STATE FOREST HEADQUARTERS, ODISHA
OFFICE OF THE PRINCIPAL CHIEF CONSERVATOR OF FORESTS &HoFF
PLOT NO. GD-2/12, ARANYA BHAWAN, CHANDRASEKHARPUR
BHUBANESWAR-751023
E-mail-: nodal.pccfodisha@gmail.com

No. 12295 /9F (MG) 66/2021
Dated, Bhubaneswar the 06th June' 2025

To

The **Deputy Inspector General of Forests**
Government of India, MoEF & CC (FC Division)
Indira Paryavaran Bhawan, Jor Bagh Road
Aliganj, New Delhi-110003

Sub: Preparation of Holistic Transportation Plan to have minimum impact of the Mines located in Netrabandha Landscape coming under Keonjhar and Bonai Forest Divisions in the District of Keonjhar and Sundargarh in the State of Odisha- regarding.

Sir,

The Council of Scientific and Industrial Research – National Environmental Engineering Research Institute (CSIR-NEERI) was entrusted with conducting a study on the environmental quality across multiple mining leases, conducting transportation scenario modelling, assessing infrastructure requirements, and engaging with key stakeholders through consultations, workshops, and technical meetings. The outcome was a detailed set of recommendations for environmentally sustainable mining, including an evaluation of Environmental Carrying Capacity (ECC) which compares actual production levels against sustainable limits—and its relevance to ongoing and proposed mining operations.

CSIR-NEERI has proposed a tiered ore transportation strategy known as the Suggested Ore Transport Mode (SOTM). This framework aims to minimize the environmental footprint of ore transport while ensuring logistical efficiency.

All five mining leases falling in the Netrabandha Pahar Landscape spread across the Keonjhar and Bonai forest divisions in the Keonjhar and Sundargarh districts of Odisha have been assessed in accordance with the Suggested Ore Transport Mode (SOTM) framework, based on their respective Environmental Clearance (EC) capacities.

SOTM CODE	EC CAPACITY	SUGGESTED ORE TRANSPORT MODE	LEASE NAME	LESSEE NAME	DIVISION	CIRCLE
SOTM 1	≥ 5 MTPA	100% TRANSPORT VIA PRIVATE RAILWAY SIDING OR CONVEYOR BELT TO PUBLIC RAILWAY SIDING, OR PIPELINE FOR CAPTIVE MINES; AT LEAST 70% BY SUCH MODES FOR NON-CAPTIVE MINES.	GUALI IRON ORE MINES	M/S OMC LIMITED	KEONJHAR	ROURKELA
SOTM3	BETWEEN 1 AND <3 MTPA	MINIMUM 70% BY PUBLIC RAILWAY SIDING; MAXIMUM 30% BY ROAD TRANSPORT—EITHER DIRECTLY TO DESTINATION OR TO ANOTHER PUBLIC SIDING.	KALAMANG WEST (NORTHERN PART) IRON ORE BLOCK	M/S TATA STEEL LIMITED	KEONJHAR & BONAI	
			NETRABANDH PAHAR IRON ORE BLOCK	M/S BHUSHAN STEEL & POWER LIMITED	ROURKELA	
			LASERADA PACHERI MANGANESE & IRON ORE BLOCK	M/S THRIVENI EARTHMOVERS PVT. LTD.	KEONJHAR	
			NETRABANDH PAHAR (WEST) IRON ORE BLOCK	M/S RAGA TRADECON PVT. LTD.	BONAI	

The total quantum of minerals proposed to be transported by road as well as by Railway siding as per the NEERI Guidelines based on the allowed EC in case of 05 mines located in the Netrabandha Pahar land scape are tabulated below.

ABSTRACT OF TRANSPORTATION PLAN OF NETRABANDH PAHAR LANDSCAPE

SL. NO.	NAME OF THE MINES	MINING LEASE AREA	"SUGGESTED ORE TRANSPORTATION MODE" (SOTM)	EC CAPACITY	MODE OF TRANSPORTATION		REMARKS
					RAILWAY SLIDING	ROAD	
1	KALMANG WEST (NORTHERN PART) BLOCK FOR IRON ORE MINES, ALLOTTED TO M/S TATA STEEL BSL LIMITED.	FOREST LAND - 42.608 HA NON-FOREST LAND-54.608 HA TOTAL-97.216 HA	SOTM-3	2.95 MTPA	70% (2.065)	30% (0.885)	AS IT IS A CAPTIVE MINE, CONCRETE PLAN FOR 70:30 IS GIVEN.
2	GUALI IRON ORE MINES OF M/S OMC LTD	FOREST LAND - 338.477 HA NON-FOREST LAND-26.549 HA TOTAL-365.026 HA	SOTM-1	12 MTPA	20% (2.4)	80% (9.6)	AS THESE ARE MERCHANT MINERS, THERE ARE NO FIXED BUYERS, HENCE NO CONCRETE RAILWAY AND ROAD
3	LASERDA PACHERI IRON & MN. MINES OF M/S THRIVENI EARTH MOVERS PVT. LTD	FOREST LAND - 94.351 HA NON-FOREST LAND-37.449 HA TOTAL-131.800 HA	SOTM-3	1.655 MTPA	70% (1.155)	30% (0.5)	

4	NETRABANDHA PAHAR IRON ORE BLOCK OF M/S. BHUSHAN POWER & STEEL LIMITED	112.621 HA NON-FOREST LAND-139.223 HA TOTAL-251.844 HA	SOTM-3	2.0 MTPA	70% (1.4)	30% (0.6)	DESTINATION ARE GIVEN. HOWEVER, THEY HAVE PROPOSED TO FOLLOW SOTM GUIDELINE THROUGH UNDERTAKINGS.
5	NETRABANDHA (WEST) IRON ORE MINES OF M/S RAGA TRADECON PRIVATE LIMITED	66.242 HA NON-FOREST LAND-74.370 HA TOTAL-140.612 HA	SOTM-3	1.0 MTPA	70% (0.7)	30% (0.3)	

The capacity of Guali Iron ore mines is 12.0 MTPA. But the UA stated that the present production capacity falls under the 1 to <3 MTPA and that will follow SOTM 3. The DFO, Keonjhar Division in his memo no.7880 dt.19.05.2025 addressed to RCCF, Rourkela states that the UA i.e. OMC Ltd. has expressed that the present mode of transportation from Guali Iron Ore Mines involves approximately 20% by rail and 80% by road. However, the transportation strategy will be shifted once the new railway line from Barbil to Barsuan in near future is completed.

Director, Indian Institute of Forest Management, Bhopal has been requested to prepare a comprehensive Biodiversity Conservation Plan for Netrabandha Pahar landscape. The institute was supposed to submit the plan by march'2025.Due to some technical reason it is delayed.

In case of Kalamanga iron Ore mines of Tata Steel Limited, in Stage-I condition they have to produce the biodiversity plan. The Plan is being prepared in a holistic manner for the entire landscape. Hence, it is not possible to submit the plan in standalone manner. Further, Department of Steel and Mines, Government of Odisha vide Order No.22 dt.02.01.2025 have allowed another one year to start the mining operation. They have furnished an undertaking to in the Stage-I compliance to pay for the approved biodiversity plan.

RCCF, Rourkela after detailed discussion with the user agencies and, DFOs related to concerned mines, has prepared a holistic transportation Plan. The same is enclosed.

In this context, it is requested to consider the holistic transportation plan for all the 05 nos. of Mines located in the Netrabandha Pahar Landscape of Keonjhar Forest Division and Bonai Forest Division in Keonjhar District and Sundargarh District in the State of Odisha.

Encl: **Copy of holistic transportation plan**

Yours faithfully

Additional Principal Chief Conservator of Forests
Forest Diversion & Nodal Officer, FC Act

Memo No. 12296 Date. 06.06.2025

Copy forwarded to the Additional Chief Secretary to Government, Forest, Environment & Climate Change Department, Government of Odisha, Kharavel Bhawan, Bhubaneswar for information and necessary action.

6/6/2025

Chief Conservator of Forests (Nodal)

Memo No. 12297 Date. 06.06.2025

Copy forwarded to the Regional Chief Conservator of Forests, Rourkela Circle for information & necessary action with reference to his office Memo No. 2800 dt. 28.05.2025.

6/6/2025

Chief Conservator of Forests (Nodal)

Memo No. 12298 Date. 06.06.2025

Copy forwarded to the Divisional Forest Officer, Keonjhar & Bonai Forest Divisions for information & necessary action with reference to Memo No. 2801 dt.28.05.2025 of RCCF, Rourkela.

6/6/2025

Chief Conservator of Forests (Nodal)

Memo No. 12299 Date. 06.06.2025

Copy forwarded to the Authorized Signatory of Netrabandha Pahar Iron Ore Block of M/s Bhusan Power &Steel Ltd. / Guali Iron Ore Mines of M/s OMC Ltd. /Laserda Pacheri Manganese & Iron Ore Block of M/s Thriveni Earthmovers Pvt. Ltd. / Kalmang West (Northern part) Iron Ore Mines of M/s Tata Steel BSL Ltd. and Netrabandha Pahar (west) Iron Ore Block of M/s Raga Tradecon Pvt. Ltd. for information & necessary action.

6/6/2025

Chief Conservator of Forests (Nodal)

HOLISTIC TRANSPORTATION PLAN FOR SUSTAINABLE MINING FOR THE NETRABANDHA PAHAR LANDSCAPE IN ROURKELA CIRCLE

INTRODUCTION

In response to the findings of the Justice M.B. Shah Commission Report (2013), the Ministry of Environment, Forest and Climate Change (MoEF&CC) mandated a comprehensive Carrying Capacity Study to promote sustainable mining practices within a 1,000 sq. km impact area in the state of Odisha. The primary objectives of this initiative were twofold:

1. To develop a sustainable development plan for ongoing and future mining activities.

2. To formulate an environmental management strategy that ensures ecological balance while supporting developmental needs.

The Council of Scientific and Industrial Research – National Environmental Engineering Research Institute (CSIR-NEERI) was entrusted with conducting the study. It involved the collection and assessment of primary environmental data covering air, water, noise, soil/land, biodiversity, and socio-economic parameters. The study also entailed evaluating environmental quality across multiple mining leases, conducting transportation scenario modelling, assessing infrastructure requirements, and engaging with key stakeholders through consultations, workshops, and technical meetings.Key stakeholders consulted included representatives from the Department of Steel & Mines, Directorate of Mines, Indian Bureau of Mines (IBM), State Pollution Control Board (SPCB), Geological Survey of India (GSI), State Forest Department, MoEF&CC, and senior management from the mining companies operating within the study area.

The outcome was a detailed set of recommendations for environmentally sustainable mining, including an evaluation of Environmental Carrying Capacity (ECC)—which compares actual production levels against sustainable limits—and its relevance to ongoing and proposed mining operations. Central to the recommendations was the determination of a Suggested Sustainable Annual Production (SAP), along with mine-wise production allocations and critical pre-requisites for their implementation.

It also addressed the expansion of existing mines valid up to 2020 and strategies for maintaining sustained iron ore production beyond 2020. The study also recommended establishing a robust monitoring and reporting framework to track the environmental performance of mining operations and proposed a dedicated institutional mechanism to oversee and enforce sustainable mining practices in the region.

REGULATION OF ORE TRANSPORTATION BASED ON ENVIRONMENTAL CLEARANCE (EC) CAPACITY

Given the significant environmental impacts—particularly dust pollution and noise—caused by the road-based transportation of iron and manganese ore, the report emphasizes the need to regulate ore transportation in alignment with the Environmental Clearance (EC) capacity of individual mines.

To this end, CSIR-NEERI has proposed a tiered ore transportation strategy known as the Suggested Ore Transport Mode (SOTM). This framework aims to minimize the environmental footprint of ore transport while ensuring logistical efficiency.

SUGGESTED ORE TRANSPORT MODE (SOTM) BASED ON EC CAPACITY

CODE	EC CAPACITY	SUGGESTED ORE TRANSPORT MODE
SOTM 1	≥ 5 MTPA	100% TRANSPORT VIA PRIVATE RAILWAY SIDING OR CONVEYOR BELT TO PUBLIC RAILWAY SIDING, OR PIPELINE FOR CAPTIVE MINES; AT LEAST 70% BY SUCH MODES FOR NON-CAPTIVE MINES.
SOTM 2	BETWEEN 3 AND <5 MTPA	MINIMUM 70% BY PUBLIC RAILWAY SIDING VIA CONVEYOR BELT; MAXIMUM 30% BY ROAD—EITHER DIRECTLY TO DESTINATION OR TO ANOTHER PUBLIC RAILWAY SIDING.
SOTM 3	BETWEEN 1 AND <3 MTPA	MINIMUM 70% BY PUBLIC RAILWAY SIDING; MAXIMUM 30% BY ROAD TRANSPORT—EITHER TO THE DESTINATION DIRECTLY OR TO ANOTHER PUBLIC RAILWAY SIDING.
SOTM 4	<1 MTPA	100% BY 10/17-TON TRUCKS, OR AS PER ANY OF THE HIGHER-CAPACITY OPTIONS MENTIONED ABOVE.

Pursuant to the EC conditions, five mining leaseholders have submitted their proposed Iron Ore Transport Mode (IOTM) plans, detailing how they intend to align ore transportation with environmental regulations and ECC thresholds. These proposals aim to reduce the ecological burden of mining-related logistics while supporting continuous and compliant operations.

This Holistic Transportation Plan is thus developed in alignment with the NEERI recommendations and SOTM classifications, focusing on environment-friendly, capacity-aligned, and stakeholder-integrated transportation strategies that support sustainable mining within the Netrabandha Pahar Landscape, Rourkela Circle.

