

**OFFICE OF THE DIVISIONAL FOREST OFFICER, KEONJHAR DIVISION**

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Memo No. 3269 /Mining  
Dated, Keonjhar the 16-5-2017

To

The Regional Chief Conservator of Forests,  
Rourkela Circle, Rourkela.

Sub: Proposal for diversion of 2.062 ha forest land for laying of Pipeline for transportation of Iron Ore slurry from Barbil to Angul of M/s Jindal Steel & Power Ltd.

X-Sub: **Processing of Part Proposal for diversion of 0.744 ha Forest Land, out of the total forest land proposed for diversion over 2.062 ha, falling under the jurisdiction of Keonjhar Forest Division.**

Ref: Proposal No. FP/OR/Others/9825/2015, St. Sl. No. OR-028/2016.

The proposal for diversion of 0.744 ha Forest land, for laying underground pipeline for transportation of Iron Ore Slurry from village Kitabeda under Barbil Tahasil to Village Taramakanta under Banspal Tahasil of Keonjhar District under the jurisdiction of Keonjhar Forest Division, in respect of M/s Jindal Steel & Power Ltd., Angul has been received online from the Addl. Principal Chief Conservator of Forests, Forest Diversion and Nodal Officer, FC Act. O/o the Principal Chief Conservator of Forests, Odisha, Bhubaneswar vide No. FP/OR/Others/9825/2015, State Sl. No. OR-028/2016 on dated 18.04.2016. The said proposal, submitted over 0.744 ha forest land, after due scrutiny, is sent herewith in 5 sets for approval under section-2(ii) of Forest Conservation Act, 1980 (Amended).

**A. Brief description of the Project Proposal**

**A.1. Brief description of the Project**

M/s Jindal Steel & Power Ltd (JSPL) has proposed to transport iron ore fines in form of slurry through underground pipeline from its plant at Deojhar (Kitabeda Village) under Barbil Tahasil of Keonjhar District to its Integrated Steel Plant at Nisha, Angul. The proposed pipeline will be laid underground with minimum depth of 1.2 mtr to 1.5 mtr depth from the ground level and width of 1.2 mtr.

The aforesaid underground pipeline project of M/s Jindal Steel & Power Ltd has been approved by the State Level Single Window Clearance Authority (SLSWCA) of Govt. of Odisha vide proceeding dated 08/02/2012. The copy of the approval letter is enclosed herewith as **Annexure- V**

The proposed underground pipeline is envisaged to traverse along various roads (NH/SH/MDR/ODR etc.) within the RoW corridor of the roads. The NOC/ permission, as regards underground laying of pipeline corridor in the RoW of the existing roads, has been obtained from various authorities (NHAI/NH Division/R&B Dept./RWD Dept etc.). The copy of NOC/ permission, obtained from different authorities, is enclosed herewith as **Annexure - V**

The aforesaid pipeline project, running from Kitabeda of Barbil Tahasil to Taramakanta of Banspal Tahasil in Keonjhar district, will pass through villages – Kitabeda, Sialijoda, Bileipada, Bhagalpur, Lahanda, Thakurani RF, Baneikala, Joda, Kamarjoda, Baunsapani, Khuntapani, Baitarani RF, Jalahari, Jalori, Jajanga, Jadibahal, Palasa (Ka), Kundapasi, Unchabali, Balada, Nayagada,

Badakalimati, Dabuna, Purunadihi, Naibaga, Naibaga RF, Basantapur, Kaijoda, Sundura, Kadakala, Bejidihi, Nayakote, Kalanda (Kha), Jamirapasi, Kusakala, Taramakanta, Taramakant RF enroute Taramakanta. The geo co-ordinates of Starting Point at JSPL Plant in Deojhar (Kitabeda Village), Barbil in Keonjhar and Integrated Steel Plant at Nisha, Angul in Angul District is Latitude - 22° 05' 10.43" N, Longitude - 85° 28' 47.13" E and Latitude - 20° 52' 12" N, Longitude - 84° 59' 24" E respectively.

The underground pipeline project of M/s Jindal Steel & Power Ltd. involves a total of 10.096 ha land in Keonjhar forest division which includes 0.744 ha forest land and 9.352 ha non-forest land. The proposed width of the underground pipeline is 1.20 mtrs in non-forest land and forest land. The status of the non-forest land, involved in the said project, as on 25.10.1980 is certified by the concerned Tahasildars to be non-forest. The certificate furnished, to this effect in respect of non-forest land by Tahasildar, Barbil, Jhumpura & Banspal Tahasil, is enclosed herewith as Annexure- VII.

