

# **EXECUTIVE SUMMARY**

of

## **Humdara-Ghodepaiwadi Bauxite Ore Mine**

**ML Area : 120.48 Ha.**

**Humdara- Ghodepaiwadi (Sagave Village), Rajapur Taluka, Ratnagiri  
District, Maharashtra State**

**PROPONENT**

**M/S. GAMMA IRON INDIA LTD**

**July-2024**

**EIA Consultant**

**MINERAL ENGINEERING SERVICES**

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## 1.0 INTRODUCTION

M/s. Gamma Iron India Limited is proposing the bauxite mining project is located in Humdara- Ghodepawadi (Sagave Village), Rajapur Taluka, Ratnagiri District, Maharashtra. The proposed capacity of the project is 0.3 MTPA. The proposed bauxite mining project is over an extent of 120.48 ha. Mode of mining will be mechanical, with the use of Heavy earth moving machinery including excavator and ripper dozer. There will be no drilling and blasting operations for winning of ore and removal of waste. Pursuant to the Mines and Minerals (Development and Regulation) Act 2015 Amendment and the Mineral (Auction) Rules, 2015, the Government of Maharashtra through Directorate of Geology and Mining (DGM) issued the notice inviting tender on 01-02-2019 to conduct Auction of the Nanar Bauxite Block. The auction process for Humdara-Ghodepawadi Bauxite Block was conducted in accordance with the Mineral (Auction) Rules, 2015 and upon conclusion of the auction M/s. Gamma Iron India Ltd. being the highest qualified bidder who submitted the highest final price offer was declared as preferred bidder on 20-05-2019.

Further, upon submission of the first installment, being 10% of the upfront payment, Government of Maharashtra issued a Letter of Intent (LOI) vide letter no. MNG-0723/C.R.91/Ind-9(B) dated 13.09.2019 for the grant of a mining lease for Nanar Bauxite Block over an extent 120.48 Ha area. Further the validity of Letter of Intent has been extended by Government of Maharashtra MNG-0723/C.R.91/Ind-9(B) vide its letter dated 09.08.2023

## 2.0 PROJECT DESCRIPTION

The lease area of 120.48 hectares falls under Humdara- Ghodepawadi (Sagave Village), Rajapur Taluka, Ratnagiri District of Maharashtra State. The lease area falls under the Survey of India Toposheet no 47 H/6 and bounded by latitude of N 16°31'05.704" to 16°31'38.06" & Longitude E 73°23' 11.61" to 73°24'23.50 . The proposed lease area is having about 13.79 million tonnes of mineable reserves & resources as on 15.07.2021.

### Project Details

<b>Land Details &amp; Survey Nos</b>	120.48 Ha	
<b>Geographical Coordinates</b>	Latitude N 16° 31' 5.704" to N 16° 31' 38.06" & Longitude E 73° 23' 11.61" to E 73° 24' 23.50 "	
<b>Survey of India (SOI) Topo-sheet No</b>	47 H/6	
<b>Reserves &amp; Resources</b>	13.10 million tonnes	
<b>Production Capacity</b>	0.3 Million Tonnes	
<b>Life of the Mine</b>	8 Years	
<b>Water requirement</b>	80 KLD	
<b>Power requirement</b>	90 kwh	
<b>Defence Installation</b>	None	--

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Nearest airport	Chipi	110 Kms
Nearest Railway Station	Rajapur Railway Station	42 km
Nearest Highway	National High way NH-17	17 km from Mine lease
Seismic Zone	III	
Nearest Habitat	Hamda – Ghodepaiwadi (Sagave ) Village	Within ML Area there are 70 Houses
Project Cost	260 lakhs	
Man Power Requirement	60	