CLASSIFICATION OF LEASE-WISE STATUS AS PER EC CAPACITY AND SOTM UNDER NETRABANDHA PAHAR LANDSCAPE, ROURKELA CIRCLE

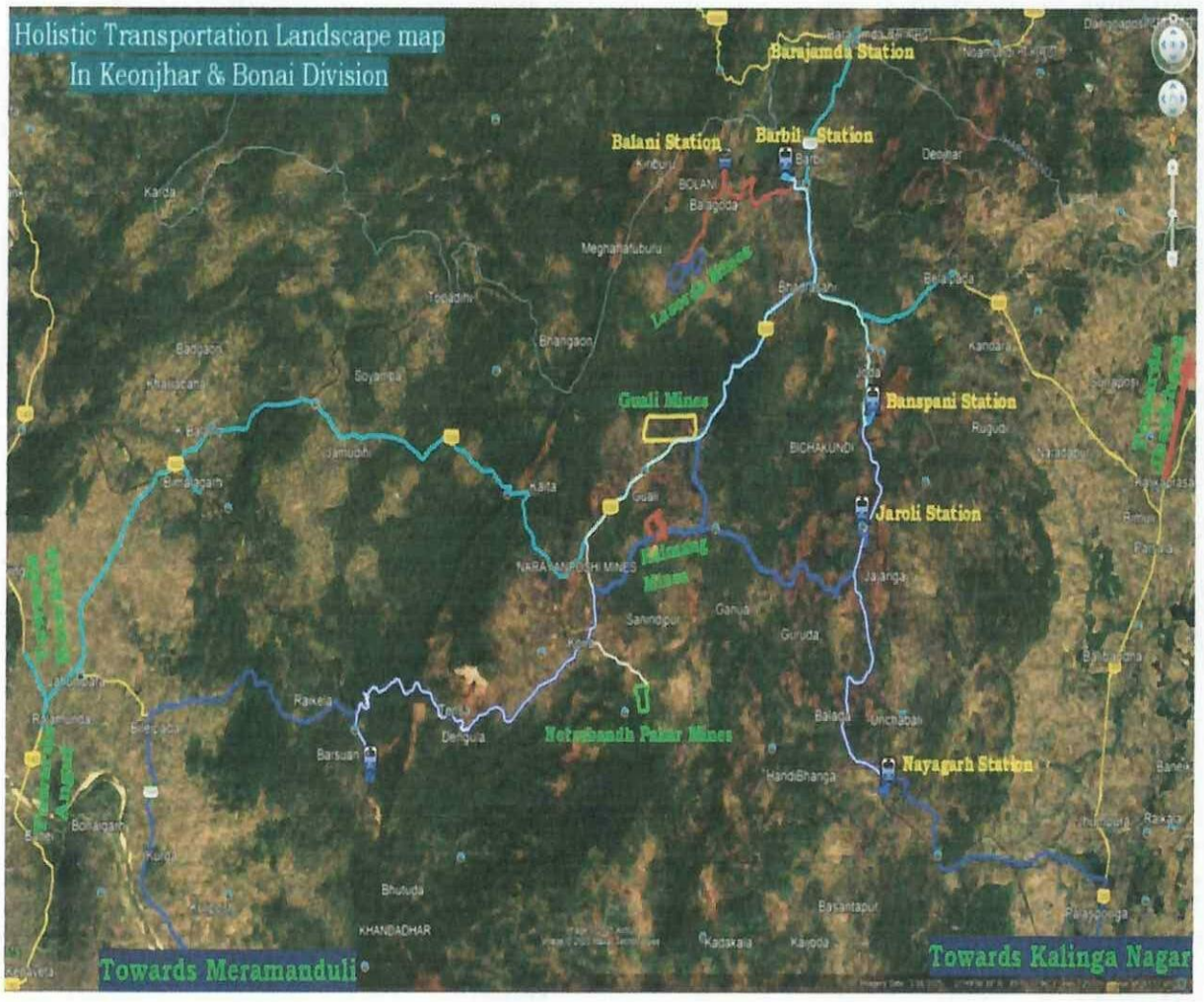
All five mining leases falling under the Netrabandha Pahar Landscape—spread across the Keonjhar and Bonai forest divisions in the Keonjhar and Sundargarh districts of Odisha—have been assessed in accordance with the Suggested Ore Transport Mode (SOTM) framework, based on their respective Environmental Clearance (EC) capacities.

As per the latest production capacities reported by lessee, four leases fall under SOTM 3, applicable to mines with an EC capacity between 1 and less than 3 million tonnes per annum (MTPA). Under SOTM 3, it is mandated that at least 70% of the ore be transported via public railway sidings, while no more than 30% may be moved by road transport, either directly to the destination or to another railway siding. The fifth lease, Guali Iron Ore Mines operated by Odisha Mining Corporation (OMC), falls under SOTM 1, with an EC capacity exceeding 5 MTPA. As per SOTM 1 guidelines, ore transport must occur 100% via private railway siding or conveyor belt to public railway siding, or pipeline in the case of captive mines, with at least 70% transported through such modes for non-captive operations. lease-wise classification is as follows:

LEASE WISE STATUS AS PER EC CAPACITY & SOTM UNDER NETRABANDH PAHAR LANDSCAPE IN ROURKELA CIRCLE

SOTM CODE	EC CAPACITY	SUGGESTED ORE TRANSPORT MODE	LEASE NAME	LESSEE NAME	DIVISION	CIRCLE
SOTM 1	≥ 5 MTPA	100% TRANSPORT VIA PRIVATE RAILWAY SIDING OR CONVEYOR BELT TO PUBLIC RAILWAY SIDING, OR PIPELINE FOR CAPTIVE MINES; AT LEAST 70% BY SUCH MODES FOR NON-CAPTIVE MINES.	GUALI IRON ORE MINES	M/S OMC LIMITED	KEONJHAR	ROURKELA

SOTM3	BETWEEN 1 AND <3 MTPA	MINIMUM 70% BY PUBLIC RAILWAY SIDING; MAXIMUM 30% BY ROAD TRANSPORT— EITHER DIRECTLY TO DESTINATION OR TO ANOTHER PUBLIC SIDING.	KALAMANG WEST (NORTHERN PART) IRON ORE BLOCK	M/S TATA STEEL LIMITED	KEONJHAR & BONAI	
			NETRABANDH PAHAR IRON ORE BLOCK	M/S BHUSHAN STEEL & POWER LIMITED	ROURKELA	
			LASERADA PACHERI MANGANESE & IRON ORE BLOCK	M/S THRIVENI EARTHMOVERS PVT. LTD.	KEONJHAR	
			NETRABANDH PAHAR (WEST) IRON ORE BLOCK	M/S RAGA TRADECON PVT. LTD.	BONAI	



LANDSCAPE OF NETRABANDH PAHAR IN ROURKELA CIRCLE

CURRENT PRODUCTION CAPACITY OF MINES UNDER NETRABANDHA PAHAR LANDSCAPE

As per the current reports submitted by the lessees, the total production capacities of the five mining leases within the Netrabandha Pahar Landscape have been summarized below.

SL. NO	CIRCLE	LEASE NAME	LESSEE NAME	DIVISION	TOTAL PRODUCTION CAPACITY (IN MT)
1		GUALI IRON ORE MINES	M/S OMC LIMITED	KEONJHAR	12
2	ROURKELA	KALAMANG WEST (NORTHERN PART) IRON ORE BLOCK	M/S TATA STEEL LIMITED	KEONJHAR & BONAI	2.95
3		NETRABANDH PAHAR IRON ORE BLOCK	M/S BHUSHAN STEEL & POWER LIMITED	BONAI	2.0
4		LASERADA PACHERI MANGANESE & IRON ORE BLOCK	M/S THRIVENI EARTHMOVERS PVT. LTD.	KEONJHAR	1.655 (1.545 MT FOR IRON + 0.11 MT FOR MN)
5		NETRABANDH PAHAR (WEST) IRON ORE BLOCK	M/S RAGA TRADECON PVT. LTD.	BONAI	1

TRANSPORTATION PLAN AS PER SOTM -3 IN NETRABANDH PAHAR LANDSCAPE IN ROURKELA CIRCLE.

In accordance with the Suggested Ore Transport Mode (SOTM-3) guidelines—applicable to mines with production capacities between 1 and less than 3 million tonnes per annum (MTPA)—lessees operating within the Netrabandha Pahar Landscape have submitted their respective transportation plans. The plans are summarised below.

1.KALAMANG WEST (NORTHERN PART) IRON ORE MINES

Kalamang West (Northern Part) Iron Ore Mines has been granted with Environmental Clearance vide File No 55807/89-MINB1/06-2022, dated18.10.2022 by SEIAA, Odisha for production of 2.95 MTPA of Iron Ore ROM.

As per SOTM of CSIR NEERI, Kalamang West (Northern Part) Iron Ore Mines fall under the SOTM-3 category and thus lessee have planned that 70% of the Total Production i.e~ 2.00 MTPA shall be transported through public railway siding and rest 30% i.e ~ 0.95 MTPA shall be transported through road directly to the destination. The Proposed route plan has furnished in table below.

PROPOSED TRANSPORTATION PLAN OF KALAMANG WEST (NORTHERN PART) IRON ORE BLOCK							
SL. NO	LEASE NAME	LESSEE NAME	TOTAL PRODUCTION CAPACITY (IN MT)	70 % PRODUCTION THROUGH PUBLIC SLIDING (IN MT)	NAME OF RAILWAY SLIDING (IN MT)	30 % PRODUCTION THROUGH PUBLIC ROAD (IN MT)	ROUTES OF ROAD
1	KALAMANG WEST (NORTHERN PART) IRON ORE BLOCK	M/S TATA STEEL LIMITED	2.95	2.065	BARSUAN BARBIL JAROLI BANSPANI NAYAGARH	0.885	NH-20 NH-520

PROPOSED TRANSPORTATION ROUTE PLAN OF KALAMANG WEST (NORTHERN PART) IRON ORE MINES

Further, in addition to complying CSIR NEERI guidelines for transportation of iron ore from Kalamang Lease, the company is planning to lay down ~221 km long slurry pipeline in future for transportation of ore from Kalamang lease to steel plants located at Kalinganagar as an eco-friendly & sustainable method of ore transportation.

It is to mention here that, Tata Steel Limited is planning the development of a 7.0 MTPA capacity Slurry Pipeline to transport iron ore slurry from Kalamang to Tata Steel Kalinganagar (TSK) plant, thereby eliminating road transport of the 2.95 MTPA of Iron Ore from Kalamang Mine & 4.0 MTPA Iron Ore from Gandhalpada mine (Adjacent to Kalamang) in future. The laying of slurry pipeline will eliminate the transportation of ore by roads & railways. Tata Steel has made considerable development and has also obtained major clearances for laying slurry pipeline. It is planned to commission and start the slurry transportation by the end of 2030 considering the time envisaged to obtain the statutory approvals and laying 221 km long pipeline. The Detail Proposed plan submitted by DFO, Keonjhar, Bonai has given in **Annexure-I.**

2.LASERADA PACHERI MANGANESE & IRON ORE BLOCK

Government of Odisha issued the Letter of Intent (LoI) vide letter No – IV (MISC) SM-06/2017848/SM, Bhubaneswar dated 27.01.2017 under Rule 18(1) of Mineral Auction Rules 2015 for grant of Composite License (CL) in favor of M/s Thriveni Earthmovers Pvt. Ltd. Subsequently, after conduct of DGPS survey by ORSAC the Director of Mines vide No. MXIII (b) 80/2015/8031/DM/dated 22.10.2021 has intimated that the total Lease area finally comes to 131.800 ha (94.351 ha forest land +37.449 ha non-forest land) situated in Dhanrjayapur-40, Kanrda -38 & Laserda village under Barbil Tehsil of Keonjhar District, Odisha.

On an application of forest diversion proposal over 94.351 ha of forest land including 4.261 ha of safety zone, the Ministry of Environment & forests, Govt. of India have granted Stage–I approval vide their letter No.8-02/2023-FC, dt. 21.12.2023 subject to fulfilment of certain conditions.The Mining plan over 138.00 ha has been approved by Regional Controller of Mines, IBM, Bhubaneswar on 18.11.2021.Environment Clearance has been obtained from MoEF& CC, IA Division, Govt. of India on 02.07.2024 of production capacity 1.545 MTPA of Iron Ore and 0.11 MTPA of Manganese Ore.

The Reserve estimated in the approved mining plan of Laserda – Pacheri Manganese & Iron block is only 8.37 MT (Million Tone) for Iron Ore & 7.37 MT for Manganese Ore by considering 235 of Bore Hole (Core drilling). They are planning to commence the mining activities after receipt of all required clearance with a production capacity of 1.545 MTPA for Iron & 0.11 MTPA for Manganese Ore.

The ore transportation from "Laserda – Pacheri Manganese & Iron block" will be followed as per the Recommendations of CSIR-NEERI and the suggested Ore transportation mode will be "SOTM 3 (for production between 1 and < 3 MTPA): minimum 70% by public Railway siding and maximum 30% by road-direct to destination or by the public Railway line or above options". The Detail Proposed plan submitted by DFO, Keonjhar has given in **Annexure-II**. The Proposed route plan has furnished in table below.

TRANSPORTATION PLAN OF LASERADA PACHERI MANGANESE & IRON ORE BLOCK							
SL. NO	LEASE NAME	LESSEE NAME	TOTAL PRODUCTION CAPACITY (IN MT)	70 % PRODUCTION THROUGH PUBLIC SLIDING (IN MT)	NAME OF RAILWAY SLIDING (IN MT)	30 % PRODUCTION THROUGH PUBLIC ROAD (IN MT)	ROUTES OF ROAD PROPOSED FOR TRANSPORTATION
1	LASERADA PACHERI MANGANESE & IRON ORE BLOCK	M/S THRIVENI EARTHMOVERS PVT. LTD.	1.655	1.155	BOLANI BARBIL	0.5	DESTINATION IS NOT KNOWN AS MINING OPERATION IS YET TO BE GRANTED STAGE-II APPROVAL HAS NOT BEEN ACCORDED TILL YET.

PROPOSED TRANSPORTATION ROUTE PLAN OF LASERADA PACHERI MANGANESE & IRON ORE BLOCK

3. NETRABANDH PAHAR IRON ORE BLOCK - M/S BHUSHAN STEEL & POWER LIMITED

The block comprising of 139.223 Ha lies with in Baladihi Village in Koira Tehsil in Sundargarh District, Odisha. The lessee has a total ore production capacity of 2 MTPA thereby *it comes under the CSIR-NEERI recommended SOTM 3 and they would transport 1.4 MTPA by Public Railway Siding viz. Barsuan Railway Siding which is situated at a distance of about 35 KM from their allotted Iron ore block. Hence the iron ore will be transported from the Netrabandha mines to the Barsuan railway station by road.*

And the rest 0.6 MTPA through road transport. Iron ore excavated from mines i.e. Run of Mines (RoM) shall be loaded mechanically and carried out by Dumper (Terex - 25) having capacity of 25 MT to the ear marked stack yard. Oversized lump ores shall be processed through Rock Breaker for specified sizing. The lump ore & the friable are stacked separately in a segregated manner for measurement, sampling and are ready for analysis prior to transportation.

The Detail Proposed plan submitted by DFO, Bonai has given in **Annexure-III**. The Proposed route plan has furnished in table below.