### **A.2. Physiography and Geological formation**

The proposed site for laying of underground pipeline project runs from Kitabeda of Barbil Tahasil to Taramakanta of Banspal Tahasil in Keonjhar district. This site falls under the physiographic- Bhuyan-Juangpirh in central Keonjhar and Joda-Barbil plateau region stretching along Chamakpur-Bonai border region characterised with deposits of Quartzite and Lava deposits. This geological formation is an integral part of Western mountainous terrain containing lofty hills with intervening narrow vallies. This area is densely forested and represented by high hills namely Gandhamardan I ( $\Delta$  1090 mtr.), Gandhamardan II ( $\Delta$  1062 mtr.) and Gonasika ( $\Delta$  1009 mtr.) etc. The rocks of Keonjhar District belong to the iron ore series of the Dharwars, an exceedingly ancient system of archæan rocks, which also occurs in neighbouring Singbhum and Sundargarh Districts. This mass gives passage after a short distance south of Keonjhar boundary to rocks of Gandawana system, to Archæan rocks (Khondalite and charnockite) at its west, southwest and to quaternary rocks at its southeast. Shale, phyllites, schists, sandstone, conglomerates and quartzite occur often with extensive basic intrusion. Most part of this district is covered by rocks of Iron ore group represented by BHJ, BHQ & BMQ which provides the iron ore deposits.

The quartzite are normally seen on the hilltops extending roughly in north-south direction to west of Keonjhar. The quartzite is underlain by pyrophyllite, which forms economic deposits at some places. This is in turn underlain by weathered granite. At times, on the top of the weathered granite, china clay pockets are available. On the further west, trap and tuffites are seen. White to yellowish lithomarge is also seen associated with traps. Buxites with intercalated laterite cap over metavolcanics on the flat-topped hill of Dholkotapahar near Kuanr, about 30 K.M west of Keonjhar has been reported with reserve of 10 million tons with  $Al_2O_3\%$  up to 49. Dolerite dykes and basic intrusive are also seen in this central area. Due to the availability of quartz sericite schist and amphibolite predominantly in this area, better agricultural lands are found in Telkoi and Banspal.

### **A.3. Floristic- Faunal Composition**

The proposed site for laying of underground pipeline project runs from Kitabeda of Barbil Tahasil to Taramakanta of Banspal Tahasil in Keonjhar district involves Thakurani RF, Batarani RF, Naibaga RF, Revenue Forest and DLC forest. Thakurani and Baitarani RF are sub grouped under type 3C/C<sub>2c</sub> Moist Peninsular Low Level Sal and Naibuga RF is sub grouped under type 5B/C<sub>2</sub> Northern Dry Mixed Deciduous Forest. The prevailing vegetation in the applied Revenue and DLC forest is sporadic and patchy with dominance of Sal and Sal associates. The prevailing forest growth comprises the sal forests of Bhuyan & JuangPirh plateau and extends over a large area. The main associates of sal

are *Pterocarpus marsupium*, *Terminalia alata*, *Emblica officinalis*, *Bridelia retusa*, *Gmelina arborea*, *Cleistanthus collinus*, *Careya arborea*, *Diospyrus melanoxylon*, *Butea parviflora*, *Woodfordia fruticosa*, *Zyziphus spp.* The main climbers associated with sal in these areas are *Combretum decandrum*, *Butea superba*, *Bahunia vahlii*, *Smilax tetraphylla* etc. The important grass species are *Heteropogon contortus*, *Aplida mutica*, *Dicanthium carricosum*, *Cynodondactylon*, *Chrysopogon aciculatus* etc.

The Northern Dry Mixed Deciduous Forest occurs scattered over extensive areas in both the divisions in dry slopes and rugged ground where soil is poor and shallow. Tree canopy is seriously broken by human activities so that scattered trees and small groups are now typical. This broken top canopy is characterizing the transition to still drier types having trees with low spreading crown. Shrubs and small trees occupy vast areas.

