



STATE FOREST HEADQUARTERS, ODISHA  
OFFICE OF THE PRINCIPAL CHIEF CONSERVATOR OF FORESTS & HoFF  
PLOT NO. GD-2/12, ARANYA BHAWAN, CHANDRASEKHARPUR  
BHUBANESWAR-751023

E-mail:- [nodal.pccfodisha@gmail.com](mailto:nodal.pccfodisha@gmail.com)

No. \_\_\_\_\_  
Dated, Bhubaneswar the \_\_\_\_\_

/9F (MG)-49/2023  
September'2024

The Assistant Inspector General of Forests (FC Division)  
Government of India, Ministry of Environment, Forest & Climate Change  
New Delhi.

**Sub:** Proposal for seeking prior approval of the Central Government under Section 2 of the Van (Sanrakshan Evam Samvardhan) Adhniyam, 1980 for non-forestry use of 134.69 ha of forest land for Expansion of Kulda Open cast Coal Mining Project of Basundhara Area of Mahanadi Coalfields Limited in Sundargarh district of Sundargarh Forest Division.

- Ref: (i) Letter No.8-7/2024-FC dated 11.06.2024 of Scientist 'D' Govt. of India, MoEF & CC(FC Division), New Delhi.  
(ii) Memo No.10466/FE&CC dated.18.06.2024 of OSD-cum-Secretary to Govt., FE&CC Department, Odisha.

Sir,

In inviting a reference to the aforesaid office letters on the captioned subject, this is to inform that the DFO, Sundargarh Forest Division has submitted the necessary compliance on your observations pointed out under reference which has been recommended by the RCCF, Rourkela Circle are as follows:-

**Observation No. (i):-** 7306 trees has been reported as project affected trees in the online proposal while the inspection report of the DFO mention the same as 30441. The same needs to be rectified by the user agency by providing the correct number of trees involved in the project..

**Compliance:-** In compliance to the above, the RCCF, Rourkela Circle has reported that 30,441 no. of trees have been enumerated both in forest and non-forest land over 295.62 ha. The detailed enumeration of trees are as follows:

Sl. No.	Type of Land		No. of trees enumerated
01.	Forest Land	1) Lalma Reserve Forest	20912
		2)(a) Revenue Forest (Tumulia village)	1050
		(b) Revenue Forest (Kulda village)	807
		(c) Bankibahal Forest (Kulda village)	866
			2723
02.	Non Forest Land	3) Govt. Non Forest land Kulda village	363

	4)(a) Tenancy Non-Forest Land, Kulda village	2013
	(b) Tenancy Non-Forest Land, Tumulia village	2632
	(c) Tenancy Non-Forest Land, Bankibahal village	1798
		<b>6443</b>
<b>G. Total:-</b>		<b>30441</b>

Further, as reported by the DFO, Sundargarh Forest Division, 7306 nos. of trees have been reported as project affected trees in the online proposal which seems to have been arrived out of the table mentioned in the Point No. 4 (ii) Species-wise local/scientific names and girth-wise enumeration of trees of Part-II submitted by him. The DFO, Sundargarh Forest Division has also uploaded 30441 nos. of trees in Part-II of Parivesh Portal. The uploading screen shot of Part-II submitted by the DFO, Sundargarh Forest Division is enclosed as **Annexure-I**.

**Observation No. (ii):-** *Compensatory afforestation, as per the provisions of the Van (Sanrakshan Evam Samvardhan) Rules 2023, should be raised over non-forest / revenue forest land or the lands accredited under ACA can also be swapped in lieu of CA. The state government may, therefore, inform the details of mined out and reclaimed non-forest lands available with M/s. MCL and possibility of using them as CA.*

**Compliance:-** In compliance to the above, as per schedule-II, Sl. No.- 3(ii) of Van (Sanrankshan Evam Samvardhan) Amended Rules 2024, recent notification issued by the Ministry of Environment Forest and Climate Change, Government of India, New Delhi on dated. 20.09.2024, degraded forest land over 305.59 ha (Effective area – 286.96 ha) has been identified in Pandripani RF, Sidarmunda RF, Punjipahar RF and Panikholia RF under Gopalpur Range of Sundargarh Forest Division i.e. twice the extent of project area of forest land over 134.69 ha under PARIVESH-1.

The detailed status of degraded forest land for CA is furnished below which has been enclosed at **page No.144/DP(Vol-1)**.

Sl. No.	Name of the Reserved Forest	Legal Status	Area in ha.	Effective area in ha.
1.	Pandripani RF	Reserve Forest/p	64.10.	56.30
2.	Sidarmunda RF	Reserve Forest/p	53.56	53.56
3.	Punjipahar RF	Reserve Forest/p	131.54	121.00
4.	Panikholia RF	Reserve Forest/p	56.39	56.10
	<b>Total</b>		<b>305.59</b>	<b>286.96</b>

Accordingly, the DFO, Sundargarh Forest Division had prepared site specific CA scheme as per approved onetime cost norm basis an average of 500 seedlings per ha. with 18 months old seedlings to be planted thereof with a provision of required soil moisture conservation activities, watering and fencing etc. with maintenance of up to 10 years. The DSS analysis report furnished by DFO, Sundargarh Forest Division and countersigned by RCCF, Rourkela Circle had been enclosed at page No.147-155/DP (Vol-1). The CA scheme had been approved by the PCCF, F(FD NO Act.) with financial outlay of Rs.9,02,61,000/- (Rupees Nine crores two lakhs and sixty one thousand) only which is enclosed as **Annexure-II**. All other relevant records related to CA scheme had already been enclosed in the DP.

**Observation No. (iii):-** As per analysis of the land use details given in the proposals following discrepancies have been observed and same be clarified.

**Observation No. (iii)(a):-** State Government's forwarding letter mentions total forest area involved in the Kulda OCP as 354.06 ha while from the perusal of approval granted in the past, the total forest area comes out to be 362.58 ha (227.89 + 134.69). The State Government therefore, while rectifying this discrepancy should clarify the exact involvement of forest area in the extant proposals as well as in the approvals granted in the past.

**Compliance:-** In compliance to the above, the RCCF, Rourkela Circle has reported that the total forest land involved in Kulda OCP is **354.06 Ha.** including 134.69 ha of area involving in the present proposal. However, an area of 8.52 ha has been re-diverted from infrastructure area of Kulda OCP for Basundhara Coal Washery, vide Letter No. 8-176/1997-FC (Vol.), dated 11.03.2019 of GoI MoEF & CC, (FC Division) New Delhi from an area of 227.89 ha which has been diverted earlier for kulda OCP vide letter No. F.No.-8-176/1997-FC dated 08.08.2007 (Copy of both approvals enclosed in **Annexure-III**). Therefore, the total forest area for Kulda OCP as per the current mining plan will be  $(227.89-8.52) + 134.69 = 354.06$  Ha.

**Observation No. (iii)(b):-** As per detail provided in the Mining Plan (Page-1 of Chapter-2), the total lease area has been revised to 921.305 ha from the 634.20 ha used in Phase-I i.e. additional increase of 287.10 ha is involved in the phase-II. R&R Plan indicates the total area involved in the expansion project as 284.10 ha while as per proposal submitted online and approved Mining Plan, the total incremental area is indicated as 295.62 ha. Discrepancy may be rectified by the State.