TRANSPORTATION PLAN OF NETRABANDH PAHAR IRON ORE BLOCK - M/S BHUSHAN STEEL & POWER LIMITED							
Lease Name	LESSEE NAME	TOTAL PRODUCTION CAPACITY (IN MT)	70 % PRODUCTION THROUGH PUBLIC SLIDING (IN MT)	NAME OF RAILWAY SLIDING (IN MT)	30 % PRODUCTION THROUGH PUBLIC ROAD (IN MT)	ROUTES OF ROAD PROPOSED FOR TRANSPORTATION	DESTINATION
NETRABANDH PAHAR IRON ORE BLOCK	M/S BHUSHAN STEEL & POWER LIMITED	2.0	1.4	BARSUAN	0.6	NH 520	JHARSUGUDA
				JIRUDI		Sambalpur-Rourkela Highway	
				BANSPANI			
				NAYAGARH			
				BARBIL			

4. RAGA TRADECON PRIVATE LIMITED (NETRABANDHA (WEST) IRON ORE MINES

The Netrabandh Pahar (West) Iron Ore Block has an estimated annual production capacity of 1 Million Tons Per Annum (1 MTPA). This production is the total amount of iron ore to be transported to various destinations for further processing or shipment.

The transportation of the iron ore from the Netrabandh Pahar (West) Iron Ore Block involves a combination of Road and Rail transport. The initial leg of the journey, from the mine to the railway sidings, is done by road, and then the ore is carried onward to its final destination via rail. M/s Raga Tradecon Pvt. Ltd., operating the Netrabandh Pahar (West) Iron Ore Block with a production capacity of 1.0 MT, plans to transport 0.70 MT via rail and 0.30 MT by road by following SOTM-3. The detail plan has furnished by DFO, Bonai has furnished in **Annexure-IV.** The Route plan has given below.

TRANSPORTATION PLAN OF NETRABANDH PAHAR IRON ORE BLOCK – RAGA TRADECON LTD.						
LEASE NAME	LESSEE NAME	TOTAL PRODUCTION CAPACITY (IN MT)	70 % PRODUCTION THROUGH PUBLIC SLIDING (IN MT)	NAME OF RAILWAY SLIDING (IN MT)	30 % PRODUCTION THROUGH PUBLIC ROAD (IN MT)	ROUTES OF ROAD PROPOSED FOR TRANSPORTATION
NETRABANDH PAHAR (WEST) IRON ORE BLOCK	M/S RAGA TRADECON PVT. LTD.	1	0.7	BARSUAN	0.3	DESTINATION IS NOT KNOWN AS MINING OPERATION IS YET TO BE GRANTED STAGE-II APPROVAL HAS NOT BEEN ACCORDED TILL YET.
				JIRUDI		
				BANSPANI		
				NAYAGARH		
				BARBIL		

PROPOSED TRANSPORTATION ROUTE PLAN OF NETRABANDH PAHARRON ORE BLOCK

5. GUALI IRON ORE MINE OF M/s OMC LTD.

Guali Iron Ore Mines" of M/s Odisha Mining Corporation (OMC) Limited, a State Government Undertaking, is an ongoing mining project for exploitation of iron ore occurring in the Mining Lease (ML) area over 902.00 Ac or 365.026 ha in the Revenue villages of Guali, Pandulipasi, Rugudidihi, Laharapada and Tapadihi under BarbilTahasil of Champua Sub-Division in Keonjhar District and Sidhamath Reserved Forest of Keonjhar Forest Division.

The said ML area finds place within latitude 210 59' 21.991" to 22° 00' 00.984" N and longitude 85° 17' 02.375" to 85° 18' 59.140" E in the Survey of India Topo Sheets bearing No. F 45 N 5 and F 45 H 8. The area exhibits an undulated topography with varying elevations from 598 m to 500 m above Mean Sea Level (AMSL). This area is approachable from Barbil covering a distance of 20 km by Barbil-Rourkela National Highway No. 215.

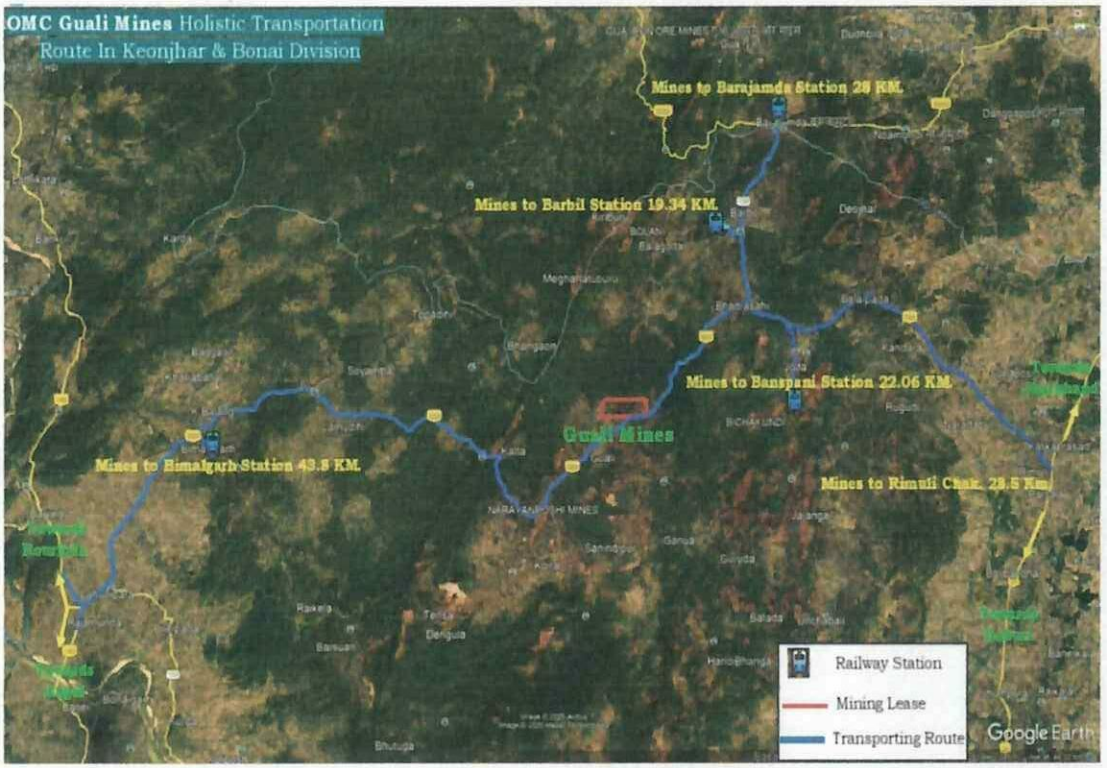
This area is also approachable from Koira Town of Sundargarh District which is on NH No. 215 at a distance of 13 km. The nearest railhead is located at Barbil on Tata-Chaibasa-Banspani track of South-Eastern Railway. The district Head Quarter Keonjhar is at a distance of 80 km. The nearest Air strip is at Tanto at a distance of 12 km from the ML area.

The user agency M/s OMC limited has production capacity of 12 MTPA which is more than 5 MTPA thereby it comes under the CSIR-NEERI recommended SOTM 1. But, the UA stated that at present the ore production capacity falls under the 1 to > 3 MTPA and that will follow SOTM 3.

As per the communication received from the **Divisional Forest Officer (DFO), Keonjhar**, it has been intimated by the user agency—**M/s Odisha Mining Corporation (OMC)**—vide **Letter No. 7880 dated 19.05.2025**, that the current mode of ore transportation from **Guali Iron Ore Mines** involves approximately **20% by rail** and **80% by road**. However, the user agency has proposed a significant shift in transportation strategy upon the completion of the **new railway line from Barbil to Barsuan in near future.**

Post completion, it is anticipated that approximately **70% of the ore** will be transported by **railway**, with the remaining **30% by road**, thus aligning with the **SOTM-1** guidelines for mines with an EC capacity exceeding 5 MTPA. The detailed **Transportation Plan**, as submitted by the M/s OMC Ltd., is appended in **Annexure-V** for reference.

PROPOSED TRANSPORTATION ROUTE PLAN OF GUALI MINES



CONCLUSION :

The effective implementation of environmentally sustainable mining practices is critical for maintaining ecological balance within the **Netrabandha Pahar Landscape**. Central to this objective is the adoption of the transportation strategy recommended by **CSIR-NEERI**, which aligns ore movement with the **Suggested Ore Transport Mode (SOTM)**framework, based on each mine's **Environmental Clearance (EC)** capacity. The table below presents a consolidated overview of the mining lease areas, SOTM classifications, approved production capacities, and the proposed modes of transportation as reported by the respective user agencies

ABSTRACT OF TRANSPORTATION PLAN OF NETRABANDH PAHAR LANDSCAPE

SL. NO.	NAME OF THE MINES	MINING LEASE AREA	"SUGGESTED ORE TRANSPORTATION MODE" (SOTM)	EC CAPACITY	MODE OF TRANSPORTATION		REMARKS
					RAILWAY SLIDING	ROAD	
1	KALMANG WEST (NORTHERN PART) BLOCK FOR IRON ORE MINES, ALLOTTED TO M/S TATA STEEL BSL LIMITED.	FOREST LAND - 42.608 HA NON-FOREST LAND-54.608 HA TOTAL-97.216 HA	SOTM-3	2.95 MTPA	70%	30%	AS IT IS A CAPTIVE MINE, CONCRETE PLAN FOR 70:30 IS GIVEN.

2	GUALI IRON ORE MINES OF M/S OMC LTD	FOREST LAND - 338.477 HA NON-FOREST LAND-26.549 HA TOTAL-365.026 HA	SOTM-1	12 MTPA	20%	80%	AS THESE ARE MERCHANT MINORS, THERE ARE NO FIXED BUYERS, HENCE NO CONCRETE RAILWAY AND ROAD DESTINATIO N ARE GIVEN. HOWEVER, THEY HAVE PROPOSED TO FOLLOW SOTM GUIDELINE THROUGH UNDERTAKI NGS.
3	LASERDA PACHERI IRON & MN. MINES OF M/S THRIVENI EARTH MOVERS PVT. LTD	FOREST LAND - 94.351 HA NON-FOREST LAND-37.449 HA TOTAL-131.800 HA	SOTM-3	1.655 MTPA	70%	30%	
4	NETRABANDHA PAHAR IRON ORE BLOCK OF M/S. BHUSHAN POWER & STEEL LIMITED	112.621 HA NON-FOREST LAND-139.223 HA TOTAL-251.844 HA	SOTM-3	2.0 MTPA	70%	30%	
5	NETRABANDHA (WEST) IRON ORE MINES OF M/S RAGA TRADECON PRIVATE LIMITED	66.242 HA NON-FOREST LAND-74.370 HA TOTAL-140.612 HA	SOTM-3	1.0 MTPA	70%	30%	

Regional Chief Conservator of Forest,
Rourkela Circle

ANNEXURE-1

6F
11.3.25

OFFICE OF THE
DIVISIONAL FOREST OFFICER
BONAI DIVISION
Receipt No. 1702
Date. 11.03.2025

To,

Divisional Forest Officer
Bonai Forest Division
Bonai

GM/OMQ/016/11-G
10th March' 2025

Sub: Compliance to Holistic Transportation Plan in respect of Kalamang West (Northern Part) Iron Ore Mine of M/s Tata Steel Limited in adherence with NEERI guidelines.

Ref: 1. Stage-I Approval Reference: F. No. 8-13/2022-FC, dated 22.12.2023.
2. Letter no. 8-13/2022-FC dated 27.10.2024 from MoEF & CC, FC Division
3. Letter no. 24862, dated 09.12.2024 from Additional PCCF (Nodal), Odisha
4. Letter no. I/98978/2025, dated 24.02.2025 from MoEF&CC, Govt. of India
5. Letter no. 4562, dated 25.02.2025 from Additional PCCF (Nodal), Odisha
6. Letter no. 5285, dated 06.03.2025 from Additional PCCF (Nodal), Odisha

Dear Sir,

With reference to the cited subject, letters referred above and in person discussion held at Conference Room, O/o Additional PCCF (Nodal), Odisha on 01.03.2025, we are submitting herewith the Plan for Transportation of Iron Ore from Kalamang West (Northern Part) Iron Ore Mines of M/s Tata Steel Limited for your kindly consideration and suitable recommendation to higher quarter at the earliest.

Kalamang West (Northern Part) Iron Ore Mines has been granted with Environmental Clearance vide File No 55807/89-MINB1/06-2022, dated 18.10.2022 by SEIAA, Odisha for production of 2.95 MTPA of Iron Ore ROM.

The above Environmental Clearance also has a Specific Condition which states *"(v) The proponent shall comply all the specific conditions as recommended by CSIR-NEERI on carrying capacity study (as applicable) in time bound manner as proposed."*

It is pertinent to mention here that in the State of Odisha, all the mines are stipulated to adhere to SOTM (Suggested Ore Transport Mode) as per the guidelines suggested by NEERI CSIR in its Carrying Capacity Study Report. This is a common guideline for all the mine of the region. So, as per the guidelines, Kalamang West (Northern Part) Iron Ore Mines fall under the SOTM-3 category and thus we have planned that 70% of the Total Production i.e ~ 2.00 MTPA shall be transported through public railway siding and rest 30% i.e ~ 0.95 MTPA shall be transported through road directly to the destination. For better clarity and appreciation of facts, the SOTM-3: the relevant portion of CSIR NEERI guideline has been appended below:

> ***"SOTM 3 (for production between 1 and <3 MTPA): Minimum 70% by public railway siding and maximum 30% by road -direct to destination or by other public railway siding or above options."***

It is noteworthy to mention here that there are nearly 92 working & non-working leases located within 10 km radius (Fig-1) from Kalamang Lease. So, it wouldn't be appropriate to consider only the instant 5 leases to prepare a separate Holistic Transportation Plan but otherwise coherently stick to the already mandated CSIR NEERI guidelines to ensure compliances.