The associates of sal in top canopy in this type of forests are *Anogeissus latifolia*, *Lagerstroemia parviflora*, *Terminalia alata*, *Dalburgia latifolia*, *Albizia spp.*, *Bombax ceiba*, *Pterocarpus marsupium*, *Adina cordifolia*, *Terminalia chebula*, *Terminalia belerica*, *Boswellia serrata*, *Dalbergia paniculata*. The middle canopy consists of associates like *Ougeinia ougenensis*, *Casia fistula*, *Alangium salvifolium*, *Cleistanthus collinus*, *Gardenia latifolia*. Scattered clumps of *Dendrocalamus strictus* are found in Kalapat and Revena blocks. *Nyctanthes arborescens* (Gangasiuli) are found plenty in Atei, Revena, Santoshpur, Barabanka, Pedipokhari, Tamango, Thakurani. The undergrowth is usually rare and consists of shrubs like phoenix spp., *Holarrhena antidysenterica*, *Woodfordia fruticosa*, *Leea asiatica*. Climbers like *Butea superba*, *Combretum decandrum*, *Smilax tetraphylla*, *Ichnocarpus frutescens*, *Dioscorea bulbifera*, *Mucuna pruriens* are found in this type of forests. The grasses like *Cymbopogon maretinii*, *Aristida setacea*, *Fulaliopsis binata* occur in this type of forests. The density varies from 0.2 to 0.4. The typical site quality of these types of forests is Q IV to Q V. Regeneration of sal and other important associates is poor. The coppice regeneration that comes from the illicitly felled stumps is retarded and poor. Repeated biotic interference plays a major role. The most characteristic feature of the crop in these forests is thorny and unbrowsable and nonetheless, xerophytic spp. are predominant in regeneration.

No rare or endangered flora & fauna is noticed in this area but however, movement of mega fauna like elephant is often noticed in the forest blocks and its fringe area. The area comes under the elephant habitat zone- 2 of ORSAC, Bhubaneswar.

## **B. Documents and Undertakings as regards Forest Diversion Proposal**

### **B.1. Maps**

The user agency has furnished the required maps as depicted in the following table-

S No	List of Drawings / Maps	Scale	Plate No.	No of Plates
1	Pipeline corridor marked on Original SOI Topo sheets.	1: 50,000	Plate- I- A,B,C	3
2	3-Alternate route of Pipeline corridor marked on Original SOI Toposheets.	1: 50,000	Plate- II- A,B,C	3
3	Cadastral map depicting the proposed pipeline corridor – Forest land.	16" = 1 mile 1: 3960	Plate- III- (8 Nos.)	In Separate Volume –II

4	Cadastral map depicting the proposed pipe line corridor – Non-Forest land.	16" = 1 mile 1: 3960	Plate- IV- (73 Nos)	In Separate Volume –II & III
5	DGPS Maps depicting the proposed pipe line route in Keonjhar district.	1: 3960	Plate- V (13 Nos)	CD and In Separate Volume -II
6	Super imposed route map on forest cover showing RF/ National Park, PRF/ Sanctuary/ PF etc.	1:1,25,000	Plate- VI	1
7	Detailed route map in Keonjhar Forest Division	1:50,000	Plate- VII	1
8	Map of Compensatory Afforestation.	16" = 1 mile 1: 3960	Plate- VIII	1

## B.2. Forest Land

The submitted diversion proposal over 0.744 ha, for laying of underground pipeline project of M/s Jindal Steel & Power Ltd from Kitabeda to Taramakanta in Keonjhar forest division, involves 0.100 ha forest land in Thakurani RF, 0.187 ha in Baitarani RF, 0.073 ha in Naibaga RF, 0.024 ha in Taramakanta PRF, 0.274 ha Revenue Forest and 0.086 ha DLC Forest land. The details of the forest land involved in the project with the purpose of utilisation is furnished hereunder-

### Purpose wise breakup of the forest land required for the project under the present proposal

Sl. No.	Purpose of Utilization	Reserved Forest (R.F.) in ha	Proposed Reserved Forest (PRF) in ha	Revenue Forest in ha	DLC Forest in ha	Total Forest Land in ha	Total Non-forest land in ha	Grand Total in ha
1	Iron Ore Slurry Pipeline Project	0.36	0.024	0.274	0.086	<b>0.744</b>	9.352	<b>10.096</b>
<b>Total</b>		0.36	0.024	0.274	0.086	<b>0.744</b>	9.352	<b>10.096</b>

## B.3. Status of total land (Forest and Non-forest) as on 25.10.1980 involved in the project

The Tahasildar, Barbil, Jhumpura and Banspal Tahasil have furnished the certificate as regards the status of total land, involved in the project, as on 25.10.1980 proposed for laying of Iron Ore slurry Pipeline for transportation of Iron Ore in respect of M/s Jindal Steel & Power Ltd. and the said certificate is enclosed herewith as **Annexure- V**