**Compliance:-** In compliance to the above, the RCCF, Rourkela Circle has reported that the total incremental area for the expansion project is **295.62 Ha.** The details provided in the mining plan are correct and are as follows:

Sl. No.	Particulars	APPROVED LAND OF KULDA OCP 21 MTY, REVISION-3			INCREMENTAL LAND REQUIRED FOR KULDA EXPN OCP, 21 MTY			APPROVED LAND OF KULDA OCP 21 MTY, (REVISION-3) + INCREMENTAL LAND REQUIRED FOR KULDA EXPN OCP, 21 MTY			TOTAL LAND AS PER MP&MCP OF KULDA EXPANSION OCP (REVISION-4) = APPROVED LAND OF KULDA OCP 21 MTY(REVISION-3) + INCREMENTAL LAND REQUIRED FOR KULDA EXPN OCP 21 MTY - 8.52 HA REDIVERTED FOREST LAND FROM INFRASTRUCTURE AREA OF KULDA		
		A			B			A + B			(A + B) - 8.52		
		Land in ha			Land in ha			Land in ha			Land in ha		
		Forest	Non-forest	Total	Forest	Non-forest	Total	Forest	Non-forest	Total	Forest	Non-forest	Total
<b>A. MINE LEASE AREA</b>													
1	Quarry excavation area	187.16	134.755	321.91	110.92	107.15	218.07	298.075	241.905	539.98	298.075	241.905	539.98
2	Infrastructure including Safety zone (7.5m around mine boundary), road/hallah diversion, Embankment.	36.615	115.178	151.793	9.84	49.28	59.12	46.455	164.458	210.913	(46.455-8.52) =37.935	164.458	202.393
3	External OB dump	4.12	156.382	160.502	13.93	4.5	18.43	18.05	160.882	178.932	18.05	160.882	178.932
	<b>Total Mine Lease area required</b>	<b>227.89</b>	<b>406.315</b>	<b>634.205</b>	<b>134.69</b>	<b>160.93</b>	<b>295.62</b>	<b>362.58</b>	<b>567.245</b>	<b>929.825</b>	<b>354.06</b>	<b>567.245</b>	<b>921.305</b>
<b>B. OUTSIDE M.L. AREA</b>													
1	Residential colony	0	37.5	37.5	0	0	0	0	37.5	37.5	0	37.5	37.5
2	Rehabilitation site	0	22.9	22.9	0	0	0	0	22.9	22.9	0	22.9	22.9
	<b>Total Outside Mine Lease Area</b>	<b>0</b>	<b>60.4</b>	<b>60.4</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>60.4</b>	<b>60.4</b>	<b>0</b>	<b>60.4</b>	<b>60.4</b>
	<b>Total Project area</b>	<b>227.89</b>	<b>466.715</b>	<b>694.605</b>	<b>134.69</b>	<b>160.93</b>	<b>295.62</b>	<b>362.58</b>	<b>627.645</b>	<b>990.225</b>	<b>354.06</b>	<b>627.645</b>	<b>981.705</b>

As reported by the DFO, Sundargarh in view of the above, this clarification shows that it is only the difference of 8.52 ha which has been accorded re-diversion out of 227.89 Ha in the existing land use of Kulda OCP for Basundhara Coal Washery thereby decreasing the total area from 634.205 Ha to 625.685 Ha. & with an increment of 295.62 Ha, the total mining lease area will be **921.305 Ha.** (625.685 + 295.62).

Further, the DFO, Sundargarh Forest Division reported that at the time of preparation of R&R plan, the total expansion area was taken to be 284.10 Ha. as per the initial authenticated land schedule. However, the total area was increased from 284.10 ha to 295.62 Ha, due to some boundary adjustments and addition of plots which eventually did not affect the number of families to be rehabilitated as MCL has a policy of providing R&R to the complete villages coming in the project area.

***Observation No. (iii)(c):- Compensatory An area of 8.52 ha from the already diverted forest land of 227.89 ha is also being used in the extant expansion proposal, which amounts to modification of approval dated 08.08.2007. The State Government therefore, needs to provide a KML file of the already approved area and area being utilized in the extant extension proposal. Change in the land use of other components of the existing project, if any also be informed by the State Government.***

**Compliance:-** In compliance to the above, the RCCF, Rourkela Circle has reported that an area of **8.52 Ha** has been re-diverted from Infrastructure Area of Kulda OCP for Basundhara Coal Washery, vide Letter F.No. 8-176/1997-FC (Vol.) dated 11.03.2019 of the MoEF & CC from the area of 227.89 Ha, which was earlier diverted for Kulda OCP vide Letter F.No.8-176/1997-FC Dated 08.08.2007 of GoI, MoEF. The change in land use after the re-diversion of 8.52 ha is as follows:

Purpose	Break up of existing land use (Ha)				Break up of diverted forest land after re-diversion (change in land use) (Ha)			
	Revenue Forest	Classified Forest	Reserve Forest	Total	Revenue Forest	Classified Forest	Reserve Forest	Total
<b>Mining</b>	136.435	45.71	5.01	187.155	136.435	45.71	5.01	187.155
<b>OB Dump</b>	4.12	0	0	4.12	4.12	0	0	4.12
<b>Infrastructure</b>	21.837	0	0	21.837	13.317	0	0	13.317
<b>Embankment</b>	10.408	0	0	10.408	10.408	0	0	10.408
<b>Road</b>	3.436	0	0	3.436	3.436	0	0	3.436
<b>Diversion</b>								
<b>Nallah</b>	0.935	0	0	0.935	0.935	0	0	0.935
<b>Diversion</b>								
<b>Total</b>	<b>177.171</b>	<b>45.71</b>	<b>5.01</b>	<b>227.891</b>	<b>168.651</b>	<b>45.71</b>	<b>5.01</b>	<b>219.371</b>

As desired, the DFO, Sundargarh Forest Division submitted the KML files in respect of already approved area and area being utilized in the extension proposal and also change

in land use of other components of existing project which have been furnished in a CD enclosed as **Annexure-IV**.

***Observation No. (iv):- Examination of the cost benefit analysis revealed that the loss of the EG&S has been estimated by taking the NPV value corresponding to the lower canopy vegetation density. The DFO in Part-II indicated the canopy density of RF and of Revenue Forests as 0.6 and 0.4 respectively while the corresponding values taken for the estimation of loss of EG&SS are 0.5 and 0.3 respectively. As estimation of most of the parameters is based on the value of NPV, it will therefore, be appropriate that entire CB analysis may be revisited by taking into account the correct canopy density as mentioned in the online Part-II.***

**Compliance:-** In compliance to the above, the RCCF, Rourkela Circle has reported that entire Cost Benefit Analysis has been revised by the DFO, Sundargarh Forest Division by taking into account the correct canopy density as mentioned in the online Part-II. In the revised calculation, the total cost of the project is Rs.13,877.87 lakhs and the total benefit to the society is Rs.7,31,675.23 lakhs.

