

To**The Divisional Forest Officer
Keonjhar Division**

Sub: Proposal for non-forestry use of 22.697 ha of forest land of Jilling-Langlotra Iron Ore Block within total Mining Lease area of 456.100 ha in Keonjhar District of M/s Odisha Mining Corporation Limited.

Ref.: (i) No.8-49/1998-FC (PT.-I) dt 05.06.2022 by MoEF & CC, Govt. of India.
(ii) Letter No.5514/Mining dt 20.07.2022 by DFO, Keonjhar Division.

Sir,

The point wise compliance to the observations raised by MoEF & CC, Govt. of India vide letter under reference (i) and instruction by DFO, Keonjhar to comply the observation vide letter under reference (ii) pertaining to diversion of 22.697 ha of forest land in respect of Jilling-Langlotra Iron Ore Mines of OMC Ltd is given as under for scrutiny:

Observation No. i: *Compensatory afforestation has been proposed over an equivalent non-forest area of 22.697 ha. DSS analysis of the CA area revealed the cultivation in the non-forest land identified for CA. Therefore, the State Government needs to re-confirm its suitability and proximity to existing forest keeping in view ease of its management by the Forest Department.*

In compliance, it is submitted that three separate patches of non-forest Govt. land in village Peturu under Pottangi Tahasil of Koraput district have been selected for undertaking compensatory afforestation. Near boundary pillar No.15, 16 and 3 of Patch No.1 (15.362 ha), the villagers were utilizing the vacant places for cultivation. The local Forest and Revenue Officers initially organized a meeting with the villagers as a part of their drive against “*Podu Cultivation*” and upon getting verbal consent from the villagers of Peturu, the verification team members recommended the site for compensatory afforestation. The joint verification team also certified that the area is suitable for plantation and feasible from management point of view. The Patch-III is adjacent to Ampavalli or Pedapadu PF towards east. The patch-I and Patch-II are adjacent to the area having good forest growth. The copy of the suitability certificate and the technical approval of the CA scheme are enclosed as Annexure-I series to confirm that the area is suitable for plantation. This patch was made free from cultivation by forest and revenue department official. Presently, this area is suitable for plantation which is also certified by joint verification team.

Observation No. ii: *Elephant Habitat-2 is reported in the area proposed for diversion, therefore, comments of PCCF (Wildlife) and CWLW, Odisha on the likely impacts of the project on the elephant habitat and other schedule species reported in the area may be obtained by the State and may be informed to the Ministry.*

In compliance, it is submitted that the mining lease area comprises 392.289 ha of forest area. To conserve and improve the flora and fauna of the core area and the forest area coming within

Odisha Mining Corporation Ltd.

(A Gold Category State PSU)

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CIN : U13100OR1956SGC000313

10.0 km of buffer zone, a Site Specific Wildlife Conservation Plan has been prepared in consultation with the DFO, Keonjhar Division and RCCF, Rourkela Circle and finally approved by the PCCF (WL) and CWLW, Odisha vide letter No.10895/1WL-C-SSP-167/2010 dt 15.12.2010. Provisions have been made towards protection and improvement of elephant habitat to implement the activities by utilizing the funds deposited by the User Agency. The detail activities undertaken vis-a-vis the financial involvement in core zone is given at **Annexure-II**. The copy of the approval and approved SSWLCP is enclosed as **Annexure-III** for kind reference.

However, DFO, Keonjhar may supplement with a note on the likely impact of the project on the elephant habitat and other schedule species reported in the area to comply the above observation.

Observation No. iii: Approval dated 8.10.2014 was granted over an area of 369.592 ha by the Ministry in the past. Following detail in respect of said approval may be provided by the State:

Observation No. iii. a.: Updated status of compliance of conditions stipulated in the approval dated 8.10.2014 granted in the past needs to be intimated by the State.

In compliance, it is submitted that the updated status of compliance of the conditions stipulated in the approval dt 08.10.2014 over an area of 369.592 ha has been submitted to the Special Secretary to Government, F & E Department vide letter No.789/OMC/JLIOM/2022 dt 29.04.2022. The copy of the compliance report along with the letter of submission by OMC is enclosed as **Annexure-IV** for reference.

Observation No. iii. b.: An amount of Rs. 196.12 lakh had been realized from the erstwhile user agency towards the implementation of site-specific Wildlife Management Plan in pursuance to approval under FC Act granted in the past. Current status of implementation of various provisions proposed in the Site-Specific Wildlife Management Plan, supported with year wise activities covered and expenditure incurred thereof, photograph etc. may be submitted by the State.

In compliance, it is submitted that Rs 196.12 lakh has been deposited on dt. 27.06.2009 and 26.11.2016 towards the cost of Regional Wildlife Management Plan as per the demand raised by the DFO, Keonjhar estimated @ Rs 43000/-per hectare over 456.100 ha of ML area (**Annexure-V**).

Besides, the current status of activity approved in the Site Specific Wildlife Conservation Plan implemented in the lease hold area is given at Annexure-II. DFO, Keonjhar, in addition to the above, is requested to include the activities implemented by the Forest Department in the buffer area for clarity. In this case, an amount of Rs 346.50 lakhs has been deposited on dt. 31.01.2011 in CAMPA account towards the approved financial outlay of Site Specific Wildlife Conservation Plan as per the demand raised by DFO, Keonjhar.

Observation No. iii. c.: Detail of safety zone maintained in lieu of diversion of 369.592 ha and activities viz plantation, ANR and afforestation over 1.5 times the area of safety zone has not been informed. The same may be informed by the State along with detail of expenditure incurred on the various activities undertaken in respect of safety zone area.

In compliance, it is submitted that an amount of Rs. 7, 34,474/- has been deposited by the Ex-lessee vide DD No. 371128, 371129, 371130 and 371131 towards the cost of fencing, protection and regeneration of the Safety Zone area over 29.598 ha towards diversion of

369.592 ha of forest land. The scheme includes barbed wire fencing and plantation all along inner side of the 7.5 meter strip of the ML area. Copy of the Safety Zone scheme along with the photographs of the plantation undertaken in safety zone within mining lease area are enclosed as **Annexure-VI**.

A scheme over 44.397 ha of degraded forest land towards 1.5 times of safety zone has been prepared in Banbeda RF under Telkoi Range of Keonjhar Forest Division. Plantation has been carried out by State Forest Dept. during 2009-10. Copy of the afforestation scheme for 1.5 times the safety zone area is enclosed as **Annexure-VII**. Various activities undertaken may be incorporated by DFO, Keonjhar.

Observation No. iii. d.: Detail of NPV realized from the user agency in lieu of diversion of forest land accorded in the past and in pursuance to Ministry's guidelines dated 31.03.2020 may be informed by the State.

In compliance, it is submitted that the ex-lessee has deposited Rs. 34, 70, 46,888/- & Rs. 1, 01, 61,201/- towards NPV over 369.592 ha of forest land involved in the mining lease as per the demand raised by DFO, Keonjhar. Besides, OMC has also deposited Rs. 27, 71, 46,750/- towards NPV over 369.592 ha vide UTR No. SBINR 12021011106076046 dt. 11.01.2021 as per the demand raised by DFO, Keonjhar. An undertaking has also been submitted to deposit the additional amount of NPV, if so determined, as per the final decision of the Hon'ble Supreme Court of India and transfer the same to Ad-hoc CAMPA under intimation to the Ministry. The details of NPV deposited by Ex-lessee and OMC are given in **Annexure-VIII** series along with the undertaking by OMC for kind perusal.

Observation No. iii. e.: As evident from the detail provided in the proposal, the mining lease was auctioned to successful bidder, detail of documents/information pertaining to transfer of approval in favour of the new lessee, if any, accorded by the State in terms of guidelines dated 31.03.2020 is not provided in the proposal, the same needs to be informed by the State.

In compliance, it is submitted that during auction process, M/s Shyam Ores (Jharkhand) Pvt. Ltd has been selected as L1 bidder and accordingly the State Government has issued conditional grant order in their favour. The State Govt. cancelled the grant order due to non-fulfillment of the conditions stipulated therein. Subsequently, the State Govt. vide letter No.338/SM/IV (B)SM-11/2020 dt 11.01.2021 granted the same mining lease in favour of OMC subject to fulfillment of conditions stipulated therein. OMC complied all the conditions and the lease was executed in favour of OMC and vested with all the already approved statutory approvals communicated by the State Govt. vide letter No. 317/SM/IV(AB)SM-01/2021 dt 11.01.2021. The copy of all the correspondences in this regard is enclosed as **Annexure-IX** for kind perusal.

Observation No. iii.f: Cost benefit Ratio has been estimated as 1:16411.5 which is exorbitantly high. It seems appropriation of cost and benefits components has not been done properly i.e. cost corresponding to 22.697 ha have been estimated while the benefits to be accrued from the entire mining lease area have been accounted for in the analysis. The analysis needs to be recasted by accounting CB parameters either only in respect of 22.697 ha or for entire mining lease area.

In compliance, it is submitted that the mining lease has been granted over 456.10 ha out of which 392.289 ha is forest land. OMC has proposed to work within 22.697 ha of forest land in addition to the already diverted forest area. Hence, the cost benefit analysis is estimated

over entire mining lease. The benefits by OMC and the cost estimate by DFO, Keonjhar have been revised and enclosed herewith. The revised CB ratio comes to 1:567.578 for the entire ML. The copy of the benefits by OMC and cost by DFO is enclosed as **Annexure-X** and **Annexure-X A**.

Observation No. iv: Examination of the Mining Plan submitted along with the proposal revealed the following: Mining Plan revealed the following:

Observation No. iv. a. State Government, in its forwarding letter, mentioned total lease area and forest area thereof is 392.289 ha, respectively while the corresponding forest areas indicated in the approved Mining Plan are 342.199 ha. Discrepancy in the Mining Plan needs to be rectified by the State.

In compliance, it is submitted that the State Government executed the mining lease in favour of OMC to commence the mining operation immediately to meet the raw material demand of the local industries as many iron ore mines of Odisha has been terminated by 31st March, 2020. Therefore, while preparing the mining plan, HAL kissam land schedule has been considered for designing the land use plan. In order to ascertain the exact forest area, OMC vide letter no. 338/SM dt. 11.01.2021 requested Tahasildar, Barbil to provide land schedule of the total ML area as per SABIK kissam. Tahasildar, Barbil vide letter no. 1281 dt. 09.04.2021 provided the status of land involved in the Jilling-Langalota Iron Ore Mines of OMC Ltd., wherein the total forest land comes to 392.289 ha. Out of 392.289 ha of total forest land, 26.990 ha of forest land acquired for Daitari-Banspani Rail link project and Stage-II FC granted over 342.602 ha of forest land. Therefore, OMC submitted the forest diversion proposal over balance forest land of 22.697 ha of SABIK kissam forest land.

Observation No. iv. b. Area of various land uses mentioned in the approved Mining Plan and extant proposal is observed to be at variance. Moreover, component of magazine and safety zone involving area of 81.280 ha is not mentioned in the land uses indicated in the mining plan. Discrepancies in the areas of land uses may be justified and if needed be rectified by the State Government;

In compliance, it is submitted that in the current diversion proposal, the purpose-wise break up of 22.697 ha of forest land has been proposed whereas mining plan has been prepared for the entire ML area over 456.100 ha. The proposed land use over 22.697 ha of forest land is a part of the land use proposed over entire ML area of 456.100 ha. Hence, discrepancy observed may kindly be dropped.

Component of magazine and safety zone involving an area of 81.280 ha was proposed by ex-lessee in their proposal. At page no. 7 of the Part-I of the present Mining Plan, Safety zone of 33.195 ha including safety zone for Nalla and National Highway has been proposed which includes 2.841 ha forest land of current proposal over 22.697 ha for consideration.

Observation No. iv c. As per land use details provided in the Mining Plan, out of total lease area of 456.100, an area of 269.241 ha has been utilized so far for mining and allied activities while 186.859 ha is unutilized, out of which 106.108 ha has been proposed to be utilized during the next conceptual period while 80.751 ha is proposed to be unutilized (Pg 352/c). State Government may therefore explore the possibility to handover the forest land involved in the unutilized area to Forest Department.

In compliance, it is submitted that as per the conditions no. 2.i of the Stage-II FC over 342.602 ha, legal status of forest land shall remain unchanged. As per the approved progressive mine

closure plan, reclamation activity is being undertaken by OMC. When the entire mineral will be completely exploited by OMC and the same will be certified by IBM then reclamation will be carried out as per the approved final mine closure plan.

An area over 80.751 ha proposed to be unutilized is situated in the northern corner of ML area. This part of the ML area will not be utilized till conceptual period i.e. for a period of ten years. After exploration if the area found mineralized then the same may be utilized for mining and ancillary activity during the renewal of Mining Lease.

Observation No. v: Current status of 22.297 ha i.e. whether the area has been mined already or proposed to be mined during the conceptual period may be clarified by the State.

In compliance, it is submitted that out of 22.297 ha of SABIK forest land proposed for diversion, 5.70 ha was utilized for mining by the ex-lessee as it was non-forest land. In order to utilize the entire SABIK forest land, OMC has proposed for diversion.

Observation No. vi: Examination of phase wise reclamation plan submitted along with the proposal mentioned consolidated area of 372.222 ha will be reclaimed technically and biologically. Year wise detail of reclamation in consonance with the provisions provided in the Progressive Mine Closure Plan may also be intimated by the State.

In compliance, it is submitted that the year wise reclamation schedule as approved in the progressive mine closure plan is given at Annexure-XI² for kind reference.

Observation No.vii: Ministry's vide its guidelines dated 10.03.2015 clarified that areas which were recorded as forest in Sabik land records and subsequently changed to non- forest land as per Haal records should be considered as forest for the purpose of FC Act, 1980 and prior approval. Therefore, in view of the said guidelines, the State Government may submit its considered opinion on 'why should the lease executed between Collector Keonjhar and M/s OMC on 12.01.2021, despite Ministry's standing instructions in guidelines dated 10.03.2015, without prior approval of Central Government under the Forest (Conservation) Act, 1980 in respect of 22.697 ha of forest land, not be treated as a violation of Forest (Conservation) Act, 1980.

In compliance, it is submitted that ML executed between Collector, Keonjhar and M/s OMC on 12.01.2021, includes forest land of 22.697 ha. Regarding execution of lease without prior approval of the Central Govt., the clause No.7.3 (vi) of the letter by MoEF & CC dt. 31.03.2020 keeps a provision which is read as under:

“ a. A new lessee of the mining leases expiring under the provisions of sub-section (5) and (6) of Section 8A of Mines and Minerals (Development and Regulation) Amendment Act,2015,shall be deemed to have acquired all valid rights, approvals, clearances, licenses and like vested with the previous lessee for a period of two years.....”

Subsequently, as per MMDR Amendment Act, 2021 dt 28.03.2021 the following is reproduced for clarity:

“8B. (1) Notwithstanding anything contained in this Act or any other law for the time being in force, all valid rights, approvals, clearances, licenses and the like granted to a lessee in respect of a mine (other than those granted under the provisions of the Atomic Energy Act, 1962 and the rules made there under) shall continue to be valid even after expiry or termination of lease and such rights, approvals, clearances, licenses and the like shall be transferred to, and vested; subject to the conditions provided under such laws; in the successful bidder of the mining lease selected through auction under this Act:

Provided that where on the expiry of such lease period, mining lease has not been executed pursuant to an auction under provisions of sub-section (4) of section 8A, or lease executed pursuant to such auction has been terminated within a period of one year from such auction, the State Government may, with the previous approval of the Central Government, grant lease to a Government company or corporation for a period not exceeding ten years or till selection of new lessee through auction, whichever is earlier and such Government company or corporation shall be deemed to have acquired all valid rights, approvals, clearances, licenses and the like vested with the previous lessee:

Provided further that the provisions of sub-section (1) of section 6 shall not apply where such mining lease is granted to a Government company or corporation under the first proviso:

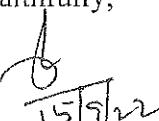
Provided also that in case of atomic minerals having grade equal to or above the threshold value, all valid rights, approvals, clearances, licenses and the like in respect of expired or terminated mining leases shall be deemed to have been transferred to, and vested in the Government company or corporation that has been subsequently granted the mining lease for the said mine.

(2) Notwithstanding anything contained in any other law for the time being in force, it shall be lawful for the new lessee to continue mining operations on the land till expiry or termination of mining lease granted to it, in which mining operations were being carried out by the previous lessee."

Ministry of Mines vide letter no.4/1/2020-M.VI dt. 05.01.2021 reserved Jilling-Langalota Iron Ore Mines and Guali Iron Ore Mines. Accordingly, Mining Lease was granted and executed in favour of OMC to produce iron ore as per the raw material requirement of the industries. The area of operation is strictly confined within approved forest area of 342.602 ha, excluding 22.697 ha of forest area to be utilized after grant of stage-II Forest clearance.

It is therefore requested to recommend the above compliance to higher ups for onward recommendation to MoEF & CC, Govt. of India for consideration by FAC for grant of stage-I Forest Clearance.

Yours faithfully,


15/9/22
Executive Director (F&E)

Encls. as above.

ANNEXURE: -I

General

JOINT VERIFICATION REPORT OF NON-FOREST GOVERNMENT LAND IN VILLAGE PETURU UNDER POTTANGI TAHASIL OF KORAPUT DISTRICT FOR RAISING COMPENSATORY AFFORESTATION (BALD HILL PLANTATION) IN LIEU OF THE FOREST LAND PROPOSED FOR DIVERSION FOR JILLING-LANGALOTA MINING LEASE OF M/s ODISHA MINING CORPORATION LIMTED LOCATED IN THE DISTRICT OF KEONJHAR, ODISHA.

Certified that on joint verification of Non forest Government land (Kissam – Kupuli) in village Peturu of Pottangi Tahasil of Koraput District, it is found that the scheduled wise land mentioned in the table is suitable for Bald Hill plantation@1600plants/ha and are free from encroachment and encumbrances. The area does not come under DLC land and FR Settlement record.

Name of the Mines	Name of the Village	Khata No.	Plot No.	Total area of the plot (Acres)	Area considered in (Acres)	Kissam	Type of Plantation recommended
Jilling-Langalota Iron Ore Mines	Peturu	61 (A.A.A)	310	48.80	37.96	Kupuli	Bald Hill Plantation 1600 Plants per HA over 22.697 ha.
			410	18.52	9.36		
			495		8.77		
TOTAL				56.09 Acres or 22.697 Ha.			

Revenue Inspector

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Revenue Supervisor
Pottangi

Forester
Sunki Section

Range Officer
Forest Officer
Semiliguda Forest Range

DIVISIONAL FOREST OFFICER
Koraput Forest Division

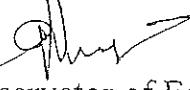
Range Officer
Pottangi
TAHASIL
POTTANGI

Financial outlay for Compensatory Afforestation Scheme over an area of 22.697 ha of Non-Forest land identified in village Peturu under Pottangi Tahasil of Koraput Forest Division against diversion of 22.697 ha of forest land of Jilling-Langlotra Iron Ore Mines of M/s OMC Ltd

Sl. No.	Name of the Range	Site of Plantation		Type of Plantation	Proposed Add-on Models	Cost Norm as per Ready Reckoner for 2022-23/ ha*	Total Amount (in Rs.)
		Location	Area (in Ha.)				
1.	Semiliguda	Peturu village	22.697	CA (AR) 1600 with 10 years maintenance	CA 1600 +WM+ SD+SMC	Rs.10,37,123/-	Rs.2,35,39,581/-
GRAND TOTAL							Rs.2,35,39,581/- Or Rounded off to Rs.2,35,39,600/-

(Rupees Two Crore thirty five lakhs thirty nine thousand & six hundred) only

Approved


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

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

*Note-

	NORM APPROVED (Rs.)
CA- Compensatory Afforestation	3,25,623/ ha
WM- Wire Mesh Fencing	4,40,299/ ha
SD- Solar with Drip system Watering	2,33,786/ ha
SMC- Soil & Moisture Conservation	37,415/ ha
TOTAL	Rs.10,37,123/-

IMPLEMENTATION STATUS OF WILDLIFE MANAGEMENT PLAN PERTAINING TO JILLING LANGALOTA IRON ORE MINES
6.1.0: Activities within the Project area

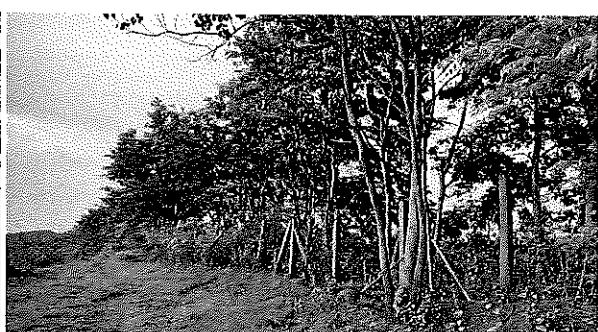
Sl. No.	Item of work	Financial outlay (Rs. In lakhs)	Activities undertaken by User Agency
1.	90 ha. of ANR plantation as per land use plan	20.00	Plantation of around 96.734 ha has been carried out within the Mining Lease. The details of plantation activities undertaken is enclosed as Appendix-A .
2.	Fire prevention – Salary of fire watchers, equipments and uniforms etc. (3000 x 2 x 5 x 10)	3.50	For fire prevention fire watchers are engaged during the month of February to June every year.
3.	Soil & moisture conservation measures	10.00	Various Soil & moisture conservation measures has been undertaken within the Mining Lease area. The details are enclosed as Appendix-B .
4.	Rain water harvesting arrangement	10.00	Roof top rainwater harvesting as well as rainwater harvesting within the already mined out area has been made. Photographs showing the rain water harvesting arrangement is enclosed herewith as Appendix-C .
5.	Garbage disposal @ 1.00/ year	0	The municipal solid waste generated from colony is being collected from door to door basis and processed in a centrally management solid waste management system. The biodegradable waste generated from the residential colony is being used for vermin-composting.
6.	Photo-voltaic fencing 12 Kms @ 1.00 lakh	12.00	Barbed wire fencing all around the mining lease has been carried out. OMC undertakes to carry out Photo-voltaic fencing all around the quarry area.
7.	Monitoring & evaluation	5.00	Implementation of various activities recommended under Site specific wildlife conservation plan is being monitored from time to time.
8.	Awareness & publicity	5.00	Awareness of for wildlife protection and habitat improvement through plantation activities is being carried out from time to time. Photographs showing the same is enclosed as Appendix-D .
Total:		65.50	

Appendix-A

Details of plantation under taken in Guali Iron Ore Mines

Location	Area covered(Ha)
Plantation in green belt	25.537
Plantation in vacant land & Avenue plantation	7.128
Plantation in over burden dumps & reclaimed area	34.069
ANR Plantation	30.000
TOTAL	96.734

