

PRE- FEASIBILITY
REPORT

EXECUTIVE SUMMARY

1.0 Introduction

Pakhar Bauxite Mine is situated near village Pakhar, Thana-Kisko, Dist.-Lohardaga, State-Jharkhand over an area of 35.828 ha. The proposed rate of production is 60,920 TPA of Bauxite. The lease area comprises of GM land and agricultural land. The estimated project cost is Rs.60 Lakhs. The expected life of mine is 18 years.

The Mining lease of Pakhar Bauxite mine over an area of 35.828hectare in Mouza - Pakhar, Thana - Kisko, District – Lohardaga, State- Jharkhand was granted in favour of Smt. Jaiwanti Kumari Bhagat R/o Nadia Harmu Road, Lohardaga (Jharkhand) vide order dated 03.06.1986 for 20 years.

The year of Commencement of the mine is 1986 and year of mine opening is 1986. After expiry of leasehold for next 20 years lessee again submitted application for renewal of mining lease for next 20 years is pending. Lessee has applied for extension of mining lease.

The Mining Plan with progressive mine closure plan was approved under 24A of MCR, 1960, vide order no. RAN/LOH/BX/MP-204/08-09(8) dated 16/06/2009 for a period of 5 years (2006-07 to 2010-11).

This is case of violation. Production has been done without obtaining environmental clearance.

This mining project falls under Category “A” Project or activity 1(a) as per EIA Notifications 2006 and amendment done so far.

1.1 Salient features of the project

Project Name	Pakhar Bauxite Mine
Location of mine	Village-Pakhar, Thana- Kisko, District- Lohardaga, State – Jharkhand.
Latitude	N23°33'55.6" TO N 23°34'18.64"
Longitude	E84°35'05" TO E 84°35'09"
Topo sheet number	73 A/10
Land Type	GM Land & Agricultural Land
Minerals of mine	Bauxite
Total Mineable reserves	889092 Tonne
Life of mine	18 years
Proposed production of	60,920 TPA of Bauxite

mine	
Method of mining	Opencast Mechanized
No of working days	300 days
Water demand	Total water requirement is about 13 KLD (2.0 KLD Drinking + 8.0 KLD Dust Suppression + 3.0 KLD Greenbelt)
Sources of water	Nearby villages (nearby tubewells)
Man power	65
Nearest railway station	Bodagram Railway Station nearly 14 km
Nearest airport	Ranchi airport is about 115 km distance
Seismic zone	Zone II

1.2 Present land Use Plan

Sr. No.	*All the areas are given in Hectares	Total
1.	Pits & Quarries	1.0234
2.	Top soil Dump	----
3.	Dumps	0.3800
4.	Roads	0.4483
5.	Railway	----
6.	Backfilled	0.7080
7.	Non Utilized	33.2683
Total		35.828

1.3 Proposed Planning

Mining method	-	Opencast Mechanized method.
Project cost	-	Rs. 60 Lakhs
Production	-	60920 TPA of Bauxite

1.4 Conclusion

Bauxite is one of the most important industrial minerals and it being the aluminium ore, is the principal raw material for the production of alumina. Bauxite is formed by lateralization of various silicate rocks such as granite, gneiss, basalt, syenite and shale. The bauxite rock usually includes other materials such as iron hydroxides, clay, silt and free silica. It most often occurs as a residual soil material in tropical and subtropical areas. It is the primary source of aluminum.

The mineral will be used for calcined alumina production and the low grade ore can be utilized by the cement and allied industries. It is also useful for the industries that can produce aluminum metal as the deposit has the metal grade.

The Bauxite Mine of the lessee is worked for supplying Bauxite to M/s Hindalco and M/s Hindalco draws their requirement of Bauxite from other private mine owners in excess of that produced from the Jharkhand state since their captive mines can be produced from their captive mines of Jharkhand.