## B.4. Tree Enumeration.

There are 70 nos. of trees (35 - sound trees and 35 - unsound trees) standing on the forest land proposed for diversion for laying of Iron Ore Slurry Pipeline project for transportation of iron Ore in slurry form from Kitabeda village under Barbil Tahasil to Taramakanta village under Banspal Tahasil in Keonjhar Forest Division. The species wise and diameter class wise abstract of trees enumerated and required to be felled is enclosed as **Annexure- VI**

## B.5. Cost benefit analysis.

The area proposed for diversion is 0.744 ha. Therefore, cost benefit analysis, for the said project, is not insisted upon.

### B.6. Re-settlement and Rehabilitation.

The project does not involve displacement of any human habitation and therefore the Re-settlement and Rehabilitation plan is not warranted.

### B.8. Reclamation and Rehabilitation Plan.

The proposed underground iron ore slurry pipeline project is envisaged to traverse through Government land (within RoW of existing roads) including three Reserved Forests and one PRF. The pipeline can be laid with minimum removal of forest growth in the proposed corridor. The User Agency has submitted undertaking to make good the land after use and make good any loss to forest/environment. The said undertaking is enclosed herewith as **Annexure- 1X**

### B.10. District Profile

The district profile in the prescribed proforma vide **Annexure- VII** of FC Act guideline is enclosed herewith as **Annexure- X**

### B.13. Certificate under FRA, 2006

The Collector, Keonjhar has furnished the desired certificate under FRA, 2006 over 0.625 ha vide letter No.937 dated 02.04.2015. The said certificate is enclosed herewith as **Annexure- XI**. Nonetheless, the certificate under FRA, 2006 over the balance forest land of 0.119 ha will be furnished by the Collector, Keonjhar to the RCCF, Rourkela Circle as required vide Para- 6(3)(e) of Forest (Conservation) Ammended Rules, 2014.

### B.14. Site Inspection Report of DCF

Site Inspection report of the Deputy Conservator of Forests, Keonjhar Division is furnished as **Annexure- XV**

### B.15. DGPS maps

The DGPS map signed by all concerned officials of Revenue and Forest Dept., validated by ORSAC and duly countersigned by the undersigned is enclosed as **Plate- V**. The area as per land schedule and that of DGPS map involved in the submitted diversion proposal is produced below-

Sl No.	Particulars of Forest Land	Area as per land schedule (in ha.)	Area as per DGPS (in ha.)	Difference	Remarks
1	Thakurani RF	0.100	0.099	0.001	1.000%↓
2	Baitarani RF	0.187	0.173	0.014	7.486%↓
3	Naibaga RF	0.073	0.073	0.000	0.00
4	Taramakanta PRF	0.024	0.032	-0.008	33.333%↑
	<b>Total RF</b>	<b>0.384</b>	<b>0.377</b>	<b>0.007</b>	<b>1.822%↓</b>
5	DLC Forest	0.086	0.086	0.000	0.00
6	Revenue Forest	0.274	0.275	-0.001	0.364%↑
	<b>Total:</b>	<b>0.744</b>	<b>0.738</b>	<b>0.006</b>	<b>0.806%↓</b>

## **C. Compensatory Levies**

### **C.1. Compensatory Afforestation**

Non-forest Private land over 2.630 ha has been identified in village Kurumula under Pallahara Tahasil under jurisdiction of Deogarh Forest Division in lieu of the forest land proposed for diversion over 2.062 ha in respect of two divisions i.e. Keonjhar & Deogarh Forest Division. This includes 0.744 ha non-forest land, in lieu of forest land proposed for diversion over 0.744 ha, under Keonjhar Division and 1.318 ha non-forest land, in lieu of forest land proposed for diversion over 1.318 ha, under Deogarh Division.