Hence, the cost benefit ratio is 1:52.72 which is enclosed as **Annexure-V**.

***Observation No. (v):- The State Government in its forwarding letter, adverting to submission made by the DFO, mentioned the peak rated capacity of the mine is 21 MTPA while approval dated 10.06.2020 of the Board of Directors of the MCL for Mining Plan, submitted online, mentioned the capacity as 18.75 MTPA. The State Government may therefore confirm if any revised approval for enhancing the capacity of the mine to 21 MTPA conveyed by the BOD of MCL.***

**Compliance:-** In compliance to the above, the RCCF, Rourkela Circle has reported that the Mining Plan of Kulda Expansion OCP has been revised from 18.75 MTPA to 21.00 MTPA, as the User Agency has already obtained an Environmental Clearance for a capacity of 21.00 MTPA for the existing Kulda OCP vide Letter bearing F.No.J- 11015/10/1995-IA-II(M) dated 24.05.2022 of GoI. MoEF & CC, (Impact Assessment Division), New Delhi which is enclosed as **Annexure-VI**). The copy of revised and authenticated Mining Plan (21.00 MTPA\_Revision-4) is enclosed herewith as Annexure -VIA.

***Observation No. (vi):- It is observed that proposed project is in the proximity of the Basundhara river and its tributaries such as Chattajor nallah. Impact of the proposed expansion of mining on Chattajor nallah and mitigation measures, if any, needed to be undertaken needs to be informed by the State.***

**Compliance:-** In compliance to the above, the RCCF, Rourkela Circle has reported that as per the EC conditions of all the running projects coming in Basundhara Coalfields like Siarmal OCP, Kulda OCP & Garjanbahal OCP, a river conservation plan for Basundhara river along with all its rivulets like Chhattajor nallah for a span of 25 kms considering the impacts of all the coal mines in the area, has already been prepared and approved by State Water Works Department, Govt. of Odisha in **Sep'2022**. Accordingly, the complete work of conservation of Basundhara River and its rivulets has been agreed to be carried out by the State Water Works Department in a phase wise manner on deposit basis, against which a DPR is expected to be submitted by State Water Works

Department. The conservation plan covers the following activities at an approximate cost of Rs. 261 Crores:

1. Construction of embankment along the river
2. Providing Geo-matress on river side slopes for slope protection along with launching apron
3. Providing dub grass turfing on country side slopes for slope protection.
4. Providing Bathing ghats on the banks of Basundhara River.

The copy of River Conservation plan is attached herewith as **Annexure-VII**.

***Observation No. (vii):- The measures proposed by the user agency for the transportation of the excavated coal from the mines to the nearest road / rail head also needs to be furnished by the State.***

***Compliance:- In compliance to the above, the RCCF, Rourkela Circle has reported that a Coal evacuation plan has been prepared for Kulda as well as complete projects of Basundhara Coalfields considering all the future expansions as well, which has been attached herewith as Annexure-VIII.***

***Observation No. (viii):- A monitoring report on the status of compliance of conditions, stipulated in the approval dated 8.08.2007 granted over 227.89 ha of forest land.***

***Compliance:- In compliance to the above, the RCCF, Rourkela Circle has reported that the User Agency has submitted the compliance of FC conditions stipulated in the approval dated 08.08.2007 granted over 227.89 ha of forest land for Kulda OCP which is attached as Annexure-IX. Further, as per the stipulated conditions, the DFO, Sundargarh Forest Division has inspected the site on 25.07.2024 and details of monitoring report is enclosed herewith as Annexure-IX(A).***

***Observation No. (ix):- The State Proposal involves rehabilitation of 975 families while the R&R Plan submitted online is already being implemented. The State Government may therefore inform if the Plan submitted along with the proposal include the 975 families also and the status of approval of the R&R Plan by the competent authority whether obtained or yet to be obtained.***

***Compliance:- In compliance to the above, the RCCF, Rourkela Circle has reported that the Rehabilitation and Resettlement benefits of the complete villages under Kulda Project i.e. Bankibahal, Kulda, Balinga, Tumulia, Siarmal as well as 09 other villages have already been undertaken by the Claims Commission, which has been set up by the Hon'ble Supreme Court of India in SLP© 6933 of 2007. The R&R benefits to the affected families of Bankibahal & Balinga have already been provided under Orissa R&R Policy 1998 and they have been resettled and for rest of the villages i.e. Kulda, Tumulia, Siarmal & some left out cases of village Bankibahal & Balinga, the same have been undertaken under Orissa R&R Policy 2006.***

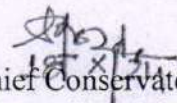
The number of families affected due to current expansion of Kulda project is 975 families particularly in the villages of Tumulia and Kulda. The approval of R&R plan by the

competent authority has been sought for and is still to be obtained. The User Agency has submitted an undertaking to this effect which is attached as **Annexure- X**.

In view of the above, the compliance to the observations pointed out by Government of India, MoEF & CC, FC Division, New Delhi is sent herewith for favour of kind information & further course of action.

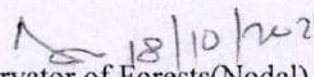
**Encl: As above**

Yours faithfully

  
Principal Chief Conservator of Forests  
(Forest Diversion and Nodal Officer, FC Act)

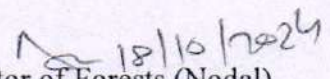
Memo No. **20828** /Dt. **18.10.2024**

Copy alongwith the compliance report of one set forwarded to the Additional Chief Secretary to Government, Forest, Environment and Climate Change Department, Odisha, Kharvel Bhawan, Bhubaneswar for favour of kind information and necessary action with reference to Letter No. 8-7/2024-FC dated 11.06.2024 of Scientist 'D' Govt. of India, MoEF & CC (FC Division), New Delhi.

  
Chief Conservator of Forests(Nodal)

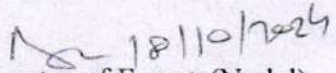
Memo No. /Dt.

Copy forwarded to the Regional Chief Conservator of Forests, Rourkela Circle for information and necessary action with reference to Memo No. 3887 dated 22.08.2024.

  
Chief Conservator of Forests (Nodal)

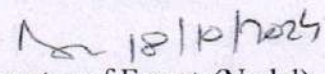
Memo No. /Dt.

Copy forwarded to the Divisional Forest Officer, Sundargarh Forest Division for information and necessary action with reference to Memo No. 3886 dated 22.08.2024 of the RCCF, Rourkela Circle to his address.

  
Chief Conservator of Forests(Nodal)

Memo No. /Dt.

Copy forwarded to the Chief General Manager, O/o the Project Officer, Kulda OCP, Basundhara Area, MCL, Sundargarh Odisha-750076 for information and necessary action.