**Table.No.2.2 Environmental Setting of the Project Site**

Sanctuary / Tiger Reserve/ Elephant / any other Reserve Forest	No		
Biosphere Reserve	No		
Water Bodies	Vaghotan River	0.52 km	
	Kodavli River	6.9 Km	
	Pariya River	4.1 Km	
	Arabian sea	7.0 Km	
Defence Installation	No		
Nearest airport	Kolhapur	137 km by road	
Nearest Railway Station	Rajapur	33.5 Km by Road	
Nearest Highway	National Highway NH-66	14 km	
Seismic Zone	III		
Nearest Habitat	Sagave village KartraDevi (Sagave Village)	Within Mine lease Area 0.67 km	
Archaeological monuments/	Vijay Durg fort	6.6 km	
	Fort Ghere Yeshwantgad	12.0 km	
Places of worships	1) Rameshwar Mandir 2) Katradevi Temple 3) Shree Hanuman Maurthi Temple 4) Jama Masjid Ingalwadi 5) Shree Rakhandev Temple	Within Lease Area 0.82 Km 0.62 Km 2.40 Km 9.5 Km	
Coastal Regulation Zone (CRZ)	CRZ Boundary	0.173 Km	
Distance from the HFL of the river in m	Vanghotan River	0.561Km	
Nearest School	Sagave Katradevi School	0.5 Km from the North Direction of the Lease Area	
List of Schools	Sl.No	Schools Name	Distance Km
	1	Mondewadi School	4.8
	2	Kumbhavda High School	8.4
	3	ZP Shala Plaekar wadi	5.5
	4	Nanar Urdu School	2.4
	5	Gothivare Primary School	2.4
	6	Primary School padel	4.1
Mangrove	Mangrove	0.290 km	

**2.1 MINING OPERATION TECHNOLOGY & MINING PROCESS**

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***Mining Method: Open Cast Mining***

The Humdara- Ghodepaiwadi Bauxite Block (Mine) will be an open cast – A category fully mechanized mine which will be worked with the use of heavy earth moving machineries. The earth moving machineries are used for excavation, loading, hauling & transporting of ore and waste rock. There will be no drilling and blasting operations carried out and removal of waste.

**3.0 DESCRIPTION OF ENVIRONMENT**

**3.1 Study Area**

The study area of 10 kms radius is considered around the mining lease as buffer zone, the study period for baseline data collection was from Oct-21 to Dec-21 which is the Post monsoon season.

**3.2 Methodology of collection of baseline data**

For Baseline data collection services of environmental laboratory of M/s. Mineral Engineering Services, Ballari have been engaged who are duly recognised by MoEF&CC , GOI, New Delhi.

**Micro meteorology**

Micro meteorology and Micro climatic parameters have been recorded by installing a Weather Monitoring Station.

**3.3 AMBIENT AIR QUALITY**

For Ambient air quality 9 stations have been fixed covering 7 villages and 1 core zone covering all the directions, the frequency of monitoring is 2 days/ week for 3 months and the parameters covered were as per CPCB NAAQS guidelines.

The statistical analysis of Ambient Air Quality is as follows, the maximum values of SO<sub>2</sub>, NO<sub>2</sub>, PM<sub>10</sub> & PM<sub>2.5</sub> are observed to be 12, 17, 56 & 36 ug/m<sup>3</sup>. All the parameters including CO, Pb, and O<sub>3</sub> as per NAAQS are monitored and monitoring results are observed to be well within the limits. The maximum values in buffer zone villages also were well within the permissible limits.

**3.4 NOISE LEVELS**

For Noise quality 9 stations including 1 station in core zone and 8 in buffer zone villages were monitored and Leq during day & night are observed. The Leq values observed while monitoring at within 500m -ML area range Day Leq- 52.1 db(A) during day , Leq- 43.2 db(A) during night and values observed at buffer zone villages during day range are Leq- 44.9 to Leq 51.3 db(A) and during night range Leq- 40.3 to 43.9db(A) . The results are observed to be well within the limits respectively. [Monitoring results when compared to CPCB Standards are well within limits.]

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### 3.5 WATER QUALITY

Water Quality Monitoring was done by grab sampling once in a season for 5 surface Water and 9 Ground Water samples. Thus, the analysis results are compared to IS standards IS:2296 & IS: 10500:2012 and the results are to be within the permissible limits as per the standards.

### 3.6 SOIL QUALITY

Soil Quality Monitoring at 6 locations including one from the ML area and others from nearby village agricultural fields are collected and analysed, during the study period for Textural & Physical Parameters and the Nutrients. They are all observed to be within normal soil quality fit for cultivation.

### 3.7 LAND ENVIRONMENT

The existing land use of study area covering 10 km radius.