TATA STEEL LIMITED
Mines Division Noamundi 833 217 India
Tel 91 9262699402
Registered Office Bombay House 24 Homi Mody Street Fort Mumbai 400 001 India
Tel 91 22 66658282 Fax 91 22 66657724
Corporate Identity Number L27100MH1907PLC000260 Website www.tatasteel.com

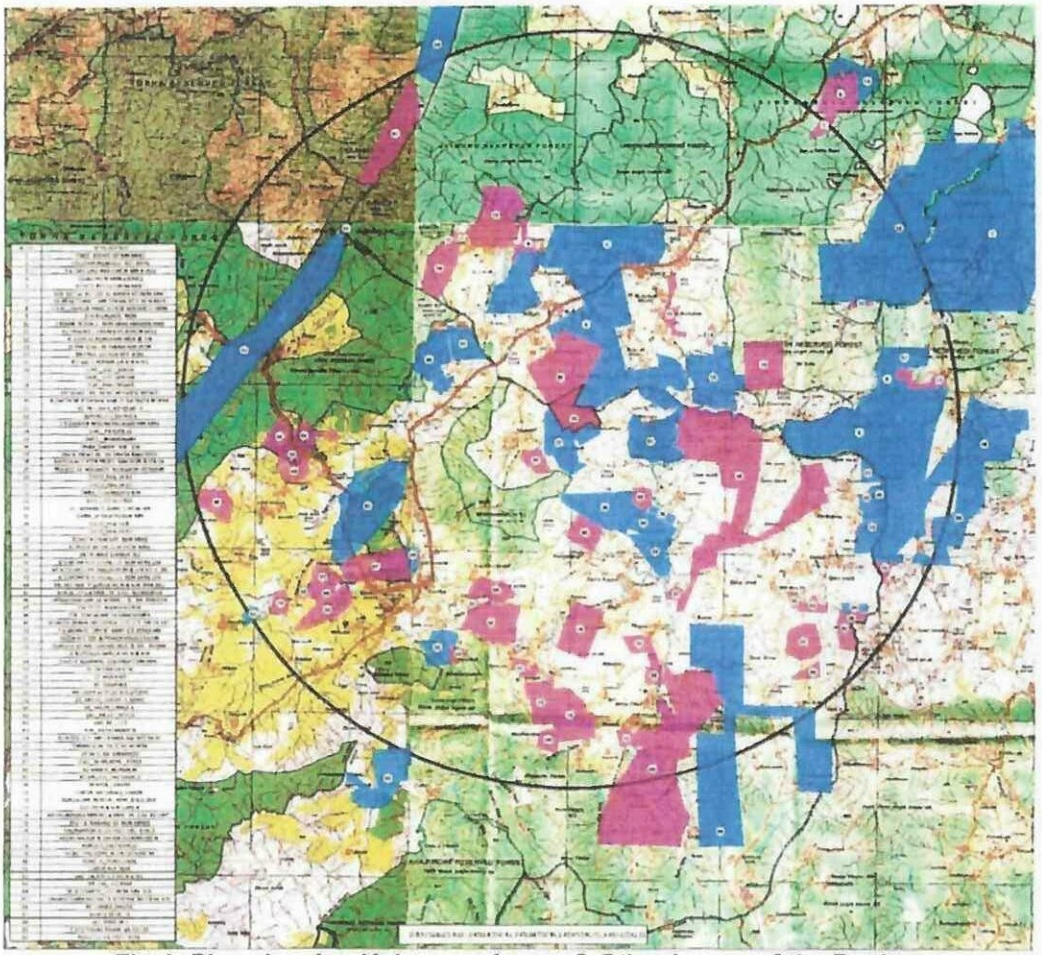


Fig-1: Plan showing Kalamang Lease & Other leases of the Region.

Further, in addition to complying CSIR NEERI guidelines for transportation of iron ore from its Kalamang Lease, the company is planning to lay down ~221 km long slurry pipeline in future for transportation of ore from Kalamang lease to steel plants located at Kalinganagar as an eco-friendly & sustainable method of ore transportation.

As part of plan for transportation of iron ore from Kalamang, we shall be following the NEERI Guidelines and transport iron Ore to different destinations as per SOTM-3 and subsequently switch over to the slurry pipeline transportation mode upon its commissioning.

It is to mention here that, Tata Steel Limited is planning the development of a 7.0 MTPA capacity Slurry Pipeline to transport iron ore slurry from Kalamang to Tata Steel Kalinganagar (TSK) plant, thereby eliminating road transport of the 2.95 MTPA of Iron Ore from Kalamang Mine & 4.0 MTPA Iron Ore from Gandhalpada mine (Adjacent to Kalamang) in future. The laying of slurry pipeline will eliminate the transportation of ore by roads & railways.

TATA STEEL LIMITED
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Corporate Identity Number L27100MH1907PLC000260 Website www.tatasteel.com

Tata Steel has made considerable development and has also obtained major clearances for laying slurry pipeline. The above project is registered in National Infrastructure Pipeline (NIP), India Investment Grid of Govt of India vide Project ID: 601904 and Single Window Clearance Proposal no: 2022094588, dated 22.09.2022. The layout of the above mentioned ~221 km long slurry pipeline is shown below as Fig-2.

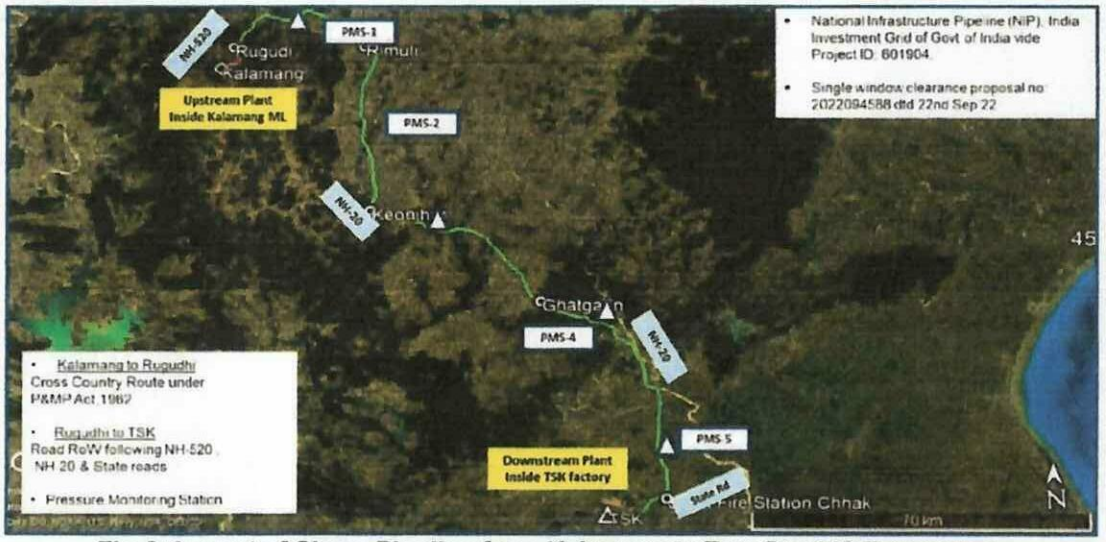


Fig-2: Layout of Slurry Pipeline from Kalamang to Tata Steel Kalinganagar

The status of other statutory approvals is mentioned below:

1.	Forest Clearance within Road RoW (General Approval & Fresh Approval)	Application for 9.141 ha of forest land under the Road RoW was submitted for general approval vide Proposal No: FP/OR/REDIV/435885/2023. Subsequently, the forest area involved has been scrutinized by concerned revenue officials to be 7.510 ha. Out of above 7.510 ha, 7.355 ha need to rediverted as per General Approval and 0.155 ha need to be diverted for which fresh diversion application shall be made. At present, necessary modification in the application is under process.
2.	Forest Clearance outside Road RoW (RoU) (Forest Diversion Proposal)	Application for diversion of forest land over 0.733 ha of Sabik Kissam involved in RoU area has been submitted vide proposal no. FP/OR/OTHERS/518581/2025. The proposal is pending with user agency (UA) for compliance of EDS raised by DFO Keonjhar
3.	Consent to Establish (Slurry Pipeline)	Consent to Establish has been granted by State Pollution Control Board, Odisha vide letter No. 10382; dated 10.07.2024
4.	Water Approval	200 m3/hr makeup water requirement approved under the water withdrawal permission of Tata Steel, Kalinganagar.
5.	Rail Crossing (enroute)- 5 Nos.	Approval obtained from East Coast Railways Division & South-Eastern Railways Division.

6.	Water Body Crossing (enroute) - 66 Nos.	Approval obtained for all water body crossings. Approval for 4 crossings from Chief Engineer, Mahanadi Basin, 15 Crossings from Chief Construction Engineer, Kanupur Irrigation Project, 44 crossings from Chief Engineer, Baitarani Basin, 3 crossings from Chief Engineer, Drainage, Cuttack
7.	Route Approval (Slurry Pipeline)	Road RoW approval over ~206 Km for NH-520, NH-20, State Road from Rugudi to TSK has already been obtained. For Cross country stretch of ~7 km from Rugudi to Kalamang, Draft Notification under Sec 3(1) of PMP Act, 1962 has been Published by Ministry of Steel. Govt. of India. For stretch of 0.115 Km from Tata Steel Kalinganagar Plant to nearest Railway siding, approval has also been obtained from IDCO. Around 4.75 Km length of pipeline falls within our own Kalingnagar pant.

So, as explained above, for Kalamang West (Northern Part) Iron Ore Mines company shall abide by the CSIR NEERI guidelines to transport 70% of the Total Production i.e ~ 2.00 MTPA through public siding and rest 30% i.e ~ 0.95 MTPA shall be transported through road directly to the destination as per SOTM-3 and subsequently, the entire ore shall be transported through slurry pipelines once it is commissioned. It is planned to commission and start the slurry transportation by the end of 2030 considering the time envisaged to obtain the statutory approvals and laying 221 km long pipeline.

We trust this is in line with the requirements desired from us, advised during the discussion held on 01.03.2025 in respect of Kalamang West (Northern Part) Iron Ore Mines of M/s Tata Steel Limited. We request your good self to suitably recommend it to higher authorities for the compliance of the observations at the earliest as per the Minutes of Meeting circulated by O/o Additional PCCF (Nodal), Odisha vide letter no. 5285, dated 06.03.2025.

Thanking You

Yours Faithfully,

(Atul Kumar Bhatnagar)
General Manager, OMQ

TATA STEEL LIMITED
Mines Division Noamundi 833 217 India
Tel 91 9262699402
Registered Office Bombay House 24 Homi Mody Street Fort Mumbai 400 001 India
Tel 91 22 66658282 Fax 91 22 66657724
Corporate Identity Number L27100MH1907PLC000260 Website www.tatasteel.com

OFFICE OF THE DIVISIONAL FOREST OFFICER
R No. 2090
Date 18.03.25
KEONJHAR DIVISION

ANNEXURE-11

THRIVENI

Ref: TEMPL – LP /DFO/2024-25/210

Date- 10.03.2025

To

The Divisional Forester Officer
Keonjhar Subdivision
Dist. Keonjhar,Odisha

Sub: Submission of Transportation plan of Laserda Pacheri Manganese & Iron Ore Block of M/s Thriveni Earthmovers Private Limited in Barbil tahsil under Keonhjar forest division of Keonjhar district, Odisha.

Ref: 1). Leter no.5285/9F(MG)-66/2021 dated 06.03.2025 of PCCF &Hoff,Odisha

2). Minute of meeting on Holistic transportation plan & Biodiversity conservation plan of Netrabandha pahar in Keonjhar and Sundargarh district in respect of 05 different mines

Dear Sir,

With reference to the above cited subject and letter under reference,we are herewith submitting the transportation plan of Laserda Pacheri Manganese & Iron Ore Block of M/s Thriveni Earthmovers Private Limited

Submitted for your kind perusal and needful action.

Your Sincerely

For Thriveni Earthmovers Pvt.Ltd.

THRIVENI EARTHMOVERS PVT. LTD.

V Kumar

Vice President

Thriveni Earthmovers Private Limited
CIN: U60231TZ1999PTC008876
CO : At - Topadhi, P.O.: Guali,P.S:Rugudi Dist.: Keonjhar-758035, Odisha,India
Ph/Fax: 0427 - 2447667 / 2445909 | email: info@thriveni.com | Website: www.thriveni.com

THRIVENI

TRANSPORTATION PLAN OF 1.655 MTPA OF IRON & MANGANESE ORE (IRON ORE 1.545 MTPA + MANGANESE ORE 0.11 MTPA) FROM LASERDA-PACHERI MANGANESE & IRON BLOCK.

INTRODUCTION

Government of Odisha issued the Letter of Intent (LoI) vide letter No – IV (MISC) SM-06/2017848/SM, Bhubaneswar dated 27.01.2017 under Rule 18(1) of Mineral Auction Rules 2015 for grant of Composite License (CL) in favor of M/s Thriveni Earthmovers Pvt. Ltd . After complying with the stipulated conditions of LoI, Govt. of Odisha declared M/s Thriveni Earth Movers Pvt. Ltd as the Successful Bidder and Granted the Composite License over **256.304 ha** for Manganese vide No.IV (B)SM-100/2007-433/SM, dated 19.01.2019 and the prospecting license deed was executed on 24.01.2019 for 2 years. During the prospecting new minerals (i.e. iron ore) was discovered and it was intimate to Govt. under Rule 11(2) of Minerals (Other than Atomic and Hydro Carbons energy Minerals) Concession Rules, 2016. On due completion of details exploration, Mining Lease application over **131.889 ha** was submitted and Government of Odisha has awarded the Letter of Intent for grant of mining lease vide No. 7731-IV(B)SM-100/2017/SM dated 21.09.2021 in favour of M/s Thriveni Earthmovers Pvt. Ltd. for Manganese & Iron ore over an area of 131.889 ha. Subsequently after conduct of DGPS survey by ORSAC the Director of Mines vide no. MXIII (b) 80/2015/8031/DM/dated 22.10.2021 has intimated that the total Lease area finally comes to **131.800 ha** (94.351 ha forest land +37.449 ha non-forest land) situated in Dhanrjayapur-40, Kanrda -38 & Laserda village under Barbil Tehsil of Keonjhar District, Odisha.

On an application of forest diversion proposal over 94.351 ha of forest land including 4.261 ha of safety zone, the Ministry of Environment & forests, Govt. of India have granted Stage–I approval vide their letter No.8-02/2023-FC, dt. 21.12.2023 subject to fulfillment of certain conditions.

The Mining plan over 138.00 ha has been approved by Regional Controller of Mines,IBM,Bhubaneswar on 18.11.2021.

Environment Clearance has been obtained from MoEF&CC,IA Division, Govt. of India on 02.07.2024 of production capacity 1.545MTPA of Iron Ore and 0.11 MTPA of Manganese Ore.

