Executive Summary of Draft Environmental Impact Assessment Report For Proposed Manganese Ore Processing Plant

at Village Survey No. 156, Mouza Khairlanjee P.H. No. 36, Tehsil Mohadi, District Bhandara Maharashtra



By
M/s. Shrisiyaram Metalloid Private Limited

EXECUTIVE SUMMARY

A. PROJECT INFORMATION BRIEF

M/s. Shrisiyaram Metalloid Private Limited has proposed new Manganese ore processing Plant at Survey No. 156, Mouza Khairlanjee, P.H. No. 36, Tehsil Mohadi, District Bhandara Maharashtra. Total Capacity of project is production of MnO: 2000 MT/Month. Geographical Coordinate of the project site is Latitude: 21°22'14.20"N and Longitude: 79°34'31.90"E. Total area of plot is 34514.00 Sq. m (8.52 Acres). Total estimated cost of the project is 450 Lakhs (4.5 Cr).

As per the Schedule attached to the EIA Notification 2006 and its amendment in 2009 the proposed project is covered under Project or Activity of 2 (b), namely **"Mineral Beneficiation"** requiring prior Environmental Clearance (EC). It is categorized as Category B1, requiring Environmental Clearance from the State Environmental Impact Assessment Authority (SEIAA), Maharashtra. Application for Grant of ToR was submitted to the Authority through the Parivesh Portal on 24/02/2026. Standard ToR issued from SEAC-I, Maharashtra Vide ToR Identification No. TO26B0901MH5807383N dated 25/02/2026.

Project site and 10 km radius area are covered under Toposheet No. 55O/07 and 55O/11 of SOI. Madhya Pradesh-Maharashtra interstate boundary is about 19.11 km (Arial) from the proposed project site towards N direction. Tumsar Town is 17.80 km E direction from project site. Nearest settlement is Khairlanji which within 500 m W direction from project site. Nearest Highway is NH 753 at 1.3 km N direction.

Manganese Ore will be required for manufacturing of MnO. Raw material will be sourced from Nearby Mines of MOIL. Approximately 2000 MT/annum of Manganese Ore will be sourced from MOIL.

Total 400 MT of Indian Coal will be required as fuel for Furnace. Total water requirement for the project is 9.0 KLD. Required water will be source from Ground water for which necessary permission will be secured from competent authority. Total 2.0 KLD of domestic waste water will be generated which will be managed through septic tanks followed by soak pit.

Total area of plot is 34514.00 Sq. m (3.45 Ha). Local skilled and Semi-Skilled persons will be hired during construction and operation phase of the project. Indirect job opportunity

will also be generated through the project. Two Coal fired furnace of 200 MT capacity will be installed at suitable location.

B. SUMMARY OF ENVIRONMENTAL MONITORING RESULTS

The studies were conducted during the Winter season, 2026 (Jan-2026 to March-2026). The wind was blowing predominantly from the W, NW to NW and SE and E directions with maximum speed of 3.19 m/sec. The mean minimum temperature is 6°C and means maximum temperature is 45°C annually. Relative humidity during study season ranging from 20 % (During March) to 60% (During January). The normal annual rainfall in the district ranges from 1250 to 1500 mm with nearly 90% occurring during the southwest monsoon (June–September).

The total study area of 32096.7 hectares (321.0 sq. km) is predominantly covered by vegetation, which accounts for approximately 39.0% of the total area, indicating substantial green cover in the region. Agricultural land constitutes a significant portion, with agriculture covering about 17.5% and fallow land accounting for 17.8%, highlighting the agrarian nature of the area and seasonal variations in land use.

Summary of Environmental Monitoring:

Groundwater: pH values range between 7.1 and 7.7, Total Dissolved Solids (TDS) values vary from 345 mg/l to 786 mg/l, Fluoride levels are low (0.2–0.32 mg/l), well within safe limits. Overall, the groundwater quality in the study area is chemically suitable for drinking purposes, but requires adequate disinfection (such as chlorination or boiling) before consumption due to bacteriological contamination.