  
Chief Conservator of Forests(Nodal)

**PART-II**

Annexure-I

(To be filled by the concerned Deputy Conservator of Forest)

State Serial No. of proposal : OR-050/2021

## 1. Location of the project/Scheme : Orissa

(i)

State / Union Territory : Orissa

(ii)

District : Sundargarh

(iii)

Forest Division : Sundargarh

(iv)

Area of forest land proposed for diversion (in ha.) : 134.69

(v)

Category of the Proposal: Mining

## 2. Legal status of forest land proposed for diversion :

S. No.	Division	Forest Land(ha.)	Legal Status
1	Sundargarh	83.24	Reserved Forest
2	Sundargarh	51.45	Revenue Forest
Total		134.69	

Division 1. : Sundargarh

## 3. District wise area to be diverted in the division :

S. No.	District	Area(ha.)
1	Sundargarh	134.69
Total		134.69

## 4. Details of Vegetation available in the forest land proposed for diversion :

(i)

Density of vegetation

S. No.	Area(in ha.)	Density	Eco-Class
1	83.24	0.6	Eco 2
2	51.45	0.4	Eco 2
Total.	134.69		

## (ii) Species-wise local/scientific names and girth-wise enumeration of trees at FRL :

S. No.	Scientific Name	Local Name	(0-30)cm.	(31-60)cm.	(61-90)cm.	(91-120)cm.	(121-150)cm.	(>150)cm.
1	Embllica Officianalis	Aunla	0	20	1	0	0	1
2	Acacia Arabica	Babul	0	3	0	0	0	0
3	Aegle marmelos	Bel	0	139	43	21	20	7
4	Semecarpus anacardium	Bhelua	0	29	3	0	0	2
5	Pterocarpus Marsupium	Bija	0	37	20	3	1	1
6	Cassia siamea	Chakunda	0	24	12	5	1	3



7	Buchanania lanzan	Char	0	1142	248	58	17	12
8	Anogeissus latifolia	Dhaura	0	701	130	20	9	5
9	Dalbergia paniculata	Dhuben	0	327	264	97	29	24
10	Misc. Species	Dumer	0	127	69	19	5	2
11	Gmelina Arborea	Gambhar	0	45	20	32	2	18
12	Ficus Bengalensis	Ghuli	0	672	322	63	17	8
13	Misc. Species	Girngila	0	2	2	2	1	0
14	Syzigium Cumini	Jamun	0	206	99	40	7	28
15	Anthocephalus Cadamba	Kadam	0	1	3	1	0	0
16	Anacardium Occidentale	Kaju	0	78	11	1	0	0
17	Pongamia pinnata	Karanj	0	25	16	5	2	5
18	Madhuca indica	Mango	0	46	16	14	14	134
19	Azadirachta indica	Neem	0	264	87	65	29	39
20	Madhuca indica	Mahul	0	237	128	116	36	488
21	Butea monosperma	Palash	0	490	302	63	7	14
22	Ficus religiosa	Pipal	0	3	1	2	0	6
23	Tectona grandis	Saguan	0	639	118	14	1	5
24	Albizia Procera	Shiries	0	1	1	0	1	4
25	Tamarindus indica	Tetel	0	19	4	8	7	21
26	Alangium lamarckii	Akelbira	0	40	4	1	0	0
27	Misc. Species	Aenthi	0	88	22	1	0	0
28	Anona Squamosa	Aata	0	32	0	0	0	3
29	Acacia auriculaeformis	Akasia	0	2	3	2	0	1
30	Terminalia Arjuna	Arjun	0	5	0	3	0	6
31	Terminalia bellerica	Bahada	0	161	52	18	7	30
32	Bambusa Vulgaris	Bamboo	0	9	0	0	0	0
33	Ficus benghalensis	Bar	0	16	9	7	4	53
34	Zizyphus Jujuba	Barakoli	0	3	3	0	0	0
35	Terminalia belerica	Behera	0	711	319	92	37	103
36	Zizyphus mauritiana	Ber	0	3	1	0	0	0
37	Zizyphus Jujuba	Buro	0	3	0	1	0	1
38	Misc. Species	Bhusunga	0	1	0	0	0	0
39	Misc. Species	Dalimba	0	3	0	0	0	0
40	Misc. Species	Debdaru	0	0	3	0	0	0
41	Eucalyptus spp.	Eucalyptus	0	2	0	0	0	0
42	Grewia elastica	Falsa	0	168	85	27	8	5
43	Misc. Species	Garud	0	13	3	0	1	0
44	Terminalia Chebula	Harda	0	49	9	4	1	4
45	Terminalia arjuna	Kaha	0	0	1	2	0	3
46	Misc. Species	Karla	0	603	69	5	0	0
47	Adina cordifolia	Karma	0	274	133	31	19	21
48	Artocarpus Heterophyllus	Kathel	0	20	14	6	0	0
49	Garuga Pinnata	Kekat	0	2438	2835	1169	334	147
50	Diospyros melanoxylon	Kendu	0	1125	225	49	22	71
51	Acacia catechu	Khair	0	26	11	2	0	1
52	Misc. Species	Khais	0	1726	601	117	26	17

53	Misc. Species	Khajuri	0	44	0	0	0	0
54	Delonix Regia	Krushnachuda	0	0	0	2	0	1
55	Bauhinia racemosa	Kuiler	0	8	4	0	2	0
56	Careya arborea	Kumbh	0	215	69	9	2	2
57	Holarrhena antidysenterica	Kurei	0	327	29	4	0	1
58	Schleichera oleosa	Kusum	0	118	13	5	3	33
59	Misc. Species	Lemon	0	15	0	0	0	0
60	Misc. Species	Lichu	0	1	0	0	0	0
61	Mitragyna parvifolia	Mundi	0	148	59	19	5	4
62	Moringa oleifera	Munga	0	7	0	0	0	0
63	Misc. Species	Nadia	0	1	0	0	0	0
64	Vitex leucoxylon	Nirgun	0	4	0	0	0	0
65	Misc. Species	Orange	0	2	0	0	0	0
66	Artocarpus Heterophyllus	Panas	0	4	0	2	0	0
67	Psidium Guajava	Pijuli	0	24	3	1	0	0
68	Soymida febrifuga	Rehena	0	43	6	2	1	2
69	Terminalia tomentosa	Sahaj	0	792	181	36	11	27
70	Shorea robusta	Sal	0	1677	499	59	14	45
71	Dendrocalamus Strictus	Salia	0	1	2	0	0	0
72	Ceiba Pentandra	Semel	0	199	116	59	9	18
73	Lagerstroemia parviflora	Senha	0	1770	157	38	6	11
74	Dalbergia latifolia	Sissoo	0	30	16	7	5	5
75	Cassia fistula	Sunari	0	128	14	0	0	0
76	Limonia acidissima	Surajbel	0	1	0	0	0	0
Total			0	18357	7490	2429	723	1442
Sub Total (No of Trees.)			30441					