TRANSPORTATION PLAN

The Reserve estimated in the approved mining plan of Laserda – Pacheri Manganese & Iron block is only 8.37 MT (Million Tone) for Iron Ore & 7.37 MT for Manganese Ore by considering 235 of Bore Hole (Core drilling). We are planning to commence the mining activities after receipt of all required clearance with a production capacity of 1.545 MTPA for Iron & 0.11 MTPA for Manganese Ore.

The ore transportation from "Laserda – Pacheri Manganese & Iron block" will be followed as per the Recommendations of CSIR-NEERI and the suggested Ore transportation mode will be "SOTM 3 (for production between 1 and < 3 MTPA): minimum 70% by public Railway siding and maximum 30% by road-direct to destination or by the public Railway line or above options". Out of the total yearly production 1.655 MT (1.545 MT for Iron + 0.11 Mt for Mn)

THRIVENI

1.155 MT (70% of 1.655 MT) will be transported by nearest Railway siding Bolani (5 km from Mines) & Barbil (12 Km from mines) and balance quantity of 0.50 MT will be transported through road or through above railway siding. A blacktop double lined road (Bhadrasahi-Kiriburu) is passing adjacent to ML pillar 15 & 16 of Laserda – Pacheri mines is connecting to the NH-520 at Bhadrashi and it also passing nearest to the Bolani & Barbil railway siding. Our planning for transporting of 0.50 MT of ore per year i.e. 50 to 60 nos of trucks per day through the above road to reach the nearest Railway siding and direct to the destination. As there are no other mines depending upon the above road, so it is always free from traffic. We are planning to use above road for transportation with taking all necessary precautionary measures for safety & environment.

Whereas the estimated reserve of Iron ore is only 8.37 MT, it may be finished within 6 to 7 years (8.37 MT@ 1.545 MTPA) from starting of mines, then only production of Manganese ore will be continued manually @ 0.11 MTPA .So after 6 to 7 years starting of the mines ,only 0.033 MT (30 % of 0.11 MT) of manganese ore per year will be transported through the road.

As Laserda – Pacheri Manganese & Iron block is a small reserve deposited and short life period of mines, so it is not possible to prepare any individual long range transporting plan i.e. slurry pipeline or conveyor belt or railway siding. So, our mode of transporting of ore is maximum through public railway and minimum direct destination through road. Further we will follow the transportation through the common conveyor belt, slurry pipe, railway, etc. if any developed by state governments to minimize the road transportation. Google image showing the road connecting nearest railway siding and NH-520 enclosed as **Annexure-1.**

We request yours good office to do needfull for onward transmission of the compliance for grant of Stage-II approval in respect of Laserda Pacheri Manganese & Iron Block in favour of M/s Thriveni Earthmovers Private Limited at the earliest.

Thanking You

Your Sincerely

For Thriveni Earthmovers Pvt.Ltd.

THRIVENI EARTHMOVERS PVT. LTD. THRIVENI

V. Kumar

(Vice President)

Thriveni Earthmovers Private Limited
CIN: U60231TZ1999PTC008876
CO : At - Topadhi, P.O.: Guali,P.S:Rugudi Dist.: Keonjhar-758035, Odisha,India
Ph/Fax: 0427 - 2447667 / 2445909 | email: info@thriveni.com | Website: www.thriveni.com

GOOGLE PLAN SHWOING THE LOCATION OF RAILWAY SIDING & ROADS WILL BE USED FOR ORE TRANSPORTING FROM LASERDA PACHERI MN & IRON MINES

ANNEXURE - III

Bhushan POWER & STEEL

ANNEXURE -1

Bhushan Power & Steel Limited
(A JSW Group Company)
Village : Thelkoloi, Post : Lapanga, Teh : Rengali
Dist. : Sambalpur - 768 212, Odisha, INDIA
T +91(0)663 6636000
Website : www.jsw.in, CIN : U27100DL1999PLC108350

6P
29.5.25

OFFICE OF THE
DIVISIONAL FOREST OFFICER
BONAI DIVISION
Receipt No. 3456
Date 28.05.2025

To,
Divisional Forest Officer,
Bonai Forest Division,
Sundargarh.

Reference: Letter Submitted on 11-03-2025 with refence no 5285 / 9F (MG)-66/2021 dated 06-03-2025.

Subject: Submission of Revised Holistic Transportation Plan for Transportation of Iron Ore from Netrabandha Pahar Iron Ore Mines.

Respected Sir,

We, Bhushan Power and Steel Limited (BPSL), the successful bidder of the Netrabandha Pahar Iron Ore Mines, with reference to the transportation plan submitted earlier dated 11-03-2025 wherein a 50% rail and 50% road transportation arrangement was proposed, we would like to submit a revised transportation plan in compliance with the guidelines of the Suggested Ore Transport Mode (SOTM).

Our mine has a production capacity of 2 million Tonnes Per Annum (2 MTPA), and as per the categorization under the SOTM framework, we fall under SOTM-3.

As per the prescribed guidelines, the following transportation plan has been proposed:

- 70% of the total iron ore (1.4 MT) will be transported by rail. The ore will first be moved by road from the mine site to the Barsuan Railway Siding, located approximately 35 km from the mine. From there, it will be transported by rail to BPSL, Jharsuguda.
- The remaining 30% of the ore (0.6 MT) will be transported directly via road to BPSL, Jharsuguda.

The detailed transportation route details have been enclosed for your kind consideration.

Yours faithfully,

For Bhushan Power and Steel Limited
(Netrabandha Phar Iron Ore Mines)

Sanjay Kumar Singh
(A.V.P)

Enclosed:

1. Details of Transportation Route.
2. Previous Letter Submitted on 11-03-2025

Transportation Via Public Railway Siding (Barsuan)

S.NO	Transportation Via	Circle	Lease Name	Lessee name	Division	Total Capacity MT	70% Through Public siding	Route and Name of Siding	Total distance Upto Public Siding	Distination
1	Public Railway Siding	Rourkela	Netrabandha Pahar Iron Ore Mines	M/s Bhushan Power and steel limited	Bonai	2 MT	1.4 MT	via Tensa Rd and Koida Barsuan Rd to Barsuan Raiway Siding	35 KM	JSW-BPSL Jharsugudha

Transportation Via Public Road

S.NO	Transportation Via	Circle	Lease Name	Lessee name	Division	Total Capacity MT	30% Through Public road	Road Route and details	Total distance by road	Distination
2	By Road	Rourkela	Netrabandha Pahar Iron Ore Mines	M/s Bhushan Power and steel limited	Bonai	2 MT	0.6 MT	NH 520 Chhachhelia, Rajamunda , kasiara. NH143 Sambalpur Rourkela Highway, to Jharsuguda	236KM	JSW-BPSL Jharsugudha

29

hushan

(A JSW Group Company)
Village Thelkoloi, Post Lapanga, Teh. Rengali
Dist. Sambalpur - 768 212, Odisha, INDIA
T +91(0)663 6620000
Website www.jsw.in, CIN U27100OR1999PLC...

Date: 11-03-2025

To,
The Divisional Forest Officer,
Bonai Forest Division,
Sundargarh.

Subject: Submission of Plan for Mineral Transportation from Mines in Compliance with PCCF and HoFF's Letter

Reference: Letter no 5285 / 9F (MG)- 66/2021 Dated 06-03-2025

Dear Sir,

With reference to the letter received from the Principal Chief Conservator of Forests (PCCF) and Head of Forest Force (HoFF), it was mentioned that the user agency is required to submit a holistic, environmentally friendly plan for the transportation of minerals from the mines.

In compliance with this requirement, we are submitting the transportation plan for your review. This plan has been developed with the objective of minimizing environmental impacts, ensuring sustainable transportation practices, and adhering to all necessary regulatory standards.

Kindly consider this letter for your information and necessary action.

Thank you for your attention to this matter.

Your Sincerely,

For M/S Bhushan Power & Steel Limited.

(Netrabandha Pahar Iron Ore Block)

11/03/25

Sanjay Kumar Singh

(A.V.P)

Enclosures:

Transportation Plan

Received
12.3.25
Head Clerk
Bonai Forest Division

Bhushan Power & Steel Limited
(A JSW Group Company)
Village : Thelkoloi, Post : Lapanga, Teh. : Rengali
Dist. : Sambalpur - 768 212, Odisha, INDIA
T +91(0)663 6636000
Website : www.jsw.in, CIN : U27100DL1999PLC108350

GF
12.3.25

To,
The Divisional Forest Officer,
Bonai Forest Division,
Sundargarh,

OFFICE OF THE
DIVISIONAL FOREST OFFICER
BONAI DIVISION
Receipt No. 1725
Date. 12.03.2025

Date: 11-03-2025

Subject: Submission of Plan for Mineral Transportation from Mines in Compliance with PCCF and HoFF's Letter.

Reference: Letter no 5285 / 9F (MG)- 66/2021 Dated 06-03-2025.

Dear Sir,

With reference to the letter received from the Principal Chief Conservator of Forests (PCCF) and Head of Forest Force (HoFF), it was mentioned that the user agency is required to submit a holistic, environmentally friendly plan for the transportation of minerals from the mines.

In compliance with this requirement, we are submitting the transportation plan for your review. This plan has been developed with the objective of minimizing environmental impacts, ensuring sustainable transportation practices, and adhering to all necessary regulatory standards.

Kindly consider this letter for your information and necessary action.

Thank you for your attention to this matter.

Your Sincerely,

For M/S Bhushan Power & Steel Limited.

(Netrabandha Pahar Iron Ore Block)

11/03/25

Sanjay Kumar Singh

(A.V.P)

Enclosures:

Transportation Plan.

Transportation Plan Netrabandha Pahar Iron Ore Mines

Bhushan Power & Steel Limited

10 March 2025

BRIEF SUMMARY OF MINE

The block comprising of 139.223 Ha lies within the Baladihi village in Koira Tehsil in Sundergarh dist. Odisha. The exploration under G2 category following UNFC guidelines was carried by the State Directorate of Geology, hence the block was auctioned for mining lease. As per the new MMDR Act 2017, the mining lease period will be for 50 years.

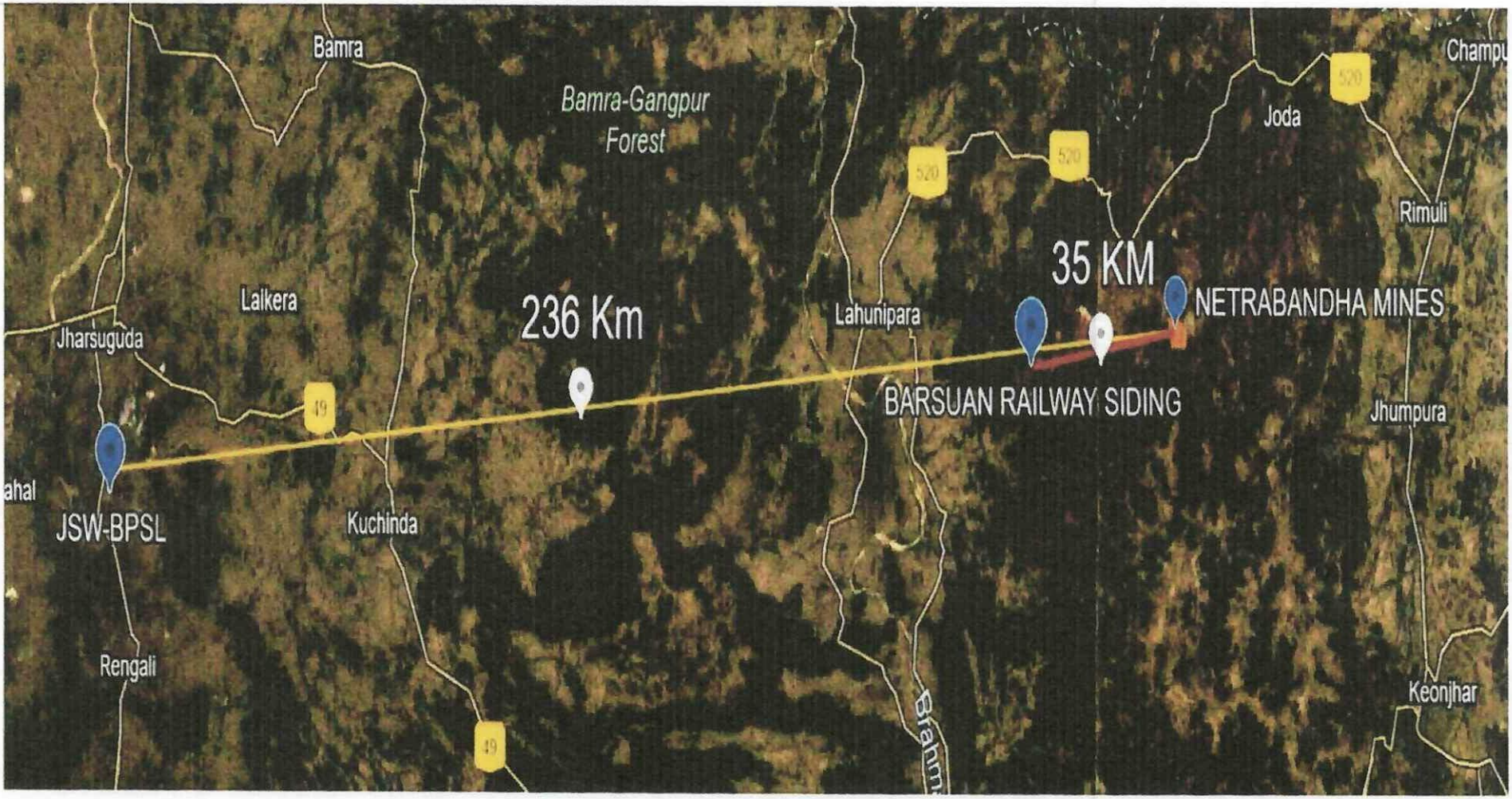
A panchayat road running from Koira to Patmunda / Khajurdih runs along the eastern boundary of the block; sometime through the lease area, sometime outside the lease area. This panchayat road joins NH 215 at a distance of about 7 KM from the lease area. SH 10(A) runs at a distance of about 8 KM from the lease area. Both the NH & SH joins the lease area to Rourkela via Tensa & Kalta, respectively. Rourkela is about 110 KM from the lease area. Barsuan on SE Railway is the nearest railway siding which is around 35 Km away.

Koira, at a distance of about 7 Km, is the nearest township with all the amenities.

There is no national park / sanctuary located within 10 km radius from te lease area.