Year of Plantation	No of saplings	Name of the locations
2002-03	30000	ML Boundary, Behera Quarry, SS Quarry, Along Nala
2003-04	32000	Safety Zone of Roads, Inhabitant site, Magazine, Jilling Dump, Both side of PWD road
2004-05	40000	Safety Zone of Roads, Inhabitant site, Magazine, Jilling Dump, Both side of PWD road, Railway Siding
2005-06	26500	Jilling dump, Inhabitant site, Appahatu dump, Behera quarry, Beside magazine, Rly siding, ML boundary
2006-07	27500	Jilling dump, Railway buffer end, Plot no.187, Boundary line area, Appahatu, Boundary line near Pandiya, Plot 237. & 238 etc.
2007-08	25500	Jilling dump, Plot no.187/188, S.S. Quarry (bottom), S.S. Quarry (top), Buffer zone of railway, Behera Quarry etc.
2008-09	25000	Jilling dump, Bottom area of Jilling Shelter, Backside of Geology department, Buffer zone of railway, Crushing plant Jilling, Dalconala side etc.
2009-10	16000	Jilling dump, Bottom area of Jilling Shelter, Backside of Geology department, Jilling mines road, boundary line, safety zone Appahatu
2010-11	10500	Jilling dump, Back of Geology dept., Jilling mines road, Safety zone area Appahatu, etc.
2011-12	47000	Safety zone(Appahatu, Jajang, Jilling & Langalota), Railway siding dump, Dalconala site, Jilling dump, Avenue, water treatment plant, PLOT NO.187,Apahatu area near magazine etc.
2012-13	11730	Gap plantation & causality replacement done in green belt, avenue plantation, waste dump reclaimed area and ANR Plantation.
2013-14	15000	
2014-15	16000	
2015-16	19500	
2016-17	20080	
2017-18	9800	
2018-19	13200	
2019-20	36350	



Appendix-B

Soil Moisture conservation activities undertaken within the Guali Iron Ore Mines

Check dams, Retaining walls already constructed across the seasonal channels are as follows:

Sl. No.	Location	Length (m)	Width (m)	Height (m)	Particulars of Construction	GPS Co-ordinates
1	Jilling Dump No- 04	76	0.50	2.0	Cemented Structure	21° 57' 57.10" N 85° 25' 52.00" E
2	Jilling Dump No- 05	262	1.0	1.2	Cemented Structure	21° 57' 53.50" N 85° 25' 52.10" E
3	Jilling Dump near OCU-2 dump	218	0.6	1.2	Cemented Structure	21° 57' 53.51" N 85° 25' 52.12" E
4	Jilling Dump near Gurubeda side No-06	353	0.3	1.7	Cemented Structure	21° 57' 58.00" N 85° 26' 08.60" E
5	Dalconala-Jilling side	1100	0.6	1.1	Cemented Structure	21° 57' 23.04" N 85° 25' 41.50" E
6	Dalconala-Langalota side	1300	0.6	1.1	Cemented Structure	21° 57' 22.20" N 85° 25' 43.10" E
7	LangalotaVibro fines dump No - 04	250	0.6	1.8	Cemented Structure	21° 57' 19.50" N 85° 25' 47.00" E
8	Jajang Railway siding dump-5	1038	0.4	1.8	Cemented Structure	21° 56' 56.10" N 85° 25' 37.60" E
9	Jajang Railway siding dump-6	64	0.6	1.1	Cemented Structure	21° 56' 41.00" N 85° 25' 49.10" E
10	Appahatu Dump No 01	180	0.6	1.1	Cemented Structure	21° 58' 19.90" N 85° 25' 29.70" E

Details of masonry check dams

Sl. No	Location	Particulars of construction	Size (Total L X B X H) (m)	GPS Co-ordinates
1	Near Joda Gate (i) On Upside	Masonry with spill-way system & Sedimentation tank	L= 5 m, H= 1.0 m, Top width= 1.0m, Bottom width=1.5m	21° 58' 02.90" N 85° 25' 53.80" E
2	(ii) On down side		L=3m, H=1.0 m Top width=0.6 m, Bottom width=0.8 m	21° 58' 02.85" N 85° 25' 53.78" E
3	Near NSPL Camp adjacent to Dalconala	Masonry with spill-way system	L= 5 m H= 1.5 m Top width= 1.0 m Bottom width=1.5 m	21° 57' 20.60" N 85° 25' 45.10" E

Details of settling pit already constructed

Sl.No No.	Location	Length (m)	Width (m)	Depth (m)	GPS Co-ordinates
Jilling Dump (Gurubeda site)					
1	Settling Pit-1	5.3	5.3	2.0	21° 57' 53.30" N 85° 26' 08.80" E
2	Settling Pit-2	5.0	4.0	1.5	21° 57' 55.70" N 85° 26' 07.90" E
3	Settling Pit-3	6.0	4.0	1.6	21° 57' 57.90" N 85° 26' 08.90" E
Jilling Dump near Joda gate					

4	Settling Pit-1	4.2	2.9	1.7	21° 57' 51.80" N 85° 25' 50.70" E
5	Settling Pit-2	4.5	4.3	1.8	21° 57' 48.20" N 85° 25' 50.10" E
6	Settling Pit-3	3.3	3.0	1.7	21° 57' 48.00" N 85° 25' 52.90" E
7	Settling Pit-4	10.0	3.8	3.0	21° 57' 46.20" N 85° 25' 49.80" E
8	Langalota Pit (near sampling shed)	12	4.0	3.0	21° 57' 18.30" N 85° 25' 38.90" E

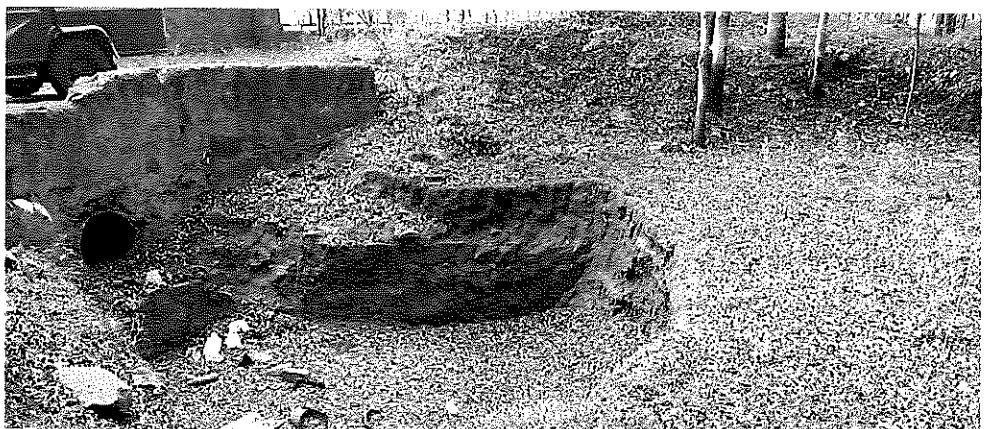
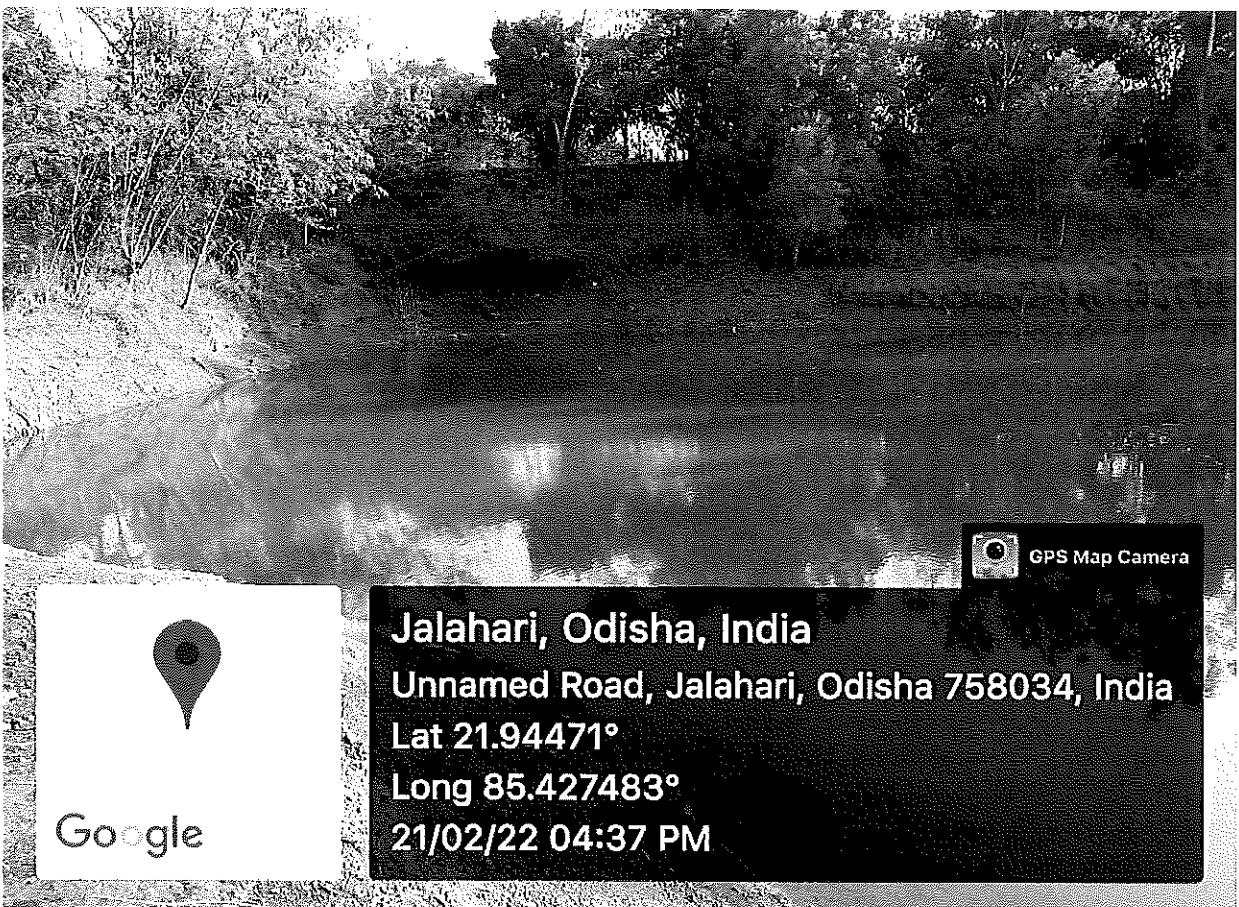
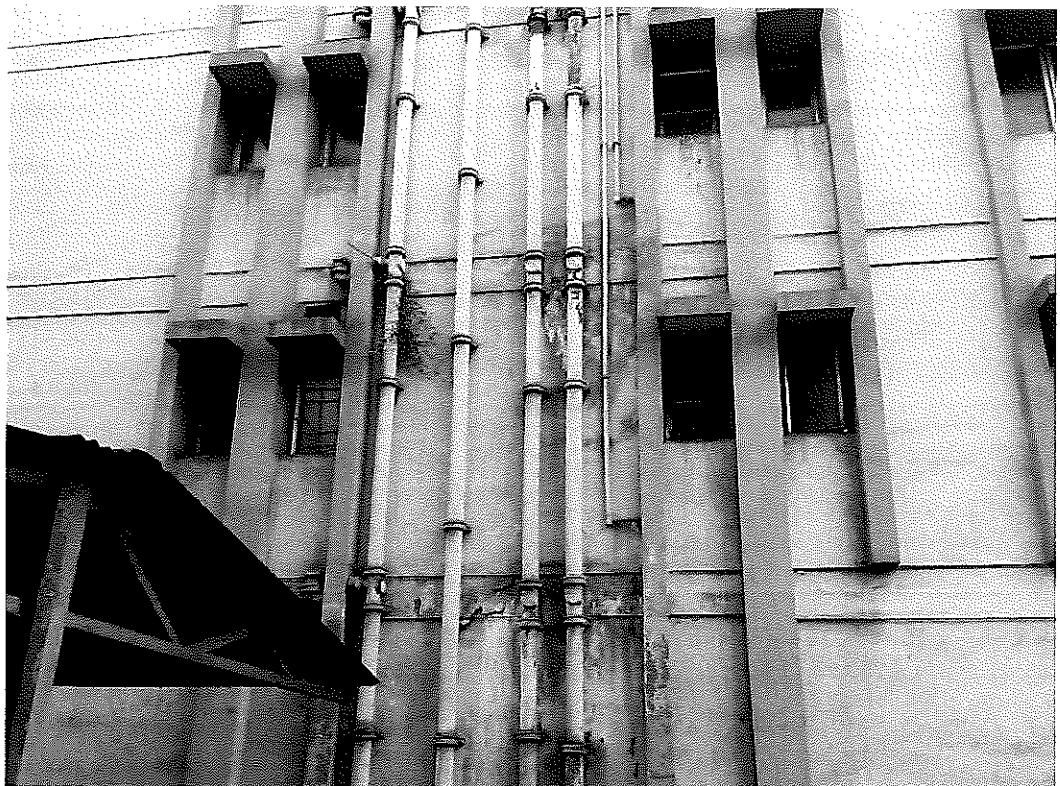


Fig: Various Soil Moisture conservation activities in Jilling Langalota Iron Ore Mines

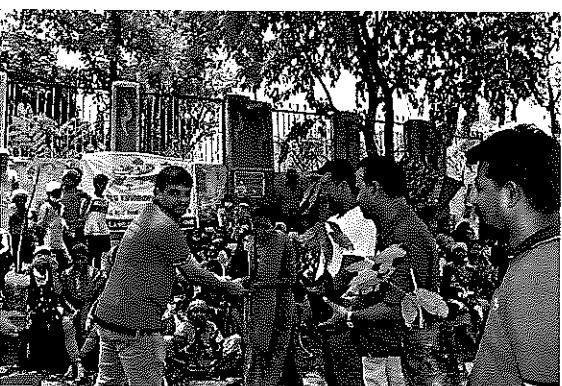
Appendix-C







Awareness programme in Jilling Langalota Iron Ore Mines



OFFICE OF THE PRINCIPAL CCF (WILDLIFE) & CHIEF WILDLIFE
WARDEN, ORISSA 5TH FLOOR, B.D.A. APARTMENT, PRAKRUTI BHAWAN, NILAKANTHA
NAGAR, BHUBANESWAR- 751012.

Memo No. 10895 Dt. 15.12.2010
1WL-C-SSP- 167/2010

To

The Chief Conservator of Forests (Nodal),
O/o the Principal CCF, Orissa, Bhubaneswar.

Sub: Approval of Site Specific Wildlife Conservation Plan for Jilling-Langalota Iron 7 Manganese Mines of M/s Essel Mining & Industries in Keonjhar Forest Division of Keonjhar district.

Sir,

I am directed to inform you that the Site Specific Wildlife Conservation Plan for Jilling-Langalota Iron 7 Manganese Mines of M/s Essel Mining & Industries in Keonjhar Forest Division of Keonjhar district has been approved by PCCF(WL) & Chief Wildlife Warden, Orissa with financial forecast of Rs.412.00 lakhs for the following activities.

1. For activities to be implemented by User agency in project area	Rs.65.50 lakhs.
2. For activities to be implemented by DFO, Keonjhar division in project impact area.	Rs.346.50 lakhs.
	Total Rs. 412.00 lakhs

User Agency will deposit Rs.346.00 lakhs in CAMPA account with DFO, Keonjhar Forest Division for activities to be taken up in project impact area. Rs.65.50 lakhs earmarked for activities inside the project area is to be spent by user agency for implementing the above approved activities under the supervision & monitoring of DFO, Keonjhar Forest Division.

for finance
Chief Conservator of Forests (WL)

Memo No. 10896 Dt. 15.12.2010

Copy forwarded to the DFO, Keonjhar Division for information & necessary action with reference to Memo No. 4108 dt. 1.11.2010 of CF., Rourkela Circle.

for finance
Chief Conservator of Forests (WL)

Memo No. 10897 Dt. 15.12.2010

Copy forwarded to CF, Rourkela Circle for information & necessary action with reference to his office Memo No. 4106 dt. 1.11.10.

for finance
Chief Conservator of Forests (WL)

Memo No. 10898 Dt. 15.12.2010

Copy forwarded to Chief Residential Manager, Essel Mining & Industries Ltd, 525, Sahid Nagar, Bhubaneswar for information & necessary action.

for finance
Chief Conservator of Forests (WL)

**SITE SPECIFIC
CONSERVATION PLAN
FOR
JILLING LANGALOTA IRON
AND MANGANESE MINES
IN KEONJHAR DISTRICT**



OF



ESSEL MINING & INDUSTRIES LTD

Prepared by:

SRI S.K. PATNAIK, I.F.S. (Retd.)

&

SRI S.K. MOHANTY, O.F.S. (Retd.)

ESSEL MINING & INDUSTRIES LTD


RAY PATNAIK
PRESIDENT

AND

Constituted Attorney

WILDLIFE CONSERVATION PLAN OF JILLING LONGALOTA IRON & MANGANESE ORE MINE

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WILDLIFE CONSERVATION PLAN OF JILLING LONGALOTA IRON & MANGANESE ORE MINE

P R E F A C E

**Sri S. K. Patnaik, I.F.S.
Former Chief Wildlife Warden
ORISSA**

The Jilling – Langalota Iron and Manganese Mine of M/s. ESSEL Mining and Industries Ltd is spread over an area of 456.100 Ha in Baitarani 'A' R.F. and adjoining area. It has an estimated geological reserve of more than 98 mt of iron ore and 0.254 mt of manganese. The mine is being worked since 1954.

EMIL has been asked to implement a wildlife conservation plan for the area, as it lies in a forest area, which had good wildlife in the past.

This plan aims at minimizing the stretch to the wildlife that still inhabit the neighbouring area, despite intense mining operation, opening of roads, railway line and establishment of ore handling facilities. I shall be happy this objective can be achieved by implementing the plan in true spirit.

I thank Dr. P.R. Karat, IFS, DFO, Keonjhar Forest Division and his staff for all cooperation in providing relevant information, but for which the preparation could not have been possible.

My thanks are due to Sri N.K. Mishra, General Manager, Sri Inrajit Sanyal, Senior Manager Geology, Ms. Asha Mohanty, Assistant Manager - Environment and Sri Malaya Das, Deputy Manager Surveyor and their field staff of EMIL for all the help provided during field visit and providing all required in preparing the plan.

My special thanks are due to Sri S.K. Mohanty, O.F.S (I) without whose active support, it would have been difficult to prepare this.


(S. K. Patnaik)

EXECUTIVE SUMMARY

WILDLIFE CONSERVATION PLAN OF JILLING LONGALOTA IRON & MANGNESE ORE MINES

EXECUTIVE SUMMARY

0.1 Jilling-Langalotta Mines of EMIL covers an area of 456.100 Ha in Baitarani 'A' R.F. and adjoining area of Keonjhar district. It comprises of 369.592 Ha of forest land of different categories. Total geological reserve for Iron ore is 84.99 mt. It has been worked since 1954 and the broken up area is 208.159 Ha within forest including broken up safety zone over 21.920 Ha. The ore shall be sold in India or exported.

0.2.1 The lease is located 8 kms south of Joda in Topo-sheet No 73-G/5 and has a geological reserve of 85.99 mt. The annual production is targeted at 4.2 mt. So far 34.116 ha has been reclaimed by afforesting the same.

0.2.2 It is a hilly tract with elevation from 473 to 620 mts above MSL. It drains to Baitarani through Dalkonala. The forest can be classified as Northern Dry Mixed deciduous Forest, with tropical flora and fauna. It allotted to Coppice Working circle according to the Working Plan of the Division. The main avocation people, other than mining is agriculture. A railway siding has been provided to the lease.

0.3 The mining operation is semi-mechanised in the area containing BHJ with iron ore, purple shale, with dolerite dyke. It started as manually operated mines in 1954 and has since gradually being converted to semi-mechanised. The production is proposed to go upto 5.5.MTPA. The pit depth of different quarries varies between 12 mts to 48 mts with bench size of 6m X 6m and general slope of 45°.

0.4.1 The wildlife within the lease area if any may be threatened due to loss of forest or vegetation, forest fire, soil erosion, moisture loss, dust pollution, noise, lighting, garbage, steep pit slopes, water pollution, poaching and grazing by cattle etc.

Conservator of Forests,
Jharsuguda Circle

M/s ESSEL MINING & INDUSTRIES LTD

For ESSEL MINING & INDUSTRIES LTD

(RANJAN SINGH
PRESIDENT
AND
Constituted Attorney

DIVISIONAL FOREST OFFICER
CUM-WILD LIFE WARDENS
KEONJHAR DIVISION.

10-9-10
Conservator of Forests
Jharsuguda Circle

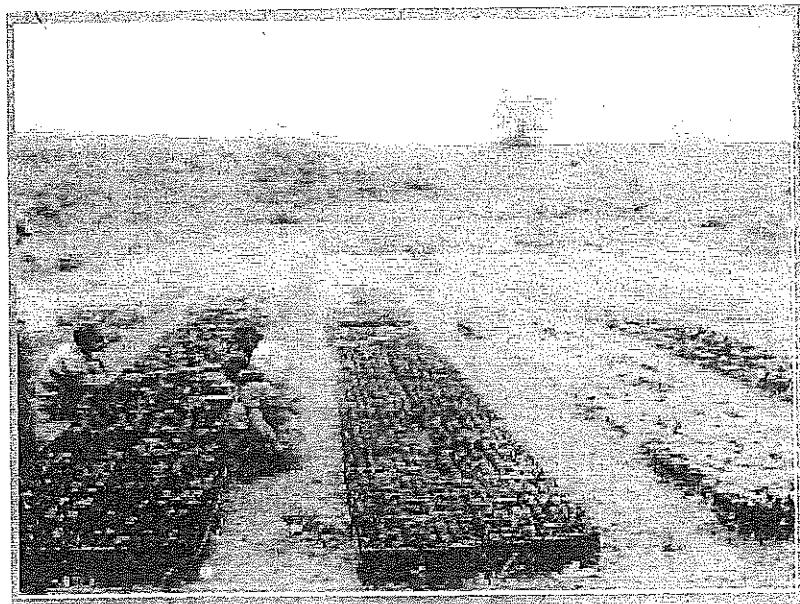
WILDLIFE CONSERVATION PLAN OF JILLING LONGALOTA IRON & MANGANESE ORE MINE

- 0.4.2. Similarly wildlife of the ZoI of 10 kms radius may threatened due to loss of forest, increased dependence of local people and those coming in due to mine, opening up of roads, human-animal conflict, forest fire and transmission of communicable diseases due to grazing of cattle etc.
- 0.5.1. Hence measures to be taken within the mine shall include protection of natural and planted forest, with 2 Van Sahayaks, fire prevention by 2 fire watchers, prevention of dust by water sprinkling etc, control of noise, control of lighting, rain water harvesting, soil and moisture conservation and prevention of grazing, elimination of garbage and awareness prevention etc.
- 0.5.2. The measures within the ZoI shall include protection and improvement of habitat with 2 Ban Sahayaks, planting of edible species (200 Ha), game tank, salt lick, prevention of forest fire with 15 kms of fire line, engagement of 2 fire watchers, prevention of grazing with support from VSS etc, eliminating dependence on forest with diary, poultry, vegetable growing, handicrafts, tailoring, technical jobs, small business etc with SHG, help. Farm forestry/social forestry and provision of biogas plant with up gradation of cattle breed can be done. Human-wild animal conflict can be controlled with Rs.2.00 lakh contribution to corpus fund, 10 kms of solar fencing along forest fringes, alternate non-edible crop cultivation, pucca house/metal bin for grain storage, arrangement for driving away wild animal with help of VSS/GBS etc. The local cattle should be immunized to prevent transmission of communicable diseases.
- 0.5.3. The plan period shall be of 10 years and it will be monitored by a monitoring committee chaired by the DFO, Keonjhar. The funds for activities within the mine shall be spent by EMIL while for the ZoI it will be deposited with DFO, Keonjhar. He will utilize the same along with funds under Regional Wildlife

WILDLIFE CONSERVATION PLAN OF JILLING LONGALOTA IRON & MANGANESE ORE MINE

Management Plan and that placed by other lessees in the Zol as they overlap with each other, due to pressure of no. of mines within Zol.