Surface water: pH values range from 7.5 to 7.8, indicating a neutral to slightly alkaline nature. The Dissolved Oxygen (DO) levels range from 6.8 to 7.2 mg/l, which is indicative of good oxygenation and healthy aquatic conditions. Biochemical Oxygen Demand (BOD) values are observed up to 3 mg/l, suggesting low to moderate organic pollution, while Chemical Oxygen Demand (COD) ranges from 11 to 16 mg/l, indicating the presence of some oxidizable organic matter. Overall, the surface water quality in the study area is generally within permissible limits for most physico-chemical parameters. However, the

presence of bacteriological contamination at certain locations indicates the need for appropriate treatment and disinfection prior to use for drinking purposes.

Ambient Air Quality: The PM_{10} concentrations across the monitoring locations range from 35.50 µg/m^3 to 66.50 µg/m^3, with average values between 45.80 µg/m^3 and 60.28 µg/m^3. $PM_{2.5}$ concentrations range from 9.50 µg/m^3 to 48.50 µg/m^3, with average values between 13.30 µg/m^3 and 37.70 µg/m^3. Sulphur Dioxide (SO_2) ranges from 6.50 µg/m^3 to 18.70 µg/m^3, while Oxides of Nitrogen (NOx) vary between 7.60 µg/m^3 and 23.50 µg/m^3 across all monitoring stations. Carbon Monoxide (CO) concentrations are observed in the range of 0.10 mg/m^3 to 0.70 mg/m^3, which are also well within the permissible limit (2 mg/m^3 for 8-hour average), suggesting low levels of incomplete combustion sources. The ambient air quality in the study area is generally good and well within the prescribed National Ambient Air Quality Standards for all monitored parameters. The results indicate that the area is not significantly impacted by air pollution sources, and the existing environmental conditions are suitable from an air quality perspective. However, periodic monitoring is recommended to ensure that air quality remains within acceptable limits, especially considering future developmental activities.

Noise Level: The daytime noise levels (Leq Day) across the study area range from 42.3 dB(A) to 47.6 dB(A). The highest noise level was recorded at Khairlanji (47.6 dB(A)), while the lowest was observed at Kandri (42.3 dB(A)). At the project site (N-1), the daytime noise level was recorded as 45.5 dB(A).

The nighttime noise levels (Leq Night) vary between 36.6 dB(A) and 42.1 dB(A). The maximum value was recorded at Khairlanji (42.1 dB(A)), whereas the minimum was observed at Kandri (36.6 dB(A)). The project site recorded a nighttime noise level of 40.2 dB(A).

The observed noise levels at all monitoring locations are well within the permissible limits prescribed by the Central Pollution Control Board (CPCB) for residential areas (55 dB(A) during daytime and 45 dB(A) during nighttime).

Soil Quality: Overall, the soil in the study area is moderately fertile, non-saline, and free from heavy metal contamination. The dominance of clay loam texture, adequate nutrient

levels, and favorable pH conditions make the soil suitable for agricultural use. The baseline data suggest that the existing soil quality is good, and with proper management practices, it can sustain agricultural productivity without significant limitations.

Ecology & Biodiversity: No NP, WLS, BSR, ESZ falling within 10 km radius from the project site. Pench NP, Mansinghdeo WLS, Nagzira WLS, New Nagzira WLS and Koka WLS and ESZ of the same are falling beyond the 10 km radius from the project site.

Socio-economics: As per Census 2011, the study area has scheduled castes population of 6540, while scheduled tribes' population is 7418 of the total population showing higher number of tribal populations. As per 2011 census records, 53897 population of the study area is literate. 19906 population is still illiterate in the study area. As per Census of India, 2011, total working population of the study area is 39994. Total 33809 population in the area is still unemployed including population on 0-6 age group.