Further JSW-BPSL Plans to set up a beneficiation plant at the JSW Narayanposhi Iron Ore Mines. Iron ore from Netrabandha will be transported by road (11 km) to the beneficiation plant. After beneficiation, the ore will be transported via slurry pipeline to the JSW-BPSL plant, reducing environmental impacts. The project is targeted for completion by March 2028.

BRIEF SUMMARY OF MINE



TRANSPORTATION PLAN

Aim of the transportation plan is to facilitate the efficient and compliant transportation of iron ore from Netrabandha Iron Ore Mines to the BPSL steel plant at Thelkoli, Sambalpur District.

1. Excavation, Sizing, and Stacking Process:

- Excavation and Loading:
  The iron ore (Run of Mines or ROM) will be mechanically excavated and loaded into 25 MT dumpers. These dumpers will transport the ore to the earmarked stack yard within the mine area.
- Processing Oversized Ore:
  Any oversized lump ore will be processed using the Rock Breaker, Mobile Crusher Plant, and Mobile Screen Plant to achieve the desired sizing. The lump ore and friable ore will be segregated and stacked separately in a controlled manner.
- Measurement, Sampling, and Grade Analysis:
  Once the ore is properly sized, it will undergo a grade analysis and measurement. The results of the analysis will be reported to the Department of Mines, Government of Odisha. These results will be used to obtain the necessary transportation permits for moving the ore to the BPSL steel plant.

TRANSPORTATION PLAN

Cont...

2. Transportation Methods:

The transportation of the iron ore will be carried out in two phases: road and railway. The allocation will be 50% via road and 50% via railway.

Road Transportation (50% of Total Dispatched Ore):

- Loading into Trucks:
  The iron ore will be manually loaded into authorized transport trucks (25 MT capacity) during the day (6:00 AM to 6:00 PM)
- Weighment:
  The loaded trucks will be weighed at a certified electronic weighbridge located within the lease area. The weight will be duly certified, and the trucks will be covered with sealed tarpaulins to avoid dust pollution and spillage of the ore.
- Route Details:
  After weighment, the loaded trucks will proceed to the BPSL steel plant. The trucks will travel along state highways, carrying the necessary transit permissions issued by the State Government.

Railway Transportation (50% of Total Dispatched Ore):

The iron ore will be transported from the Netrabandha Mines to the Barasuan railway siding (approximately 35 km away) by road. At the siding, the ore will be transferred onto railway wagons for transportation.

TRANSPORTATION PLAN

3. Compliance and Environmental Considerations:

- Dust Pollution Control:
  As part of the environmental management plan, all ore-loaded trucks will be covered with sealed tarpaulins to prevent dust pollution and ore spillage during transit.
- Weighing and Documentation:
  To ensure transparency and compliance with regulations, all transportation vehicles will be weighed at certified weighbridges, and documentation such as the weight certificate and transit permission will be properly managed and recorded.
- Environmental Monitoring:

Continuous monitoring of dust and emission levels will be conducted, especially during road transportation, to ensure adherence to environmental standards set by the authorities.

4. Route and Traffic Management:

- Route Details:
  The routes from Netrabandha Mines to the BPSL steel plant are shown in the attached Google Map. The primary routes will be along state highways, ensuring minimal traffic disruption.
- Traffic Management Plan:
  Traffic management strategies will be implemented to avoid congestion, especially during peak hours. Regular communication will be maintained with local traffic authorities to ensure smooth movement of transport vehicles.

BENEFICIATION AND SLURRY PIPELINE

- JSW-BPSL is planning to set up a beneficiation plant at the JSW Narayanposhi Iron Ore Mines. The iron ore from Netrabandha will be transported to this plant, located 11 km away, via road. Once processed, the ore will be transported to JSW-BPSL via a slurry pipeline with a capacity of **15 million tons per annum (mtpa)**. The pipeline will span a length of **165 km** from the grinding and beneficiation unit to the JSW-BPSL plant, significantly reducing environmental impacts such as dust pollution and traffic congestion.

Key Highlights:

- **Transportation from Netrabandha to Beneficiation Plant:** 100% of the iron ore will be transported by road to the JSW Narayanposhi beneficiation plant (11 km).
- **Slurry Pipeline:** After beneficiation, 100% of the ore will be transported to JSW-BPSL via slurry pipeline (15 Mtpa capacity, 165 km length), reducing road traffic and environmental impact.
- **Project Completion:** The target completion for both the beneficiation plant and slurry pipeline by **March 2028**.

This integrated approach will ensure efficient and sustainable iron ore transport for JSW-BPSL.

TRANSPORTATION VIA SAMBALPUR- ROURKELA HIGHWAY THROUGH KALTA

← from Chhachhelia, Odisha 770048
to JSW BPSL, Q297+HJC, Sarbahal, Jharsuguda,...

5 hr 3 min (236 km)

via Sambalpur - Rourkela Hwy and Biju Expy/Sambalpur - Rourkela Hwy/Sambalpur-Sundargarh-Rourkela Hwy

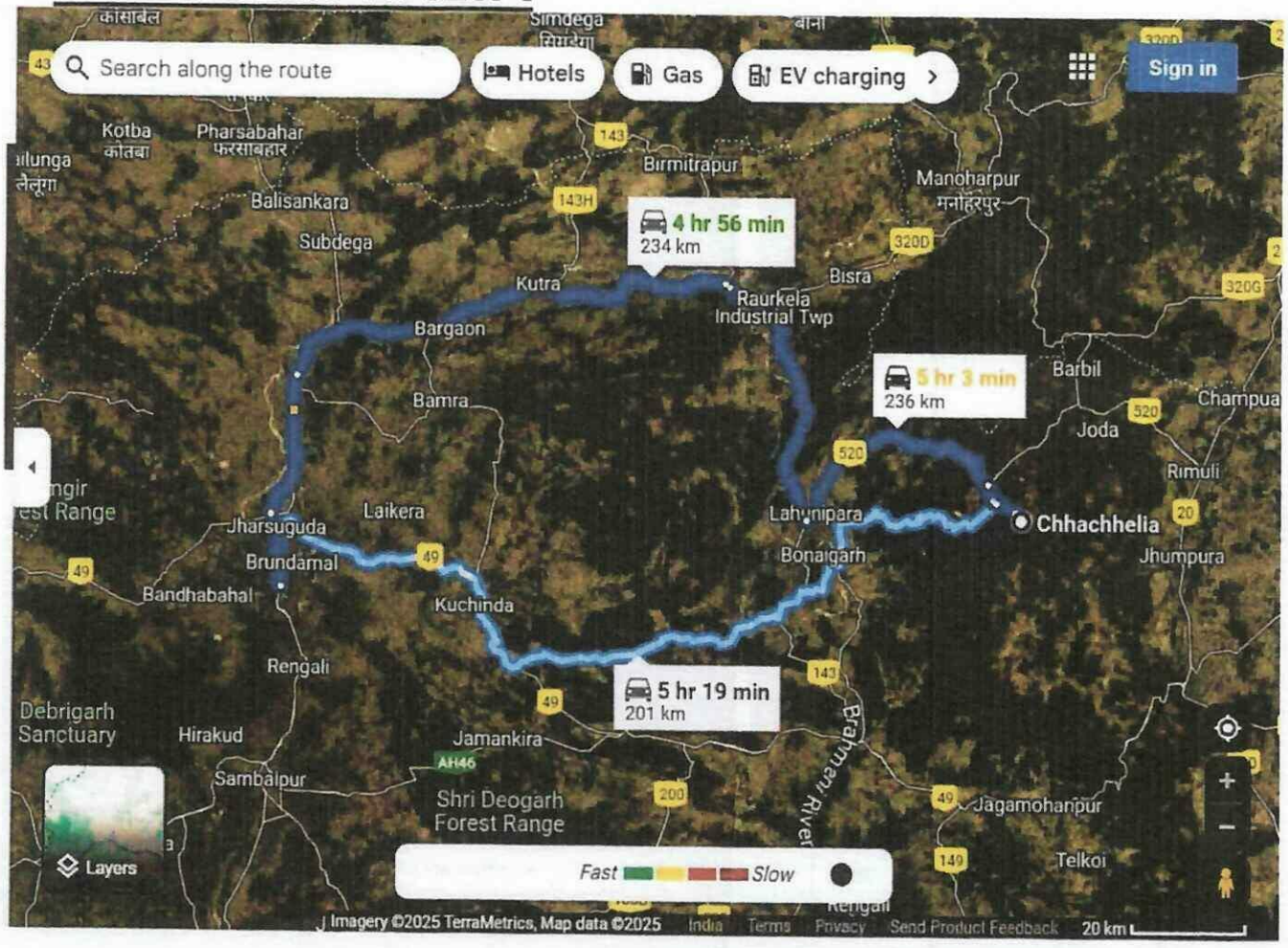
Some traffic, as usual

⚠ This route has tolls.

Chhachhelia
Odisha 770048

- Take Rajamunda - Rimuli Rd to NH 520 in Kasira
  18 min (10.1 km)
- Follow NH 520, NH 143 and Sambalpur - Rourkela Hwy to Thelkoloi
  4 hr 32 min (225 km)
- Drive to your destination
  32 sec (130 m)

JSW BPSL
Q297+HJC, Sarbahal, Jharsuguda, Thelkoloi, Odisha



TRANSPORTATION VIA SAMBALPUR- ROURKELA HIGHWAY THROUGH TENSA

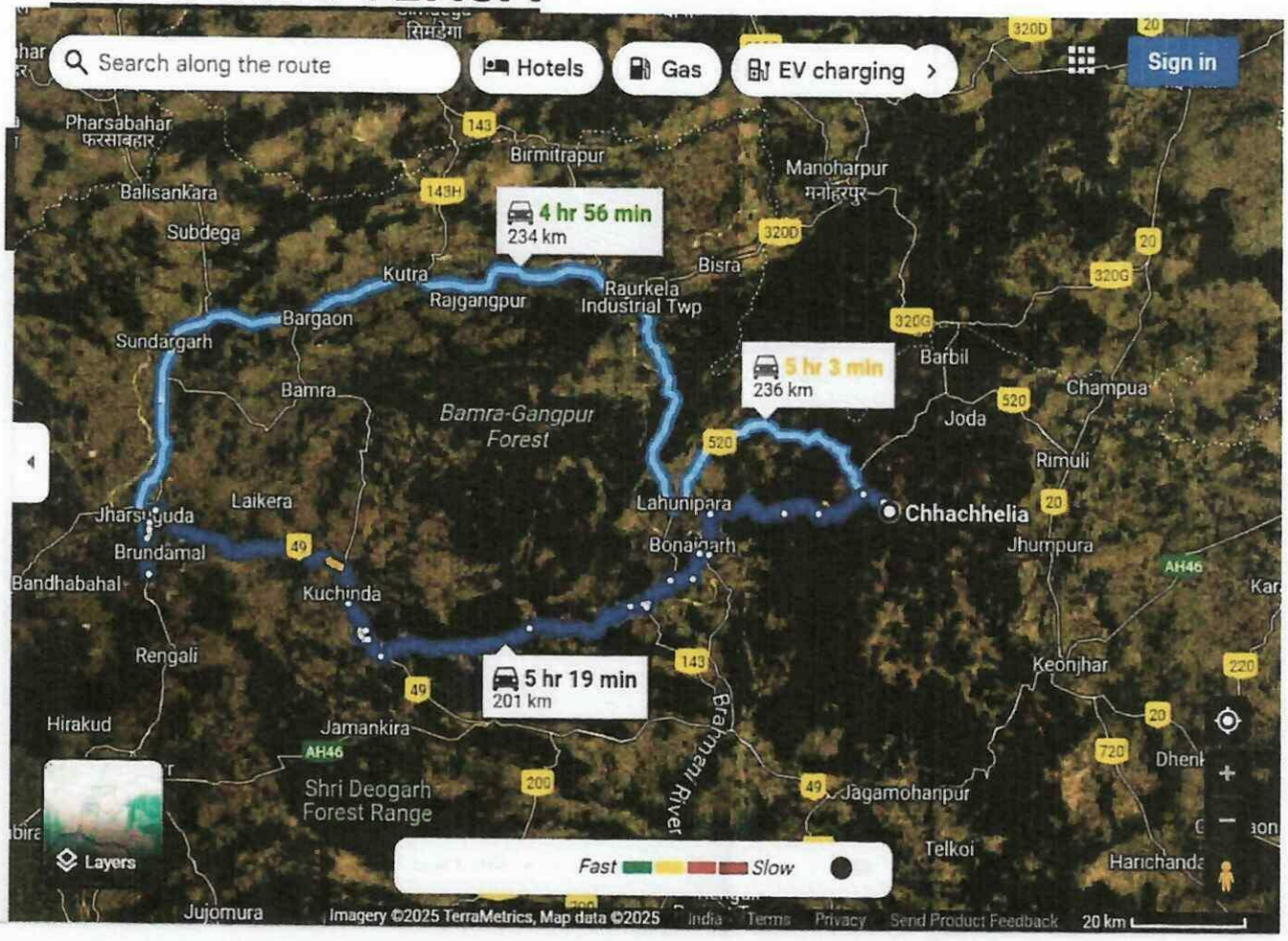
from Chhachhelia, Odisha 770048
to JSW BPSL, Q297+HJC, Sarbahal, Jharsuguda,...