- 0.6.1. It is estimated that **Rs. 165.00 Lakhs** shall be spent within the lease area for different ameliorative measures by EMIL.
- 0.6.2. **Rs. 204.00 Lakhs** shall be deposited by EMIL with the DFO, Keonjhar for implementing the plan within the Zol.



Conservator of Forests,
Boudh Circle

DIVISIONAL FOREST OFFICER
CUM-WILD LIFE WARDENS
KEONJHAR DIVISION.

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10-3-10
ASST. Conservator of Forests
VC Chambua Range

CHAPTER-I
INTRODUCTION

WILDLIFE CONSERVATION PLAN OF JILLING LONGALOTA IRON & MANGANESE ORE MINE

CHAPTER - I
INTRODUCTION

1.0.1 Iron and Manganese ores are the source of primary raw materials for the Steel Industry and Ferro Alloys Plant. It is therefore essential for the production of steel, which in turn is absolutely necessary to maintain a strong industrial base.

1.0.2 Aditya Birla Group is among India's largest business houses with operations in the country for over last 50 years and globally for nearly three decades. This group has taken over ESSEL Mining & Industries Ltd (EMIL) in the year 1990. For last nearly 30 years, EMIL is involved in mining operation in Iron ore store-house like Orissa State.

1.0.3 The specialty of EMIL is that while conducting mining operation they also look after the environment and health/safety of mine workers, engineers, developers, geologist, surveyors and executives. Therefore, Jilling-Langalota Iron & Manganese ore mine of EMIL has been awarded with Environment Management System standard ISO 14001 during 1999 and during last year became the first mining company in India to be certified with Occupational Health and Safety Management System standard OSHAS 18001.

1.0.4 Government of Orissa in Mining & Geology Dept. had granted a mining lease in favour of M/s. S. Lal & Co. Ltd. for 30 years over an area of 1557.00 acres or 630.0 Ha in Villages - Jalhury, Juruli, Banspani, Khuntpani, Bholebeda, Jajang and in Baitarani 'A' Reserve Forest on 01.10.1954. The lease was valid upto 30.09.1984. Subsequently it was renewed by the State Government on 30.03.1988 with effect from 01.10.1984 for 20 years over a reduced area of 1127.023 acres or 456.100 Ha. This 1st RML has also expired on 30.09.2004. ESSEL Mining & Industries Ltd (EMIL) was

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For ESSEL MINING & INDUSTRIES LTD. ⁶

10-06-10
ESSEL Conservator of Forests (RAVI BANSAL)
PRESIDENT
AND
Constituted Attorney

WILDLIFE CONSERVATION PLAN OF JILLING LONGALOTA IRON & MANGANESE ORE MINES

formed in the year 1990 and this lease was transferred in favour of EMIL

- 1.0.5 EMIL has filed renewal of mining lease (2nd RML) on 11.09.2003. The duration of the 2nd RML is from 01.10.2004 to 30.09.2024.
- 1.0.6 The lease area includes 106.682 Ha of Baitarani 'A' R.F., 20.821 Ha of Revenue Forest in villages Jilling/Longalota, and 328.597 Ha of Govt.non-forest land. Hence 127.503 Ha is forest land and the balance is non-forest land. The forest land includes 29.129 Ha of broken up and 98.374 Ha of virgin land.
- 1.0.7 The total geological reserve of this mine has been estimated to be 85.99 million tons. The annual rate of production has been fixed at 4.2 Million Tons. Now the life of the mine has now been estimated to be 20 years.
- 1.0.8 During 1st RML, EMIL had submitted a proposal for diversion of 102.503 Ha of forest land for mining and allied purpose. On the recommendation of the State Government in Forest & Environment Department, Government of India, MoEF had granted diversion of 75.489 Ha of forest land which includes 29.129 Ha of broken and 46.360 Ha of virgin forest land vide their letter Dt.17.11.2000 with 10 conditions.
- 1.0.9 During 2nd RML (01.10.2004 to 30.09.2024) out of the non-forest land 242.089 Ha was included in the DLC list and considered as forest land. Hence the total lease area included 106.682 Ha of Baitarani' A' Reserve Forest, 20.821 Ha of Revenue Forest land, 242.089 Ha of DLC land, 45.248 Ha of non-forest land, and 41.260 Ha of private land. Out of total DLC list forest 171.899 Ha is broken up and 70.190 ha is virgin DLC forest. Now EMIL has applied for diversion of forest land measuring 208.149 Ha. This includes 75.489 Ha of broken and 132.660 Ha of virgin forest land. Besides

WILDLIFE CONSERVATION PLAN OF JILLING LONGALOTA IRON & MANGANESE ORE MINE

106.202 Ha of forest land has been set aside for Safety Zone and other purposes.

- 1.0.10 Now every proposal involving diversion of forest land involves implementation of a Conservation Plan. EMIL has requested the authors to prepare this plan. The prescription of this plan is to be implemented by the User Agency within the lease area. The User Agency has to deposit cost with D.F.O., Keonjhar Division for implementation of the plan in the buffer zone of 10 Kms.
- 1.0.11 During visit to this mining area on 11th of Sept.'07 the author of this plan observed that, on the northern part of the lease area there is good chunk of existing dense growth of vegetation which was earlier surrendered by EMIL and has not yet been granted to any lessee for mining and lies very much within Baitarani 'A' R.F. This patch can be used as a habitat by animals, birds and reptiles, who may migrate there due to the mining activity, to live and propagate safely.
- 1.0.12 Direct mining activity, vehicular traffic, dust pollution, pollution to hill streams by mine waste, lighting effect, anthropogenic pressure on the forest, degradation of forest area, limiting tranquility of the area etc. are some of the adverse factors which affect the bio-diversity of this area in general and wildlife in particular. Therefore minimizing the said factors is the essence of this plan. Its intention is to regulate mining, vehicular traffic, human pressure etc. to the extent possible. By this the wildlife of this area will feel safe to live and propagate despite the biotic pressures generated due to mining and ancillary activities.
- 1.0.13 The existing vegetation of the lease area comprises of Sal with associates. The vegetation is mostly coppice shoots and in sub climax stage. Protection of the vegetation is essential from wildlife point of view.
- 1.0.14 The topography of Jilling Longalota mining lease area and its surroundings is highly undulating as evident from the

WILDLIFE CONSERVATION PLAN OF JILLING LONGALOTA IRON & MANGANESE ORE MINE

contour map. Rainwater during rainy season drains down the slopes smoothly from the valley floor to Dalko nala. This natural water course is flowing west to east cutting across Jilling-Longalota ridge. Certain percentage of water accumulated due to the precipitation in and around the area flows through Dalko nala. This is the main and only water source for the wildlife of the area which is needed to be conserved.

1.0.15 As the adverse impact of mining is bound to be felt in the adjoining area, to the detriment of wildlife and its habitat; this conservation plan also aims at suggesting remedial measures for the Zone of Influence of 10 Kms in radius.



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Asst. Conservator of Forests
VC Chamba Range

CHAPTER-II
TRACT DEALT WITH

C H A P T E R - II
THE TRACT DEALT WITH

2.0.1 **Location of the lease** - Jilling Langalota Iron & Manganese ore mine of ESSEL Mining 7 Industries Ltd (EMIL) is situated about 8 Kms south of Joda Town. It falls within Survey of India Topo Sheet No.73 G/5. The lease area is bounded by latitude $21^{\circ} 56' 15''$ to $21^{\circ} 59' 0''$ N and longitude $85^{\circ} 25' 10''$ to $85^{\circ} 26' 10''$ E.

2.0.2 This lease was granted originally to M/s. S. Lal & Co for mining of Iron ore by the State Govt. in Mining & geology Department over 1557 acres or 630 ha in the year 1954 for a period of 30 years in villages Jalahuri, Jurudi, Jajang, Banspani, Khuntapani, Bholebeda and in Baitarani 'A' R.F. vide Proceeding No.1095 Mines/XX-A-66153 Dt.19.03.1954. The lease was executed on 01.10.1954.

2.0.3 On the application of EMIL, State Govt. in Mining & Geology Department granted the 1st renewal (01.10.1984 to 30.09.2004) Vide Order No.13605/MG.III.A.MG/56/85 Dt.21.11.1986 for 20 years. The renewal was granted for a reduced area of 1127.023 acres or 456.100 Ha.

2.0.4 **Land-use pattern:** The lease area includes 106.682 Ha of Baitarani 'A' R.F., 20.821 Ha of Revenue Forest, 287.337 Ha of non-forest land and 41.260 Ha of private land. By that time, Forest (Conservation) Act, 1980 was already in force. Therefore, EMIL applied to MoEF for grant of diversion of forest land over 127.503 Ha (106.682 Ha of R.F. and 20.821 ha of Revenue Forest). This forest land includes 29.129 Ha of broken up land and the rest is virgin.

2.0.5 Govt. of India, MoEF considering the requirement, granted diversion of 75.489 Ha of forest land which includes 29.129 ha of broken and 46.360 Ha of virgin vide order No.8-49/98-FC Dt.17.11.2000 (**Annexure-I**) with 10 conditions. EMIL has complied with all the conditions (**Annexure-II**).

2.0.6 **Surface right:** Collector, Keonjhar has granted surface right over the lease area of 456.100 Ha. But subsequently the surface right has been withdrawn over 16.883 Ha and South Eastern Railway has acquired 19.172 Ha of forest land

WILDLIFE CONSERVATION PLAN OF JILLING LONG ALOTA IRON & MANGANESE ORE MINES

Within Baitarani 'A' R.F. Therefore, as on to-day the surface right order for 420.045 ha stands.

2.0.7 **Renewal Of the lease:** EMIL has applied to the state Govt. for grant of 2nd renewal of the lease (01.10.2004 to 30.09.2024) on 11.09.03 i.e. one year prior to the expiry of the 1st RML.

2.0.8 **Change in classification of forest land:** During 1997, a major portion of the non-forest land of this lease has been included in the DLC list of the Keonjhar Dist. Therefore, the land intended to be used as on this date is 106.682 Ha of Baitarani 'A' R.F., 20.821 Ha of Revenue Forest, 242.089 Ha of D.L.C forest, 42.248 Ha of Govt. non-forest land and 41.260 Ha of private land.

2.0.9 **FDP for 2nd RML:** out of the total forest area of 369.592 ha, EMIL during 2nd RML has submitted proposal for diversion of 277.494 Ha leaving 92.098 Ha for safety Zone etc. The forest area proposed for diversion includes 74.049 Ha of Baitarani 'A' R.F., 16.712 Ha of Revenue Forest, 186.723 Ha of D.L.C forest (total 277.494 Ha) forest area to be retained for safety Zone etc. 32.623 Ha relates to Baitarani 'A' R.F., 4.109 Ha of Revenue Forest, 55.366 Ha of D.L.C forest. The detailed land use pattern has been furnished at **Annexure-III**

2.1.0 **Ore reserve position:** It has been proved that there is a geological reserve of 85.99 million tons of iron ore. The rate of annual production has been proposed to 6.28 million tons of iron ore. Hence on an average the life of this mine has been estimated to be 16 years. Mining in this lease has been started from October 1954.

2.1.1 **Reclamation:** EMIL and the previous lessee has so far completed 53 years of mining in this lease and opened up 3 quarry pits, two for iron and one for Manganese ore. Out of the mined out area, EMIL has reclaimed 51.070 Ha of forest land and afforested by planting 153860 seedlings. This is evident from the photographs furnished herewith. EMIL has also adopted coir mat covering to the over burden dumps ,

WILDLIFE CONSERVATION PLAN OF JILLING LONGALOTA IRON & MANGANESE ORE MINES

allow them to stabilise and plant seedlings to prevent erosion and siltation of perennial stream Dalko.

2.1.2 Mining PLAN: Jilling-Langalota Iron and Manganese ore mines is a mechanised mining and mining as per Mining Plan approved by IBM vide their letter No.314(3)/2008-MCCM(CZ)/MP Dt 17.04.2009(Annexure-IV)

2.1.3 Natural features: The lease area consists of a series of north-south trending parallel ridges and valleys. The Langalota, Jiling, Rakhaburu, Khuntpani, Appahatu hills and their associated valleys constitute this lease area. The eastern slope of the hill is steeper than the western. The highest altitude of this lease is 620 mt and lowest 473 m above MSL.

2.1.4 Drainage: river Baitarani is flowing north-south of the lease and located at a distance of 1 K.M. on the eastern direction of the lease area and that constitute the main drainage

WILDLIFE CONSERVATION PLAN OF JILLING LONGALOTA IRON & MANGANESE ORE MINE

The perennial Dalko nala is originating from a spring outside the lease area on the western direction i.e. near Jalahuri village. The exact location of the spring is 1.7 K.M. north of southern end of the lease. There is also another small tributary flowing from south to north and discharging to Dalko nala. The water table in this area is inferred to be at shallow depth below valley floor i.e around 15 meters from as evident from the water level in the wells.



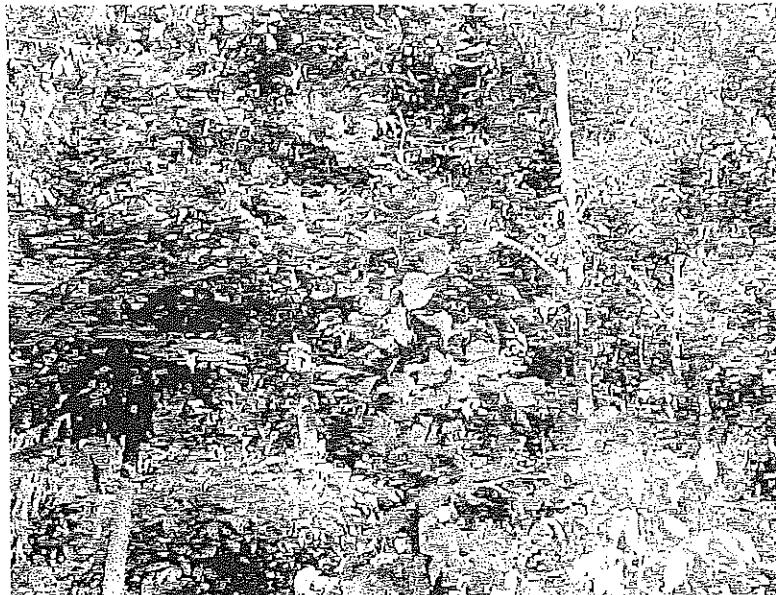
2.1.5 **Forest and forest type:** Keonjhar District has a forest cover of 5390 Sq. Km. Out of this, dense forest constitutes 3036 Sq. Km. (Canopy density 0.40 & above) and open forest cover is 2327 Sq.Kms. (Canopy density 0.10 to 0.40). This is according to information furnished in 'State of India's Forest Report, 2003' prepared by Forest Survey of India, Dehradun. Champion & Seth has classified the forests of this region in northern part of Keonjhar Division in to two major groups according to 'Forest Types of India'.

WILDLIFE CONSERVATION PLAN OF JILLING LONGALOTA IRON & MANGANESE ORE MINE

- a) Group 3C – Northern Tropical Moist Deciduous Forests
- b) Group 5 B – Northern Tropical Dry Deciduous Forests.

Of course variations do occur due to reasons like climatic, edaphic and biotic factors. Microclimate also influences the Forest Types. Bamboo is totally absent in this locality. Taking all these into consideration the vegetation has further been classified into three sub-types:

- i) 3C / C2 e (iii) Moist Peninsular Valley Sal.
- ii) 5B / C1c Dry Peninsular Sal Forests.
- iii) 5B / C2 Northern Dry Mixed Deciduous forest. However, Baitarani 'A' R.F. in which this lease is located has been included in Forest Type – 5B/ C2 'Northern Dry Mixed Deciduous forest'. Total area of this lease area has been distributed in to plains, valley, hills and ridges. This R.F. has been allotted to Coppice Working Circle, according to the current Working Plan of Keonjhar Forest Division.



The geological formation of this block is quite suitable for the growth of Sal, which therefore is the dominant species. It is more aggressive than any of its associates and constitutes 30 to 40 % of the crop composition. There is hardly any middle

WILDLIFE CONSERVATION PLAN OF JILLING LONGALOTA IRON & MANGANESE ORE MINE

storey or top storey in the crop. The crop is the secondary growth and mostly constitutes the coppiced Sal. The crop has still the vigor to grow but need protection from biotic interference. The quality of Sal varies from all India quality III to IV. The principal associates are *Terminalia alata* (Asan), *Terminalia belerica* (Bahada), *Lagerstroemia parviflora* (Patuli), *Anogeissus latifolia* (Dhaura), *Syzygium cuminii* (Jamun), *Mangifera indica* (Mango), *Schleichera oleosa* (Kusum), *Lannea coromandelica*, *Oroxylon indicum* etc. The most striking features is the presence of climbers like *Millettia auriculata*, *Combretum decandrum* (Atundi) etc. These climbers have infested in such a way that, the growth of the vegetation at most of the areas have been restricted and therefore need cleaning. There are small patches of Dhaura with other xerophytic species like Karada, Khakada, Dhaman, Bheru etc. but the extent of such areas are insignificant. This Sal forest is considered to be an extension of the best Sal forests of Saranda of Singhbhum district of Jharkhand.



WILDLIFE CONSERVATION PLAN OF JILLING LONGALOTTA IRON & MANGANESE ORE MINES

2.1.6 Working Plan Description

The entire Baitarani 'A' R.F has been placed under Rehabilitation Working circle according to the revised Working Plan of the undivided Keonjhar Division that shall come into operation after final approval. The objective of the management of the Working Circle is given in the following paragraphs.

Rehabilitation Working Circle

The following special objectives of management are set for the Working Circle, which is within the ambit of the general objectives of the management and aims at the regeneration and restocking of the degraded forests:

- i. To generate the degraded forest blocks including the areas once affected by shifting cultivation, by appropriate Silvicultural inputs and protection measures by peoples participation.
- ii. To improve the micro-climate and micro-edaphic conditions through soil and moisture conservation measures.
- iii. To increase the biodiversity in forest crop by encouraging natural regeneration.
- iv. To meet the bonafied needs of the local inhabitants for fuel wood, small timber, fodder and NTFP to the extent possible depending upon the productivity of the forests to ensure their participation.

2.1.7 Flora and Fauna

The common species notice in the core zone and the buffer zone of the leasehold within the Baitarani 'A' R.F is furnished below.

FLORA

IN THE CORE ZONE OF THE LEASE

Trees

<u>Local name</u>	<u>Botanical name</u>	<u>Family</u>
Amla	<i>Embla officinalis</i>	Euphorbiaceae
Asan	<i>Terminalia alata</i>	Combretaceae
Bahada	<i>Terminalia belerica</i>	Combretaceae
Bel	<i>Aegle marmelos</i>	Rutaceae
Bana Bhalia	<i>Semicarpus anacardium</i>	Anacardiaceae
Bheru	<i>Chloroxylon swietenia</i>	Meliaceae
Chaur	<i>Buchnania lanzen</i>	Anacardiaceae
Chhatian	<i>Alstonia scholaris</i>	Apocynaceae
Dhaura	<i>Anogeissus latifolia</i>	Combretaceae
Harida	<i>Terminalia chebula</i>	Combretaceae

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Jamun	<i>Syzygium cumini</i>	Myrtaceae
Kendu	<i>Diospyrus melanoxylon</i>	Ebenaceae
Kusum	<i>Schleichera oleosa</i>	Sapindaceae
Sal	<i>Shorea robusta</i>	Dipterocarpaceae

Grasses

Khara grass	<i>Imperata cylindrica</i>	Gramineae
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Shrubs / Herbs

Arakha	<i>Calotropis gigantia</i>	Asclepiadaceae
Basanga	<i>Adhatoda vasica</i>	Acanthaceae
Dhatki	<i>Woodfordia fruticosa</i>	Lythraceae
Kurei	<i>Holarrhena antidysenterica</i>	Apcynaceae

Climbers

Atundi	<i>Combretum decandrum</i>	Combretaceae
Baidanka	<i>Mucuna monosperma</i>	Papilonaceae
Bichhuati	<i>Urtica dioica</i>	Euphorbiaceae
Satabari	<i>Asparagus racemosus</i>	Liliaceae

IN THE BUFFER ZONE OF THE LEASE

Trees

Local name	Botanical name	Family
Achu	<i>Morinda tinctoria</i>	Rubiaceae
Amla	<i>Emblica officinalis</i>	Euphorbiaceae
Ankula	<i>Alamgium lamarkii</i>	Cornaceae
Asan	<i>Terminalia alata</i>	Combretaceae
Bahada	<i>Terminalia belerica</i>	Combretaceae
Bara bakulia	<i>Dalbergia paniculata</i>	Palanaceae
Barakoli	<i>Zizyphus mauritiana</i>	Rhamnaceae
Baruna	<i>Crataeva religiosa</i>	Capparideceae
Bel	<i>Aegle marmelos</i>	Rutaceae
Bana Bhalia	<i>Semicarpus anacardium</i>	Anacardiaceae
Behenta	<i>Lemonia acidissima</i>	Rutaceae
Bheru	<i>Chloroxylon swietenia</i>	Meliaceae
Char	<i>Buchnania lanzani</i>	Anacardiaceae
Chhatian	<i>Alstonia scholaris</i>	Apocynaceae
Dhaman	<i>Grewia tillaefolia</i>	Tiliaceae
Dhäura	<i>Anogeissus latifolia</i>	Combretaceae
Dimiri	<i>Ficus glomerata</i>	Moraceae
Haldu	<i>Adina cordifolia</i>	Rubaceae
Harida	<i>Terminalia chebula</i>	Combretaceae
Jamun	<i>Syzygium cumini</i>	Myrtaceae
Kalucha	<i>Glochidion lanceolarium</i>	Euphorbiaceae

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Karada	<i>Cleistanthus collinus</i>	Euphorbiaceae
Katrang	<i>Gardenia latifolia</i>	Rubiaceae
Kendu	<i>Diospyrus melanoxylon</i>	Ebenaceae
Kochila	<i>Strychnos nux-vomica</i>	Loganiaceae
Kumbhi	<i>Careya arborea</i>	Myrtaceae
Kusum	<i>Schleichera oleosa</i>	Sapindaceae
Sal	<i>Shorea robusta</i>	Dipterocarpaceae
Sidha	<i>Lagerstroemia parviflora</i>	Lythracaceae
Semul	<i>Bobax ceiba</i>	Bombacaceae
Siris	<i>Albizia lebbek</i>	Mimosaceae
Sunari	<i>Cassia fistula</i>	Ceasalpiniaceae