5. Working plan prescription for the forest land proposed for diversion : No Data

6. Brief note on vulnerability of the forest area to erosion :

Proposed forest land is not vulnerable to erosion. It is almost flat land

7. Approximate distance of the proposed site for diversion from boundary of forest(in km.) : 08

8. Significance of the forest land proposed for diversion from wildlife point of view :

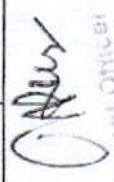
- Details of wildlife present in and around the forest land proposed for diversion : Movement of Wildlife like Fox, Wild Boar, Rabbit, Jungle Cat, Jungle Hen etc. was reported by Forester as well as surveyors. However, there is sparse presence & movement in the area.
- (i).
- (ii). Whether forms part of national park, wildlife sanctuary, biosphere reserve, tiger reserve, elephant corridor, wildlife migration corridor etc. : No
- (iii). Whether the forest land proposed for diversion is located within eco-sensitive zone(ESZ) of the Protected Area notified under Wildlife(Protection) Act, 1972 (Note: In case, ESZ of a Protected Area is not notified, then, 10kms distance from boundary of the Protected Area should be treated as ESZ): No
- (iv). Whether any national park, wildlife sanctuary, biosphere reserve, tiger reserve, elephant corridor, wildlife migration corridor etc., is located within 1 Km. from boundary of the forest land proposed

**SPECIES WISE ABSTRACT OF TREES - REQUIRED LAND FOR KULDA EXPANSION**

Sl.no.	Scientific Name	Local Name	Up to 59cm	60 to 89cm	90 to 119cm	120 to 149cm	150 to 179cm	180 & Up	Total Of SLNO
1	Alangium lamarkii	Akelira	40	4	1				45
2	Misc species	Aenthi	88	22	1				111
3	Annona squamosa	aata/custard apple	32					3	35
4	Acacia auriculiformis	akasia	2	3	2			1	8
5	Embla officinalis	aumla/amla	20	1				1	22
6	Terminalia arjuna	arjun	5		3			4	14
7	Acacia Arabica	Babul	3						3
8	Terminalia bellerica	bahada	161	52	18	7	7	23	268
9	Bambusa vulgaris	bamboo	9						9
10	Ficus benghalensis	Bar	16	9	7	4	2	51	89
11	Zizyphus jujube	barakoli	3	3	0	0	0	0	6
12	Terminalia belerica	Behera	711	319	92	37	21	82	1262
13	Aegele marmelos	bela	139	43	21	22	2	3	230
14	Ziziphus mauritiana	Ber	3	1					4
15	Semecarpus anacardium	bhelua	29	3	0	0	2	0	34
16	Murraya koenigii	bhusunga	1						1
17	Pterocarpus marsupium	bija	37	20	3	1	0	1	62
18	Zizyphus jujube	Buro	3		1			1	5
19	Cassia siamea	Chakunda	24	12	5	1	1	2	45
20	Buchanania lanzan	Char	1142	248	58	17	5	7	1477
21	Punica granatum	Dalimba	3						3
22	Cedrus deodara	Debdaru		3					3
23	Anogeissus latifolia	dhaula	701	130	20	9	1	4	865
24	Dalbergia paniculata	Dhuben	327	264	97	29	9	15	741
25	Ficus glomerata	dumer	127	69	19	5	0	2	222
26	Eucalyptus spp.	eucalyptus	2						2
27	Grewia asiatica	falsa	168	85	27	8	2	3	293
28	Gmelina Arborea	Gambhar	45	20	32	2	4	14	117
29	Rauwolfia serpentine	Garud	13	3		1			17
30	Ficus racemosa	Ghuli	672	322	63	17	3	5	1082
31	Couroupita guianensis	Girngla	2	2	2	1			7
32	Terminalia Chebula	Harda	49	9	4	1	0	4	67
33	Tamarindus indica	imll/yetel	19	4	8	7	0	21	59
34	Syzygium cumini	jamun	206	99	40	7	10	18	380
35	Anthocephalus cadamba	kadam	1	3	1	0	0	0	5
36	Terminalia arjuna	kaha		1	2			3	6
37	Anacardium Occidentale	Kaju	78	11	1	0	0	0	90
38	Pongamia pinnata	karanja	25	16	5	2	0	5	53
39	Momordica charantia	Karla	603	69	5	0	0	0	677
40	Adina cordifolia	karma	274	133	31	19	7	14	478
41	Artocarpus heterophyllus	kathal	20	14	6	0	0	0	40

  
 P. S. Saha  
 Joint Director  
 K. U. L. D. A.  
 K. U. L. D. A.  
 K. U. L. D. A.

42	Garuga pinnata	Kekat	2438	2835	1169	334	73	74	6923
43	Diospyros melanoxylon	Kendu	1125	225	49	22	21	50	1492
44	Acacia catechu	khair	26	11	2			1	40
45	Senegalia catechu	Khais	1726	601	117	26	6	11	2487
46	Phoenix sylvestris	Khajuri	44						44
47	Delonix regia	krushnachuda			2			1	3
48	Bauhinia purpurea	Kuiler	8	4	0	2	0	0	14
49	Careya arborea	kumbh	215	69	9	0	2	2	297
50	Holarthra antidyserterica	kurei	327	29	4	0	0	1	361
51	Schleichera oleosa	kusum	118	13	5	3	2	31	172
52	Citrus limon	lemon	15						15
53	Litchi chinensis	lichu	1						1
54	Azadirachta indica	Lim/ neem	264	87	65	29	14	25	484
55	Madhuca indica	Mahul	237	128	116	36	76	412	1005
56	Mangifera indica	Mango	46	16	14	14	19	115	224
57	Mitragyna parvifolia	mundi	148	59	19	5	1	3	235
58	Moringa oleifera	munga	7						7
59	Cocos nucifera	nadia	1						1
60	Vitex negundo	nirgun	4						4
61	Citrus sinensis	orange	2						2
62	Butea monosperma	palas	490	302	63	7	5	9	876
63	Artocarpus heterophyllus	panas/jackfruit	4	0	2	0	0	0	6
64	Psidium guajava	pijuli/guava	24	3	1	0	0	0	28
65	Ficus religiosa	Pipal	3	1	2	0	0	6	12
66	Soyimida febrifuga	Rahena	43	6	2	1	0	2	54
67	Tectona grandis	saguan	639	118	14	1	2	3	777
68	Terminalia tomentosa	sahaj	792	181	36	11	7	20	1047
69	Shorea robusta	sal/rengal	1677	499	59	14	6	39	2294
70	Dendrocalamus strictus	Salia	1	2					3
71	Ceiba pentandra	semel/simil	199	116	59	9	6	12	401
72	Lagerstroemia parviflora	Senha	1770	157	38	6	1	10	1982
73	Albizia lebek	shirish	1	1	0	1	0	4	7
74	Dalbergia latifolia	Sissoo	30	16	7	5	2	3	63
75	Cassia fistula	Sunari	128	14	0	0	0	0	142
76	Limonia acidissima	Surajbel	1						1
			18357	7490	2429	723	321	1121	30441