### **C.2. Net Present Value (NPV).**

The NPV of the forest land, proposed for diversion under FC Act, 1980, will be realised from the User Agency on receipt of Stage-I approval. The undertaking submitted by the User Agency to this effect is enclosed as **Annexure- IX**

### **C.3. Wild Life Management- Site Specific Wildlife Conservation Plan and Regional Wildlife Management Plan.**

The forest land proposed for diversion for laying of Iron Ore slurry pipeline requires 0.744 Ha forest land under Keonjhar forest division. The very nature of the project is laying of pipelines below the ground at a depth of 1.20 to 1.50 mtr. and the User Agency has undertaken to make good the land after use and make good any loss to forest/environment. Nonetheless, the prevalence of wild fauna in the proposed forest land is the same as that of adjoining forest blocks and are likely to be impacted by the project work. Therefore, Site Specific Wildlife Conservation Plan is suggested to be imposed as a condition in addition to an elephant anti-depredation scheme for Barbil, Champua & BJP Range.

## **D. Statutory Clearances**

### **D.1. Environmental Clearance**

No Environmental Clearance under EIA, 2006 has been accorded in respect of the project- laying of underground pipeline for transportation of Iron Ore Slurry from village Kitabeda under Barbil Tahasil to village Taramakanta under Banspal Tahasil of Keonjhar District under the jurisdiction of Keonjhar Forest Division of M/s Jindal Steel & Power Ltd., Angul.

### **D.2. Consent to Establish from SPCB, Odisha**

The User Agency has obtained Consent to Establish, vide letter No. 11898-Ind-II-NOC-5901 dated 04<sup>th</sup> July, 2015, from SPCB, Odisha and the copy of the Consent to Establish is enclosed herewith as **Annexure- XIV**

## **E. Misc. Information**

### **E.1. Violation and Action Taken thereof.**

No violation is committed in the forest land proposed for diversion under FC Act, 1980 for laying of underground pipeline for transportation of Iron Ore Slurry from village Kitabeda under

Barbil Tahasil to village Taramakanta under Banspal Tahasil of Keonjhar District under the jurisdiction of Keonjhar Forest Division in respect of M/s Jindal Steel & Power Ltd.

**E.2. Pending Court Matters.**

There is no Court matter pending against the User Agency in respect of the forest land proposed for diversion under FC Act, 1980 for laying of underground pipeline. The undertaking submitted by the User Agency to this effect is enclosed as **Annexure- X//**

**E.3. Compliance of Rule - 6 of Forest (Conservation) Rules, 2003 read with Rule - 3 of Forest (Conservation) Amendment Rules, 2014 as regards the time taken for processing at the level of the Divisional Forest Officer- Time Line Details.**

The proposal for diversion of 0.744 ha Forest land, for laying underground pipeline project for transportation of Iron Ore Slurry from village Kitabeda under Barbil Tahasil to Village Taramakanta under Banspal Tahasil of Keonjhar District under the jurisdiction of Keonjhar Forest Division, in respect of M/s Jindal Steel & Power Ltd., Angul has been received online from the Addl. Principal Chief Conservator of Forests, Forest Diversion and Nodal Officer, FC Act. O/o the Principal Chief Conservator of Forests, Odisha, Bhubaneswar vide No. FP/OR/Others/9825/2015, State Sl. No. OR-028/2016 on dated 18.04.2016. Essential details in connection with the said proposal was sought for from the User Agency on dated 27.04.2016. Incomplete compliance of the EDS dated 27.04.2016 has been received from the User Agency on dated 23.03.2017. The user agency was once again requested dated 25.03.2017 for submission of complete compliance of EDS dated 27.04.2016 and complete compliance has been received on dated 16.05.2017. The aforesaid proposal is forwarded to the RCCF, Rourkela Circle through Online portal dated 16.05.2017 within the time period fixed at the level of the Divisional Forest Officer at the expense of *11 days* spent towards examination of factual details and feasibility of the proposal, map certification, site inspection and tree enumeration.

The submitted diversion proposal over 0.744 ha of Forest land under Keonjhar forest division is forwarded herewith for approval as per provision under section 2(ii) of Forest (Conservation) Act, 1980 (Amended) with the suggestions furnished hereunder-

1. Intensive soil and moisture conservation measures along both sides of the proposed pipeline project in forest blocks.
2. Site Specific Wildlife Conservation Plan in addition to an elephant anti-depredation scheme for Barbil, Champua and BJP Range.

**Enclosure- Diversion proposal along with requisite documents.**

  
Divisional Forest Officer,  
Keonjhar Division.

Memo No. 3270 /Dated 16-5-17

Copy forwarded to the Additional Principal Chief Conservator of Forests, Forest Diversion and Nodal Officer, FC Act, O/o the Principal Chief Conservator of Forests, Odisha, Bhubaneswar for favour of kind information.

  
Divisional Forest Officer,  
Keonjhar Division.