Grasses

Khara grass	<i>Imperata cylindrical</i>	Gramineae
Phulabandhuni	<i>Thysanolaena maxima</i>	Gramineae

Shrubs / Herbs

Anantamula	<i>Hemidesmus indicus</i>	Asclepidaceae
Arakha	<i>Calotropis gigantia</i>	Asclepidaceae
Basanga	<i>Adhatoda vasica</i>	Acanthaceae
Dhatki	<i>Woodfordia fruticosa</i>	Lythraceae
Kurei	<i>Holarrhena antidysenterica</i>	Apcynaceae

Climbers

Atundi	<i>Combretum decandrum</i>	Combretaceae
Baidanka	<i>Mucuna monosperma</i>	Papilonaceae
Bichhuati	<i>Urtica dioica</i>	Euphorbiaceae
Mututri	<i>Smilax macrophylla</i>	Liliaceae
Siali	<i>Bauhinia valii</i>	Papilonaceae
Satabari	<i>Asparagus racemosus</i>	Liliaceae

2.1.8

The lease area does not form any National Park, Wildlife Sanctuary, Tiger Reserve, Ramsar Site or Biosphere Reserve. No elephant migration route passes through the lease area. But the entire area is part of an elephant habitat of the state. The fauna noticed in this area are;

FAUNA

IN THE CORE ZONE OF THE LEASE

Local name	English Name	Zoological name	Schedule
Mammals			
Bilua	Jackal	<i>Canis aureus</i>	II
Kutura	Barking Deer	<i>Muntiacus edwardsii</i>	III
Neula	Mongoose	<i>Herpestes edwardsii</i>	II

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Birds			
Kapta	Ring Dove	<i>Streptopelia decaocto</i>	IV
Koili	Cuckoo	<i>Eudynamis scolopaceus</i>	IV
Kumbhatua	Crow pheasant	<i>Centropus sinensis</i>	IV
Gunduri	Partridge	<i>Francolinus pondicerianus</i>	IV
Reptiles			
Dhamana	Rat snake	<i>Ptyas mucosus</i>	II
Godhi	Yellow monitor	<i>Varanus monitor</i>	II

IN THE BUFFERED ZONE OF THE LEASE

Local name	English Name	Zoological name	Schedule
Mammals			
Bana Biradi	Jungle Cat	<i>Felis chaus</i>	II
Barha	Wild Boar	<i>Sus scrofa</i>	III
Bhalu	Sloth Bear	<i>Melursus ursinus</i>	I
Bilua	Jackal	<i>Canis aureus</i>	II
Badudi	Bat	<i>Cynopterus sphinx</i>	IV
Dali Odha	Civet cat	<i>Vivericula indica</i>	II
Gurandi	Mouse Deer	<i>Tragulus memina</i>	I
Harina	Chital	<i>Axis axis</i>	
Hati	Elephant	<i>Elephas maximus</i>	I
Heta Bagha	Hyena	<i>Hyaena hyaena</i>	III
Kutura	Barking Deer	<i>Muntiacus edwardsii</i>	II
Neula	Mongoose	<i>Herpestes edwardsii</i>	II
Birds			
Bana Kukuda	Red Jungle fowl	<i>Gallus gallus</i>	IV
Gunduri	Partridge	<i>Francolinus pondicerianus</i>	IV
Kapta	Ring Dove	<i>Streptopelia decaocto</i>	IV
Koili	Cuckoo	<i>Eudynamis scolopaceus</i>	IV
Kumbhatua	Crow pheasant	<i>Centropus sinensis</i>	IV
Kajalpati	Balack Drongo	<i>Dicrurus adsimilis</i>	IV
Mayura	Peacock	<i>Pavo cristatus</i>	II
Reptiles			
Dhamana	Rat snake	<i>Ptyas mucosus</i>	II
Godhi	Yellow monitor	<i>Varanus monitor</i>	II
Ajagar	Python	<i>Python molurus</i>	II

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WILDLIFE CONSERVATION PLAN OF JILLING LONGALOTTA IRON & MANGANESE ORE MINES

In fact the lease area has sparse vegetation due to biotic interference, but in the impact area there are bushy/coppice shoots of the species as mentioned above. In this bushy forest some wild life as mentioned above besides hares and quails. The lease area lies in tropical region where climate is characterised by very hot summers, high humidity and well distributed rainfall during monsoon seasons. The summer lasts from March to June; while rainy season continues from July to September. October to February is the cold season.

2.1.9 **Population:** There are 38 villages lying within 10 km radius of the mine with a population of 140362, out of which the urban population is 8305. About 66% of the total population of the study area belongs to socially weaker sections, comprising 55.3% of the schedule tribes (ST) and 10.4% of scheduled castes (SC). Most of the tribal inhabitants belongs to tribes like Munda, Santala, Kolha & Sabara.

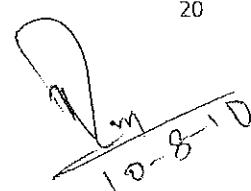
2.1.10 **Industries:** There is no industry in the area other than mine based crushers and beneficiation plants.

2.1.11 **Employment:** This mine shall provide direct employment to 1500 no of people and indirect employment to 7500 people. Large numbers of the people are either employed or shall be employed in the mines lying in the clusters.

2.1.12 **Climate:** The area lies in the tropical region where climate is characterised by very hot summers, high humidity and well distributed rainfall during monsoon seasons. The annual mean temperature in the region varies from 27.50 C in December to 38.30C in May while annual mean temperature varies from 11.40 C in January to 24.50 C in May. The annual relative humidity varies from 55% in April to 86% in August. The annual mean rainfall is 1269mm. About 78.3 % of the total rainfall occurs during June to September. The wind speed varies from 3.4 Km per hour in December to 7.5 Km per hour in June.

2.1.13 **Mines:** There are 27 nos of mines located within the "Zone of Influence" as shown in the **Plate-IV**.

2.1.14 **Agriculture:** Paddy is the main agricultural crop, though other crops like maize, arhar and black gram etc. are cultivated besides vegetables.



CHAPTER - III
MINING PROCESS

WILDLIFE CONSERVATION PLAN OF JILLING LONGALOTA IRON & MANGANESE ORE MINE

3.0.6 **Production Capacity:** EMIL is presently producing Iron ore of 4.2 MTPA and proposes to increase the production to 5.5 MTPA. In the beginning four pits were opened i.e. Jilling, Langlota, Gangaigora and Jajang. Thereafter, Khuntapani, partial Appahatu and recently Behera quarry were opened for achieving the present rate of production.

3.0.7 **Present size of mining pits:** The following table indicates the size of the pits.

Name of Pit	Length in Mtr	Width in Mtr	Depth in Mtr
Langlota	769.93	479.28	42
Jajng	489.96	407.04	42
Jilling	482.00	256.49	12
Gangaigora	474.90	329.32	48
Khuntapani	84.37	158.00	24
Appahatu	266.255	247.56	12
Behera	441.18	343.46	18

This indicates that maximum 48 mtr and minimum 12 mtr of depth of the pits have been achieved. Therefore, in order to check fall of wild animals in the pit, it requires peripheral power fencing.

3.0.8 **Size of bench:** The benches are so arranged that benches in ore and overburden are separate so as to avoid mixing of waste materials with the ore. The benches are planned with 6m height and 6m width. The overall pit slope of 45° is maintained and this is within the safe limit of mining operation.

3.0.9 **Mining methodology:** This is a semi-mechanized mine. Deep hole drilling, heavy blasting, loading and hauling of the blasted overburden rock to the dump yard is followed.

3.1.0 **Machineries used:** The following heavy earth moving machineries (HEMMS) and equipments are being used at ESSEL Mining.

CHAPTER-III
MINING PROCESS

3.0.1 **Lease Period:** Jilling Langalota Iron & Manganese Mines of ESSEL Mining & Industries Ltd.(EMIL)has been operating since 1954 and at present it is in 2nd RML (01.10.2004 to 30.09.2024).

3.0.2 **Ore Reserve Position:** The Geological reserve within the Baitarani 'A' Reserve Forest, Revenue Forest & DLC forest is 85.99 million tons. This reserve has been established after the approval of the Mining Scheme by IBM. C opy Enclosed in **Annexure-IV**

3.0.3 **Geology:** Geologically the study area within the Iron Ore Group of the Singhbhum hear Zone and is part of sequences of sedimentary rocks that belongs to the Koira Group of Pre-Cambrian Age. It forms a part of the westerly dipping eastern limb of the north plunging asymmetric syncline. The ore body is laid down in the synformal part with the axis plunging towards north to south. The stratigraphic sequence of the sedimentary rocks is given below.

3.0.4 BHJ (Banded Hematite Jasper) with Iron ore, Purple Shale, Lava and Tuffs with Dolerite dykes and boulder of Dharwar.

3.0.5 **Mining History of The Lease:** Mining operation in Jilling Langalota Iron & Manganese ore mines is in progress from October, 1954. To start with the operation of this mine was fully manual with shallow hole drilling and blasting which continued till 1988. However, with available of modern mining technology, from 1989 onwards there was gradual shift towards semi-mechanised methods. With the induction of heavy equipments like 115 mm diameter hydraulic crawler drill for deep hole drilling and loading of iron ore with front end loader and hydraulic excavator for removal of over burden at present semi-mechanised mining is in regular practice.

WILDLIFE CONSERVATION PLAN OF JILLING LONGALOTA IRON & MANGANESE ORE MINE

<i>Name of Machineries</i>	<i>No.</i>	<i>Capacity</i>
Excavator CK-90	5	0.9 M ³
Excavator CK-170	1	1.8 M ³
Excavator DC-200	2	0.9 M ³
Excavator 200 Hitachi	1	0.9 M ³
Dumper	5	25 MT
Tipper	23	10 MT
Dozer D 155	1	--
Dozer (Cat D & R)	1	100 psi
Dozer D 80	2	--
Compressor P 600	1	100 psi
Compressor P 450	1	--
Drill machine ICM-26	2	--
Drill Machine ICM-341	1	--
Drill Machine (ROC F9)	2	--
Drill machine (Pantra 1100)	1	--
Drill machine (Commando)	1	--
Front End loader	5	1.24 M ³

The above machineries in use create much of noise and dust. Therefore, remedial measures have to be suggested.



3.1.1 **Top soil:** Major part of the mine area is devoid of top soil. Area in and around Behera quarry & Jilling, certain top soil to the extent of 6" to 8" is existing. The same is being recovered and stacked in at a designated place and the same will be used for the land reclamation as well as plantation work.

CHAPTER - IV

**ANTICIPATED ADVERSE
IMPACT ON WILDLIFE AND
ITS HABITAT**

C H A P T E R - IV
THREATS TO WILDLIFE
AND ITS HABITAT

4.0 This lease spreads over an area of 456.100 Ha of Baitarani 'A' Reserve Forest of Keonjhar Forest Division and in villages like Jalhuri, Juruli, Jajng, Banspani, Khuntapani, holebeda. Working in this mine commenced as early as 1954 and so far only 29.129 Ha of leasehold land has been broken up for mining purpose because of intermittent dislocation in mining particularly after 1996 when forest land diversion was made mandatory. So far seven pits have been opened up.

4.0.1 It is on a hilly tract whose elevation ranges from 620 mt to 473 mt from mean sea level.

4.0.2 The leasehold area is within Baitarani 'A' R.F. In the past good vegetation existed in this area but due to excessive pressure for firewood and other anthropogenic pressures, at present there is bushy growth of Sal. Miscellaneous species dominate Sal in this area.

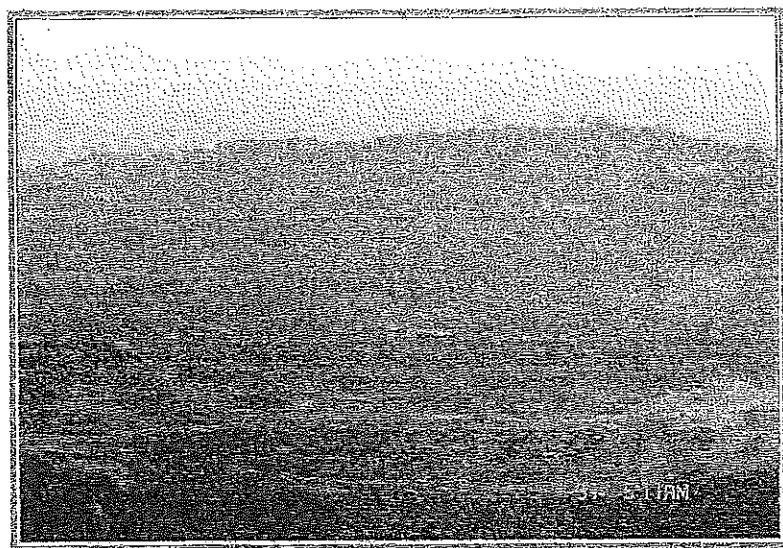
4.0.3 The mining of this area and all accompanied ancillary activities like transportation of iron ore, mining process involving blasting, colonies, dust, dumping of overburden and rejects, frequent movement of vehicles, lighting shall have the potentiality of threatening the wildlife of the region and its habitat. The railway line, siding, beneficiation plant and ore crushing units etc, already operating within or adjoining the lease area shall also exert further pressure.

4.0.4 This process will also impact the local people living around the area, within the zone of influence of 10 Kms in radius adversely. Of course, it can't be said that, the impact shall not be felt beyond this zone but such impact may not be much pronounced. There shall also be lots of adverse impact of other mines on the ZOI of this mine. This plan does not intend to go beyond this area.

WILDLIFE CONSERVATION PLAN OF JILLING LONGALOTA IRON & MANGANESE ORE MINE

4.1.1 Threats within the mining lease

After commencement of the new phase of mining over the extended area to increase the annual rate of production from 3.12 MTPA to 4.2 MTPA, the activities related to mining shall increase manifold and is likely to threaten the wildlife of the area and its habitat. The anticipated threats are enumerated below:



4.1.1.1 Forest fire

Forest fire in summer months in a tropical forest is always a threat to wildlife, even without any mining operation in any area. But this is likely to create further problem as the forest area shall reduce and anthropogenic pressure shall increase in the remaining forest. The forest fire is likely to burn the ground flora, desiccate the soil, kill the ground dwelling animals, birds and their young ones, and char their nests and eggs. It may render the hill streams dry and destroy the sub-terranean flora and fauna besides causing diseases in the standing trees. Forest fire is created by N.T.F.P. collectors, who do not extinguish fire created for clearing the

WILDLIFE CONSERVATION PLAN OF JILLING LONGALOTA IRON & MANGANESE ORE MINE

ground by negligence and by leaving lighted bidi or fire torches used for scaring wild animals or to find paths at night on forest floor.

4.1.1.2 Protection of forest

The reduced forest may be under further pressure from the mining workforce and surrounding villages for collection of fuelwood, small timber, N.T.F.P., and tubers etc. Reduction of biodiversity through the process and clearing of forest may make it further difficult for wildlife to sustain. Lack of ground cover shall subject the ground to erosion and create drier conditions.

4.1.1.3 Soil erosion

Due to mining activity and laying of extraction paths and other activities in the hilly terrain will subject the hill slopes to soil erosion, which is evident from the present situation triggered by earlier mining process. There is also possibility of landslides. This will also denude the hill slopes, which supports vegetation for the sustenance of wild animals.

4.1.1.4 Moisture conservation

Cutting of hill slopes for mining, construction of haul roads and clearing of vegetation will result in silting of existing natural water-ways and it in turn shall affect moisture retention. This will create problem for wild animals to meet their water requirement. The vegetation also may change with increased depth of ground water table. This shall affect the smaller animals most, which are the only ones which can thrive in these small forest patches in and around the quarries.

WILDLIFE CONSERVATION PLAN OF JILLING LONGALOTA IRON & MANGANESE ORE MINE

4.1.1.5 Dust Pollution

Dust generated due to mining, movement of vehicles and blasting will not only affect the plants due to their leaves being covered by dust thereby adversely impacting photosynthesis but also shall affect the health of wild animals particularly small herbivores.

4.1.1.6 Noise Pollution

Noise due to blasting, movement of heavy earth movers and mining equipment, movement of people to and from the colonies shall affect the tranquility of the area and shall disturb animals. This will be further compounded in 3-shift mine as it will disturb animal round the clock. This may also not only affect their health but also adversely affect their reproductive process. Many of them may desert the area and get killed or run over by vehicle outside their habitat.



WILDLIFE CONSERVATION PLAN OF JILLING LONGALOTA IRON & MANGANESE ORE MINE

4.1.1.7 Accidental fall of animals

From the inception of mining the pit has attained considerable depth/size which is being enlarged in wedge shape during progress of mining. Such deep mining pits are dangerous for wild animals as any fall by animals shall be fatal or result in critical injury making them invalid for rest of their life. This happens when they topple over the brim while foraging or hen pushed during a fight.

4.1.1.8 Water Pollution

The water flowing from the opened out pits, extraction paths and dumps shall be laden with red silt and contaminate the water of Dalko nala and other streams, rendering them unhygienic for animals as well as for human consumption. When this muddy water enters the rivers, rivulets and tanks etc. below; they also silt them up or contaminate them unless this is prevented. Due to siltation of stream beds frequent flooding takes place and submerges the wildlife habitat in the flood plains.

4.1.1.9 Garbage

As large number of people shall be working in the mine in different outfits, staying in colonies with family, working in the office, engaged in operation of railway and loading wagons etc, there is livelihood of generation of lot of garbage of all sorts on daily basis including liquid wastes. Unless they are removed and treated in proper manner, they shall cover the ground impeding regeneration and affecting wild animal health. Liquid wastes may contaminate the natural water bodies and soil.

4.1.1.10 Poaching

With flow of money due to mining related activities, people tend to afford to buy expensive wild animal meat procured by unscrupulous hunters poaching wild animals for table purposes. Such illegal shooting of wild animals affects their population adversely.

WILDLIFE CONSERVATION PLAN OF JILLING LONGALOTA IRON & MANGANESE ORE MINE

4.1.1.11 Grazing by livestock

As there is no general practice of stall feeding cattle in the area, they may graze in the forest patches and reclaimed mine site. They shall not only feed on natural vegetation, but also damage newly planted seedlings, cause soil erosion on hill slopes, deprive wild animals of their food. They may also transmit communicable diseases to the wild animals.

4.1.1.12 Invasion of weeds:

*It was seen in the valley nearby that the blanks are full of exotic weed *Parthenium*. Next menace is *Eupatorium odoratum* that is spreading in forests where blanks are created. Of course *Lantana camara* has spread to a much lesser extent. Unless they are checked, they shall create severe hindrance for fodder availability for herbivores as blanks created due to mining activity may be colonized by them.

THREATS TO WILDLIFE & ITS HABITAT FROM THE SURROUNDING OF THE LEASE AREA

Mining doesn't only adversely impact wildlife in the lease area but the social, demographic and economic changes in the surrounding villages and forest areas also create pronounced impact to the detriment of wildlife and its habitat. Some of them are indicated below:

4.1.2.1 Depredation by wild animals

With the reduction of forest area and its density due to mining, different wild animals like elephant, wild boar, cheetals, sloth bear may visit the nearby villages to raid crops and in the process come in conflict with people. They attack standing crops, houses stored with grains/country liquor and even people when confronted with.

4.1.2.2 Increased dependence of people on forests

Those of the neighboring area, who do not get employment in the mines, particularly old, physically challenged and women will depend on forest for their livelihood and adversely impact the quality of the habitat.

WILDLIFE CONSERVATION PLAN OF JILLING LONGALOTA IRON & MANGANESE ORE MINE

4.1.2.3

Dependence on forest due to ancillary activities

Due to setting up of hotels, restaurants, tea kiosks, colonies and different other business etc, people will more and more depend on the existing forest for meeting their fuelwood/small timber need unless alternative source is provided at a subsidized/reasonable price.

4.1.2.4

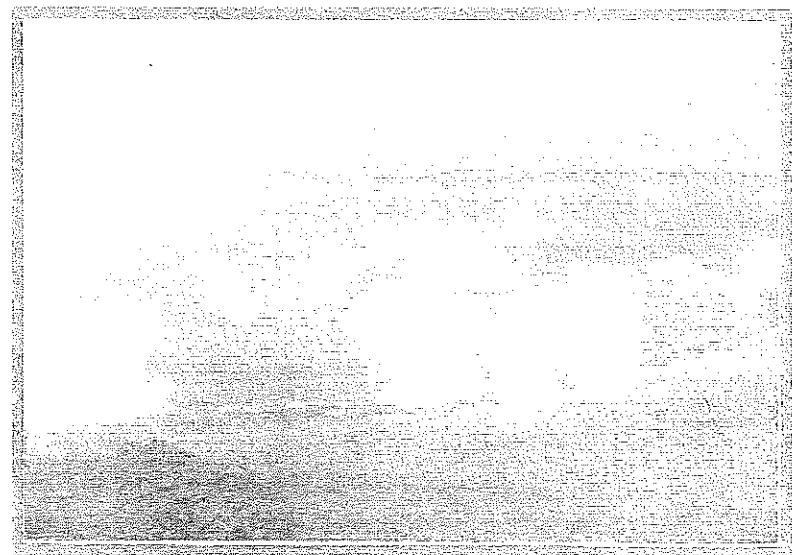
Opening of roads

If road and paths are developed and increased in length in the entire mining area in an unplanned manner, it will open up the remaining forest disturbing the wildlife and reducing the forest cover. This will in other way facilitate the poachers, make the forest floor prone to erosion, forest fire and reduce the forest growth.

4.1.3

Threats to wildlife

Unless measures are taken to alleviate them through different innovative measures, the threats mentioned in the previous paragraphs and others, we may have to pay heavy price. Hence, the next chapter contains a 'Wildlife Conservation and Management Plan' for the entire mine and its surrounding area.



CHAPTER - V
PROPOSED MITIGATION
MEASURES

CHAPTER - V
SITE SPECIFIC CONSERVATION
AND MANAGEMENT PLAN

5.0.1 Jilling Langolata Iron Ore and Manganese Mine is a 'Y' shaped large mine lying partly in Baitarani 'A' R.F. This is surrounded by 27 other different mines. Two hillocks namely Jilling pahar and Langalota pahar form part of the mine with Dalko nala flowing between them in the valley. A large colony exists within the mine, while a road and railway siding also form part of the mine. A surrendered patch with fairly good forest growth also exists between 2 legs of the lease. Hence, given a helping hand this habitat can be enhanced and support wildlife displaced from the mine. Besides other measures can be taken within the mine to see that the wild animals can still thrive, in a more tolerable situation despite the activities of the mine. This plan intends to prescribe such measures, as it is impossible to negate all perceived adverse condition created.

5.0.2 The following paragraphs contain suggested measures within the mine and in its surrounding area of 10 Kms in radius. Of course impacts of all mines in the cluster shall overlap and hence the treats due to this mine is almost impossible to isolate.