C. SUMMARY OF ENVIRONMENTAL IMPACT

- The Sources of air emission during construction phase will include site clearing, vehicles movement, materials storage and handling and operation of construction equipment's
- A fugitive dust emission is due to movement of vehicle and land preparation activities, loading and unloading of construction materials, top soil removal, movement of vehicles over dusty roads and air born dust from exposed project site
- Emission from the Furnace will increase the ground level concentration of pollutants
- Generation of noise may cause the difficulty on hearing capacity
- No Industrial Effluent will generate due to the proposed activity
- Domestic waste water will be managed through septic tank followed by soak pit.
- Care will be taken to avoid water pollution during rainy season due to washout of waste material from dumpsite by constructing garland drains & settling pond
- All construction activity will be strictly carried out in dry season
- The land use shall be changed from open non-agriculture land to industries
- Construction waste viz. paint cans, empty boxes, iron bars, wood chips, concrete, cement, plaster, glass will be generated and disposal on open land may cause soil pollution

D. ENVIRONMENTAL MANAGEMENT PLAN (EMP)

Air Pollution Management

- 30 m stack attached to Furnace for better dilution and dispersion of pollutants
- Scrubber with Bag filter is attached preceding to the stack to arrest particulate matter
- All vehicles and their exhausts will be well maintained and will be regularly monitored for emission generated from the vehicle exhaust.
- Control of the airborne fugitive emissions from the ore handling area will be achieved through regular water sprinkling in this area.
- Total 33% of total area will be developed under green belt.

Waste Water Management

- No Industrial Effluent will generate due to the proposed activity
- Total water requirement for the project is 9.0 KLD.
- Required water will be source from Ground water for which necessary permission will be secured from competent authority.
- Total 2.0 KLD of domestic waste water will be generated which will be managed through septic tanks followed by soak pit.
- Domestic waste water will be treated by Bio toilets.

Solid Waste Generation and Its Disposal

- Total 400 MT of Indian Coal shall be required for Phase-I and 200 MT will be required for Phase-2.)
- Total 140 MT of Ash (@30-35% of Ash Content) shall be generated. The same shall be given to Bricks manufacturers. Ash can also be used for filling of low line area.
- Garbage collection bins will be provided at requisite locations for collection of dry waste & wet waste
- Construction waste will be stored and managed as per C&D Rule, 2016
- Domestic waste will be managed as per Solid Waste Management Rule, 2016
- Solid waste will not be disposed openly
- No burning of solid waste within plant premises.

Landscaping and Greenbelt Development

Total area for greenbelt development is 7096.706 Sq. m. Greenbelt will be developed along plot boundary as well as vacant plot using varieties of plant species suitable to local environment. Total 750 trees of different species will be planted. Species type will be selected based on soil characteristics, and other related aspects to mitigate pollution effects due to noise, odor, dust etc.

Occupational Health Safety Managements System

- Safety policy shall be displayed in the plant area
- Water sprinkling will be carried out in raw material unloading area
- Health check-up for operational workers will be carried out
- PPE will be provided to operational workers viz. Nose mask, ear muffs, ear plugs, safety gloves, helmets and safety goggles
- Training will be provided to workers in case of emergency
- First Aid box will be provided for emergency health hazards
- Emergency contact details of ambulance, hospital, police, safety in charge will be available
- Fire Fighting System will be provided at requisite location
- Sign boards will be provided at requisite location for safety measures
- "No Smocking Zone" shall be marked at fire prone area in the plant
- Safety audits shall be conducted

E. COST OF ENVIRONMENTAL MANAGEMENT PLAN

Total cost of Environmental Management Plan is about 45.0 Lacs. Recurring cost for the same is 4.5 Lahks/Year.

F. CONCLUSION

- Proposed project does not anticipate any adverse impacts on environment
- Workplace/ operation hazards, which will be minimized by providing personal protective equipment's, safety precautions & emergency plan
- Consequently, impacts on air, water, land and ecological environments are insignificant and the socio-economic benefits are predominantly positive

- Positive impact on employment generation will be envisaged in construction as well as operational phases
- Air emission through stack will be controlled by Scrubber and Bang filter
- No forest land is involved in the project
- No tree felling involved in the project