  
 Project Officer  
 Aulda Opencast Project  
 कृषि विज्ञान केंद्र  
 अहमदाबाद


**SPECIES WISE ABSTRACT OF TREES - FOREST LAND OF KULDA EXPANSION**

S.No.	Scientific Name	Local Name	Up to 59cm	60 to 89cm	90 to 119cm	120 to 149cm	150 to 179cm	180 & Up	Total Of SINO
1	Misc species	Aenth	88	22	1				111
2	Acacia auriculiformis	Akashi		2	1				3
3	Terminalia arjuna	Ajrun			1				1
4	Emblica officinalis	Aunla	12					1	13
5	Acacia arabica	Babul	2						2
6	Ficus benghalensis	Bar	10	7	2			19	43
7	Terminalia belerica	Behera	622	282	83			18	1094
8	Aegle marmelos	Bel	130	42	18			2	211
9	Ziziphus mauritiana	Ber	3	1					4
10	Semecarpus anacardium	Bhelua	12	3					15
11	Pterocarpus marsipium	Bija	34	20					54
12	Cassia siamea	Chakunda	20	12	5			2	41
13	Buchanania lanzan	Char	579	130	14			2	739
14	Anogeissus latifolia	Dhaura	632	124	17			1	782
15	Dalbergia paniculata	Dhuben	292	253	93			9	688
16	Ficus glomerata	Dumer	92	64	14			3	174
17	Gmelina arborea	Gambhar	2	2	3				8
18	Rauwolfia serpentine	Garud	13	3				1	17
19	Ficus racemosa	Ghull	672	322	63			3	1082
20	Couroupita guianensis	Girngla	2	2	2			2	7
21	Terminalia chebula	Harada	35	6	2			1	46
22	Syzygium cumini	Jannun	114	78	24			6	231
23	Anthocephalus cadamba	Kadam						3	3
24	Anacardium occidentale	Kaju	65	11					76
25	Pongamia pinarata	Karanj	24	14	4			1	46
26	Momordica charantia	Karla	598	69	5				672
27	Adina cordifolia	Karna	227	115	25			5	395
28	Artocarpus heterophyllus	Kathel	17	11	5			17	33
29	Garuga pinnata	Kekat	1923	2394	1023			62	5761
30	Diospyros melanoxylon	Kendu	1055	194	35			13	1346
31	Senegalia catechu	Khais	1668	582	112			6	2403
32	Bauhinia purpurea	Koller	1					2	3
33	Careya arborea	Kumb	93	47	6				147
34	Holarrhena antidysenterica	Kurel	296	16	2				314
35	Schleichera oleosa	Kusum	29	8	2			1	45
36	Azadirachta indica	Lm	9	12	17			2	44
37	Madhuca indica	Mahul	136	65	16			2	375
38	Mangifera indica	Mango	13	7	2			5	75
39	Mitragyna parviflora	Mundi	147	59	18			2	232
40	Azadirachta indica	Neem	83	41	13			10	148
41	Butea monosperma	Palash	393	242	41			2	686
42	Artocarpus heterophyllus	Panash						2	2
43	Ficus religiosa	Pipal	2	1					9
44	Soyimida febrifuga	Rahena	39	6	2			1	48
45	Tectona grandis	Saguan	178	89	6			2	275
46	Terminalia tomentosa	Sahaj	720	168	25			3	925
47	Shorea robusta	Sai	1354	460	52			1	1894
48	Dendrocalamus strictus	Salia	1	2					3
49	Celba pentandra	Semel	142	98	43			4	299
50	Lagerstroemia parviflora	Senha	1621	137	26			1	1788
51	Albizia lebbeck	Shiries	1	1					2
52	Dalbergia sisoo	Shistru	27	16	7			4	56
53	Cassia fistula	Sunari	128	13					141
54	Limonia acidissima	Surajbel	1						1
55	Tamarindus indica	Tarel	14357	6258	1836			6	22
									446
									23635

  
 Project Officer  
 KULDA EXPANSION PROJECT  
 दक्षिण भारत सरकार


**SPECIES WISE ABSTRACT OF TREES - NON FOREST LAND OF KULDA EXPANSION**

SL.NO.	SCIENTIFIC NAME	LOCAL NAME	Up to 59cm	60 to 89cm	90 to 119cm	120 to 149cm	150 to 179cm	180 & Up	Total Of SLNO
1	Alangium lamarkii	Akelbra	1						1
2	Acacia Arabica	Babul	1						1
3	Ficus benghalensis	Bar						2	2
4	Zyphus jujube	Barkel	1						1
5	Terminalia belerica	Behera	4	1	2				7
6	Semecarpus anacardium	Bhetua	1						1
7	Cassia siamea	Chakunda	1						1
8	Buchanania lanzan	Char	33	3	1				37
9	Anogeissus latifolia	Dhaua		3					3
10	Dalbergia paniculata	Dhuben	2						2
11	Gmelina Arborea	Gambhar	1						1
12	Terminalia Chebula	Harda	1	1					2
13	Syzgium Cumini	Jamun	3	1					4
14	Anacardium Occidentale	Kaju	13	1	1				14
15	Garuga pinnata	Kekat	18	17	5			1	41
16	Diospyros melanoxylon	Kendu		1					1
17	Bridelia retusa	Khais	2	1					3
18	Bauhinia purpurea	Kulier	1						1
19	Cereya arborea	Kumb	3	1					4
20	Schleichera oleosa	Kusum					1		1
21	Azadirachta indica	Lim	14	3					17
22	Madhuca indica	Mahul	17	22	21	3	2	3	68
23	Mangifera indica	Mango	2				1		3
24	Moringa oleifera	Moonga	3						3
25	Butea monosperma	Palash	61	27	11				99
26	Psidium guajava	Pijuli	3	3	1				7
27	Ficus religiosa	Pipal	1		2				3
28	Terminalia tomentosa	Sahaj	3		2				5
29	Sal	Sal	16	3				1	20
30	Ceiba pentandra	Semel	3	1					4
31	Legerstroemia parviflora	Senha	2		1				3
32	Dalbergia latifolia	Sissoo	2						2
33	Cassia fistula	Sunari		1		3	4	7	1
			213	89	47				353