5.1.1 **Protection of vegetation**
As there is no likelihood of larger animals to live here due to mining activity all around the lease area, whatever little area has been set-aside for Safety Zone etc. and surrendered area should be well protected which may serve the purpose of resting and nesting by the small animals, birds and reptiles. For this purpose two Bana Sahayaks, preferably ex-army Jawan/retired Forest Guard may be engaged round the year on contractual basis to see that there is no illicit removal of any vegetation for fuel or other wise. They should also keep watch over the thick vegetation existing on the outer fringe of the lease area besides surrendered area and

WILDLIFE CONSERVATION PLAN OF JILLING LONGALOTA IRON & MANGANESE ORE MINE

keep the local Forest staff informed and take their help in case of eventualities beyond their control. An area of 200Ha (effective) shall be planted up with indigenous species in blanks and degraded patches and maintained for 5-years. Two year old seedlings of edible and other species should be planted in 0.5mx0.5mx0.5m pits filled with valley soil, bio-fertilizers and bio-pesticides.

A separate Ecological wing may be created under the charge of a Forestry graduate to look after planting, reclamation, soil conservation and fire prevention work of this and other nearby mines of EMIL to provide focused attention to this aspect for much better result.

5.1.2

Forest fire

This sparse vegetation need protection against forest fire as this fire may kill small ground dwelling animals and birds besides destroying vegetation particularly regeneration. This will also desiccate the soil, make it prone to erosion and kill sub-terrestrial flora and fauna. Hence, it should be prevented at any cost. Two fire watchers out of local youth should be engaged for 5 months every year during fire seasons to prevent spread of fire both in natural as well as planted vegetation. About 5 K.M. long fire-line may be cut and cleared of vegetation at vulnerable points on the periphery of the lease area before February each year and controlled burning carried out to prevent spread of fire, if occurs.

5.1.3

Photo-voltaic (Solar) fencing

As the mining pit shall be quite deep and steep, fall of animals into the pit can't be ruled out. Hence, photo-voltaic fencing of five strands with 1.5 mt height may be erected on the outer side of the mining pit (12 Kms) to prevent fall of animals. This should be regularly maintained by the mining staff.

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5.1.4 Soil and moisture conservation

On the periphery of the mining pits all reels, gullies etc. should be plugged through appropriate intervention either by masonry structures or vegetative check dams or both. At the end of the slope check dams should be erected for collecting rainwater and silt. These steps will prevent further soil erosion and on the contrary shall help in moisture conservation as well as charging the ground water table. Check dams should be provided at suitable interval where drained out water and rain water can be accumulated to serve the small animals, birds and reptiles. The run-off water of the mine should be stored in a pond down below and after settling can be recycled for sprinkling on the haul roads. Plenty of grasses, medicinal plants and shrubs/herbs should be planted on mined out slopes and vegetative bunds as well as on the over burden dumps. Such grasses and other plants should preferably be edible for the wild herbivores. A good method of planting grasses is to mix them with cow-dung pellets or soil pellets and sow before rains. Grass seeds are miniature in form and very light in weight. By mixing with pellets while sowing no seed will go waste? EMIL is already using coir mats to cover the mine slopes. Instead of one continuous slope, it should be broken with inward sloping benches running along the contour, and erosion resisting species like khas khas, sabai grass or agave can be planted on there benches. Instead of using mats of nylon or coir & nylon pure coir mats should be used as they are biodegradable and shall disintegrate and mix with the soil after serving their purpose.

5.1.5 Roads

There are number of roads besides benches for carrying the ore laden earth movers. In order to reduce their adverse impact in the form of dust, erosion, noise and lighting they should be properly planned to limit their length to the barest minimum requirement.

5.1.5 Blasting

As blasting is inescapable, muffled blasting should be practiced at a fixed time of the day preferably in the afternoon synchronizing with the time of blasting in the adjoining

WILDLIFE CONSERVATION PLAN OF JILLING LONGALOTA IRON & MANGANESE ORE MINE

mines. This will reduce noise pollution to some extent and relative tranquility shall be maintained in other parts of the day and night. There are some guidelines issued by the Chief Wildlife Warden. The same should be scrupulously followed.

5.1.6

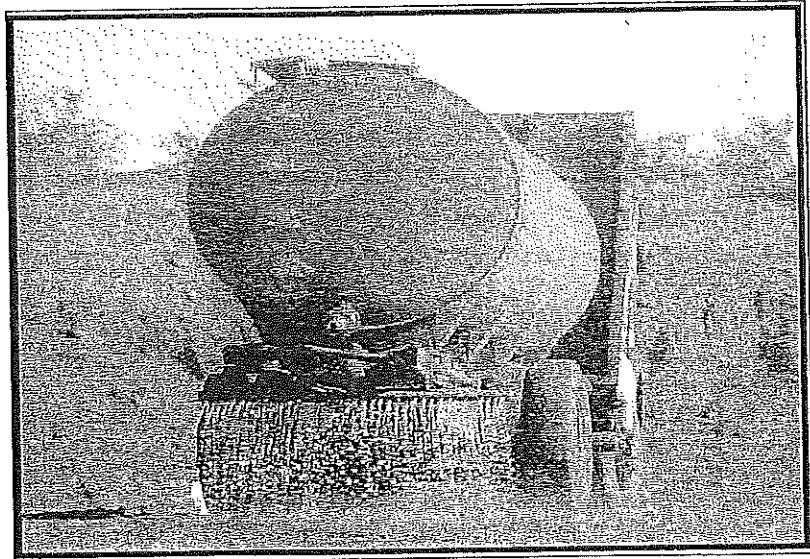
Earth movers and machines

All mining machineries and earthmovers should be well maintained to avoid disturbing sound at the time of operation. This is required in order to minimize noise in the locality.

5.1.7

Dust

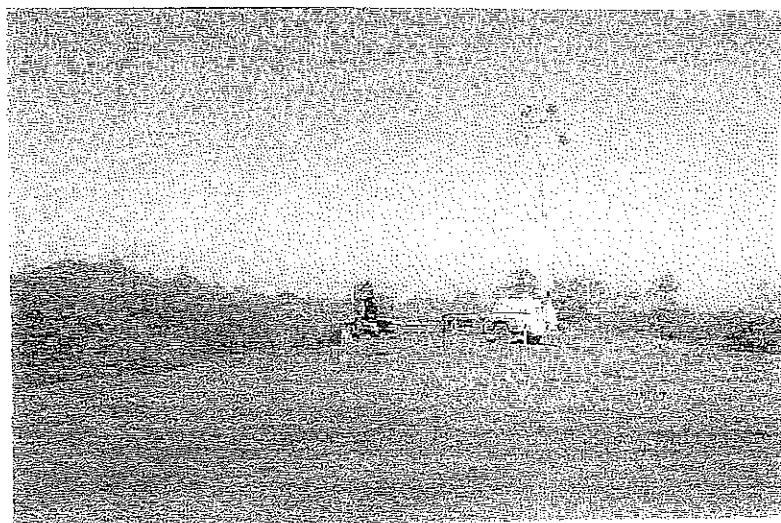
Dust is a major pollutant in the iron ore mine particularly at the time of drilling, blasting, crusher site and movement of vehicles carrying ore. Such dust covers the ventral side of the leaf of nearby trees and affects the photosynthesis system of the plant. Such dust also affects the health of wild animals. To avoid this, the roads should be sprinkled with water twice a day and during summer/winter season on non rainy days. The ore carrying vehicles should be covered to prevent spread of dust en-route. Alternatively the ore can be sprayed with water jet before being transported.



WILDLIFE CONSERVATION PLAN OF JILLING LONGALOTA IRON & MANGANESE ORE MINE

5.1.8 Lighting

Light particularly after dusk disturbs the tranquility of wildlife habitat. This should be avoided as far as possible. But some lighting may be unavoidable. Hence, the headlight of ore carrying and other vehicles moving in and around the mine should be shaded half. It will be extremely helpful if movement of vehicles is restricted during night time. The street lights inside the mining area should also be focused inwards in order not to be visible outside the mine pits. They should not light up the vegetated patches as they are used by wild animals.



5.1.9 Poaching

Poaching of small ground dwelling animals should be prevented by strict watch and ward. The persons engaged for protection of the lease area should also be assigned to prevent poaching. They should be well acquainted with the local forest staff so that at the time of exigencies they can take their help or inform them to prevent poaching.

WILDLIFE CONSERVATION PLAN OF JILLING LONGALOTA IRON & MANGANESE ORE MINE

5.1.10 Sanitation

All garbage of the mining area such as leaf plated used by workers, papers, tobacco covers and cigarette covers, left-over food materials and their packaging of mine workers etc. wastes generated in the office premises, colony, siding and plants etc should be properly disposed off in dust bins placed at different places without allowing them to litter the ground and create hazard for wild animals. While all efforts should be made to reduce such litter to the minimum, and try to prevent entry of polythene bags. Of course the reduction in garbage can be substantially reduced by use of re-usable containers like glass/plastic/metal plates, glasses, water bottles, cloth, jute bags etc instead of disposable material all these still generated should be segregated to bio-degradable and non degradable. The degradable areas can be converted to compost through different methods like vermin-compost and used in plantation. Non bio-degradable materials may be recycled suitably or incinerated without polluting the atmosphere. The liquid wastes including excreta and chemicals should not be allowed to flow into the natural streams. They should be treated and detoxified before release if they can be used for different purposes. Excreta like cow dung can go into composting/bio gas etc.

5.1.11 Treatment of wild animals

If any animal accidentally gets injured and unable to escape to its hideout should be given first-aid by the managerial staff of the mine and reach him the nearest veterinary hospital for further treatment. The Forest staff should immediately inform to take over the animal.

5.1.12

Reclamation

The mining pits be reclaimed as early as they get exhausted of minerals and the over burden dumps reach the permissible height. After reclamation the area should be planted with edible grasses, medicinal plants and edible fruit species along with other indigenous tree species etc. which are palatable to the wild animals, birds, reptiles living in the area to cater to their food need and suit to their food habit. In such planting process preferably taller seedlings of 60 to 75 cm height may be planted to avoid immediate browsing by ungulates. 0.5³ mt pits should be adopted.



Before planting the pits should be filled with borrowed soil, organic manure etc. to allow the planted species to grow faster and go beyond the damageable height. Bio-insecticides like neem oil should be used to prevent termite/past attack. In order to minimize capillary moisture loss in drier seasons, clod mulching should be done around the plants immediately

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after the rainy season. Suitable moisture/soil conservation measures like half moon trenching or saucers should be provided around the plants. Staggered trenching can also be done wherever required.



5.1.13

Awareness:

The mine workers should be made aware about conservation of forest and wildlife through periodic training, film show, lecture etc. by EMIL with the help of different organizations and by the local forest staff. They should also assist in preventing forest fire, helping in protection and prevention of poaching etc. whenever required. Any commendable activities either by individual or groups should be rewarded during the annual 'Mineral conservation & mines Safety week' being celebrated especially during October-November by I.B.M or during the wildlife week.

5.1.14

Plantation:

Plantation shall be needed for different purposes like filling the blanks in green belts, safety zones, colony, road, avenues, reclaiming the mines and waste dumps etc. Same techniques as indicated in Para 5.1.4 & 5.1.12 can be

WILDLIFE CONSERVATION PLAN OF JILLING LONGALOTA IRON & MANGANESE ORE MINE

adopted for this purpose. For this, it will be ideal to maintain an in house nursery of different indigenous fodder, fruit, ornamental and medicinal plants for obtaining seedlings of right size and quality. A forestry graduate can be kept in charge of the planting process for their EMIL cluster of mines. They already have an environment expert, who shall also be of help.

5.1.15 Rain water harvesting:

Depletion of ground water table shall also pose a threat unless remedied. Hence arrangement of rain water harvesting for use in dry season or recharging the ground water should be done in the colonies, along paved roads, offices, ore handling/crushing plants etc.

5.1.16 Control of weeds:

The 3 dangerous spreading exotic weeds are likely to invade blanks created due to mining, it is essential that they are clothed as fast as possible. This should be done by taking up reclamation measures without any delay. The blanks in forest patches should also be planted and nurtured so that the canopy is closed without loss of time. When still such weeds spread, they should be uprooted and destroyed before ripening of seeds. This operation may be required to be repeated for number of times so that the root stock is also eliminated completely.

5.2.0 Measures outside the lease area:

The mining and its ancillary activities including anthropogenic pressures generated due to the same shall also impact the wildlife and its habitat in the zone of influence of 10 kms in radius. Of course the Regional Wildlife Management Plan for Keonjhar and Bonai Forest Division shall also be operational there besides measures to be supported by other mines in the area. The measures are indicated the following paragraphs.

WILDLIFE CONSERVATION PLAN OF JILLING LONGALOTA IRON & MANGANESE ORE MINE

5.2.1 **Protection and improvement of habitat:**

With the reduction in forest cover due to mining activities, pressures due to increased population and economic activities in the area, need for fuel wood, small timber and other forest material and need for more land for habitation/road development etc the wild animal habitat shall shrink and suffer in quality. It will be essential to protect and improve them in order to support the wildlife there and those which may shift there due to mining activities. For this purpose the forest patches need to be rigidly protected from illicit removal and encroachment. Besides their quality should be improved by filling the blanks with edible species of plants, improve water availability, cover and meet the salt requirement of wild animals. Hence 2 Ban Sahayaks, preferably ex-army Jawan/Retired Forest Guards can be appointed to support the field forest establishment. 200 Ha (effective) blanks should be planted up to improve forest cover and make edible biomass available for herbivores. A game tank shall be dug and 2 salt licks maintained. Planting techniques as indicated in Para 5.1.4 and 5.1.12 can be adopted.

5.2.2 **Forest fire**

Any effort to improve habitat shall not be quite successful unless the forest fire is controlled. For this purpose fire lines cover 15 kms should be cut and maintained and 2 fire watchers can be engaged for 5 months of fire season every year. They should be provided with simple fire fighting equipments and mobility.

5.2.3 **Grazing**

Grazing is another major threat to the habitat. Effort should be made to minimize grazing pressures, by introducing stall feeding and improving cattle breed. In no case newly planted or regenerated areas should be subjected to grazing. Help of

WILDLIFE CONSERVATION PLAN OF JILLING LONGALOTA IRON & MANGANESE ORE MINE

Gramya Bana Samiti (GBS)/ VSS may be taken to ensure this.

5.2.4 Eliminating dependence on forest

Dependence of people on forest patches is another threat to their existence. Despite employment generation due to mining activity, some section of population like old physically challenged and women may not find employment and still depend on forest for livelihood. In order to improve their economy, without dependence on forest, they should be provided with training, financial and marketing support for taking up avocations like vegetable growing, diary, poultry, horticulture, bee-keeping, mushroom culture, sericulture, papad/insence stick making, small shops, tea-stalls, tailoring, embroidery, other handicrafts and small technical job. Self Help Groups (SHG) can be formed and linked to financial institutions. The A.V. Birla Janseva Trust can play a very pivotal role in this endeavor.

5.2.5. Social and farm forestry

Planting of fuel, fodder, small timber, fruit bearing and ornamental species may be planted in farm bunds, back yards, road avenues, institutional premises, village commons, waste lands etc to meet the requirement of forest materials and also to arrest pollution.

5.2.6 Biogas plants

The local unproductive cattle breed shall be upgraded with A.I. and stall feeding shall be encouraged. Based on this individual/community biogas plants may be established to meet the fuel and lighting requirement of villages and reduce dependence on forest.

5.2.7 Human-wild animal conflict

Conflict between people and wild animals is not uncommon in the area, elephant, sloth bear; wild bear, deer etc come in conflict to meet their food need. In the process house

WILDLIFE CONSERVATION PLAN OF JILLING LONGALOTA IRON & MANGANESE ORE MINE

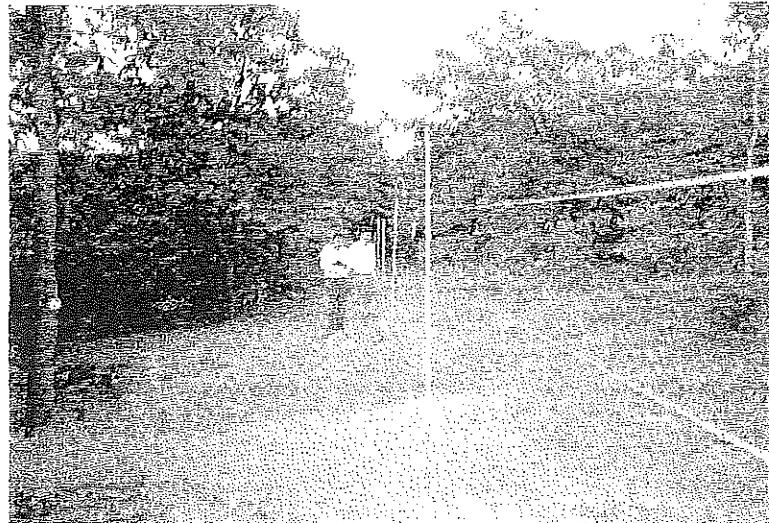
breaking/death or injury people occur. To prevent such incidence the following measures are suggested.

5.2.7.1 Corpus fund

A corpus fund of Rs.2.00 lakhs may be placed with D.F.O., Keonjhar to immediately disburse compassionate grant to affected people and replenish the same on receipt of government funds.

5.2.7.2 Photo-voltaic (solar) fencing

Forest fringes may be fenced with 10 km solar fences of 5 strands to prevent their approach to the crop fields or villages. This should be kept in charge of one or two V.S.S./GBS/Panchayat etc. They should not only own the system, they should also maintain them in their own interest.



5.2.7.3 Street lighting

Solar/Electric Street light may be provided in each village to scare the wild animals at night. With them it will be easy to spot wild animals approaching the village in dark nights.

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5.2.7.4 Alternate cropping

In order to distract wild animals, the fields on the forest fringes may cultivate non-edible crops like, agave, certain medicinal plants, sunflower, tobacco and chilli etc.

5.2.7.5 Storage of grains

Pucca grain storages (Community/Individual) may be encouraged or metal bins supplied to prevent raiding of houses due to strong order of boiled rice mohwa flower etc.

5.2.7.6 Driving away wild animals

Anti-depredation squad may be formed and become operational with support of the V.S.S./GBS (Gram A Bana Samiti) etc for which they may be provided with proper equipments like loud hailers, hooters, focused lights, flairs, recording of tiger roaring sound etc besides adequate incentives. They should have communication facility with Range Officer.

5.2.8 Cattle immunization

All cattle that graze in the forest should be vaccinated against communicable diseases so that they are not transmitted to the wild animals.

5.2.9

As the villages to be treated by this mine can not be pin pointed, the DFO, Keonjhar can treat entire Zol with funds from all lessees, besides that available as part of 'Regional Wildlife Management Plan for Keonjhar and Bonai Forest Divisions.

5.2.10 Preventing Accidents on the Railway Track

A railway line has been laid with siding for Jilling-Longalota Iron Ore Mine. The area being an elephant country, elephant choose to move over the entire area. They are also still crossing this track. There has been a very sad incident of three elephants getting killed after being run over by an ore carrying train. Such incidents may threaten the entire elephant population that move in the area. Hence it is absolutely essential that certain measures should be taken to prevent occurrence of the similar incidents. There is a

WILDLIFE CONSERVATION PLAN OF JILLING LONGALOTA IRON & MANGANESE ORE MINE

sharp bend in the railway line where it is difficult to see the elephants crossing by the loco driver from a distance. As such when break is applied it may became too late. A series of measures need be taken to prevent such sad incidents in future. Some of the measures are indicate below:

- i) The local people and the forest staff should be consulted to locate the stretch of railway track where the elephants usually cross the track and mark the site on the ground..
- ii) Since the track is on a raised embankment an underpass of 6 meters height and 20 meters wide can be provided for movement of the elephants.
- iii) There should be a 1.10meter high barrier made of B.G. rails mounted on B.G. rail posts 5 Kms long on either side of the underpass on both the sides of the track, so that the elephants can not cross the railway track at any other place.
- iv) The approach of the track should be made funnel shaped on either side and planted up with suitable species of both edible as well as non edible species of trees and shrubs so that the elephants feel comfortable and safe to pass under the underpass. The intention of planting of some non-edible species is to ensure that the entire vegetation is not lost due to foraging, thereby removing all cover. Such underpass construction process should be completed fast, within a maximum time frame of 6 months. All debris generated should be removed from the work site and the passage should be smooth. There should be 0.5meter deep soil formation below the rail to muffle the vibration due to train movement.
- v) In case the elephant do cross the railway track where it is on a flat ground the passage can be provided across the railway track with stainless steel reflectors placed at 45° angle to the track, so that the light from the

WILDLIFE CONSERVATION PLAN OF JILLING LONGALOTA IRON & MANGANESE ORE MINE

locomotive can be reflected towards the animals thereby preventing to cross the track when locomotives approach. In this case also the sides of this passage should be similarly fenced with B.G. rail barriers to prevent them straying else where. It should be sufficiently wide and may be about 50 meters. In such cases there should be signage from 1.5 Kms on either side to alert the loco driver regarding the elephant passage, so that he can limit the speed to 10 Kms per hour at this stretch and honk horn. This passage should be made smooth in order to prevent their straying to the other stretches of line. This arrangement should be discussed with the railway authorities and measures taken with due collaboration between the Forest Department, Indian Railways and ESSEL Mines. If required financial support from other mines of the locality and Railways can be taken.

- vi) The slopes of the railway track and the land in possession of the railways should be planted up with thick vegetation, so that the movement of goods train does not disturb the elephants as this will both muffle the sound of the moving train and will be a visual barrier.
- vii) No power line should be less than 6.0meters above the ground and all electric towers and posts should be protected from elephants and other animals in order to prevent electrocution. This should also be taken up with the 'power supplying agency'.
- viii) The villagers/VSS/GBS may be sensitized to alert nearby Station Masters/F.D.officials regarding movement of elephants in the area so that they can alert the loco-drivers about their possible movement.
- ix) Night movement of trains should be avoided along this stretch as far as feasible.

WILDLIFE CONSERVATION PLAN OF JILLING LONGALOTA IRON & MANGANESE ORE MINE

5.3.1 **Plan period**

The plan period is 10 years. But its implementation need be regularly monitored to assess its impact effect and take up in any modification, if required.

5.4.1 **Monitoring Committee**

A Committee under the Chairmanship of the D.F.O., Keonjhar with the representatives of the mine owner, local village heads. Range Officer, Champua and Section Forester. The Committee should sit at least once in a year to determine the effect of the prescriptions of this plan. They should be empowered for addition, alteration and modification of the plan based on their experience. In addition to this conditions suggested in the approved Mining Plan, accepted E.I.A. & E.M.P. report, Environmental clearance and Forest diversion approval should also be followed in letter and spirit.

5.5.1 **Funding**

This plan shall be fully funded by ESSEL Mining & Industry Ltd and implemented by the lessee within the mine as the operations shall take place within their leasehold area limits. EMIL shall deposit the funds required to take up activities in the buffer zone of 10 Kms of the lease area with D.F.O., Keonjhar Forest Division.

5.6.1 **Financial forecast**

For successful implementation of the plan, the next chapter of this plan indicates the financial forecast of the entire Project covering coming 10 years.



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CHAPTER – VI
FINANCIAL FORECAST

CHAPTER-VI
FINANCIAL FORECAST

6.0.0. Based on activities suggested in the Chapter-V broad financial estimate for activities within the lease hold area and in the adjoining forest etc. areas are as under.

6.1.0. The activities proposed to be taken up inside the lease hold area are to be executed by the User agency under the supervision and monitoring of DFO, Keonjhar Forest Division.

