

EXECUTIVE SUMMARY

**OF
ENVIRONMENTAL IMPACT ASSESSMENT REPORT
&
ENVIRONMENTAL MANAGEMENT PLAN
FOR
PUBLIC HEARING**

**Nahardih - Maghaipur Limestone Block
(365.252 ha) with Limestone production capacity of
1.5 Million TPA along with mobile crusher of 400 TPH**

At

**Villages Pachari, Chhadia, Alesur, Maghaipur and Motimpur-Khurd,
Tehsil: Kharora, District: Raipur, Chhattisgarh**

PROJECT PROPONENT



M/s. Nalwa Steel & Power Ltd.

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(Chhattisgarh)
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EXECUTIVE SUMMARY

1.0 PROJECT DESCRIPTION

1.1 INTRODUCTION

M/s. Nalwa Steel & Power Limited is proposing Nahardih-Maghaipur Limestone Block (365.252 ha) with Limestone production capacity of 1.5 Million TPA, Topsoil: 0.075 Million TPA, Over Burden: 0.88 Million TPA (Total Excavation: 2.45 Million TPA) along with mobile crusher of 400 TPH at Villages Pachari, Chhadia, Alesur, Maghaipur and Motimpur-Khurd, Tehsil: Kharora, District: Raipur, Chhattisgarh.

Letter of Intent (LOI) Letter has been issued by State Government of Chhattisgarh for Nahardih-Maghaipur Limestone Block for mineral Limestone over an area of 365.252 ha. in favour of M/s. Nalwa Steel & Power Limited vide their letter no. 3-13/2021/12 dated 04.08.2022.

As per EIA Notification dated 14th September, 2006, as amended from time to time; the project falls under Category "A" S. No. '1' (Mining of Minerals), Project or Activity '1(a) - (3)'.

1.2 JUSTIFICATION FOR THE PROJECT

The Gross State Domestic Product (GSDP) of Chhattisgarh for 2021-22 (at current prices) is projected to be Rs 3, 83,098 crores. This is an annual increase of 5% over the actual GSDP of 2019-20, and 9.4% higher than the revised estimate of GSDP for 2020-21 (Rs 3, 50,270 crore). In 2020-21, GSDP is estimated to be 3.2% lower than the budget estimate. In comparison, the nominal GDP of India is estimated to contract by 13% in 2020-21 and grow by 14.4% in 2021-22.

Chhattisgarh has emerged as one of the most preferred investment destinations in India. The state (including Madhya Pradesh) attracted cumulative Foreign Direct Investment (FDI) worth US\$ 1.43 billion between April 2000 and March 2020. Between October 2019 and March 2021, FDI inflow in Chhattisgarh stood at US\$ 0.03 million. During 2019, 61 Industrial Entrepreneurs' Memorandum (IEMs) were filed in Chhattisgarh with a proposed investment of Rs. 5,132 crore (US\$ 743.30 million). Chhattisgarh has abundant limestone reserves that support a strong steel & cement sector. Chhattisgarh accounts for around 5.4% of the total limestone reserves in India. Limestone production in the state reached 42.41 million tonnes in 2018-19.

Rise in infrastructure development is driving growth for Steel and Cement industries. Demand for steel & cement is set to continue given the strong growth expectations.

There is a significant scope for new mining capacities for raw material required for steel & cement making and considerable opportunities for future discoveries of sub-surface deposits.

This would not only help in bridging the demand-supply gap of cement in the region, the project will bring about gains in gross domestic product which will add to the gains in the GDP/GSDP. The mine shall be contributing around Rs. 16.815 Cr/year to the State & Central Govt. exchequers by way of mining revenue (Royalty, DMF, NMET) after ML is executed & mine is operated at the propose capacity. Total of 96 persons will be employed directly in this mine. Beside it, various direct-indirect employment opportunities are also envisaged. With the proposed development in and around the

area, there will be supporting facilities/infrastructure eventually leading to the development of the area. The project will help in the overall growth of the region.