  
 Project Officer,  
 Kulda Opencast Project  
 धरमपुरी अतिकारी  
 नरसिंह धरमपुरी

**SPECIES WISE ABSTRACT OF TREES - TENANCY LAND OF KULDA EXPANSION**

S.No.	Scientific Name	Local Name	Up to 58cm	60 to 89cm	90 to 119cm	120 to 149cm	150 to 179cm	180 & Up	Total Of Stand
1	Alungum baracili	ankul/abul/akelira	39	4	1			3	44
2	Annona squamosa	akasa	32					1	35
3	Acacia auriculiformis	akasa	2	1	1			1	5
4	Embica officinalis	amla	8					4	9
5	Terminalia arjuna	arjun	5					2	13
6	Terminalia bellerica	bahaba	161	52	18			23	268
7	Bambusa vulgaris	bamboo	9					9	9
8	Ficus benghalensis	bara	6	2	5			30	44
9	Zizyphus jujuba	barakoli	2					1	5
10	Pterocarpus marsupium	bjja	3	3	3			1	8
11	Terminalia bellerica	behera	85	36	7			24	161
12	Argyle marmelos	bela	9	1	3			1	19
13	Semecarpus anacardium	bhelka	16					2	18
14	Murraya koenigii	bhusunga	1					1	5
15	Zizyphus jujuba	Buro	3		1			1	5
16	Cassia siamea	CHARUNDA	3					2	3
17	Buchanania lanzan	Char	530	115	43			3	701
18	Punica granatum	Dalimba	3					2	3
19	Cedrus deodara	Dedlatu		3				3	3
20	Angoelstus latifolia	dhaula	69	3	3			3	80
21	Dalbergia paniculata	dhuben	33	11	4			3	51
22	Ficus glomerata	dumer	35	5	5			1	48
23	Eucalyptus spp.	eucalyptus	2					1	2
24	Grewia asiatica	fala	188	85	27			3	293
25	Gmelina arborea	gambhari	42	18	29			13	108
26	Terminalia chebula	harida	13	2	2			2	19
27	Tamarindus indica	harla	19	2	4			11	37
28	Syzygium cumini	jammun	89	20	16			13	145
29	Artocarpus cadamba	kadam	1		1			1	2
30	Terminalia arjuna	kaha	2	1	2			3	6
31	Pongamia pinnata	kananja	1	2	1			2	7
32	Momordica charantia	karla	5					2	5
33	Adina cordifolia	karna	47	18	6			8	83
34	Artocarpus heterophyllus	kathal	3	3	1			2	7
35	Garciga pinnata	kekat	497	424	141			14	1121
36	Diospyros melanoxylon	kerdu	70	30	14			20	145
37	Acacia catechu	khair	26	11	2			1	40
38	Sonagalia catechu	khais	56	18	5			1	81
39	Phoenix sylvestris	khajuri	44					1	44
40	Delonix regia	krushnachuda			2			1	3
41	Bauhinia purpurea	kuiler	6	4				1	10
42	Caraya arborea	kumth	119	21	3			2	146
43	Holarrhena antisyrenatica	kunei	31	13	2			1	47
44	Schleichera oleosa	kusum	89	5	3			28	126
45	Citrus limon	lemon	15						15
46	Litchi chinensis	lichu	1						1
47	Madhuca indica	mahul	84	41	79			277	562
48	Mangifera indica	mango	31	9	12			73	146
49	Mitragyna parvifolia	mundi	1		1			1	3
50	Moringa oleifera	munaga	4						4
51	Cocos nucifera	nodia	1						1
52	Azadirachta indica	neem/mahaim	158	31	35			24	275
53	Vitex negundo	nirgun	4						4
54	Citrus sinensis	orange	2					7	2
55	Butea monoperma	palas	36	33	11				91
56	Artocarpus heterophyllus	panaz/sectfruit	4					3	4
57	Psidium guajava	pituli/guava	21						21
58	Soyrhida febrifuga	rehena	4					2	6
59	Shorea robusta	rengal	2	4	2			5	14
60	Tectona grandis	saguan	461	29	8			2	502
61	Terminalia tomentosa	sahaj	69	13	9			19	117
62	Shorea robusta	sal	305	32	5			4	366
63	Legersioemia parviflora	sanha	147	20	11			7	191
64	Celtis pentandra	simil	54	17	16			8	98
65	Albizia lebbek	shimb						4	5
66	Dalbergia sisoo	sisoo	1					2	5
			3787	1143	546			668	6443


  
 Project Officer  
 Kulda Panchayat Project  
 कल्दा पंचायत प्रोजेक्ट  
 कल्दा पंचायत

Financial Outlay for **Compensatory Afforestation Scheme** over an area of **286.96 ha** of **Degraded Forest land** identified in **Pandripani RF (64.10 ha)**, **Sidarmunda RF (53.56 ha)**, **Punjipahar RF (131.54 ha)**, **Panikholia RF (56.39 ha)** under **Gopalpur Range of Sundargarh Forest Division** against diversion of 134.69 ha forest land for **Expansion of Kulda Open Cast Coal Mining Project of Basundhara Area** by **MCL** as per approved One-time Cost Norm

Sl. No.	Description	Amount (Rs.)
1.	Cost of ANR Plantation @ 500 Plants per ha over 286.96 ha @ Rs.1,50,051/- per ha with 10 years maintenance	4,30,58,635.00
2.	Cost of Bamboo Twig and Thorn fencing over 23885 RMT with 5 years maintenance @ Rs.1,10,214/- per ha/ 250 RMT (As proposed by DFO, Sundargarh Division)	1,05,29,846.00
3.	Cost of SMC activities like staggered trenches, percolation pits, contour trench, graded earthen bund, LBCD, wire mesh LBCD, Sub-Surface Dyke and WHS as per the slope and site requirement @ Rs.39,284/- per ha over 286.96 ha with 5 years maintenance	1,12,72,937.00
4	Watering for 5 months, 10 days per month in the 1 <sup>st</sup> year @ Rs. 100/ per plant (November to March), watering for 8 months, 5 days per month (April to June and November to March) in the 2 <sup>nd</sup> year @ Rs. 77/- per plant through tractor/tanker totaling Rs. 177/- per plant for 143500 plants	2,53,99,500.00
<b>Grand Total</b>		<b>9,02,60,918</b> or rounded off to <b>9,02,61,000.00</b>
<b>5.</b>	<b>Infrastructure to be provided as per consent of the User Agency in kinds</b>	
	i. Supply 2023 Mahindra Bolero Neo 1.5 D N 10 OPT with all accessories, including RTO, insurance and other charges for monitoring of the CA Plantation with Petrol and Driver	
	ii. Supply Mahindra Scorpio-N Z8 L Duesek NT 4WD 7 STR (with Everest White) with all accessories, including RTO, insurance and other charges for monitoring of the CA area	

**(Rupees Nine Crore Two lakhs Sixty-One thousand) only**

Approved

  
 15/03/24  
 Principal Chief Conservator of Forests  
 Forest Diversion & Nodal Officer, FC Act  
 Principal Chief Conservator of Forests  
 (Forest Diversion & Nodal Officer FC Act)  
 O/o. the P.C.C.F Odisha, Bhubaneswar



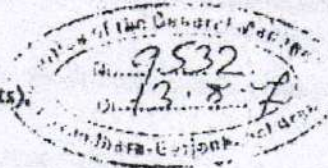
FOR: RD, CMOD

F. No. E-176/1997-FC  
 Government of India  
 Ministry of Environment & Forests  
 (FC Division)

Paryavaran Bhawan, CGO Complex,  
 Lodhi Road, New Delhi - 110003

Dated: 08<sup>th</sup> August 2007

To:  
 The Principal Secretary (Forests),  
 Government of Orissa,  
 Bhubaneswar.



Sub: Diversion of 227.89 ha of forest land (as against initially proposed 280.86 ha) for  
 Kulda OCP of Mahanadi Coalfields Limited in Sundergarh district in Orissa.

Sir,

I am directed to refer to State Government's letter no. 10.F. (Cons) / 54 / 1997 / 8908 / F&E dated 09.05.1997 and no. 10.F. (Cons) / 54 / 1997 / 23070 / F&E dated 10.11.1998 on the subject cited above seeking prior approval of the Central Government under the Forest (Conservation) Act, 1980. After careful consideration of the proposal by the Forest Advisory Committee constituted under Section-3 of the said Act, in-principle approval for the said Mining Lease was granted vide this Ministry's letter of even number dated 25.07.2001 and 22.01.2002 subject to fulfillment of certain conditions. The State Government has furnished compliance report in respect of the conditions stipulated in the in-principle approval and has requested the Central Government to grant final approval.