6.2.0. The following table indicates the cost estimate for measures to be taken up outside the project area within 10-years. The cost of activities to be taken up in the project impact area (ZoI) i.e. outside leasehold area shall be deposited with the Forest Department to be utilized by the Divisional Forest Officer, Keonjhar Division for execution of works under the guidance of Conservator of Forests, Rourkela Circle. User agency will deposit Rs.346.50.00 lakhs with DFO, Keonjhar Division under CAMPA for implementation of the plan.

6.1.0: Activities within the Project area.

(Rs. In lakhs)

Sl. No.	Item of work	Financial outlay
1.	90 ha. of ANR plantation as per land use plan	20.00
2.	Fire prevention – Salary of fire watchers, equipments and uniforms etc.(3000x2x5x10)	3.50
3.	Soil & moisture conservation measures	10.00
4.	Rain water harvesting arrangement	10.00
5.	Garbage disposal @ 1.00 /year	0
6.	Photo-voltaic fencing 12 Kms@1.00 lakh	12.00
7	Monitoring & evaluation	5.00
8.	Awareness & publicity	5.00
	Total:	65.50

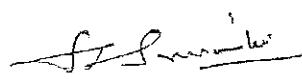
6.2.0: Activities within the Project Impact area (zone of influence). (Rs. In lakhs)

Sl. No.	Item of work	Financial outlay
1	Anti-depredation & anti-poaching squad-2 squads (3000 x 5 x 12x 10) with hired vehicle/ manpower/ equipment/ barracks/ crackers, megaphone, search lights/ flare guns/ tents & camping equipments for 10 years	60.00
2	Deployment of one elephant tracker	2.00
3	Habitat improvement works-like gap planting with indigenous species de-weeding over 200 ha. @40,000/-	80.00
4	Soil & Moisture conservation measures	40.00
5	Construction of game tanks -2nos.	10.00
6	Creation of artificial salt licks and their maintenance-50 nos	10.00
7	Fire prevention measures (1) Creation & maintenance of fire lines- 50 kms. (2) Fire fighting tools & equipments (3) Engagement of fire watchers and their mobility	20.00
8	Immunisation of live stock	5.00
9	Measures to prevent casualties due to train accidents	50.00
10	Corpus fund	10.00

11	Biodiversity monitoring & Development of communication network / GIS based maps Satellite maps on GIS domain should be procured every year to know the changing profile of the project area in both dry season and wet season for 10 years preferably using the GIS lab of PCCF(WL), Orissa	20.00
12	Eco-development activities in 10 VSS areas	30.00
13	Awareness promotion	4.50
14	Monitoring & evaluation	5.00
	Total	346.50
	Grand total	412.00

N.B: All measures for dump reclamation, dust suppression, garbage bins, soil erosion measures should be taken up including retaining walls , plantation etc. as per the reclamation plan etc to be prepared in terms of the approved mining plan and other guidelines. This component is to be dealt separately as per the above guidelines. Hence no financial forecast on this account is indicated in the conservation plan.

Approved by PCCF(WL)& CWLW, Orissa.


Chief Conservator of Forests (WL)

Chief Conservator of Forests (WL)
Orissa Forest Department
Orissa, India

WILDLIFE CONSERVATION PLAN OF JILLING LONGALOTA IRON & MANGANESE ORE MINE

CHAPTER - VI
FINANCIAL FORECAST

6.0. The estimate of expenditures on different activities within the mine and in the Zone of Influence have been indicated separately in the following paragraphs.

6.1. The following table gives the broad estimate of cost of activities that shall be taken up within the lease area. This shall be in addition to the provisions made for some of the similar activities made according to different plans and orders. The entire amount shall be utilized by EMIL through its own agency.

Sl. No.	Items	Amount (Rs in Lakhs)
1.	a) Protection of habitat – Salary of Bana Sahayaks @ 5,000/- x 2 x 10 x 12 including uniform etc.	15.00
	b) Planting of 200 Ha (effective) of plantation for filling the blank etc.	70.00
	c) Salary of a forest guard @ 15,000/- p.m. and other facilities etc for creating an Ecological wing of the mine	25.00
2.	Fire prevention – Salary of 2 fire watchers – 2100/- x 5 x 12 x equipments and uniforms etc.	3.00
3.	Soil & moisture conservation measures	15.00
4.	Rain water harvesting arrangement	10.00
5.	Garbage disposal @ 1.00/year	10.00
6.	Photo-voltaic fencing 12 kms @ 1.00 lakh	12.00
7.	Awareness promotion	5.00
	Total	165.00

(Rupees One Crore & Sixty Five Lakhs Only)

0.6.2. The table given below indicates broad estimates of activities to be taken within the ZOI within the plan period. This will be in addition to the priority, the 'Regional Wildlife Management Plan'. As the ZOI of different mines in the cluster can not be differentiated, this cost which shall be deposited with DFO, Keonjhar shall be spent in apportioned area for this mine or as a part of general plan for the area.

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M/S. ESSEL MINING & INDUSTRIES LTD.
EL MINING & INDUSTRIES LIMITED

ANUPAM SINGH
PRESIDENT
AND
Managing Attorney

DIVISIONAL FOREST OFFICER
CUM WILDLIFE WARDENS
KEONJHAR DIVISION

10-8-10
Asst. Conservator of Forests
Chamarsa Range

Conservator of Forests,
Rourkela Circle

WILDLIFE CONSERVATION PLAN OF JILLING LONGALOTA IRON & MANGANESE ORE MINE

Sl. No.	Items	Amount (Rs in Lakhs)
1.	a) Protection of forest – Salary of 2 Bana Sahayaks @ 5,000/- x 2 x 12 x 10 including uniform etc.	13.00
	b) Incentives to VSS/GBS	2.00
	c) Planting of 200 Ha (effective) @ 35,000/Ha.	70.00
2.	a) Fire prevention including salary of 2 fire watchers @ 2100/- x 2 x 5 x 10	3.00
	b) Fire lines over 15 kms	3.00
3.	Income generating activities	15.00
4.	Immunization of livestock	3.00
5.	Social / farm forestry	10.00
6.	Prevention of human – wild animal conflict	
	a) Corpus fund	2.00
	b) Solar fencing @ 1.00 / km over 10 km	10.00
	c) Street lighting	2.00
	d) Storage godown/bins	5.00
	e) Anti-depredation measures incentive tools / equipments	10.00
7.	f) Alternate cropping	1.00
	Improvement of habitat	
	a) Game tank	3.00
	b) Salt lick	2.00
	c) Measures to prevent casualties due to train accidents	50.00
	Total	204.00

(Rupees Two Crore & Four Lakhs Only)

0.6.3. The total cost of the plan over 10 years period is **Rs.369.00 lakhs.**

Besides, the User Agency has also to deposit the proportionate cost of regional Wildlife Management Plan of Keonjhar-Bonai Division @ Rs.15,000/- per Ha x lease area of 456.100 Ha = **Rs.68.50 lakhs.**

Conservator of Forests,
Jharsuguda Circle

M/s. **ESSEL MINING & INDUSTRIES LTD.**
For **ESSEL MINING & INDUSTRIES LIMITED**

(RAMESH KUMAR
PRESIDENT
AND
General Manager)

DIVISIONAL FOREST OFFICER
CUM-WILD LIFE WARDENS
KEONJHAR DIVISION.

Asst. Conservator of Forests
VC Chambal Range

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- Mammals of India by S.H. Prater
- Indian Birds by Salim Ali
- Reptiles of India by J. C. Daniel.
- Flora of Orissa, Saxena & Brahmam (O.F.D.C.Ltd).
- Right to passage,-Elephant Corridors of India-Wildlife Trust of India

26/07

02

ANNEXURE:-IV



Letter No. 139/OMC/JLIOM/2022

Date: 29/04/2022

To

The Special Secretary to Govt.,
 Forest & Environment Department,
 Govt. of Odisha

Sub.: Diversion of 342.602 hectares of forest land in village for Jilling-Langalota Iron Ore Mines in favour of OMC Ltd. in Keonjhar Forest Division.

X-Sub.: Annual self-compliance report year ending 31st March 2022.

Ref.: (i) F.No. 8-49/98-FC (Pt.) dt. 08.10.2014 by MoEF, Govt. of India.

Sir

MoEF& CC, Govt. of India vide letter under reference (i) has granted Stage-II (final) forest clearance over 342.602 ha of forest land for mining of Jilling Iron Ore Mines of OMC. The point wise compliance to conditions stipulated vide Stage-II FC as on 31st March, 2022 is given as under:

Compliance the conditions stipulated in the grant order of Stage-II FC
 342.602 ha. of forest land vide F. No. 8-49/98-FC (Pt.) dt. 08.10.2014
 pertaining to Jilling Langalota Iron Ore Mines of OMC Ltd.

Sl. No.	Observation raised	Compliance
(i)	Legal status of the diverted forest land shall remain unchanged;	Complied OMC will peruse the matter with the State Govt. to keep the legal status of forest land remain unchanged.
(ii)	State Government shall raise and maintain from funds realized from the user agency compensatory afforestation over the 46.0818 ha. non-forest land equal in extent to the virgin forest land being diverted during the 2 nd renewal of mining lease transferred and mutated in favour of the State Forest Department;	Complied State Govt. has raised and maintained the compensatory afforestation over the 46.0818 ha of non-forest land by utilizing the funds deposited by ex-lessee. The non-forest land has been transferred and mutated in favour of State Forest Dept.
(iii)	State Government shall create and maintain penal compensatory afforestation over the degraded forest land double in extent to	Complied State Govt. has raised and maintained the

The Odisha Mining Corporation Ltd.

(A Gold Category State PSU)

Regional Office : Barbil, PO : Barbil, Dist : Keonjhar-758035, Odisha, India

Tel : 06767-275253, Fax : 06767-275257, www.omcltd.in

CIN : U13100OR1956SGC000313

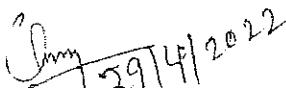
<p>State Government shall create and maintain penal compensatory afforestation over the degraded forest land double in extent to forest land used in violation (i.e. $2 \times 11.0477 = 22.0954$ ha.) from funds already realized from the user agency;</p>	<p>Complied</p> <p>State Govt. has raised and maintained the penal compensatory afforestation over the 22.0954 ha of degraded forest land by utilizing the funds deposited by ex-lessee.</p>
<p>Following activities shall be undertaken by the user agency at the project cost:</p> <p>(a) Implementation of scheme containing appropriate mitigative measures to minimize soil erosion and choking of streams duly approved by the Regional Chief Conservator of Forests, Rourkela Circle;</p>	<p>Complied</p> <p>A scheme on mitigative measures to minimize soil erosion and choking of stream has been approved by RCCF Rourkela. The management to minimize soil erosion and choking of stream will be implemented as per the approval by RCCF, Rourkela.</p>
<p>(b) Planting of adequate drought hardy plant species and sowing of seeds in the appropriate area within the mining lease as per the scheme duly approved by the Regional Chief Conservator of Forests, Rourkela Circle to arrest soil erosion;</p>	<p>Complied</p> <p>A scheme on Planting of adequate drought hardy plant species and sowing of seeds, in the appropriate area within the mining lease to arrest soil erosion has been approved by RCCF, Rourkela. The same species will be planted within the mining lease in a scientific manner to arrest soil erosion in accordance with the approved scheme.</p>
<p>(iv) (c) Construction of check dams, retention /toe walls as per the scheme duly approved by the Regional Chief Conservator of Forests, Rourkela Circle to arrest sliding down of the excavated material along the contour;</p>	<p>Complied</p> <p>The scheme on Construction of check dams, retention /toe walls will be implemented by OMC as per the scheme at the cost approved by RCCF, Rourkela.</p>
<p>(d) Stabilize the overburden dumps by appropriate grading/benching as per the scheme duly approved by the Regional Chief Conservator of Forests, Rourkela Circle so as to ensure that that angles of repose at any given place is less than 28°; and</p>	<p>Complied</p> <p>The scheme to Stabilize the overburden dumps by appropriate grading/benching, approved by the Regional Chief Conservator of Forests, Rourkela will be implemented by OMC.</p>
<p>(e) Strict adherence to the prescribed top soil management as per the scheme duly approved by the Regional Chief Conservator of Forests, Rourkela Circle.</p>	<p>Complied</p> <p>The prescription of the scheme on top soil management will be implemented as per approved scheme at the cost approved by RCCF, Rourkela.</p>
<p>The State Government shall realise from the user agency the additional amount of NPV, if so determined, as per the final decision of the Hon'ble Supreme Court of India and</p>	<p>OMC has deposit the additional amount of NPV, if so determined, as per the final decision of the Hon'ble Supreme Court of India and transfer the same to Ad-hoc</p>

	transfer the same to Ad-hoc CAMPA under intimation to this Ministry;	CAMPA under intimation to this Ministry.
(vi)	The User Agency shall obtain the Environment Clearance as per the provisions of the Environmental (Protection) Act, 1986, if required;	Complied
		Environment Clearance has been granted by MoEF & CC vide letter no. J-11015/959/2007-IA.II (M) dt. 07.06.2012 for production of 6.28 MTPA of Iron Ore. The same has been transferred to OMC vide vesting order.
(vii)	State Forest Department shall undertake fencing, protection and afforestation of the safety zone area (7.5 meter strip all along the outer boundary of the area identified to undertake mining), from funds realised from the user agency;	Complied
	State Forest Department has undertaken fencing, protection and afforestation of the safety zone area (7.5 meter strip all along the outer boundary of the area identified to undertake mining), from funds realised from the ex-lessee.	
(viii)	The period of diversion of the said forest land under this approval shall be for a period co-terminus with the period of the mining lease to be renewed under the Mines and Minerals (Development and Regulation) Act, 1957, or Rules framed there under, subject to a maximum period of 20 years. This approval shall be valid subject to possession of a valid mining lease in accordance with the provisions of the Mines and Minerals (Development and Regulation) Act, 1957 and Rules framed there-under;	Complied
	Mining Lease has been granted by Steel & Mines Dept. vide order No. 358/SM dt. 12.01.2021 in respect of Jilling-Langalota Iron Ore Mines over an area of 456.100 ha (as per DGPS)/456.037 ha (as per RoR). Mining Lease deed has been executed on dt. 11.01.2021 with validity upto 10.01.2031.	
(ix)	User agency either shall undertake gap planting and soil & moisture conservation activities as per the scheme duly approved by the Regional Chief Conservator of Forests, Rourkela Circle to restock and rejuvenate the degraded open forests (having crown density less than 0.4), if any, located in the area within 100 m. from outer perimeter of the mining lease;	Complied
	State Forest Dept. has executed the scheme on gap planting and soil & moisture conservation activities as per the scheme duly approved by the Regional Chief Conservator of Forests, Rourkela Circle to restock and rejuvenate the degraded open forests (having crown density less than 0.4) from funds deposited by ex-lessee.	
(x)	The user agency shall undertake de-silting of the village tanks and other water bodies located within five km from the mine lease boundary as per the scheme duly approved by the Regional Chief Conservator of Forests, Rourkela Circle so as to mitigate the impact of siltation of such tanks/water bodies, whenever required;	Complied
	OMC will undertake de-silting of the village tanks and other water bodies located within five km from the mine lease boundary as per the scheme approved by RCCF, Rourkela.	

(xi)	<p>The user agency shall undertake mining in a phased manner after taking due care for reclamation of the mined over area. The concurrent reclamation plan shall be executed by the User Agency from the very first year, and an annual report on implementation thereof shall be submitted to the Nodal Officer, Forest (Conservation) Act, 1980, Government of Odisha and the Addl. Principal Chief Conservator of Forests (Central), Ministry of Environment & Forests, Regional Office (Eastern Zone), Bhubaneswar. If it is found from the annual report that the activities indicated in the concurrent reclamation plan are not being executed by the User Agency, the Nodal Officer or the Addl. Principal Chief Conservator of Forests (Central) may direct that the mining activities shall remain suspended till such time, such reclamation activities are satisfactorily executed;</p>	<p>Complied</p> <p>Mining is being carried in a phased manner as per the mining plan approved by IBM, vide letter no. MP/A/37-ORI/BHU/2020-21 dt. 19.03.2021. Reclamation will be carried out as per the progressive Mine Closure Plan approved by IBM. OMC will submit an annual report on implementation of concurrent reclamation plan (as per approved mine plan) to the Nodal Officer, Forest (Conservation) Act, 1980, Odisha and IRO, MoEF&CC, Bhubaneswar.</p>
(xii)	<p>No labour camp shall be established on the forest land;</p>	<p>Complied.</p> <p>OMC has not constructed any labour camps within the diverted forest land.</p>
(xiii)	<p>The user agency shall provide alternate fuel to the labourers and the staff working at the site so as to avoid any damage and pressure on the adjacent forest areas;</p>	<p>Complied</p> <p>The labourers and the staff working at the site is coming from nearby area. So, there will be no pressure on the adjacent forest land for collection of fuel wood. Also OMC will provide alternate fuel to the labourers and the staff working at the site, if required in future.</p>
(xiv)	<p>The boundary of the mining lease and safety zone shall be demarcated on ground at the project cost, by erecting four feet high reinforced cement concrete pillars, each inscribed with its serial number, forward and back bearing and distance from pillar to pillar;</p>	<p>Complied</p> <p>The boundary of the mining lease and safety zone has been demarcated on ground at the project cost, by erecting four feet high reinforced cement concrete pillars, each inscribed with its serial number, forward and back bearing and distance from pillar to pillar.</p>
(xv)	<p>The forest land shall not be used for any purpose other than that specified in the proposal;</p>	<p>Complied</p> <p>OMC will ensure that forest land shall not be used for any purpose other than that specified in the proposal.</p>

(xvi)	<p>Any other condition that concerned Regional Office of this Ministry may stipulate, from time to time, in the interest of conservation, protection and development of forests & wildlife;</p>	<p>Complied.</p>
(xvii)	<p>User agency shall submit annual report on compliance to conditions stipulated in this approval to the State Government and concerned Regional Office of this Ministry;</p>	<p>Complied</p>
(xviii)	<p>The User Agency and the State Government shall ensure compliance to provisions of the all Acts, Rules, Regulations and Guidelines, for the time being in force, as applicable to the project.</p>	<p>Complied</p>

Yours faithfully,


Sr. Manager (Mining)
Jilling-Langalota Iron ore Mines

Odisha Mining Corporation Ltd.
(A Gold Category State PSU)
Jilling-Langalota Iron Ore Mines, Keonjhar-758034
E-Mail: Jillingminesomc@gmail.com



ESSEL MINING & INDUSTRIES LIMITED

P.O: Barbil- 758035, Dist: Keonjhar (Orissa)

Phone No. (06767)-275224, 275437, 275237(O), Fax No.06767-275367

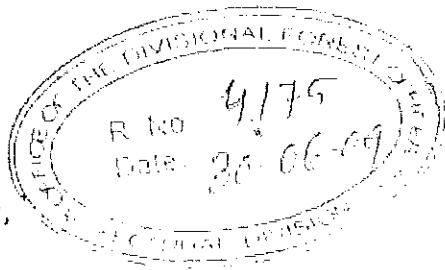
E-Mail emilbbl@adityabirla.com

mined
2009
29.6.09

Ref No A/ 787 /09-10

DL. 27-6-09
29-6-09

To
The Divisional Forest Officer,
Keonjhar Division,
Keonjhar.



Sub: Implementation of Wildlife Management Plan.

Dear Sir,

With reference to your letter no 3727 dated 10.06.2009 on the captioned subject, we are enclosing herewith a Demand Draft bearing No 010349 dated 27.06.2009 for Rs. 91,22,000/- (Rupees Ninety One Lakhs twenty two thousand only) in favour of Compensatory Afforestation Fund (CAF), Orissa, A/C No. CA1585 in Corporation Bank, Lodhi Road, New Delhi towards payment of Wildlife Management Plan in respect of our Jilling Langalota Iron & Mn. Mines.

Kindly acknowledge the receipt.

Thanking you,

Yours faithfully,

For Essel Mining & Industries Ltd.

G.D.RATI
General Manager - Admin.

DD. No 010349 dt 27.6.09
of RS 91,22,000/- Recd Draft with
order
29.6.09

Received of DD No. 010349
dt 27.6.09 for
Rs. 91,22,000/- Kept with
Me
29.6.09

ANNEXURE - VI

SCHEME FOR PROTECTION, FENCING & REGENERATION OVER 29.596 Ha.
SAFETY ZONE AREA IN Jhilling - Longalota Mines of M/S Essel Mining
& Industries Ltd. in Keonjhar dist.

1. No. Of seedling to be planted 2500 seedling per Ha. Block
 2. Spacing 1' x 1' x 1'
 3. Wage rate Rs.40/- per manday
 4. Species to planted Teak, Bamboo, Asan, Arjuna, Amla,
Sunaroba, Casta, Neem, Mango etc.
 5. The user agency will pay the enhance wage rate as and when will be required.

FIRST YEAR OPERATION

Item	Mandays No.	Rs.	Cost of Materials (In Rs.)	Total Amount (In Rs.)
1. (a) Survey & demarcation	2	80/-	-	80/-
(b) Posting of Pillars	-	-	500/-	500/-
2. Clearance of site	6	240/-	-	240/-
3. Vegetative fencing	22	880/-	1320/-	2200/-
4. Alignment & stacking	2	80/-	25/-	105/-
5. Cost of seedlings including 10% extra @ Rs. 2.00 per seedling (2750 Nos. x 2.00)	-	-	5500/-	0.05500/-
6. Pitting	60	2400/-	-	2400/-
7. Carriage of seedlings & planting	35	1400/-	-	1400/-
8. Application of manure & insecticides	12	480/-	1000/-	1480/-
9. 1 st weeding & soil working	20	800/-	-	800/-
10. 2 nd weeding & soil working	15	600/-	-	600/-
11. Soil & moisture conservation (gully plugging contour bunds check dam etc.)	40	1600/-	-	1600/-
12. Fire line tracing and Inspection path	2	80/-	-	80/-
13. Watch & ward	18	720/-	-	720/-
Total	234	9360/-	8345/-	17,705/-

SECOND YEAR OPERATION.

14. Replacement of casualty	-	600/-	600/-
(i) Cost of seedlings (10% plus) 300 seedlings @ Rs. 2/-	-	600/-	600/-
(ii) Carriage & planting	6	240/-	240/-
15. Soil working & weeding.	20	800/-	800/-
16. Application of manure & insecticide.	5	200/-	1000/-
17. Vegetative fencing	12	480/-	480/-
18. Fire line tracing and inspection path.	2	80/-	80/-
19. Watch & ward	18	720/-	720/-
Total:-	63	2520/-	1600/-
			4,120/-

THIRD YEAR OPERATION.

20. Soil working, weeding and pruning.	15	600/-	600/-
21. Maintenance of fire line and inspection path.	2	80/-	80/-
22. Maintenance of vegetative fencing.	12	480/-	480/-
23. Watch & ward	18	720/-	720/-
Total:-	47	1880/-	1880/-
24. Contingent Exp.	-	-	1110/-
Grand Total:-	344	13,760/-	9,945/-
			24,815/-

Protection Fencing Cost over 29.598 ha.