2. INTRODUCTION OF THE PROJECT/ BACKGROUND INFORMATION

2.1 Identification of Project and Project Proponent

Pakhar Bauxite Mine is situated near village Pakhar, Thana-Kisko, Dist.-Lohardaga, State-Jharkhand over an area of 35.828 ha. The proposed rate of production is 60,920 TPA of Bauxite. The lease area comprises of GM land and agricultural land. The estimated project cost is Rs.60 Lakhs. The expected life of mine is 18 years.

2.2 Brief Information about the Project

The project has been proposed for mining of 60,920 TPA of Bauxite by Mechanized Mining method. The mine lease area is 35.828 Ha. The expected life of the mine is 18 years. Blasting will be done for mining activity. Water requirement for the proposed project for drinking use, dust suppression and other use will be 13 KLD, which will be taken from nearby village.

Details	Requirement of water(KLD)
1. Dust Suppression.	8
2. Drinking & Domestic	2
3. Greenbelt Development	3

2.3 Need for the Project and Its Importance to the Country or Region

Our country is progressing fast and requires high production of aluminum. Bauxite, being the primary ore for production of aluminum plays a very important role in improving the economic conditions of the country to a great extent. Laterite is used as construction material. The region, in which the mining lease lies, is economically backward and is mostly dependent upon seasonal farming. The per capita income of the villages in this area is much below the national average. As a result of the proposed project, employment and various other facilities will enhance in this area. Thus, the project will greatly improve the economic condition of the area.

2.4 Demands-Supply Gap

The demand for bauxite is ever growing. The region, in which the mining lease lies,

is economically backward and is mostly dependent upon seasonal farming. The per capita income of the villages in this area is much below the national average. As a result of the proposed project, employment and various other facilities will enhance in this area. Thus, the project will greatly improve the economic condition of the area. Therefore there is always a good demand of the mineral in the domestic market.

2.5 Imports vs. Indigenous Production

Development needs will be met only through indigenous produced bauxite material against the high cost of imported material.

2.6 Export Possibility

There is no proposal to export the bauxite as there is huge gap in demand and production.

2.7 Domestic/ Export Markets

DOMESTIC MARKET

The bauxite will be used for production of aluminum.

EXPORT MARKET

The proposed mining activity is for indigenous consumption only for aluminum industries.

2.8 Employment Generation

The proposed mining activity will provide employment to about 59 (approx) workers. The workers will be hired mostly from the nearby villages.

3. PROJECT DESCRIPTION

3.1 Type of Project Including Interlinked and Interdependent Projects, If Any.

There is no any interlinked project.

The project falls under Category “A” Project or activity 1(a) as per EIA Notifications 2006 and amendment done so far.

3.2 Location

Pakhar Bauxite Mine is situated 13 Km away from Bodagram Railway Station nearly Nearest Airport Birsa Munda Airport Ranchi is about 115 Km distance.

Toposheet No- 73A/10

N23°33'55.6" TO N 23°34'18.64"

E84°35'05" TO E 84°35'09"

3.3 Details of Alternate Sites

Mining is site specific project.

3.4 Size or magnitude of operation**Anticipated Life of mine for bauxite**

We are considering average production of 49670 Tonne of mineral per annum.

Anticipated Life = Mine able (111 + 122) Reserve/Avg. Annual Production in tonne
 = 889092/49670= 18 Years.

The Life of mine may change depend upon the prospecting results, rate of production and the extent of mechanization done by the lessee in near future.

3.5 General Geology:**3.5.1 Topography**

The Pakhar Plateau is V shaped hillock. The plateau slopes gradually toward north. Steep gradients with cliff faces are characteristics of the south, east and west of the hillocks. The link of western plateau is known as Banglapat. The Bauxite lease area of the lessee mostly covers in Pakharpat. The highest point is at 1047.5mRL and lowest point towards the valley portion in north is about 960m above M.S.L.