1.3 PROJECT DETAILS

**Table - 1
Project Details**

S. No.	Particulars	Details
A.	Nature of project	Opencast Mechanized Limestone Mining Project
B.	Size of project	
1.	ML area	365.252 ha
2.	Production Level	<ul style="list-style-type: none"> ➤ Limestone Production Capacity - 1.5 Million TPA ➤ Crusher - 400 TPH
	Project Location	
1.	Village	Pachari, Chhadia, Alesur, Maghaipur and Motimpur Khurd
2.	Tehsil	Kharora
3.	District	Raipur
4.	State	Chhattisgarh
5.	Coordinates	Latitude: 21° 25' 39.33" N to 21° 25' 58.70" N Longitude: 81° 57' 39.33" E to 81° 58' 37.92" E
6.	Toposheet No.	F44P/15
D	Environmental Setting Details (with approx. aerial distance & direction from the mining lease boundary)	
1.	Nearest Habitation	<ul style="list-style-type: none"> ➤ Village Pachari (~100 m in NW direction from ML Boundary) (~90 m from UPL) ➤ Village Chhadia (~120 m in West direction from ML Boundary) (~140 m from UPL) ➤ Village Alesur (~350 m in NE direction from ML Boundary) (~360 m from UPL) ➤ Village Maghaipur (~170 m in SSE direction from ML Boundary) (~210 m from UPL) ➤ Village Nahardih (~400 m in SW direction from ML Boundary) (~700 m from UPL) ➤ Village Motimpur Khurd (~230 m in SSE direction from ML Boundary) (~450 m from UPL)
2.	Nearest School	Govt. New Middle School Chhadiya (~300 m in SW direction)
3.	Nearest Highway	NH -130 B (~4.0 km in SSE direction)
4.	Nearest Railway Station	Tilda Railway Station (~20 km in NW direction)
5.	Nearest Airport	Swami Vivekananda Airport, Raipur (~60 km in SW direction)
6.	Nearest Town / City	Kharora (~6.0 km in SW Direction)

S. No.	Particulars	Details																						
7.	Wild Life Sanctuary, National Park, Biosphere Reserves within 10 km radius study area	None																						
8.	Reserve Forests (RF) / Protected Forest (PF) within 10 km radius study area	<ul style="list-style-type: none"> ➤ Khulidabri Protected Forest (~3.0 km West direction) ➤ Moheranga PF (~8.5 km in WNW direction) 																						
9.	Water Bodies within 10 km radius study area	<table border="1"> <thead> <tr> <th>Name</th> <th>Distance and Direction</th> </tr> </thead> <tbody> <tr> <td>Tangna Nala</td> <td>3.0 km in North direction</td> </tr> <tr> <td>Kumhari Tank</td> <td>4.5 km in WNW Direction</td> </tr> <tr> <td>Banjari Nala</td> <td>9.0 km in NW direction</td> </tr> <tr> <td>Chitawar Nala</td> <td>5.5 km in NNE direction</td> </tr> <tr> <td>Khorsi Nala</td> <td>5.0 km in ENE direction</td> </tr> <tr> <td>Mahanadi Canal (Lowan Branch)</td> <td>4.5 km in SE direction</td> </tr> <tr> <td>Mahanadi Canal (Baloda Branch)</td> <td>100 m in SSW direction</td> </tr> <tr> <td>Kosrangi Tank</td> <td>6.5 km in SSE direction</td> </tr> <tr> <td>Pindron Tank</td> <td>8.0 km in SSW direction</td> </tr> <tr> <td>Pikridih Tank</td> <td>8.5 km in WSW direction</td> </tr> </tbody> </table>	Name	Distance and Direction	Tangna Nala	3.0 km in North direction	Kumhari Tank	4.5 km in WNW Direction	Banjari Nala	9.0 km in NW direction	Chitawar Nala	5.5 km in NNE direction	Khorsi Nala	5.0 km in ENE direction	Mahanadi Canal (Lowan Branch)	4.5 km in SE direction	Mahanadi Canal (Baloda Branch)	100 m in SSW direction	Kosrangi Tank	6.5 km in SSE direction	Pindron Tank	8.0 km in SSW direction	Pikridih Tank	8.5 km in WSW direction
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10.	Seismic Zone	Zone - II as per IS: 1893 (Part-I) : 2002																						
D	Cost Details																							
1.	Project Cost	Rs. 300 Crore																						
2.	Cost of EMP	Capital Cost: Rs. 7.6 Crores Recurring Cost: Rs. 1.4 Crore/annum																						