29.598 ha. X 24,815/- = Rs. 7,34,474/-

Seven lacs thirty four thousand four hundred seventy four only

Divisional Forest Officer,
Kalonihar Division.

ANNEXURE-VII

PROTECTION, PROTECTION & ONE & HALF TIMES AFFORESTATION COST
 ESTIMATE OF PROTECTION OF SAFETY ZONE AREA OVER 44.397 Ha.
 24.55 ha. in Jhilling-Longalota Mine's of M/S Essel Mining and
 Industries Ltd. in Keonjhar dist.

1. No of seedling to be planted 300 nos per Ha.

2. Spacing Pit size (1' x 1' x 1')

3. Wage rate Rs. 40/- per manday.

4. Species to be planted. Chakunda, Karanja, Mango, Sizoo, Aunla, Simarua and Maha Neem.

Sl No	Particulars of work	Manday		Material cost (In Rs.)	Total Amount (In Rs.)
		No	Rs.		
FIRST YEAR OPERATION					
1.	Survey and Demarcation	2	80/-	--	80/-
2.	Posting of pillars	-	--	500/-	500/-
3.	Vegetative fencing (depending upon site condition)	22	880/-	1320/-	2200/-
4.	Regeneration cleaning (singling out of shoots, removal of high Stumps etc.)	20	800/-	--	800/-
5.	Alignment & stacking	1	40/-	20/-	60/-
6.	Cost of seedlings including 10% casualties (330 Nos.X 2.00)	-	--	660/-	660/-
7.	Pitting (1' x 1' x 1') 300 Nos.	8	320/-	--	320/-
8.	Carriage of seedling & Planting	8	320/-	--	320/-
9.	Application of manure & insecticides	3	120/-	170/-	290/-
10.	First weeding & soil working	5	200/-	--	200/-
11.	Second weeding & soil working	5	200/-	--	200/-
12.	Soil & moisture conservation measure	30	1200/-	--	1200/-
13.	Fire line tracing and inspection path	2	80/-	--	80/-
14.	Watch and ward	18	720/-	--	720/-
		124	4960/-	2670/-	7630/-

Second Year Operation					
15	Replacement of casualty i) Cost of seedling 10 @=40 nos.x2.00	1	--	80/-	80/-
16	Carriage & planting	1	40/-	--	40/-
17	Soil working & weeding	5	200/-	--	200/-
18	Application of manure & insecticides	3	120/-	170/-	290/-
19	Maintenance of Fire line & inspection path	2	80/-	--	80/-
20	Maintenance of vegetative fencing(depending upon site condition)	12	480/-	--	480/-
	Watch & ward	18	720/-	--	720/-
		41	1640/-	250/-	1890/-
3rd Operation					
21	Soil working, weeding and pruning	5	200/-	--	200/-
22	Maintenance of fire line and inspection path	2	80/-	--	80/-
23	Maintenance of vegetative fencing	12	480/-	--	480/-
24	Watch and ward	18	720/-	--	720/-
		37	1480/-	--	1480/-
	Total		--	--	11,060/-
25	Contingent and unforeseen expenditure -	--		--	545/-
	GRAND TOTAL		--		11,605/-

ONE & HALF TIMES AFFORESTATION COST.

Total area 44.397 ha. X Rs. 11,545/- = Rs. 5,12,563/-
(Rupees Five lacs twelve thousand & five hundred sixty three)only.

Divisional Forest Officer,
Keonjhar Division.

C 23

13/01

(09)



OFFICE OF THE DIVISIONAL FOREST OFFICER, KEONJHAR DIVISION
Ph. No. 06766-254315, E-mail- dfokjr.od@gov.in

No. 322 /6F-Mining- /2020
Dated, Keonjhar the 11th January, 2021

To

The Executive Director (F&E),
M/s OMC Ltd, OMC House,
Bhubaneswar- 751001

Sub: Guideline under FC Act, 1980 in pursuance of the "The Mineral Laws (Amendment) Act, 2020" – regarding.

X-Sub: Demand of funds towards Net Present Value (NPV) in respect of Jilling- Longlota Block for Iron Ore over 369.529 ha of forest land.

Ref: F.No.11-97/2018-FC dated 31.03.2020 & F.No.11-97/2018-FC Part(I) dated 05.05.2020 of MoEF&CC, GoI & Notification No.299/SM dated 11.01.2021 of O.S.D-cum-Addl. Secretary to Government, Steel & Mines Department, Govt. of Odisha.

Sir,

As per the Para-C of the guideline issued by the MoEF&CC, GoI vide F. No.11-97/2018-FC dated 31.03.2020 & F.No.11-97/2018-FC Part(I) dated 05.05.2020 and notification No.299/SM dated 11.01.2021 of O.S.D-cum-Addl. Secretary to Government, Steel & Mines Department, Govt. of Odisha, you are requested to deposit the amount of ₹27.71.46.750/- (Rupees twenty-seven crore seventy-one lakh forty-six thousand four hundred fifty) only @ ₹ 7.50 lakhs per ha towards Net Present Value (NPV) over 369.529 ha of total forest land involved within the Jilling- Longlota Block for Iron Ore. This amount shall be deposited into the account of CAMPA, which will be adjusted against actual compensatory levies payable on the forest land at the time of approval under FC Act, 1980. The proof/evidence of the deposit of fund should be submitted to this office for further necessary action at this end.

Also it is requested to follow the instruction and provision in the manual for making online payment of NPV, wherein prior permission of Central Government under the FC Act, 1980 was granted for carrying our mining operation for a maximum period of two years from the date of commencement of new lease on the same term and conditions which was stipulated in the approval under FC Act, 1980 obtained by the previous lessee.

Further, it is intimated that the proposal No. & file No. of the earlier diversion by the previous lessee is furnished below for your reference,

Proposal No. FP/OR/MIN/1004/2011 & File No.8-48/1998-FC (pt).
Enclosure- I. Manual for online payment of NPV,

2. F.No.11-97/2018-FC-Part(I) dated 05.05.2020
of MoEF&CC, GoI letter.

Yours faithfully,

11/01/2021
Divisional Forest Officer,
Keonjhar Division.

Memo No. 323 / Dated. 11-01-2021
Copy submitted to the Principal Chief Conservator of Forests, Forest Division and Nodal Officer, FC Act, O/o the Principal Chief Conservator of Forests, Odisha, Bhubaneswar for favour of kind information and necessary action.

11/01/2021
Divisional Forest Officer,
Keonjhar Division.

Memo No. 324 / Dated. 11-01-2021

Copy submitted to the Regional Chief Conservator of Forests, Rourkela Circle, Rourkela for favour of kind information and necessary action.

S. W. on 11/01/2021
Divisional Forest Officer,
Keonjhar Division.

Memo No. 325 / Dated. 11-01-2021

Copy submitted to the Special Secretary to Government of Odisha, F&E Deptt. for favour of kind information and necessary action.

S. W. on 11/01/2021
Divisional Forest Officer,
Keonjhar Division.

Memo No. 326 / Dated. 11-01-2021

Copy submitted to the Director of Mines, Government of Odisha, Bhubaneswar for favour of kind information and necessary action with reference to memo No.301/SM dated 11.01.2021 of O.S.D-cum-Addl. Secretary to Government, Steel & Mines Department, Govt. of Odisha.

S. W. on 11/01/2021
Divisional Forest Officer,
Keonjhar Division.



OFFICE OF THE DIVISIONAL FOREST OFFICER, KEONJHAR DIVISION
Phone No- 06766-254315, email ID- dfokjr.od@gov.in

No. 342 /6F-Mining-15/2021
Dated, Keonjhar the 14th Jan 2021

To

The Collector & District Magistrate,
Keonjhar

Sub:

Reservation of Jilling – Langlotta Iron Ore Block over an area of 456.100 ha (as per RoR) /456.037 ha (As per DGPS) in Keonjhar District as per provision of section 17 A (2) of MMDR Act read with order no F. No 4/1/2020 – M.VI, dated 05.01.2021 of Central Govt. in Ministry of Mines in favour of OMC Ltd. for mining lease over a period of 10 years.

Ref:

Notification No. 299/SM dated 11.01.2021 and order No. 317/SM dated 11.01.201 of Govt. of Odisha Steel and Mines Department

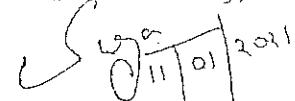
Sir,

With reference to the Letter No. cited above on the captioned subject, this is to intimate you that M/s OMC Ltd, has deposited Rs.27,71,46,750 .00(Rupees Twenty Seven Crore seventy one Lakh forty six thousand seven hundred fifty Only) towards the cost of Net Present Value (NPV) of the forest land over 369.529 ha involves in the above mentioned Mining block Vide UTR No .SBINR12021011106076046 dated. 11.01.2021 in Ad-hoc CAMPA Account. (Copy enclosed).

This is for favour of your kind information and necessary action.

Encl:-As above.

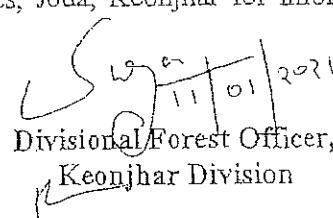
Yours faithfully,


14/01/2021

Divisional Forest Officer,
Keonjhar Division

Memo No. 343 Dated 14-01-2021.

Copy forwarded to Joint Director of Mines, Joda, Keonjhar for information and necessary action.


14/01/2021
Divisional Forest Officer,
Keonjhar Division

349 374

1/11/2021

State Bank of India

Welcome: ORISSA MINING CORPORATION LTD (17885) [Know More](#)

Srikanta Mohapatra

You are here: / Reports / Query By Account

e-PayOrder Details

e-PayOrder Details

e-PayOrder Number CRB7156456

Debit Status Success

11-Jan-2021

ORISSA CAMPA

Twenty Seven Crores Seventy One Lakhs Forty Six Thousand Seven Hundred 27,71,46,750.00

and Fifty only

00000010872145031

BHUBANESWAR MAIN BRANCH	Amiya Ballav Nayak "CRB7156456"	SAROJ KUMAR PLUSTX Approver	Harihar Panda Authorizer 1	Srikanta Mohapatra Authorizer 2
-------------------------	---------------------------------------	-----------------------------------	-------------------------------	---------------------------------------

Counterfoil Description NPV FOR JILLING-LONGLOTA

Transaction Type RTGS Funds transfer

GSTIN Number --

Debit Account Details

00000010872145031 BHUBANESWAR MAIN BRANCH 27,71,46,750.00

Credit Account Details

<https://corp.onlinesbi.com/corpuser/viewinboxtransactiondetail.htm>

1/2

S.M.

375 350

1/11/2021

State Bank of India

ORISSA NEW DELHI LODHI COMPLEX/NEW
CAMP/150525810040989 DELHI LODHI COMPLEX/CORP000371 27,71,46,750.00 Processed SBINR12021011106076046

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Site best viewed at 1024 x 768 resolution in I.E 10+, Mozilla 35+, Google Chrome 35+

<https://corp.onlinesbi.com/corpuset/viewinboxtransactiondetail.htm>

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UNDERTAKING

I, Dr. Suman Krishna Sit, General Manager (Geology), Authorized Signatory of Odisha Mining Corporation Limited do hereby undertake to deposit the additional amount of NPV, if so determined, as per the final decision of the Hon'ble Supreme Court of India and transfer the same to Ad-hoc CAMPA under intimation to the Ministry pertaining to Jilling Langalota Iron Ore Mines of OMC Ltd.

(Dr. Suman Krishna Sit)
General Manager (Geo)
Authorized signatory
Odisha Mining Corporation Ltd.

Odisha Mining Corporation Ltd.

(A Gold Category State PSU)

Registered Office : OMC House, Bhubaneswar - 751001, India
Tel : 0674-2377400/2377401, Fax : 0674-2396889, 2391629, www.omcltd.in
CIN : U13100OR1956SGC000313

Government of Odisha
 Steel and Mines Department

ORDER

No. 338 /SM
 IV(B)SM-11/2020

11-01-2021

Sub: Grant of Mining Lease for Iron ore in favour of Odisha Mining Corporation Limited. in respect of Jilling-Langlota Iron ore block over an area of 456.037 hac (as per DGPS)/ 456.100 hac (as per RoR) in village Jalahuri, Juruli, Bansapani, Khuntapani, Bholebeda and Jajang under Barbil Tahasil of Keonjhar district.

Whereas in pursuance to the order No.F.No.4/1/2020-M.VI dated 05.01.2021 issued by the Central Government, the Jilling-Langlota iron ore block in Keonjhar district has been reserved in favour of Odisha Mining Corporation Limited for a period of 10 years vide notification No.299/SM dated 11.01.2021.

And whereas, it (OMC Ltd) has been issued with a Letter of Intent vide letter No.307/SM dated 11.01.2021 for grant of mining lease for a period of 10 years followed with Order No.317/SM dated 11.01.2021 transferring all the valid rights, approvals, clearances, licensees and the like vested with the previous lessee in favour of the LoI holder for a period of 2 years.

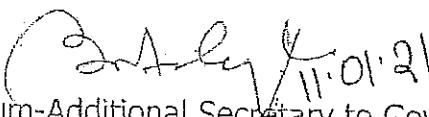
And whereas, OMC Ltd. has accepted the terms & conditions of the said LoI vide its letter No. 631/OMC/2020 dated 11.01.2021.

Now, therefore, Government, after careful consideration, in exercise of powers conferred under section 17A (2C) of MMDR Act read with order dated 05.01.2021 of the Central Government as cited supra, have been pleased to grant the mining lease for Iron ore in favour of Odisha Mining Corporation Limited in respect of Jilling-Langlota Iron Ore block over an area of 456.037 hac (as per DGPS)/ 456.100 hac (as per RoR) in village Jalahuri, Juruli, Bansapani, Khuntapani, Bholebeda and Jajang under Barbil Tahasil of

Se

Keonjhar district for the period of 10 (ten) years which shall be executed within 15 (fifteen) days from the date of issue of this grant order.

By order of the Governor


O.S.D-Cum-Additional Secretary to Government

Memo No. 339 /SM

Dated: 11.01.2021

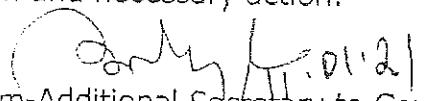
Copy forwarded to MD, Odisha Mining Corporation Limited, Bhubaneswar for information and further necessary action. He is requested to ensure payment of required NPV before execution & registration of the lease deed, which shall be completed within the aforesaid stipulated period. Copy of the draft lease deed format is also enclosed herewith for ready reference.


O.S.D-Cum-Additional Secretary to Government

Memo No. 340 /SM

Dated: 11.01.2021

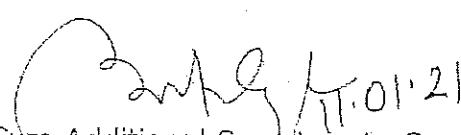
Copy forwarded to Indian Bureau of Mines, Bhubaneswar/ MoEF& CC, 534, Paryavaran Bhawan, CGO Complex, Lodhi Road, New Delhi 110003/ MoEF& CC (FC Division), Indira Paryavaran Bhawan, Aliganj, Jorbagh Road, New Delhi 110003/ SPCB, Parivesh Bhawan, A/118, Nilakantha Nagar, Unit-VIII, Bhubaneswar, Odisha, 751012/ Director General of Mines Safety, Chaibasa Region, Chaibasa, 833201 /Ministry of Water Resource, River Development and Ganga Rejuvenation, West Block-2, Wing 3, Sector-1, R.K. Puram, New Delhi-110066 for information and necessary action.


O.S.D-Cum-Additional Secretary to Government

Memo No. 341 / SM

Date: 11.01.2021

Copy forwarded to Director of Mines, Odisha, Bhubaneswar/ Deputy Director of Mines, Jajpur/ DFO, Cuttack for information and necessary action. Copy of the draft lease deed format is also enclosed herewith for ready reference.


O.S.D-Cum-Additional Secretary to Government

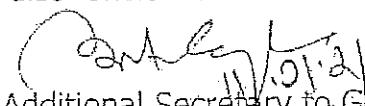
Memo No. 342 / SM

Date: 11.01.2021

Copy forwarded to the Collector, Jajpur District for information and necessary action. He is authorized to execute the mining lease deed after


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ensuring the payment of NPV by the Lessee M/s OMC Ltd. and transmit a copy of the duly registered deed to all concerned including this Department. Copy of the draft lease deed format is also enclosed herewith for ready reference.

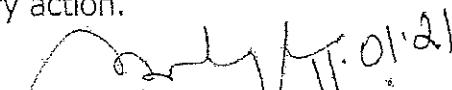


O.S.D-Cum-Additional Secretary to Government

Memo No. 343 / SM

Date: 11.01.2021

Copy forwarded to Forest and Environment Department/ PCCF(Nodal), Bhubaneswar for information and necessary action.



O.S.D-Cum-Additional Secretary to Government



Government of Odisha
 Steel and Mines Department

ORDER

No. 317 /SM
 IV(AB)SM-01/2021

Dated the 11th January, 2021

Whereas a mining lease of the following description, which was held by M/s Essel Mining & Industries Ltd. (hereinafter referred to as the previous lessee) with validity period upto 31.03.2020 has been reserved in favour of Odisha Mining Corporation Limited (OMC Ltd).

Description of the Mining Block

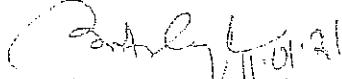
- Name of Mineral(s)-Iron
- Name of Mining lease-Jilling-Langlotia Iron Block.
- Address/location of mining lease-Village Jalahuri, Juruli, Banspani, Khuntapani, Bholebeda & Jajang under Barbilltahasil of Keojhar district.
- Area of lease-456.037 hectcs (As per DGPS)/456.100hectcs(As per ROR).

And whereas, a letter of intent bearing No.307/SM, dated 11.01.2021 has been issued in favour of OMC Ltd. for grant of mining lease for the abovementioned mining block for a period of 10 years;

And whereas, in terms of order No.F.No.4/142020-M.VI dated 05.01.2021 of Government of India in Ministry of Mines, all the valid rights, approvals, clearances, licenses and the like vested with the previous lessee shall be transferred in favour of OMC Ltd. for a period of two years.

Now therefore, Government pursuant to the order dated 05.01.2021 cited supra, do hereby order the transfer of all the valid rights, approvals, clearances, licenses and the like vested in the previous lessee in respect of the aforementioned mining block in favour of the holder of the letter of intent. The details of the valid rights, approvals, clearances, licenses, and the like held by the previous lessee and now transferred in favour of the holder of the Letter of Intent are given in the Annexure-I to this order.

This order is valid for a period of two years from the date of execution of lease deed or till the date of getting fresh approvals, clearances, licenses, permits, and the like, whichever is earlier

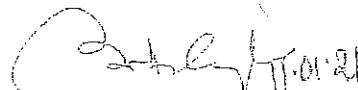

(B. N. Acharya)

OSD-cum-Additional Secretary to Government

Memo No. 318 / SM

Dated: 11/01/2021

Copy to alongwith Annexure-I forwarded to MD, OMC Ltd. for information and necessary action. It is requested that one copy each of the documents mentioned in the Annexure-I may be collected from the office of the Director Mines, Odisha, Bhubaneswar during office working hours.

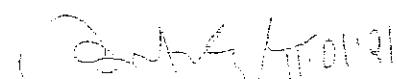

(B. N. Acharya)

OSD-cum-Additional Secretary to Government

Memo No. 319 / SM

Dated: 11/01/2021

Copy to alongwith Annexure-I forwarded to M/s Essel Mining & Industries Ltd., Jilling, PO-Jajang, Keonjhar- 758034, Odisha for information and necessary action.


(B. N. Acharya)

OSD-cum-Additional Secretary to Government

Memo No. 320 / SM

Dated: 11/01/2021

Copy alongwith Annexure-I forwarded to Indian Bureau of Mines, Bhubaneswar/ MoEF& CC, 534, Paryavaran Bhawan, CGO Complex, Lodhi Road, New Delhi 110003/ MoEF& CC (FC Division), Indira Paryavaran Bhawan, Aliganj, Jorbagh Road, New Delhi 110003/ SPCB, Parivesh Bhawan, A/118, Nilakantha Nagar, Unit-VIII, Bhubaneswar, Odisha, 751012/ Director General of Mines Safety, Chaibasa Regiona, Chaibasa, 833201 /Ministry of Water Resource, River Development and Ganga Rejuvenation, West Block-2, Wing 3, Sector-1, R.K. Puram, New Delhi-110066 for information and necessary action.


(B. N. Acharya)

OSD-cum-Additional Secretary to Government

Memo No. 321 / SM

Dated: 11/01/2021

Copy alongwith Annexure-I forwarded to Director of Mines, Odisha, Bhubaneswar for information and necessary action. He is requested to provide one copy each of the documents described in the Annexure-I to the


S. N.

authorized representative of the LoI holder with proper acknowledgement and forward a copy of acknowledgement to the Department for record.

Danteshwar 11.01.21
OSD-cum-Additional Secretary to Government

Memo No. 322 / SM

Date: 11.01.2021

Copy alongwith Annexure-I forwarded to Collector, Keonjhar/ Deputy Director of Mines, Joda/ DFO, Keonjhar for information and necessary action.

Danteshwar 11.01.21
OSD-cum-Additional Secretary to Government

Memo No. 323 / SM

Date: 11.01.2021

Copy alongwith Annexure-I forwarded to Forest and Environment Department/ PCCF(Nodal), Bhubaneswar for information and necessary action.

Danteshwar 11.01.21
OSD-cum-Additional Secretary to Government

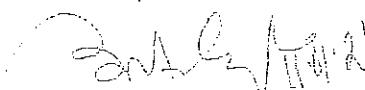
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ANNEXURE-I

Name of the Block : Jilling-Langlotta Iron ore Block
 LoI Holder : Odisha Mining Corporation Limited
 Area of the Lease : 456.100 Hects (As per ROR)
 : 456.037 hecta (As per DGPS)

SL N o	Nature of approval clearance etc	Issuing officer/authority	Reference No./ Date of Issue
1	Mining Plan	Regional Controller of Mines, Bhubaneswar, Govt. of India	MPM/FM/07-ORI/BHU/2018-19, Dated 18.05.2018
2	EC	MoEF& CC, Govt. of India	J-11015/959/2007-IA.II(M), Dtd 07.06.2012
3	FC	MoEF& CC, Govt. of India,	F. No. 8-49/98-FC(pt), Dtd. 08.10.2014 over 342.602 hecta.
4	Consent to Establish	State Pollution Control Board, Odisha	No.9579/ IND-II-NOC-5189(Pt) Dtd.09.08.2018
5	Consent to Operate	State Pollution Control Board, Odisha	No.11579/IND-I-CON-248, Consent order NO-87 , Dated 30.10.2019
6	Surface Right	District Collector, Keonjhar	Surface Right granted over 439.219 hecta
7	Deep Hole Blasting & use of HEMM	Directorate General of Mines Safety, Chaibasa Region, Chaibasa, Govt. of India	No. CR/4242/ Chaibasa Dtd. 06.09.2002
8	Ground Water Withdrawal	Member Secretary (CGWA), Central Ground Water Authority, Govt. of India	No.21-4(33)/SER/CGWA/2007-2050, Dtd. 22.10.2018

1. Transfer of Forest Clearance is subject to payment of NPV as prescribed in letter dtd. 31.03.2020 of Government of India, Ministry of Environment, Forest & Climate Change.