Occasional springs at the slopes provide water for human consumption. Main water sources are on the middle and foot of the hills. Cultivation depends mainly at the top of the plateau in monsoon. The hill slopes are under Pakhar Reserve Forest with Forest density of 0.2 Thick growth of saal and other trees are common in the area.

3.5.2 Local Geology:

The leasehold area forms almost a rectangular map of land that exposes bauxites, laterites in old quarries. In the area as seen in the northern and southern part of the area both in the escarpment sections. A general section is characterized as follows:

Lateritic Soil	:	1.5m
Lateritic and Morrums	:	1.5m
Bauxite and Aluminous Laterite	:	About 4.5m Thick

Litho merge could not be seen, Laterites are red, hard compact, massive with vesicles, scoriaceous, ferruginous laterite (murrum). Segregation of Bauxite has been found mostly just beneath the pisolitic laterite (murrum). The top surface, a perfect plateau is in general covered with lateritic soil.

3.6 PROJECT DESCRIPTION WITH PROCESS DETAILS

3.6.1 Method of Mining

Since the deposit in this area is surfacial in nature with continuous boulders interspersed with soil & laterite, it is proposed to carry out only opencast mechanized mining for this plan period. The operations like drilling of shot hole, sorting of ore and breaking at the size will be done manually. For blasting 100 mm holes will be drilled by wagon drills run by diesel compressor. And overburden will also be removed by poclain dumper combination.

The sequence of operations followed will be (a) Cutting and removal of soil & murrum by poclain dumper combination wherever present in the bench; (b) Removal of OB with dumper to the dump site or backfills, as the case may be, (c) Drilling of bench, using DTH drills in harder strata (d) Charging and blasting of holes, and loading of laterite & bauxite by poclain dumper combination; (e) Removal of waste with dumper to the backfill site. (g) The ore is sized and sorted and loaded into the trucks.

Losses in drilling and loading, some ore would be occasionally lost due to sudden changes in the dimensions of the ore-body. It is estimated that 80% of in situ ore is recovered during mining from the previous achieved data

PRODUCTION DETAILS

The Proposed Production of Bauxite in next five year:

Year	Pit No.	Total tentative excavation (Tonnes)	Top soil (Tonnes)	OB/SB/IB (Tonnes)	ROM (Tonnes)		Ore/Waste Ratio
					Ore (Tonnes)	Mineral Reject (Tonnes)	
1 st Year	1 & 2	83227	11781	19259	41749	10438	1:1.0
2 nd Year	1 & 2	92900	19030	19788	43266	10816	1:1.1
3 rd Year	1 & 2	107953	18968	28283	48562	12140	1:1.2
4 th Year	1 & 2	106861	17699	21847	53853	13462	1:1.0
5 th Year	2 & 3	130775	25632	28992	60920	15231	1:1.1
Total		521716	93110	118169	248350	62087	1:1.1

3.7 Raw Material Required Along With Estimated Quantity, Likely Source, Marketing Area of Final Product/S, Mode of Transport of Raw Material and Finished Product

No raw material will be required for production of Bauxite.

3.8 Resource Optimization/ Recycling and Reuse

Not envisaged.

3.9 Availability of Water Its Source, Energy/ Power Requirement and Source

3.9.1 Water Requirement

Water required for drinking is 2.0 KLD. It is proposed to obtain water for drinking from nearby village.

3.9.2 POWER

Electricity will be supplied from Jharkhand State Electricity Board.

3.10 QUANTITY OF WASTES TO BE GENERATED (LIQUID AND SOLID) AND SCHEME FOR THEIR MANAGEMENT/ DISPOSAL

3.10.1 Solid Waste Generation & its Disposal

During quarry development tolerable amount of soil will be removed from this area. This soil will be used for road dressing & plantation.