Source: Site Visit & Pre- Feasibility Report

1.4 LOCATION MAP

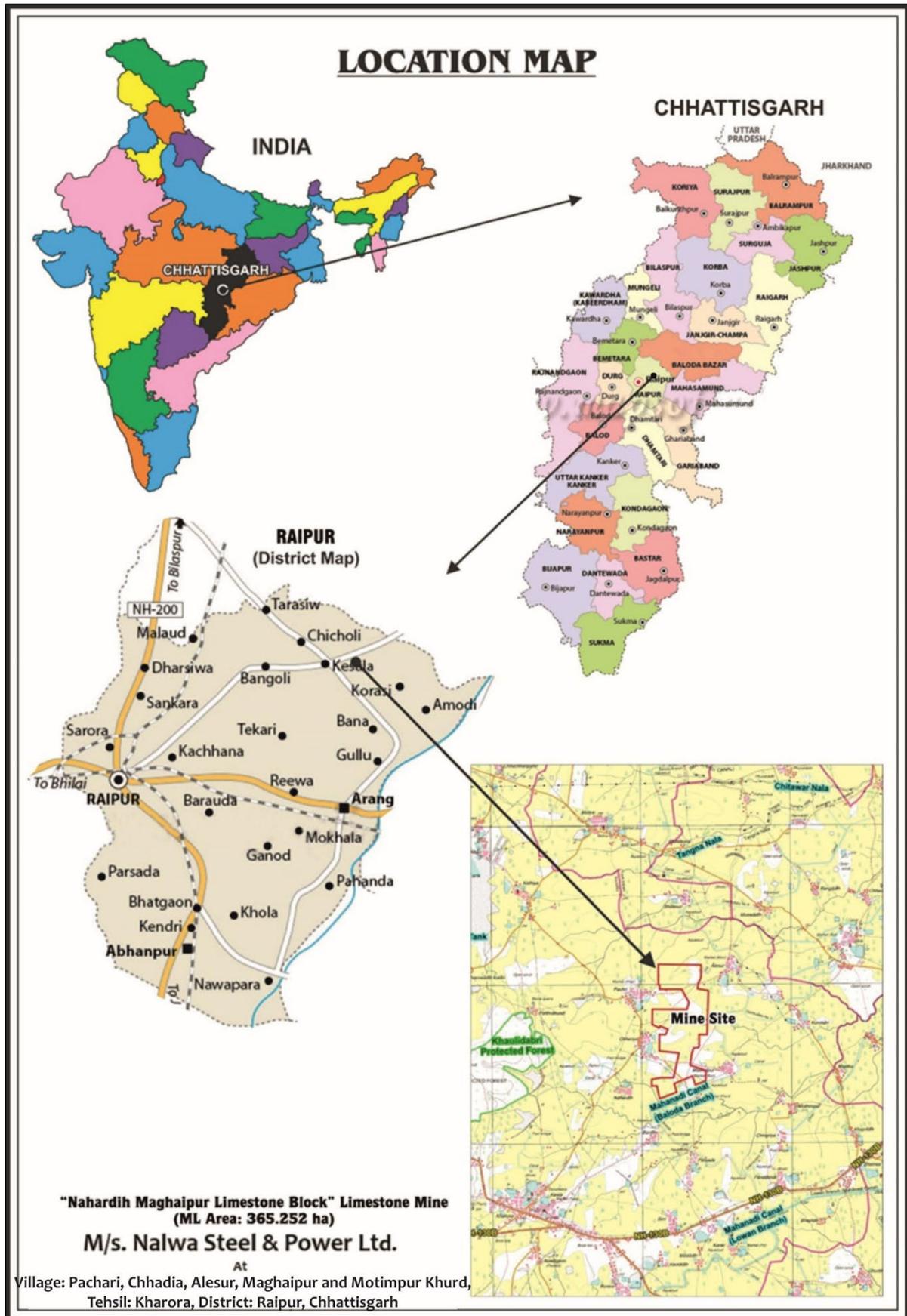


Figure 1: Location Map (showing general as well as specific location of the ML Area)

1.5 MINING DETAILS

Table - 2
Mining Details

S. No.	Particulars	Details
1.	Method of mining	Mechanized Opencast mining
2.	Total Geological Resources	122.22 Million Tons (As on 01/04/2022)
3.	Total Mineable Reserves	85.11 Million Tons (As on 01/04/2022)
4.	Limestone Production Capacity	1.5 Million TPA
5.	Life of the Mine	~60 years
6.	Bench Height	6.0 m
7.	Minimum Bench Width	12.0 m
8.	Individual bench slope	80°
9.	Ultimate Pit Slope	45°
10.	Elevation Range	282 m to 293 m AMSL
11.	Working depth in Plan period	264.6 m AMSL (22.40 m bgl)
12.	Ultimate Working Depth	252 m AMSL (35 m bgl)
13.	ROM/Waste Ratio (Tonnes: Tonnes)	1 : 0.30
14.	Number of Working Days	330 days
15.	Number of shifts per day	2 Shifts

Source: Approved Mining Plan & Progressive Mine Closure Plan

2.0 DESCRIPTION OF THE ENVIRONMENT

2.1 WIND PATTERN OF THE AREA

The nearest IMD stations to the mine site is located in Raipur. Based on the previous IMD data [Climatological Normals (1991-2020)], the pre-dominant wind direction (seasonal as well as annual) was considered. As per the data, pre-dominant wind direction throughout year was observed from West, according to which, the locations for ambient air quality monitoring were selected.