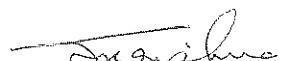

 OSD-cum-Additional Secretary to Government



Cost Benefit Analysis in respect of the Proposal for diversion of 22.697 ha of forest land for mining of iron Ore from Jilling Langalota Iron Ore Mining Lease of M/s OMC Ltd. in Barbil Tahasil under the Jurisdiction of Keonjhar Forest Division of Keonjhar District, Odisha.

Table-C: Existing guidelines for estimating benefits of forest diversion in CBA

Sl. No.	Parameters	Remarks
1	Increase in productivity attribute to the specific project.	Average annual production of 100,00,000 MT of iron Ore with size distribution and the price at the mines head is as indicated below: Calibrated lump Iron Ore: 5-18 mm/18-40 mm: 45,00,000/- @ Rs. 7308/- Iron Ore fines (-5 mm size): 55,00,000/- @ Rs.3379/- Hence, the annual sale value of Iron Ore at the mines head would be Rs. 5147.05 Crore at the prevailing market rate. The net gain per annum comes to Rs. 3296.043642 Crores [(Rs. 5147.05 Crore)-(Rs. 169.1605 Crore i.e. average cost of production per ton of Iron ore + Rs. 1681.845858 Crore per annum towards deposit of royalty, DMF, NMET and GST)] Hence, the net gain of mines for a period of 10 years comes to=Rs. 3296.043642 x 10 years= Rs. 32960.43642 Crores
2	Benefits to economy due to the specific project.	One metric ton (MT) of iron ore contributes 0.558 MT of steel. Therefore a quantity of 100,00,000 MT of Iron Ore will produce around 55,80,000 MT of steel by SAIL which has a sale value of Rs. 29518.20 Crore (Price of one MT of Steel is Rs. 52,900.00 as on July, 2022)
3	Number of population benefited due to the specific project.	686
4	Economic benefits of direct and indirect employment due to the project.	Rs. 102.90 Crore (686 persons x Rs. 500/- as average wage x 300 working days x10)
5	Economic benefits due to compensatory afforestation	Rs.1.004 Crore (Rs. 8848/- x 22.697 ha x 50 years)
Total		Rs. 33064.34042 Crore



[Dr. Suman Krishna Sit]
 General Manager (Geology)
 Authorised Signatory
 Odisha Mining Corporation Limited

Odisha Mining Corporation Ltd.

(A Gold Category State PSU)

Registered Office : OMC House, Bhubaneswar - 751001, India

Tel : 0674-2377400/2377401, Fax : 0674-2396889, 2391629, www.omcltd.in

CIN : U13100OR1956SGC000313

Annexure-XA

Parameters for evaluation of loss of forest over 22.697 ha forest area required for mining and ancillary activity within the Jilling Langalota Iron Ore Mines of M/s OMC Ltd. in Keonjhar District, Odisha

Table-B: Estimation of cost of forest diversion

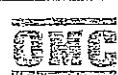
Sl. No.	Parameters	Remarks
1	Eco-system services losses due to proposed forest diversion.	Rs. 29,42,16,750/- [Rs. 7,50,000/- x 392.289 ha]
2	Loss of animal husbandry productivity, including loss of fodder.	Rs. 2,94,21,675/- [Rs.29,42,16,750/-x 10%]
3	Cost of human re-settlement.	Nil
4	Loss of public facilities and administrative infrastructure (roads, building, schools, dispensaries, electric lines, railways etc.) on forest land, which would require forest land if these facilities were diverted due to the project.	Nil
5	Possession value of forest land diverted	Rs.8,82,65,025/- [Rs.29,42,16,750/-x 30%]
6	Cost of suffering to oustees	Nil
7	Habitat fragmentation cost	Rs. 14,71,08,375/- [Rs.29,42,16,750/-x 50%]
8	Compensatory afforestation and soil & moisture conservation cost.	Rs. 2,35,39,600/-
Total estimation of cost of forest diversion		Rs. 58,25,51,425/-

Table-C: Existing guidelines for estimating benefits of forest diversion in CBA

Sl. No.	Parameters	Remarks
1	Increase in productivity attribute to the specific project.	Rs. 32960.43642 Crore
2	Benefits to economy due to the specific project.	-
3	Number of population benefited due to the specific project.	500 Nos.
4	Economic benefits of direct and indirect employment due to the project.	Rs. 102.90 Crore
5	Economic benefits due to Compensatory Afforestation	Rs. 1.004 Crore
Total estimation of cost of forest diversion		Rs. 33064.34042 Crore

CB Ratio (Calculation is based on available information against the Parameters)= **1: 567.578**

**Divisional Forest Officer,
Keonjhar Division**


8.0 PROGRESSIVE MINE CLOSURE PLAN UNDER RULE 23 OF MCDR' 2017
8.1 Environment Base line information:

The leasehold area is located in the villages of Baushapani, Bholabeda, Jajanga, Jalahari, Jalari, Khuntapani & Baitarani Reserved forest. The lease area is 456.037 Ha (as per DGPS)/ 456.100 Ha (as per RoR).

As present proposal is for "Mining Plan", so a fresh study for base line data will be undertaken by M/s OMC Ltd in due course of time to ascertain the Environmental base line information in the core, 500mtr from the lease boundary and buffer zone of the mining lease area on water regime, quality of air, ambient noise level, flora, climatic conditions and Surface water regime.

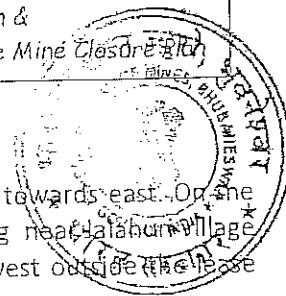
Existing land use pattern indicating the area already degraded due to mining, roads, processing plant, workshop, township etc.

The existing land use pattern at start of Mine Plan period is shown in the table below:

Sl No	Description	Area put to use at the start of plan period, Ha
1	Area under Mining	107.798
2	Storage of topsoil	0.00
3	Waste Dump Site	26.447
4	Mineral storage	16.843
5	Infrastructure	4.039
6	Roads	4.482
7	Railways	15.755
8	Tailing pond	0.00
9	Effluent Treatment Plant	0.00
10	Mineral Separation Plant	17.608
11	Township area	3.599
12	Others (Water Harvesting)	0.693
	Others (Green Belt/ Safety Zone)	10.314
	Others (Magazine)	0.713
	Others (SE Railway acquired Area)	34.967
	Others (Nalla with safety zone)	11.899
	Others (NH with safety zone)	10.982
	Others (HT line)	3.102
Total area of utilization		269.241
13	Other Unutilized Area	186.859
Grand Total		456.100

Saroj Kumar Prusty
 Qualified Person

Rabindra Mohanty
 Qualified Person



Water regime

The river Baitarani flowing in S-N direction is located at a distance of 1 Km towards east. On the western side of the lease area a perennial Dalco nala is flowing from a spring near Salahuri village outside the lease. The spring is situated at a distance of 1.7 km at southwest outside the lease area. A small tributary to Dalco nala is also flowing from south to north.

Few water seepages are located towards south - west of the lease hold and discharging to Dalco Nala. These tributaries and streamlets are the sources to meet the basic need of water to the nearby villages and mining colonies. The water table in the area is present at a shallow depth below valley floor, i.e. around 15 meter evidenced from the wells.

Since the rock strata of the area do not contain high concentration of metals (except for iron) or sulphide, which has the potential to generate acid mine drainage, therefore, its impact on water quality is insignificant. The only factor that contributes to the pollution of the Baitarani river is the sediment load that the surface runoff carries from the broken up areas to the perennial nala during the rainy season.

Ground water regime

The geological set up, rainfall distribution and the degree of secondary porosity in the geological formations for storage and movement of groundwater controls the hydro- geological regime of the area. The area has undergone several phases of intense tectonic deformations, which has been responsible for the development of deep-seated intersecting fracture plain. These structural elements chiefly control the occurrence and movement of groundwater. The major set i.e. lineament NW-SE trending is the conduit for groundwater movement. The wells located in the vicinity of this lineament records copious yield. In the study area aquifers are recharged by water from direct precipitation and seepage from surface water bodies.

Quality of air

Air quality of the mine will be established after a fresh study for base line data is undertaken by M/s OMC Ltd in due course of time to ascertain the Environmental base line information in the core and buffer zone of the mining lease area.

Ambient noise level

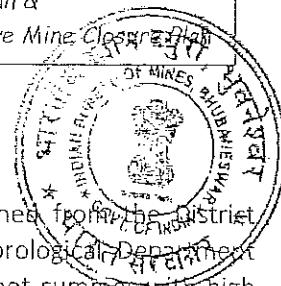
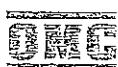
Ambient noise level of the mine will be established after a fresh study for base line data is undertaken by M/s OMC Ltd in due course of time to ascertain the Environmental base line information in the core and buffer zone of the mining lease area.

Fugitive dust

Fugitive dust in the mine will be established after a fresh study for base line data is undertaken by M/s OMC Ltd in due course of time to ascertain the Environmental base line information in the core and buffer zone of the mining lease area.

Saroj Kumar Prusty
Qualified Person

Rabindra Mohanty
Qualified Person



Climatic conditions

Secondary information on the prevailing climate of the area was obtained from the District Statistical Handbook and based on observations made by Indian Meteorological Department (IMD). The climate of the study area is characterized by an oppressively hot summer with high humidity. Summer generally commences in the month of March. Temperature begins to rise rapidly attaining the maximum in the month of May. During summer, the maximum temperature goes up to 45°C. The weather becomes more pleasant with the on-set of the monsoon in June and remains as such up to the end of October. The temperature in the month of December is lowest. Sometimes it even drops down to 4.6°C. The average annual rainfall is 1497.6mm.

Human settlements

Human settlement & residential areas of local villagers as well as Company's residential colony exists within the lease area.

Public buildings, places of worship and monuments

Public buildings exist within the lease hold area. The lease area (Core Zone) and the area within 5km radius of the M.L area (Buffer Zone) do not have the places of archeological, historical, cultural, monumental and aesthetic and important residential as well as official buildings.

Indicate any sanctuary is located in the vicinity of leasehold

There is no national park/wild life sanctuary/biosphere reserve/ tiger reserve/ elephant reserve in the core (M.L area) and buffer zone (5 km radius of the M.L area).

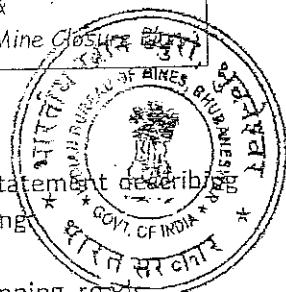
Proposed Environmental Monitoring Parameters and Stations:

The monitoring of various environment parameters as per relevant statute shall be conducted. The details of proposed monitoring stations are shown in Environment Plan (Plate No ***).

	Within Core one	Within Buffer Zone	Remark
Ambient Air Quality	7nos	4nos	Refer Environment Plan
Fugitive Air Quality	9nos	Nil	
Noise Quality	11nos	4nos	
Surface Water Quality	6 nos	Nil	
Ground Water Quality	2nos	5nos	

Saroj Kumar Prusty
Qualified Person

Rabinera Mohanty
Qualified Person



8.2 Impact Assessment: Attach an Environmental Impact Assessment Statement describing the impact of mining and beneficiation on environment on the following:

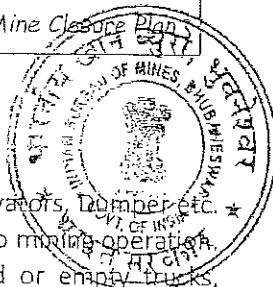
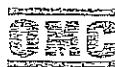
i) Land area indicating the area likely to be degraded due to quarrying, dumping, roads, workshop, processing plant, tailing pond/dam, township etc.

The land use in stages is given below: -

Sl No	Description	Area put to use at the start of plan period, Ha	Total area at the end of first 5 years of Plan Period, Ha	Land use by End of Conceptual Period, Ha
1	Area under Mining	107.798	124.522	124.522 ✓
2	Storage of topsoil	0.00	0.00	0.00
3	Waste Dump Site	26.447	76.551	76.551 ✓
4	Mineral storage	16.843	25.817	42.414 ✓
5	Infrastructure	4.039	23.799	23.799 ✓
6	Roads	4.482	10.366	10.366 ✓
7	Railways	15.755	15.840	15.84 ✓
8	Tailing pond	0.00	0.00	0.00
9	Effluent Treatment Plant	0	0.00	0.00
10	Mineral Separation Plant	17.608	22.185	6.301 ✓
11	Township area	3.599	3.599	3.599 ✓
12	Others (Magazine)	0.713	0.713	0
	Others (Water Harvesting)	0.693	0.693	0.693 ✓
	Others (Green Belt/ Safety Zone)	10.314	10.314	10.314 ✓
	Others (nala with safety zone)	11.899	11.899	11.899 ✓
	Others (NH with safety zone)	10.982	10.982	10.982 ✓
	Others (HT line)	3.102	3.102	3.102 ✓
	SE Railway	34.967	34.967	34.967 ✓
Total area of utilization		269.241	375.349	375.349
13	Other Unutilized Area	186.859	80.751	80.751
Grand Total		456.100	456.100	456.100

Saroj Kumar Prusty
Qualified Person

Rabin德拉 Mohanty
Qualified Person



i) Air quality

Method of mining will be mechanized with the deployment of DTH drills, Excavators, Dumper etc. Therefore, there will be emission of noxious gases like NOX, SOx, CO etc. due to mining operation. As such, there will also be generation of dust during movement of loaded or empty trucks, excavation and dumping affecting the condition of ambient air quality (AAQ). Periodic monitoring will be conducted to check the status of air quality.

Following measures are proposed for management of air quality: -

- Water sprinkling on haul roads at regular intervals.
- Installing of permanent water sprinklers at strategic places.
- Dense plantation along the safety zone/avenue plantation.
- No overloading of tippers/ Dumpers.
- Ore shall be covered with tarpaulin during transportation from stackyard to outwards.
- Provision of dust extractors with the drill machines/ wet drilling practices.
- Water spraying in the dump hopper of crusher.
- Provisions of dust masks to the persons exposed to dust.

ii) Water quality

Open cast mining of the iron ore will not generate any waste water. However, small quantities of waste water from domestic use and workshop will be released from the mines site and the following management plan will be practiced.

Wastewater from workshop will be treated for oil removal and treated water to be used for green belt development. The generated sewage from worker colony will be treated through STP and treated water will be used in afforestation area.

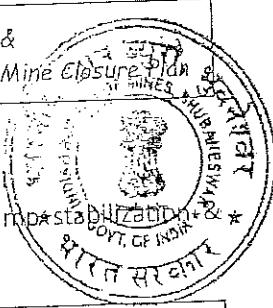
Impact on Ground Water Quality

The downward movement of the toxic substances from the stacks, dump and exposed quarry faces during seepage and percolation of ground water normally affects the ground water quality adversely in mining area. The water table in the area is comparatively at a greater depth (6m to 9m below the general surface level) which will not be touched during the plan period as well as beyond the plan period. Therefore chances of ground water pollution are not anticipated.

The domestic sewage from the canteen and toilets will be routed to septic tanks followed by soak pits. The workshop effluent will be routed through oil and grease trap and treated to the discharge standards and reused in the workshop.

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Proposed Environmental Protection Measures

Following environmental protection measures have been proposed for dump stabilization, water quality management.

Year	Location	Garland drain		Retaining wall	
		Name	Length, m	Name	L x W x H, m
1st Year (11.01.2021 to 31.03.2021)	NA	-	-	-	-
2 nd Year (2021-22)	NA	-	-	-	-
3 rd Year (2022-23)	Appahatu Dump A Jilling backfill & Dump	D1 D1	750 500	R1 R1	750x1.5x1.5 500x1.5x1.5
4 th Year (2023-24)	NA	-	-	-	-
5 th Year (2024-25)	Appahatu DumpB	D1	1300	R1	1300x1.5x1.5

iii) Noise levels

Due to operation of the HEMM & plant, ambient noise level is likely to increase but the same will be managed through proper maintenance of the plant & machineries & use of personal protective equipment. Provision of sound insulated chambers for the workers deployed on machines(HEMM).Periodic monitoring will be conducted to check the status of noise level.

iv) Vibration levels (due to blasting)

The blast induced ground vibrations will be controlled through limiting the charge per delay and use of in-hole delay by NONEL means of initiation. The blasting frequency will be limited to 3-4 times per week.

v) Acid mine drainage

Not applicable

vi) Surface subsidence

Not applicable

vii) Socio-economics

The mining employment will greatly increased the income levels of the local population and indirectly will generate employment in tertiary services like transport and repair shops. The impact of mining operations in the area on socio-economic will be a positive one. The infrastructure of the area roads, public transport and electricity supply will also improve after continuation of the mining operation in the area.

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viii) Historical monuments etc.

There are no historical monuments or places of archeological interest within 5 km radius of the lease.

8.3 Progressive Reclamation Plan:

To mitigate the impacts and ameliorate the condition, describe year wise steps proposed for phased restoration, reclamation of lands already/to be degraded in respect of following items separately for 5 years period.

8.3.1. Mined-Out Land: Describe the proposals to be implemented for reclamation and rehabilitation of mined-out land including the manner in which the actual site of the pit will be restored for future use. The proposals may be supported with yearly plans and sections depicting yearly progress in the activities for land restoration/reclamation/rehabilitation, afforestation etc, called "Reclamation Plan".

Jilling Gangoigora quarry will be exhausted after 1st year of the proposed plan period. The same shall be backfilled thereafter. The Reclamation Plan is enclosed as Plate No 11.

Year	Backfilling in Million CuM
1 st Year (11.01.2021 to 31.03.2021)	NIL
2 nd Year (2021-22)	1.56
3 rd Year (2022-23)	Nil
4 th Year (2023-24)	2.323
5th Year (2024-25)	2.199

8.3.2 Topsoil Management:

Major part of the mine area is devoid of topsoil. The thickness of the top soil in the mining area is very insignificant as it occurs very thinly over the rocks and soil cover. If any quantum of topsoil is recovered during mining operation, then it will be accumulated & will be utilized for afforestation purpose.

8.3.3 Tailings Dam Management: The steps to be taken for protection and stability of tailing dam, stabilization of tailing material and its utilization, periodic desilting measures to prevent water pollution from tailings etc, arrangement for surplus water overflow along with detail design, structural stability studies, the embankment seepage loss into the receiving environment and ground water contaminant if any may be described.

Not applicable

8.3.4 Acid mine drainage, if any and its mitigative measures.

Not applicable


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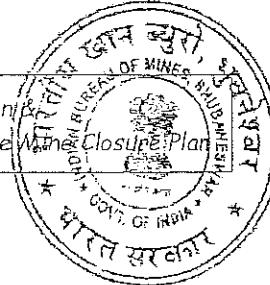
8.3.5 Surface subsidence mitigation measures through backfilling of mine voids or by any other means and its monitoring mechanism. The information on protective measures for reclamation and rehabilitation works year wise may be provided as per the following table.

Summary of year-wise proposal for item no. 8.3 for first 5 years of the Plan Period

Items	Details	Proposal				
		1 st Year (11.01.2021 to 31.03.2021)	2 nd Year 2021-22	3 rd Year 2022-23	4 th Year 2023-24	5 th Year 2024-25
Dump Management	Area afforested (Ha)	Nil	Nil	Nil	1	2.55
	No of saplings planted	Nil	Nil	Nil	2000	6000
	Cumulative no of plants	Nil	Nil	Nil	2000	8000
	Cost including watch and care during the year.	Nil	Nil	Nil	Nil	Nil
Management of worked out benches	Area available for rehabilitation (Ha)	Nil	Nil	Nil	Nil	Nil
	Afforestation done (Ha)	Nil	Nil	Nil	Nil	Nil
	No of saplings planted in the year	Nil	Nil	Nil	Nil	Nil
	Cumulative no of plants	Nil	Nil	Nil	Nil	Nil
	Any other method of rehabilitation (specify)	Nil	Nil	Nil	Nil	Nil
	Cost including watch and care during the year	Nil	Nil	Nil	Nil	Nil
Reclamation and Rehabilitation by backfilling	Void available for backfilling (L x B x D) pit wise/ stop wise	Nil	170x 60	NA	300 x 280	300x280
	Void filled by waste /tailings, million CuM	Nil	1.56	Nil	2.323	2.199
	Afforestation on the backfilled area	Nil	Nil	Nil	Nil	Nil
	Rehabilitation by making water reservoir	Nil	Nil	Nil	Nil	Nil
	Any other means (Specify)	Nil	Nil	Nil	Nil	Nil
Rehabilitation of waste land within lease	Area available (Ha)	Nil	Nil	Nil	Nil	Nil
	Area rehabilitated (Ha)	Nil	Nil	Nil	Nil	Nil
	Method od rehabilitation	Nil	Nil	Nil	Nil	Nil
Others specify	Retaining Wall	Nil	Nil	1250	Nil	1300
	Garland Drain	Nil	Nil	1250	Nil	1300

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8.4 Disaster Management and Risk Assessment:

As far as the nature of deposit & method of mining is concerned, there is no possibility of landslides, subsidence, flood, fire and tailing dam failure. Map of seismic zone in India indicates that Odisha falls under seismic zone-I, II & III. In Odisha, minor earth quakes have been felt many often but none is severe. Lessee will need the help of nearest state fire department located at Koirā for rescue, if any high risk accident occurs in the area.

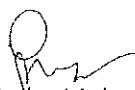
8.5 Care and maintenance during temporary discontinuance:

An emergency plan for the situation of temporary discontinuance due to court order or due to statutory requirements or any other unforeseen circumstances may indicate measures of care, maintenance and monitoring of status of discontinued mining operations. Lease area is planned to operate for iron ore continuously over a period of next 10 years.

However, there may be temporary discontinuance during the course of mining due to unforeseen causes such as -Court order; Statutory Requirements; Accidents in the Mine, Natural Calamities, Local issues and any other unforeseen circumstances. Therefore, an emergency plan is necessary to re-open the mine which will include:

1. Intimation to local mine and legal administrative authorities concerned (IBM, DGMS, Directorate of Mines, Circle Mining Office etc.) regarding temporary discontinuance.
2. Explanation to the local community regarding the cause of temporary discontinuance and possibility of reopening of mine in future.
3. Listing and proper storing of the Machines, Materials, Assets and Documents.
4. Care and maintenance of machinery as per the machine operating manuals.
5. Employment and tightening of the security for proper watch and ward to keep the machine and materials in safe and secure.
6. Repair and maintenance of haul road.
7. Regular monitoring of Air, Water, Noise etc. in the permitted area.
8. Monitoring of status of mining operation in respect of bench height, width, individual bench slope angle, overhang, undercut, or any other parameters whose levels either in form of higher side or lower side is dangerous for further mine working.
9. Preparation of plan and sections of discontinued mining operation.
10. Projection of benches in plan and sections which is safe for further working.
11. Formation of safe benches as per plan and sections.
12. Intimation to the concerned authorities for reopening once the mine is risk free.


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