5 hr 19 min (201 km)
via NH 200/NH49

Chhachhelia
Odisha 770048

- Continue to Koira
  10 min (6.0 km)
- Continue on Koida Barsuan Rd. Drive from Tensa Rd, Koida Rd, SH 10A, NH 143, ... and NH 200/NH49 to Thelkoloi
  4 hr 55 min (195 km)
- Drive to your destination
  32 sec (130 m)

JSW BPSL
Q297+HJC, Sarbahal, Jharsuguda, Thelkoloi, Odisha 768201



TRANSPORTATION UPTO BARSUAN RAILWAY SIDING

from Chhachhelia, Odisha 770048
to Barsuan, Odisha 770041

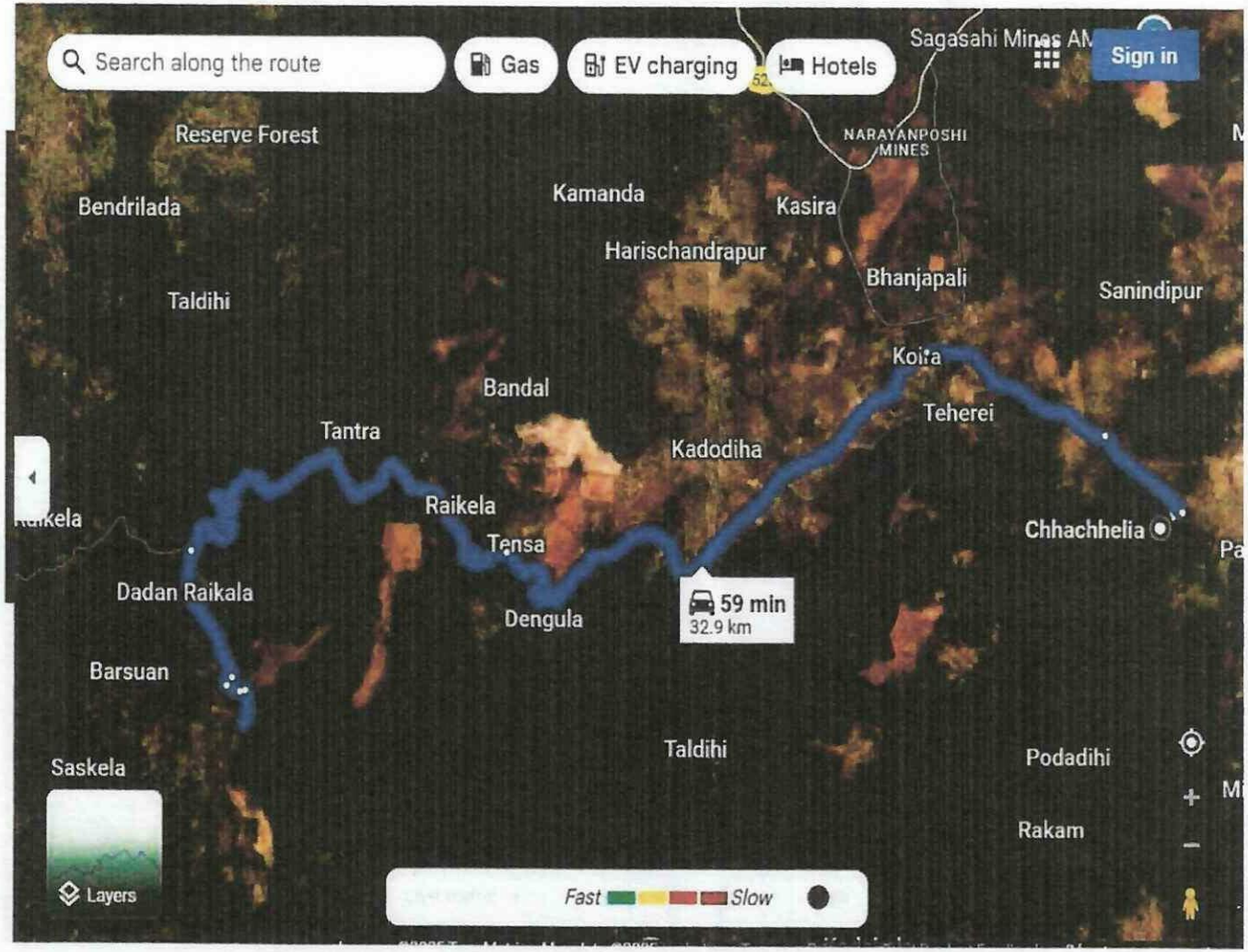
59 min (32.9 km)

via Koida Barsuan Rd and Tensa Rd
Fastest route

Chhachhelia
Odisha 770048

- Continue to Koira
  10 min (6.0 km)
- Continue on Koida Barsuan Rd to Dadan Raikala
  42 min (23.2 km)
- Drive to Koida Rd
  11 min (3.7 km)

Barsuan
Odisha 770041



ANNEXURE-IV

RAGA TRADECON PRIVATE LIMITED

NETRABANDHA (WEST) IRON ORE MINES

CIN:51420MH1995PTC162317
Vill. Baldihi, Ps. Koira, Dist. Sundargarh, Odisha, 770048
E-Mail: ragatradeconminerals@gmail.com
GSTN: 21AACCR4429D1ZW

ANNEXURE -2

6F
28.5.25

Ref:.....

Date:27.05.2025

To

OFFICE OF THE
DIVISIONAL FOREST OFFICER
BONAI DIVISION
Receipt No. 3430
Date 28.05.2025

The Divisional Forest Officer,
Bonai Forest Division.

Sub:- Regarding "Holistic Transportation Plan" in respect of Netrabandha Pahar West Iron Ore Block of M/s Raga Tradecon Pvt. Ltd.

Sir,

With reference to subject cited above, I would like to inform you that earlier we have submitted the Transportation Plan in respect of our Netrabandha Pahar West Iron Ore Block. Further, we have intimated that out of the total production of the Iron Ore, we have proposed, about 70% of said ore can be transported through public railway siding and remaining 30% by road transportation system. Besides, it is further inform you that we can be modified the above transportation ratio in future, basing on selling of the Ore on local market.

Hence, I would request you to kindly intimate the same to the Regional Chief Conservator of Forests, Rourkela Circle, Rourkela for their necessary action.

Thanking You

Yours faithfully,

For Raga Tradecon Pvt. Ltd.

Authorized Signatory.

RTPL RAGA TRADECON PRIVATE LIMITED
NETRABANDHA (WEST) IRON ORE MINES
CIN-51420MH1995PTC162317
Vill. Baldihi, P.S. Koira, Dist. Sundargarh, Odisha, 770048
E-Mail: ragatradecomminerals@gmail.com
GSTIN: [illegible]

In compliance with point no. 5, we have submitted the undertaking. However, the detailed note on transportation is narrated below.

NOTE ON TRANSPORTATION OF MINERALS FROM NETRABANDH PAHAR (WEST) IRON ORE BLOCK

1. Annual Production

The Netrabandh Pahar (West) Iron Ore Block has an estimated **annual production capacity of 1 Million Tons Per Annum (1 MTPA)**. This production is the total amount of iron ore to be transported to various destinations for further processing or shipment.

2. Transportation System

The transportation of the iron ore from the Netrabandh Pahar (West) Iron Ore Block involves a combination of **road and rail transport**. The initial leg of the journey, from the mine to the railway sidings, is done by road, and then the ore is carried onward to its final destination via rail.

- **Road Transport**: The ore is transported by trucks from the mine to the railway sidings.
- **Rail Transport**: From the railway sidings, the ore is transported to various destinations using the Indian Railways network.

3. Daily Transport Calculation

The transportation capacity is planned based on the annual production of 1 MTPA. To calculate the daily transport requirement:

- **Annual Production**: 1,000,000 tons/year
- **Number of Days per Year**: 360 days
- **Transport per Day**:1,000,000 tons/ 360 days=2,778 tons/day
- **4. Truck Requirement per Day**

To transport 2,778 tons per day by road, the number of trucks required can be calculated by dividing the daily transport load by the capacity of each truck.

- **Truck Capacity**: 28 tons/truck
- **Number of Trucks per day = 2778/28** = 100 trucks/day

RTPL RAGA TRADECON PRIVATE LIMITED
NETRABANDHA (WEST) IRON ORE MINES
Vill. Baldihi, P.S. Koira, Dist. Sundargarh, Odisha, 770048
E-Mail: ragatradecommercials@gmail.com

Thus, approximately **100 trucks per day** will be needed to transport the ore from the Netrabandh Pahar (West) Iron Ore Block to the railway sidings.

5. Railway Sidings and Distances

The ore is transported by road to various railway sidings, from where it is then moved to its destination via rail. The distances from the Betrabandh Iron Ore Block to the railway sidings are as follows:

- **Barbil Railway Siding**:
  - Distance from Netrabandh Iron Ore Block to Barbil: **27 km**
  - Route: NH 520 and Bhadrasabi to Barbil by SH (State Highway).
- **Nayagarh Railway Siding**:
  - Distance from Netrabandh Iron Ore Block to Nayagarh: **40 km**
  - Route: DMF (District Mineral Foundation) road and Express Highway.
- **Barsuan Railway Siding**:
  - Distance from Netrabandh Iron Ore Block to Barsuan: **25 km**
  - Route: PWD road.

6. Road Network

The **road network** connecting the Betrabandh Pahar (West) Iron Ore Block to the railway sidings is considered **excellent**, ensuring smooth transportation. The quality of the roads ensures that the trucks can efficiently transport the ore without delays, reducing transportation costs and improving overall logistical efficiency.

7. From Railway Sidings to Final Destinations

After reaching the railway sidings (Barbil, Nayagarh, or Barsuan), the iron ore is then transported via **rail** to its onward destinations. This reduces road congestion and allows for bulk transportation over longer distances, utilizing the capacity of the Indian Railways for efficient and large-scale mineral transportation.

8. NEERI Recommendations

For **mining operations** with annual production exceeding **5 Million Tons Per Annum (MTPA)**, NEERI (National Environmental Engineering Research Institute) has outlined specific infrastructure requirements to ensure sustainable and efficient

RTPL RAGA TRADECON PRIVATE LIMITED
NETRABANDHA (WEST) IRON ORE MINES

transportation and to mitigate environmental and logistical challenges. These recommendations are aimed at improving the overall carrying capacity of mining regions while reducing adverse impacts on local infrastructure, roads, and the environment. In the instant case, the production of the Mines is only 1MTPA so, it do not attract for dedicated railway siding or Conveyor belt system to transport the minerals.

- **Environmental Impact**: Ensuring that the transportation process does not adversely affect the surrounding environment. Measures to minimize dust, noise, and pollution will be considered.
- **Traffic Management**: Proper traffic management should be implemented to avoid congestion, particularly in areas with high road traffic density.
- **Road Safety**: Measures should be taken to enhance road safety, especially given the significant number of trucks operating daily.

9. Carrying Capacity and Infrastructure

The current transport system, including the road and rail network, does not face any pressure regarding the **carrying capacity**. The roads are well-constructed and maintained, and the railway infrastructure has sufficient capacity to handle the required volume of ore transportation.

Conclusion:

The transportation system for the **Netrabandh Pahar (West) Iron Ore Block** is well-designed to handle the annual production of 1 MTPA efficiently. The combination of **road transport** for the initial leg to the railway sidings and **rail transport** for the onward journey ensures a smooth, cost-effective, and environmentally responsible transportation process. The infrastructure is robust, and no issues are anticipated concerning the carrying capacity of either the road or rail networks.

Raga Tradecon Private Limited

Authorised Signatory

ANNEXURE-V

GOVERNMENT OF ODISHA
STEEL & MINES DEPARTMENT
*****

No 4001 /SM, Bhubaneswar, Dated the 30/04/2025
SM-MC1-MRL-0004-2021

From
Sri Abanikant Pattanaik,
Additional Secretary to Government

To
The Principal Chief Conservator of Forests (HoFF)
Forest, Environment and Climate Change Department
Government of Odisha.

Sub: Proposal for Prior Approval for Diversion of 194.683 ha of Forest Land for Guali Iron Ore Mines by M/s Odisha Mining Corporation Ltd. under Section 2(1)(ii) of the Forest (Conservation) Act, 1980 in Keonjhar District, Odisha.

Ref: Letter No. 21314/OMC, dated 16.12.2024, from M/s Odisha Mining Corporation Ltd.

Sir,

With reference to the subject cited above and the letter under reference, I am directed to inform you that the proposal of Odisha Mining Corporation Ltd. (OMC) for Stage-II Forest Clearance in respect of the Guali Iron Ore Mines located in Keonjhar District has been examined.

During the scrutiny of compliance with the conditions of the Stage-I Forest Clearance, the Ministry of Environment, Forest and Climate Change (MoEF&CC) made certain observations. In particular, observation no. (ii) highlighted the necessity of a comprehensive transportation plan. It was noted that the State Government should have submitted a strategy for transportation that aims to minimize environmental impacts. However, such a plan was not submitted at the time of review.

It was further directed that the transportation plan and associated activities should align with the recommendations of CSIR-NEERI, as mentioned in their "Carrying Capacity Study Report for Environmentally Sustainable Mining Activity." These recommendations emphasize the adoption of conveyor belts, slurry pipelines, railways, and the reduction of road-based transport — all to be implemented in a time-bound manner.

Accordingly, the holistic transportation plan prepared by OMC Ltd. is enclosed herewith for your kind perusal and necessary action.

Yours faithfully,
Additional Secretary to Government
30/4/2025

SM-MC1-MRL-0004-2021/6/2025

Executive Summary (3/7)

Road and Rail Network Augmentation

The analyses indicates that there is congestion expected in 2026 and beyond despite the road/rail capacity expansion. While the national highway network might be sufficient to cater to the long-haul road movement, the internal road network, the first mile rail and core rail network would require expansion on many segments in short, medium and long term. Some of the major sections are Joda-Rajkharsawan, Joda-Jakhapura and Bimlagarh-Rourkela on rail and Joda-Palasponga, Koira to Bhadrasahi, Bhadrasahi to Rimuli and Deojhar to Bilaipada on road.