2.2 MICRO-METEOROLOGY OF THE AREA

Meteorological station was set-up at project site to record surface meteorological parameter during Summer Season (March to May, 2023) Summary of the micro - meteorology condition near to the site is given in Table - 3:

Table - 3
Meteorology at Site (Study Period: Summer Season (March to May, 2023))

Month	Temperature (°C)		Relative Humidity (%)		Wind Speed (m/sec.)	
	Max.	Min.	Max.	Min.	Max.	Min.
March 2023	34.1	25.7	50	29	5.2	0.2
April 2023	37.9	30.6	43	24	5.3	0.1
May 2023	39.4	33.2	43	26	5.3	0.1

Source: IMD, Climatological Table 1991-2020 & NASA Power

2.3 PRESENTATION OF RESULTS (AIR, NOISE, WATER AND SOIL)

The monitoring for Air, Noise, Water and Soil has been carried out within the 10 km radius study area from the proposed mine in Summer Season (March to May, 2023). The summary of the baseline Study is given below Table - 4:

Table - 4
Summary of Air, Noise, Water and Soil Parameters

Parameters	Number of locations	Description	Standards
Ambient Air Quality Monitoring	08 Locations	PM10 - 41.5 to 74.7 µg/m ³	100 µg/m ³ (24 hours)
		PM2.5 - 21.8 to 46.8 µg/m ³	60 µg/m ³ (24 hours)
		SO ₂ - 5.05 to 10.0 µg/m ³	80 µg/m ³ (24 hours)
		NO ₂ - 8.15 to 20.33 µg/m ³	80 µg/m ³ (24 hours)
		All other parameters were also found within the permissible limit as per the NAAQS 2009.	
Noise Level Monitoring	08 Locations	Noise Level During Day Time - 47.5 to 53.7 Leq dB (A)	75 Leq dB (A)
		Noise Level During Night Time - 38.5 to 43.1 Leq dB (A)	70 Leq dB (A)
Surface Water	03 Locations	pH - 7.47 to 7.83	
		Total Hardness - 65.05 to 360.29 mg/l	
		Total Dissolved Solids - 76 to 588 mg/l	
Ground Water Sampling	09 Locations	pH - 7.60 to 8.10	6.5 to 8.5
		Total Hardness - 100.08 to 545.76 mg/l	600 mg/l
		Fluoride - 0.21 to 0.46 mg/l	1 to 1.5
		TDS - 160 to 621 mg/l	2000 mg/l
Soil Sampling	09 Locations	Soil nature - Neutral to slightly alkaline pH - 6.20 to 7.34 Organic Matter - 0.61% to 1.04% Available Nitrogen - 251.80 to 400.84 kg/ha Phosphorous - 43.10 to 65.71 kg/ha Potassium - 651.60 to 1169.3 kg/ha	-

3.0 ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

A. AIR QUALITY MANAGEMENT

- Drilling machines (30 Mt/Hr) will be equipped for Wet drilling and dust collection system to suppress dust generation at source.

- Controlled Blasting will be adopted with the optimum use of explosive energy which helps in reducing air pollution.
- Use of Hydraulic Rock Breaker for breaking oversize boulders in place of secondary blasting.
- Overloading of material will be avoided.
- Fugitive dust emissions from all sources shall be controlled regularly, Water spraying on haul roads, loading, unloading and transfer points shall be provided and maintained.
- Maintenance of vehicles will be carried out regularly for minimization of generation of gaseous pollutants.
- In order to reduce air pollution in the surrounding, Green Belt and plantation will be done over an area of 97.674 ha.
- Personal protective equipment's will be provided to workers/employees working in the area and adequate training will be provided on safety and health aspect.
- 02 Nos. Ambient Air Quality Monitoring Stations will be established at Mine Site.
- Fugitive dust emission monitoring will be done.