3.10.2 Liquid Effluent

Not applicable

4. SITE ANALYSIS

4.1 Communication

The lease area is connected with Gumla-Ranchi Road by a motorable road constructed by REO. The nearest railway station is Richughuta on eastern railway at a distance of 35Km. it is also connected with Tori railway station at a distance of 76Km. on Barkakana – Garhwa section of eastern railway. The nearest airport is Ranchi which is about 90Km away from the area.

The lease area is about 1.0Km NW of Village Pakhar, Thana - Kisko, Dist.- Lohardaga. The lease area is connected to village Pakhar by kaccha Rasta. The lease area is about 17.0Km from Kisko.

4.2 LANDFORM, LANDUSE AND LAND OWNERSHIP

LANDFORM

The lease area represents an undulating land.

LANDUSE

EXISTING LAND USE PATTERN

Sr. No.	*All the areas are given in Hectares	Total
1.	Pits & Quarries	1.0234
2.	Top soil Dump	----
3.	Dumps	0.3800
4.	Roads	0.4483
5.	Railway	----
6.	Backfilled	0.7080
7.	Non Utilized	33.2683
Total		35.828

LAND OWNERSHIP

Forest		Non- forest		
Forest (specify)	Area (ha)	Land Type	Khasra No.	Area (ha)
(i) Forest Land	Nil	(i) G.M. land	Khasra Detail enclosed	17.018
		(ii) Virgin land		Nil
		(iii) Grazing land		Nil
		(iv) Agriculture land		18.810
		(v) Others (specify)		Nil
			Total	35.828

4.3 Existing Infrastructure

Temporary shelter house is situated within lease area.

4.6 Soil Classification

It is represented by vast spread of rocks below the soil.

Planning Brief

5.1 Planning Concept

Since the deposit in this area is surfacial in nature with continuous boulders interspersed with soil & laterite, it is proposed to carry out only opencast mechanized mining for this plan period. The operations like drilling of shot hole, sorting of ore and

breaking at the size will be done manually. For blasting 100 mm holes will be drilled by wagon drills run by diesel compressor. And overburden will also be removed by poclain dumper combination.

5.2 Amenities/Facilities

Mines Office, Workshop etc.

Proper site services such as First Aid, temporary shelter, Drinking Water will be provided to the mine workers in nearby places.

5.4 EMP (Environment Management Plan) COST

Description	Quantum of work to be done	Approx. total cost of process (in Rs.)
Reclamation and Rehabilitation of excavated pits	Will be converted into water body and will be utilized for irrigation and pisciculture purpose.	50,000/-
Soil dump Management	During quarry development tolerable amount of soil will be removed from this area and it will be used for road dressing and plantation.	50,000/-
Plantation & green belt development	Within 7.5m safety barrier 475 number of plants will be planted and on approach road total 300 plants will be planted, Total number of plants will be 775.	1,50,000/-
Air and Noise Quality monitoring	One year every month in 1 location for air, and for noise 1 location.	1,00,000/-
Water sprinklers	Water spraying shall be there in haul road and mining area.	1,50,000/-
Occupational Health	Occupational health check-up for the workers shall be carried out periodically and records shall be maintained as per MMR, 1961.	1,50,000/-
Total		6,50,000/-

5.5 PROJECT COST

Serial no.	Head	Capital
1	Land	Nil
2	Road & Temporary Structures	5,00,000/-
3	Tools & Machinery	50,00,000/-
4	Miscellaneous	5,00,000/-
Total		60,00,000

6. Transport of Men and Material:

Workers from nearby villages will be engaged for mining and transportation purposes. They will come for work on foot.

The material from the mine will be transported by trucks / dumpers.

6.1 Industrial Area (Processing Area)

No infrastructure is proposed.

6.2 Residential Area (Non Processing Area)

As local workers from nearby areas will be engaged for the mining activity, no residential area/ housing are proposed.

6.3 Green Belt

The 7.5m safety barrier zone along the periphery of the mine lease area.

6.4 Social Infrastructure

The following rural activities are being proposed to be done in the region under Rural Development Programme.