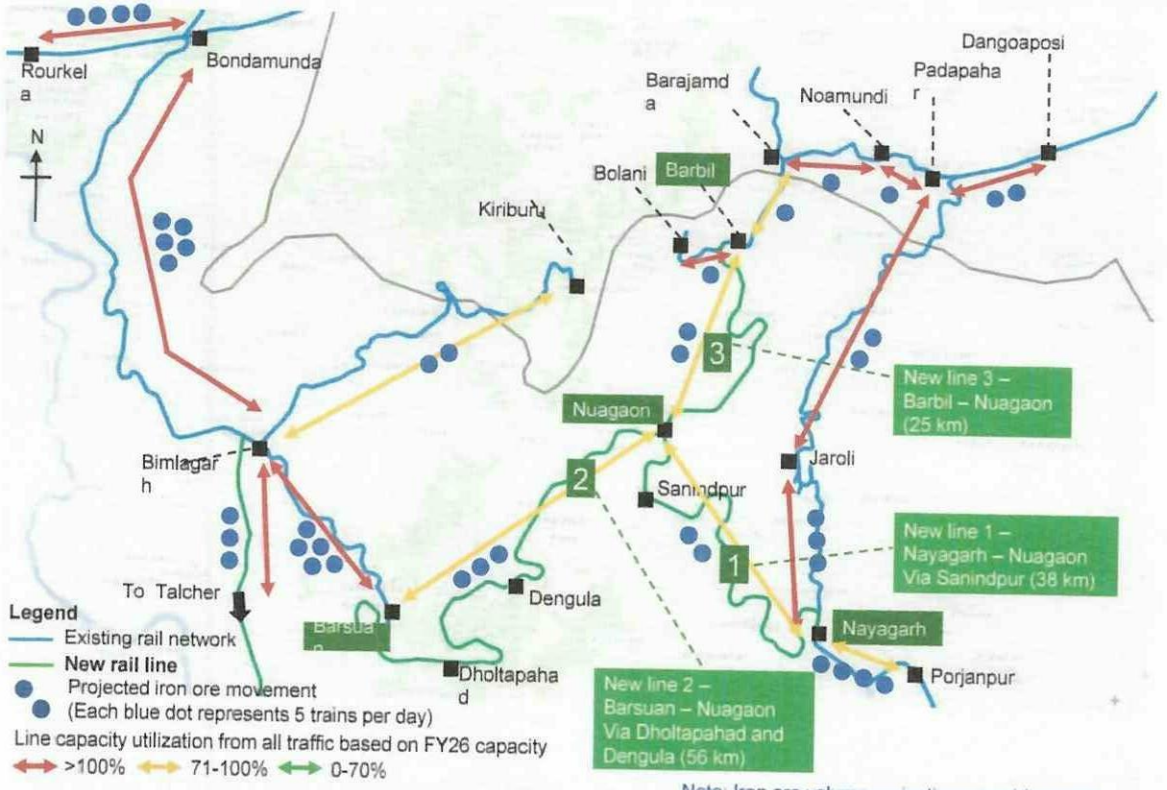
The analyses has identified expansion of various rail sections into 3rd and 4th lines by 2031, expansion of Koira to Keonjhar and Rajamunda to Rourkela highways into 4 and 6 lane by 2031 and developing bye-passes at Koira, ring road around Bhadrasahi and flyover at Barbil and Koira by 2031. A new railway network connecting Barsuan (Koira sector) to Barbil and Nayagarh (in Joda sector) is proposed which is expected to pass alongside mine blocks located in Tensa, Koira, Guali, Gonua, Sanindpur. This will provide the critically required lateral connectivity for Koira and Joda mines to the north-south rail axis of Rajkharsawan-Nayagarh-Cuttack and East-West axis to Rourkela- Jharsuguda. The ring roads in Joda would eliminate the need for trucks to go through the urban centers enabling 24-hour movement

while the bypasses and alternate road alignment in Koira would provide seamless movement and additional capacity for evacuation through new routes to access the NH network. Similarly, the various railway lines and roads would need to be upgraded and expanded for 2045 and various segments have been identified for the long-term evacuation.

Rail Sidings Upgradation and Development

The present railway sidings need to be upgraded in the short term with proper approach roads, internal roads and paving, demarcated/ expanded storage area, lighting and installation of hopper/ chute mechanism (preferably on rubber-tired chassis for mobility) to expedite the loading at public siding using semi-mechanized method (using payloader) and enable faster entry-exit of trucks into the facility. The faster truck turnaround improves velocity of cargo movement and can translate into faster truck turnaround, rake loading, rake turnaround and faster/higher evacuation. The plan also envisages new, mega sidings along the greenfield rail routes capable of handling minimum 8 -12 rakes a day as a common rail siding for large and small mines alike. Such mega sidings would be in a 5 to 7 km radius of the mines in the vicinity and connected via conveyors to eliminate first mile road movement while economizing rail siding and rail operations. For smaller mines, common conveyors for a cluster of mines is proposed. Such common-user conveyors are proposed for connecting existing mines with existing sidings also subject to technical and financial feasibility and address the first mile connectivity challenges. Such conveyor systems can be taken up for Joda sidings due to the shorter lead distances. The intent is to develop fully automated, conveyor-based rail sidings from mine to rake loading operations.

Rail track utilization : 2031 (Internal track network)



Source: KPMG Analysis (ore traffic projection); SER & ECoR for capacity utilization

Note: Iron ore volume projections consider 4500 MT per rake for FY31 (with 25 tonnes axle load)

- **Rail share projection (2031) – 43% share (103 MTPA resulting in 67 rakes/day)** – similar volume as FY26
- Traffic from Koira mines is projected to be 17 rakes/day in FY31
- The new rail network (in green), inter-linking existing Joda line with Koira line via triangular connection between **Barbil, Nayagarh and Barsuan (connecting at Nuagaon)** would improve the TLC for key destinations and add additional capacity in the internal network.
  - Reduce first mile distances for mines in Koira
  - Reduce distance from Joda to destinations towards the west (Jharsuguda, Sambalpur, Raigarh, Raipur etc.) by 95 km
  - Reduce rail distance to multiple destinations from both Joda and Koira by enabling cross-movement of ores
  - The new lines are expected to pass alongside major existing & upcoming mines such as Kurmitar, Gandhalpada, Guali, Nuagaon, Sanindpur and others and will connect Barsuan (in Koira) with Barbil as well as Nayagarh

We have also studied the impact/implication of NEERI guidelines

EC Capacity	Suggested Ore Transport Mode (to be adopted by year 2023)	No. of mines
>= 5 MTPA	100% by Pvt. siding, or by conveyor to Public siding or pipeline for captive mines and 70% for non-captive mines	**19** mines
3 to 5 MTPA	Min 70% by Public siding through conveyor, and max. 30% by road-direct to destination or other public rail siding or above option	**4** mines
1 to 3 MTPA	Min 70% by Public siding and max. 30% by road-direct to destination or by other public rail siding or above options	**13** mines
< 1 MTPA	100% by 10/17 Ton truck or above options	**33** mines

Implications for Odisha State

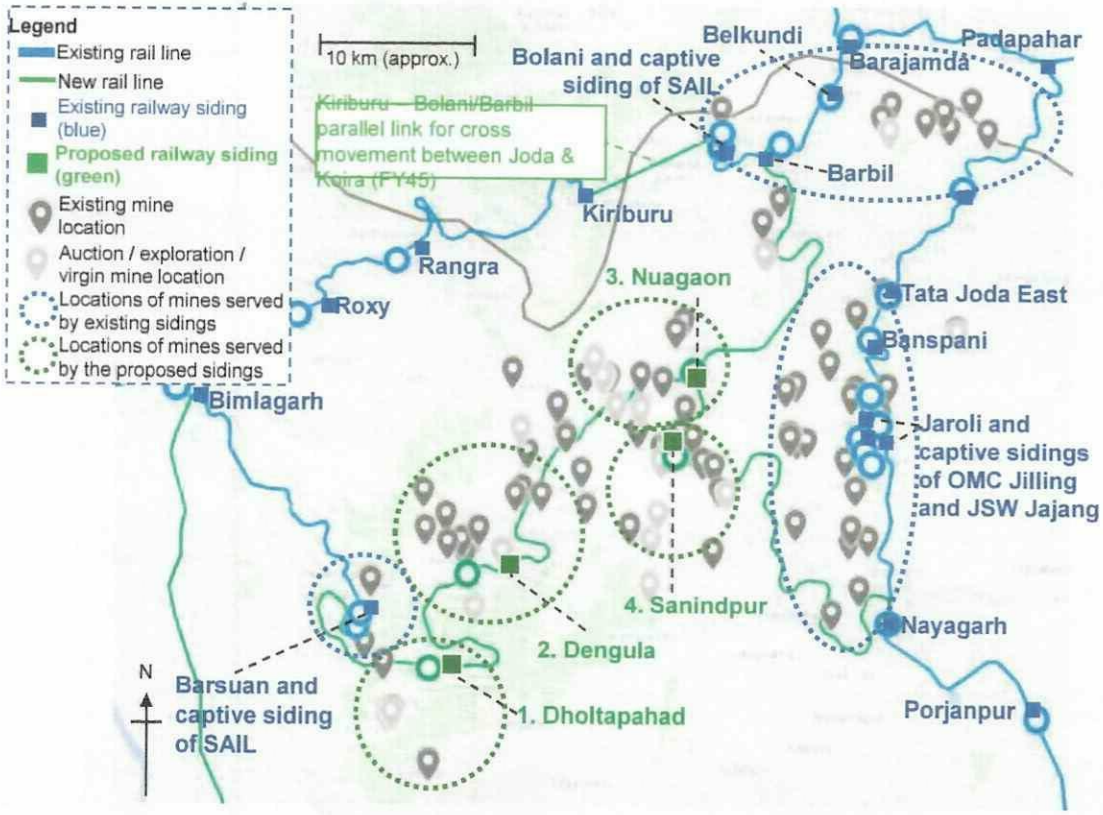
To implement the NEERI guidelines for mines above 5 MTPA, State needs to prioritize following projects:

- For mines at Oraghat, Sanindipur, Guali, Sagasahi, Kasira and Adaghat, as no siding is available nearby for conveyor belt
- Hence, either a provision of new rail line/ siding or slurry pipeline needs to be developed
- However, these areas have their own challenges owing to hilly terrain, passing through forest area, etc. where land acquisition would be a problem and may delay implementation of NEERI guidelines.

Recommendation:

- At least one railway track along Kensara, Raikela, Kusumdehi, Rengalbeda and Guali needs to be developed with siding
- To implement these projects, Authority may have to constitute an Empowered Committee to expedite the decision making and implementation process

A3 New sidings proposed on critical new rail links in the internal network



- **04 public sidings** (goods sheds) have been proposed on new lines proposed for FY31 (triangular connection) to create handling capacity for I/ore evacuation as well as improve connectivity.
- The proposed sidings have been suggested keeping in view the upcoming rail network alignment and location of virgin/under exploration mines. Location selection is based on highest concentration of traffic and average distance of 5-10 km between mine & nearest siding –

S. No.	Proposed siding	Key mines served
1	Dholtapahad	OMC Kurmitar Pahar, Kashvi Dholtapahad, Khandadhar, Sarkunda, Rantha
2	Dengula	Geetarani, Penguin, National Enterprises, SN Mohanty Raikela, JSPL Tensa, JSW Narayanposhi, Prabodh Mohanty
3	Nuagaon	OMC Guali, Tata Gandhalpada, Essel Nuagaon
4	Sanindpur	Rungta (Pathriposhi, Pureibahal, Sanindpur, Oraghat), ArcelorMittal Sagasahi, JSW Gonua, National Enterprises (Sanindpur & Oraghat), Bhushan Steel Netrabandha Pahar, SN Mohanty Jaldihi

- It is proposed to develop the above as **Large/Mega sidings with minimum handling capacity of 8-12 rakes per day** with mechanization and silo/conveyor system

Click on A3 to go back
Back to Executive Summary

Railway Siding Development

Proposed new sidings			
Proposed new siding location	Serving railway line	Key mines served	Approx. traffic (rakes / day)
FY26			
(A) Kantakudar (Point of minimum aerial distance from Kurmitar)	Bimlagarh – Talcher new line; connectivity via conveyor	OMC Kurmitar Pahar	4
FY31			
(B) Near Kusumidi / Kasira	New north-southline connecting Barsuan / Dholtapahad to Barbil	Essel Koira, Geetarani Raikela	14
(C) Near Guali		OMC Guali , Tata Gandhalpada	3
(D) Near Sanindpur	New east-west line connecting Dholtapahad to Nayagarh via Sanindpur	SN Mohanty, Rungta Pathriposhi, Rungta Pureibahal	6
FY45			
(E) Near Raikela	New north-southline connecting Barsuan / Dholtapahad to Barbil	Geetarani, JSPL Tensa, mines in Raikela	8
(F) Near Kasia		Roida, Narbheram	7

Koira East & West- Proposed railway sidings on new lines expected to divert a substantial portion of traffic by FY31...(2/2)

#	Siding	Public goods shed / Captive	Proposed capacity (rakes / day)	Projected total traffic from all mines (rakes / day)				New rail sidings	Year
				FY21	FY26	FY31	FY45		
9	Kantakudar	Captive (OMC Kurmitar)	8	-	3.6	3.6	5.9	• **New siding proposed on** Bimlagarh – Talcher / Angul new line • Target mine: OMC Kurmitar • Evacuation from mine to siding using a fully mechanized conveyor with silo loading (~10-12 km)	**2026**
10	Kasira	Public	8	-	-	7.6	7.6	• **New siding proposed** • Target mines: Geetarani Raikela, JSW Narayanposhi, SAIL Kalta etc. • Koira bypass road (Dengula – Kasira) would enable seamless access of the goods shed for mines in Raikela /Tensa region.	**2031**
11	Guali	Public	8	-	-	4.2	6.7	• **New siding proposed** • Target mines: OMC Guali	**2031**
12	Sanindpur	Public	12	-	-	6.1	9.9	• **New siding proposed** • Target mines: multiple mines of Rungta and Sagasahi region	**2031**
13	Raikela		8	-	-	-	7.8	• **New siding proposed** to absorb incremental volume from Koira East	**2045**
	Total		**23.0**	**11.5**	**26.2**	**34.2**	**52.2**		

- The proposed siding locations need to be taken up for technical assessment before finalization
- The locations have been suggested based on the proximity to the mines (5-7 kms)
- These locations may serve as Large or Mega I/Ore handling facilities with fully mechanized loading and conveyor connectivity

Source: KPMG Analysis

Capacity augmentation required at select sidings in short-term (2/2)

#	Railway Siding	Public / Captive	Capacity (rakes / day)				Projected total traffic from all mines (rakes /day)			
			FY21	FY26	FY31	FY45	FY21	FY26	FY31	FY45
16	Barsuan	Public	2.0	4.0	4.0	4.0	2.0	5.6	5.0	5.0
17	Bimlagarh	Public	4.0	7.0	7.0	7.0	1.4	4.2	-	-
18	Roxy	Public	3.0	4.0	4.0	4.0	0.9	3.0	-	-
19	Rangra	Public	2.0	4.0	4.0	4.0	1.6	3.0	-	-
20	Chandiposi	Public	4.0	4.0	4.0	4.0	0.7	-	-	-
21	Lathikata	Public	-	4.0	4.0	4.0	0.2	-	-	-
22	Patasahi	Public	4.0	4.0	4.0	4.0	0.4	-	-	-
23	SAIL Barsuan	Captive	4.0	4.0	4.0	4.0	4.4	4.2	4.9	8.0
24	Kantakudar (proposed FY26)	Captive	-	6.0	6.0	6.0	-	3.6	3.6	5.9
25	Kasira (proposed FY31)	Public	-	-	12.0	12.0	-	-	7.6	7.6
26	Guali (proposed FY31)	Public	-	-	8.0	8.0	-	-	4.2	6.7
27	Sanindpur (proposed FY31)	Public	-	-	12.0	12.0	-	-	6.1	9.8
28	Raikela (proposed FY45)	Public	-	-	-	12.0	-	-	-	7.7
	Total		**23.0**	**41.0**	**73.0**	**85.0**	**11.5**	**23.6**	**31.5**	**50.7**