 897 which is lower to compared to Pune District sex ratio of 915 and Maharashtra State sex ratio of 929 female per 1000 male.

- As per 2011 census, about 9.03% of the total population in the study area belonged to Scheduled Castes (SC) and 2.34% to Scheduled Tribes (ST). Thus, indicating that socially backward castes constitute about 11.37% of the total population.
- Total worker population is 49.76%. Out of total working population 59.65% are male workers and 38.74% are female workers.

Observations from site survey:

Villagers expressed their positive response to proposed project as it will lead to increase employment opportunity for locals. Villagers expressed that the industrial activity should be beneficial in terms of local employment so that the standard of living of nearby population will enhance & will develop the area suitably.

1.8 Anticipated Environmental Impacts & Mitigation Measures

Environmental impact identification & mitigation measures are based on the type, scale and location of proposed project activity. Environmental components that may be affected negatively and positively due to proposed expansion activity are identified.

Environment parameters are selected for impact assessment due to proposed expansion activity during various phases. The maximum impacts during Construction & Operation phase were listed below:

Table 1.7 Anticipated Impacts & Mitigation measures for different phases of project

Sr. No.	Step/Activity	Environmental Aspect	Anticipated Impact Suggested Mitigation Measures			
1.0	Construction Phase	The Existing Construction is sufficient with only minor additions. Hence, there will be minimal Impacts during Construction phase.				
2.0						
2.0	Operation Phase	Land Environment	Probable impacts on the landuse/ landcover in the surrounding 10 km study area during the operation phase of	Slag to be properly collected, Iron is separated out in magnetic separator and balance is disposed off along with sand by landfill (through MPCB authorized party)		
			the project: • Impact on land environment due to increase in slag and silica sand quantity	Air Pollution Control equipment will be provided for efficient control of dust pollution on environment during operation phase. An efficient dust suppression system will contain dust particles before it is airborne.		
			• Increase in Particulate emission due to expansion resulting increase in	Provision of greenbelt development as per the norms (at least 33%) will help to reduce air pollution.		
			precipitation eventually impacting Soil & water in study area	Domestic effluent will be treated at STP and treated sewage will be used for green belt within premises		
			 Increase in domestic sewage and trade effluent quantity Increase in Hazardous 	Trade effluent (30 cmd) will be treated and reused/ recycled within plant premises for cooling. No trade effluent will be disposed off on land.		
			waste Increase in Municipal waste, e- waste, Biomedical waste for disposal	 Hazardous Waste will be disposed to CHWTSDF (MEPL, Ranjangaon) through MPCB authorized transporter. Other wastes will be disposed through various authorized parties 		

Sr. No.	Step/Activity	Environmental Aspect	Anticipated Impact	Suggested Mitigation Measures
		Air Environment	 Impact on air environment is anticipated due to additional emission of PM, SO2 & NOx. These emissions may cause occupational health impact on site and study area like respiratory problems i.e. allergic asthma and watering of eyes, damage of respiratory organs, necrosis of plant tissues, fruits due to acid rain and finally reduced yield if not controlled. 	 vale with differential pressure measurement across the bags. Pneumatic dedusting system will be provided which will be activated once pressure drop increases Scrubbers- the scrubber drain will be monitored and fresh water injected once concentration is reduced
		Noise Environment	 Noise generated, during operation phase from the equipment & machineries including motors, blowers, fans will add to noise level, exposing on site workers to high noise level. Transportation of raw material and finished products will also increase noise at site and in the area 	noise generation in plant areas.

C	Environmental				
Sr. No.	Step/Activity	Environmental Aspect	Anticipated Impact	Suggested Mitigation Measures	
			 Impact Noise will be generated due to Hammering, Chipping , Grinding. 	Detailed work room noise survey will be carried out to delineate High Noise Areas and plan measures at Shop floor level	
		Surface water	 Increase in Sewage and Trade effluent Water use in the plant is very minimal and there will not be any discharge of wastewater into the surface water resources or on land due to treated trade effluent discharge All internal roads will be concreted, hence any spillage will not affect the surface water quality. 	 sewage and treated sewage will be used for green belt. ETP will be upgraded by installing RO and MEE/ATFD Plant work on Zero Liquid Discharge and treated effluent will be recycled for cooling or disposed through HRTS system. 	
		Ground water	 Industry is using 95 cmd of water through captive borewell by taking appropriate NOC from CGWA. 	CGWA NOC and various conditions are complied.	
		Biological Environment	 Operation phase of the unit envisage insignificant adverse impact on flora and fauna, provided efficient working of suitable 	 Green belt area of 24601.22 sq. m is developed & maintained within plot. There will be separate monitory provision made for green belt development. Capital cost of Rs. 10 Lakhs and 	