- Rural Health service
- Educational Development Programme
- Self-employment, resource development
- Conservation of cultural activities of Jharkhand
- Agricultural development & environmental protection

6.5 Connectivity

The lease area is connected with Gumla-Ranchi Road by a motorable road constructed by REO. The nearest railway station is Richughuta on eastern railway at a distance of 35Km. it is also connected with Tori railway station at a distance of 76Km. on Barkakana – Garhwa section of eastern railway. The nearest airport is Ranchi which is about 90Km away from the area.

The lease area is about 1.0Km NW of Village Pakhar, Thana - Kisko, Dist.- Lohardaga. The lease area is connected to village Pakhar by kaccha Rasta. The lease area is about 17.0Km from Kisko.

6.6 Drinking Water Management

Water for drinking is required to be 2.0 KLD. It is proposed to obtain water from nearby village.

6.7 Sewerage System

Domestic waste water will be treated into septic tank followed by soak pit.

6.8 Industrial Waste Management

Not applicable

6.9 Solid Waste management

During quarry development tolerable amount of soil will be removed from this area. This soil will be used for road dressing & plantation.

6.10 Power Requirement & Supply/Source

The operation will be done only during the day light; hence there is no power requirement for the project at site.

7. REHABILITATION AND RESETTLEMENT (R&R) PLAN

Not applicable as no person or family will be up rooted, needing any resettlement of rehabilitation.

8 PROJECT SCHEDULE & COST ESTIMATES**8.1 Likely Date of Start of Construction and Likely Date of Completion**

No construction activities are proposed. The mining activity will commence only after receiving environmental clearance and other statutory clearance.

8.2 Estimated Project Cost Along With Analysis In Terms of Economic Viability of the Project

The 5% of total estimated cost of approx. 60 Lakhs as mentioned in the report comes as 3.0 Lakh to be spent under CSR plan.

Si. No.	Activity and implementation target	Capital cost in Rs
1.	<u>Health</u> <ul style="list-style-type: none"> <input type="checkbox"/> Health Awareness and Checkup with free supply of medicines. <input type="checkbox"/> Specific Programmes for hygiene and sanitation. 	50,000/-
2.	<u>Education</u> <ul style="list-style-type: none"> <input type="checkbox"/> Targeted programmes for primary education for specially girl child. <input type="checkbox"/> Augmentation of infrastructure and equipments, furniture, blackboard, toilets etc in village's school. <input type="checkbox"/> Existing govt. School Strengthening by boundary wall construction, construction of toilets, roof repair, drinking water taps, etc. 	50,000/-

3.	<p><u>Physically Challenged</u></p> <p><input type="checkbox"/> Helping aids to each category of physically challenged as per requirement</p>	50,000/-
4.	<p><u>Water</u></p> <p><input type="checkbox"/> Provision of potable drinking water supply in nearby villages through hand pumps, tankers etc</p> <p><input type="checkbox"/> Awareness campaigns for water borne diseases, sanitation and hygiene</p>	50,000/-
5.	<p><u>Miscellaneous</u></p> <p><input type="checkbox"/> Rural sports and cultural facilities.</p> <p><input type="checkbox"/> Donation to orphanage / temple.</p> <p><input type="checkbox"/> Development of grazing lands for cattle of villages.</p> <p><input type="checkbox"/> Construction and maintenance of drainage, public utilities, sanitation facilities, etc in nearby area.</p>	1,00,000/-
Total		3,00,000/-

9.0 ANALYSIS OF PROPOSAL (FINAL RECOMMENDATIONS)

The proposed mine will bring economical benefits to the state by the way of Royalty for mineral and to the local people by way of direct and secondary employment opportunities. The mining activities as proposed are the backbone of all construction and infrastructure projects as the raw material for construction is available only from such mining.

The project will bring about socio-economic improvement of the area and will prove beneficial to the area.