#### Land Use - Study Area

Sl.No	Particulars	Area in Ha	Percentage %
1	Water bodies	1475.6	3.803
2	Mango & Cashew Plantation	19614	50.552
3	Agricultural Land	4536.1	11.691
4	Barren Land	12355.5	31.844
5	Mangroves	554.9	1.43
6	Settlements	232.4	0.599
7	Aquaculture	10.66	0.027
8	Laterite quarry	20.874	0.054
<b>Total</b>		<b>38800</b>	<b>100</b>

### 3.8 BIOLOGICAL ENVIRONMENT

A detailed biological study report of the study area including core zone and 10 km buffer zone with details of flora and fauna, endangered, endemic and RET Species is furnished. A total of 234 plant species were recorded in 10-km radius study area. The dominant species were *Acacia nilotica*, *Azadirachta indica*, *Ficus benghalensis*, *Pongamia pinnata*, and *Prosopis juliflora*.

There are 11 species of mammals, 13 reptile species, 155 species of birds, 6 species of Butterflies, 3 species of Amphibians, 14 species of Odontos and 9 species of fishes at Vaghotan River were recorded within habitats ranging from Agricultural field to scrub thorny forest.

### 3.9 SOCIO -ECONOMIC STATUS

No Rehabilitation or Resettlement is involved and it is a non-forest land and there are no human settlements or PAPs within the ML areas which require Rehabilitation and Resettlement. There are 44 villages in the buffer zone. Of these, 32 villages are located in Rajapur taluka of Ratnagiri district and 12 in Devgad taluka of Sindudurga district of Maharashtra state.

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The total population of these villages is 38,177 according to census 2011. Due to the proposed mining activity, no significant adverse changes are visualized in the traditional way of life of the people residing in the villages of buffer zone.

This mine shall provide employment for about 177 people by both direct & indirect employment which include mine officials, skilled, semi-skilled and unskilled labour and indirect employment, in contractual works & transport. Preference is given to local people for employment. During the period the lessee shall spend Rs. 21 lakhs per annum towards health care, sanitation, safe drinking water, education, gender equality, empowering women, environmental sustainability, ecological balance, public infrastructure, support for sports , NGO's and animal welfare activities.

***4.0 ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES***

***4.1 GENERAL***

The Nanar Bauxite Ore Mine is New Mine and it will operate taking all precautionary measures to reduce the impact of mining operations on Air, Water, Noise and Soil and ensuring all control measures to comply with the prescribed standards. The proposed production of ore @ 0.3 MTPA within the area will be carried out, the open cast conventional type of mining, with no drilling and blasting. The precautionary and control measures are practiced. The impact of change on land use will be positive only, as portion of abandoned pit is partly backfilled and afforested and balance portion is left as water reservoir beneficial to local villagers.

Development of green belt along the boundary of ML Area, will ensure a better environment compared to the one that existed at pre-mining stage.

***4.2 AIR ENVIRONMENT***

The maximum uncontrolled PM<sub>10</sub> emission level due to proposed mining operations like production and transport of Bauxite ore & waste generation, predicted by using AERMOD software are observed to be well within the limits and does not exceed 70 µg/m<sup>3</sup>. The dust is not containing harmful free silica. The sources of dust emissions are loading, transport operations. To minimize dust deposition, roads will be graded and maintained regularly. All the loaded trucks will be covered with tarpaulin to avoid spillage enroute and speed limits are enforced. Dust suppression measures are undertaken through regular water spray. Bauxite ore is transported from mine to buyers with high capacity dumpers which reduces the number of trips. 7.5m Wide green belts shall be developed surrounding the mining area. Regular maintenance of equipment as per manufacturer's specification is done to minimize the fugitive emissions. PUC is undertaken for the transport vehicles.

#### ***4.3 WATER ENVIRONMENT***

There is no perennial surface water source passing through the lease area. The estimated quantum of water requirement shall be 80 m<sup>3</sup>/day, met by bore well water. The wastes and ore generated are nontoxic. The possible pollutants in the water are the suspended solids which are derived from erosions within the mining areas, dumps controlled by sedimentation. Oil spillage from maintenance of machinery controlled by grease trap. Rainwater directly falling over the pit area will be allowed to settle in the settling tank thereby helping in groundwater recharge. During rainy season, the water is passed through garland drain and collected in the settling tank provided to remove the solid suspensions in the runoff water.