B. NOISE LEVEL MANAGEMENT

Following measures will be taken for noise pollution control: -

- Drilling is proposed to be carried out with the help of sharp drill bits which helps in reducing noise.
- Controlled blasting with spacing (3 m) burden (2.5 m) and optimum charge/delay will be adopted. Rock breaker will be used to avoid Secondary blasting
- The blasting will be done during less human activity and will be intimated well before time of blast. Blasting study will be done during operation phase of mining and every blast will be monitored regularly
- Crusher will be installed in closed building to control the noise pollution.
- Proper maintenance, oiling and greasing of mining machinery at regular intervals will be done
- Adequate silencers and enclosed cabin to be provided in HEMM to protect the operator from high noise level.
- Personal Protective Equipment like dust mask, ear plugs etc. are proposed to be provided to all employees
- Development of green belt within 7.5 m lease periphery and plantation in undisturbed area and backfilled area.
- Periodical monitoring of noise will be carried out

C. WATER AND WASTE WATER MANAGEMENT

- One first order stream/ dry Nallah is passing through the block from west to east which is not proposed to be diverted during the Plan period. However, the same will be diverted while approaching for mining during Conceptual stage of mining.
- Mahanadi Canal (Baloda Branch) is adjacent to proposed mine site in East direction.
- Periphery of ML boundary near to Canal will be developed with greenbelt plantation.
- The depth of water table is around 3 to 5 m bgl and the ultimate working depth of the mining operation will be (42 m bgl). Hence, groundwater will be intersected due to mining

activity. Necessary permission has been obtained from CGWA for intersection of ground water table.

- Water requirement of 110 KLD will be sourced from ground water and mine sump as and when developed. Permission has been obtained from CGWA for abstraction of ground water.
- Rain water will be accumulated in bottom most bench of pit and same will be utilized in dust suppression and plantation etc.
- No waste water will be discharged out of the mining lease area.
- Domestic Wastewater (about 4 KLD) will be diverted to the STP. Wastewater from workshop (about 4 KLD) will be used for dust suppression after oil & grease trap through ETP.
- Constructions of One Check Dam are proposed to arrest silt to go into natural drainage.
- Garland drain having siltation pits will be provided at the toe of the dumps, to channelize the runoff water from dumps into the water reservoir (i.e., mined out pits) & around the active pits to restrict rainy water from entering in to the working pit.
- To control the surface run-offs, Retaining Wall around waste dump will be constructed
- Ground water quality analysis will be done regularly.
- Surface Water Quality Analysis (Mine - Sump) will be monitored regularly.

D. GREENBELT & PLANTATION

- **Greenbelt:** Total estimated greenbelt area on 7.5 m lease periphery will be 11.250 ha out of which ~3.25 ha will be completed within plan period.
- **Plantation:** Total area under plantation will be 86.424 ha (42.370 ha on backfilled area and 44.054 ha on undisturbed area).
- Density of Trees will be @2000 trees/ha.
- Local species will be planted after consultation with local forest officer and as per CPCB/SPCB guidelines. i.e., Arjun, Jamun, Khamar, Mango, Shisham, Satwan, Neem, Karanj, Bahera, Amla, Guava, Lemon, Ashok etc

E. SOLID WASTE MANAGEMENT

- At conceptual stage, 1.01 million cum (1.67 million tonnes) of topsoil will be generated, which will be spread over the backfilled area and used in plantation.
- Approx 12.56 million cum (22.11 million tonnes) of overburden will be generated during conceptual stage, which will be used for backfilling excavated area (42.370 ha).

4.0 ADDITIONAL STUDIES

Additional studies i.e., Hydro - Geological Study & Rainwater Harvesting Plan, Risk Assessment and Disaster Management Plan, Land use and Land Cover Study, Rehabilitation and Resettlement Plan are covered in Draft EIA/EMP Report as per the Terms of References issued by MoEFCC vide letter no. J-11015/38/2023-IA.II (NCM) dated 11.12.2023 in favour of M/s. Nalwa Steel and Power Limited.

5.0 PROJECT BENEFITS

The mining activity will help in meeting the growing demand of cement & hence help in the economic growth of the country. M/s. Nalwa Steel & Power Limited. will actively involve in the implementation of CSR activities. It will be helpful in the development of basic needs of the local area like education, Health & family welfare, women empowerment, Natural resource management, water conservation, roads etc. It will result in growth of the surrounding areas by increasing direct and indirect employment opportunities in the region including ancillary development, overall improvement in Human Development Index and supporting infrastructure.

6.0 CONCLUSION

The Proposed Limestone Mining project will prove the beneficial to local people as direct and indirect employment opportunity will be generated for improving their living standard. There will be increase in revenue generation to the government by way of royalty, excise and government taxes etc. Further improvement in infrastructure will take place like education, roads, availability of drinking water, medical facilities and growth of allied in adjacent villages.

There will be no significant pollution of air, water, soil and noise. Regular monitoring of all the components of environment will be done. Increased social welfare measures taken by the company will bring development in the near-by villages.