Sr.		Environmental		
No.	Step/Activity	Aspect	Anticipated Impact	Suggested Mitigation Measures
NO.		Aspect	pollution control equipment and development and proper maintenance of suitable green belt.	
		Socio Economic Environment	 The direct-indirect employment opportunities will be generated during operation phase. Hence, there will be significant positive impact due to the proposed project. Revenue generation will help the overall improvement in social & development activities. Casting Product production, sales as well as exports have been increasing at a rapid pace. In order to meet the market requirement of Casting Product in timely manner the proposed expansion will be helpful 	 Approx. 100 nos. of persons will be employed during operation phase. Preferences shall be given to locals for employment. CER funds will be provided as per norms and will be spent in 2 years.

1.9 Environment Monitoring Program

For tracking of the effectiveness of mitigation measures & EMP at specific interval, regular monitoring of the necessary environmental parameters is required.

- To comply with the statutory requirements of monitoring for compliance with conditions of EC, Consent to operate and provisions under Factory Act & Environmental Protection Act provisions.
- Assessment of the changes in environmental conditions, if any, during the project operation/activities.
- Monitoring & tracking the effectiveness of Environment Management Plan & implementation of mitigation measures planned.
- Identification of any significant adverse transformation in environmental condition to plan additional mitigation measures; if & as required.

1.10 EMP Budget

Budget for Environmental Management has been prepared and is as below:

Table 1.8 EMP Budget

Sr No.	Pollution Control	Particulars	Estimated Capital Cost	Recurring Cost
1	Air Pollution Control	Secondary Fume Extraction Systems, Wet Scrubber System, Dust Collection System,	4,75,00,000/-	31,25,000/-
		OCEMS to be installed on 4 No. of stack	50,00,000/-	50,000/-
2	Water Pollution Control	ETP followed by ZLD system & STP Plant	50,00,000/-	7,80,000/-
3	Noise Pollution Control	Acoustic Enclosure	7,00,000/-	85,000/-
4	Green Belt	Green Belt Development	10,00,000/-	6,50,000/-
5	Solid Waste Management	Treatment and Disposal of (hazardous & non-hazardous waste at CHWTSDF)	•	10,00,000/-
6	Occupational Health	In-house Occupational Health Centre & Operational Safety Procedures	20,00,000/-	5,00,000/-
7	Environment Monitoring	Statutory Self-Monitoring from MoEF Approved Lab	-	4,00,000/-
		6,12,00,000/-	65,90,000/-	

1.11 CER

Industry will provide funds to the tune of Rs. 50 lakhs for social upliftment in nearby areas. Funds will be spent on upgradation of education, sanitation and public health facilities.

1.12 Additional studies

1.12.4 Safety and Risk Assessment studies

Safety and risk assessment studies have been conducted for chemicals to be stored and handled onsite.

Systematic study based on ALOHA has been carried out & details of consequence analysis studies have been presented in the Chapter 7. The precautions to be taken and recommendation for safe operations are mentioned at site.

Company is committed to comply with suggested recommendation.

1.13 Project Benefits

- Project will result in benefit to the country in form of foreign exchange revenues, duties etc.
- Enhanced production will also result in increased taxes to local gram panchayat and State Exchequer.
- Manpower requirement during Operation phase will be approximately 100 no. of Persons from nearby local area.
- Further, indirect employment via increased transportation, ancillary units & local economic activities with enhances spending power will also add in the employment potential.

1.14 Conclusion

The study for the proposed project of Neosym Industry Limited at Gat no. 201, Village Sanaswadi, Taluka – Shirur, District – Pune, State -Maharashtra, Pin code – 412208 has revealed that the upcoming activities of Expansion will have some minimal impacts during operation phase. All other impacts of the project will remain far below acceptable limits after necessary mitigation as described & suggested in EIA report. The major impacts will also be brought under acceptable limits by implementing the required hazard prevention & control measures as suggested in the EIA report. Thus, it has been concluded that there would not be any major impacts on environment due to the proposed project.