#### ***4.4 NOISE ENVIRONMENT***

Maximum noise is produced from operation of earth moving m/c's & movement of dumpers and operation. No drilling & Blasting involved in mining operation. Limiting the speed of trucks within the mine boundary to 20 Kmph. Regular maintenance of mining equipment, machinery & all vehicles as per the manufacturers recommendations to minimize the Noise generation and providing wide green belt surrounding ML boundary.

#### ***4.5 IMPACT DUE TO GROUND VIBRATION EFFECTS FROM BLASTING OPERATIONS & CONTROL MEASURES***

No drilling and blasting .

#### ***4.6 IMPACT ON BIOLOGICAL ENVIRONMENT***

There are no wildlife sanctuaries and National wildlife parks within the study area. The ML area is a non-forest land. Since there exists some schedule 1 fauna in this forest, a wildlife conservation plan with budgetary provisions of Rs 2.5 lakhs per year is prepared by the lessee to assist local forest department.

In the green barrier of 7.5 m along the ML boundary, three rows of tree saplings are to be planted within the dugout pits filled with a mixture of manure and soil.

For the surface dumps which shall be re-handled and backfilled only mulching with plantation grasses, leguminous plants, shrubs/bush variety of species shall be used.

#### ***4.7 IMPACT ON SOCIO ECONOMIC ENVIRONMENT***

This mine shall provide employment for about 177 people by both direct employment and indirect employment, in contractual works & transport.

The mining activities help in sustainable development of this area including further development of physical & social infrastructural facilities. Also by this mining activity, the country achieves the revenue in terms of taxes on ore production and exchequer revenue for State in terms of royalty etc.

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The project proponent shall assess the health conditions of the workers as per the DGMS guidelines. Noise, air, water quality will be maintained well within the limits.

**5.0 ADDITIONAL STUDIES**

In additional studies, Risk Analysis followed by Disaster Management Plan, which will help in identifying the possible risks and to promote towards preparedness to counter any mishap. Risk analysis and disaster management plan have been prepared and incorporated in EIA Report.

**6.0 ENVIRONMENT MANAGEMENT PLAN**

A Comprehensive Environment Management Plan including development of Green Belt has been suggested. Identification of all potential environmental impacts of a project is an essential step of Environmental impact Assessment. These are critically examined and major impacts are further studied. In case of mining projects, change in topography and land use, air pollution, water pollution, waste management, biodiversity and socio-infrastructure issues are significant. The Mine will be operated taking all precautionary measures to reduce the impact of mining operations on Air, Water, Noise and Soil and ensuring all control measures to comply with the prescribed standards. Development of green belt along the boundary of ML area will ensure a better environment. The budgetary cost towards EMP proposed is Rs. 39 Lakhs per annum

**7.0 CORPORATE ENVIRONMENTAL RESPONSIBILITY (CER)**

In addition to the CSR, the PP proposes to undertake a number of activities as one time measure under the Corporate Environment Responsibility Initiative during the operation of Mining Project. Necessary budgetary provisions will be made after obtaining the response from locals during the Public Hearing for implementing the CER Activities in line with the MoEF&CC OM notification dated 30th September 2020 and 20th October 2020.

**7.1 Corporate Social Responsibility (CSR)**

Five Years Average Annual budget to be provided for socio-economic development of the area shall be Rs16.5lakhs.

**8.0 ENVIRONMENTAL MONITORING PROGRAM**

Regular environmental monitoring shall be conducted during life of the mine covering the study area to maintain the pollutants level from the mining activity within the permissible limits by engaging the services of External Environmental Monitoring Lab, which is recognized by MoEF&CC.



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Environmental Monitoring is being done as per National Ambient Air Quality Standards, CPCB Notification, New Delhi, the 18<sup>th</sup> November, 2009. For Water Quality Monitoring and Analysis shall be done using IS methods.

**9.0 CONCLUSION**

There shall be no major impact on environmental status of the area by continuing the production of ore from this mine. Besides export potential there is large demand for ore in the next coming years in India. Thus, production of ore proposed @ 0.3 MTPA is viable and helps in providing employment for 177 people from the neighboring villages for various activities. This project also helps in socio economic improvement of the neighboring villages. Also, this project helps in meeting the demand of raw material for the steel plants located in the neighbourhood.