2. In this connection, I am directed to say that on the basis of the compliance report furnished by the State Government vide letter no. 10.F. (Cons) / 59 / 2004 / 6910 / F&E dated 05.05.2007, approval of the Central Government is hereby granted under Section-2 of the Forest (Conservation) Act, 1980 for diversion 227.89 ha of forest land (as against initially proposed 280.86 ha) for Kulda OCP of Mahanadi Coalfields Limited in Sundergarh district in Orissa subject to fulfillment of the following conditions:

1. Legal status of the diverted forest land shall remain unchanged.
2. (i) Compensatory afforestation shall be raised and maintained by the State Forest Department at the project cost.
- (ii) Fencing, protection and regeneration of the safety zone area (7.5 metres strip all along the outer boundary of the mining lease area) shall be done at the project cost. Besides this, afforestation on degraded forest land, to be selected elsewhere, measuring one and a half times the area under safety zone, shall also be done at the project cost.
- (iii) Wherever possible and technically feasible, the User Agency shall undertake

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afforestation measures in the blanks within the lease area, as well as along the roads outside the lease area diverted under this approval, in consultation with the State Forest Department at the project cost.

3. Following activities shall be undertaken by the State Forest Department at the project cost:
  - (i) Proper mitigative measures to minimize soil erosion and choking of streams shall be prepared and implemented.
  - (ii) Planting of adequate drought hardy plant species and sowing of seeds to arrest soil erosion.
  - (iii) Construction of check dams, retention/toe walls to arrest sliding down of the excavated material along the contour.
4. The period of diversion under this approval shall be twenty (20) years subject to possession of valid lease by User Agency under the MMDR Act, 1957.
5. (i) The User Agency shall take up planting work on the static dumps during the advance mining operations.  
(ii) All the dumps shall be fully reclaimed by afforestation immediately after closure of the mine in the shortest possible period under supervision of the State Forest Department.
6. Any tree felling shall be done only when it is absolutely necessary and unavoidable, and that too under strict supervision of the State Forest Department.
7. The User Agency shall ensure that no damage to the flora and fauna of the area is caused.
8. Reclamation Plan shall be strictly implemented which shall be monitored regularly by the State Forest Department. The User Agency shall submit progress report of reclamation works to the State Forest Department and the Regional Office, Bhubaneswar.
9. It shall be ensured that no labour camps are set up inside the forest area.
10. The mining lease area shall be demarcated on ground at the project cost, using four feet high RCC pillars, with each pillar inscribed with the serial number, forward and backward bearings and distance between two adjacent pillars.
11. The forest land shall not be used for any purpose other than that specified in the proposal.
12. The forest land thus diverted shall be non-transferable. Whenever and whatever extent of forest land is not required by the User Agency, it shall be surrendered to the State Forest Department after proper rehabilitation under intimation to this Ministry.
13. Any other condition that the CCP (Central), Regional Office, Bhubaneswar, may impose

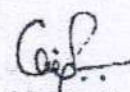
from time to time for protection and improvement of flora and fauna in the forest area, shall also be applicable.

Yours faithfully,

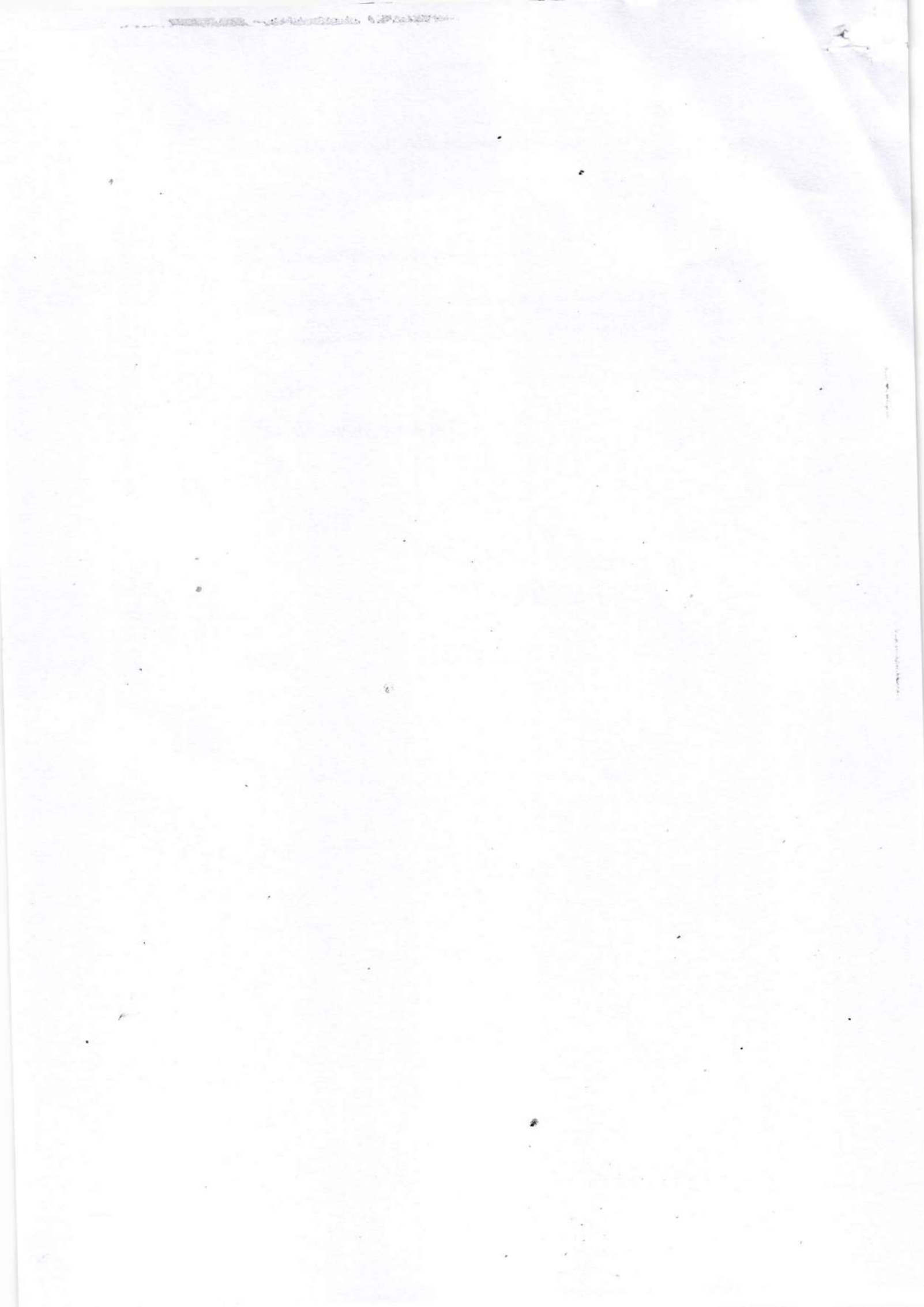
(C.D. Singh)  
Assistant Inspector General of Forests

Copy to :-

1. The Principal Chief Conservation of Forests, Government of Orissa, Bhubaneswar.
2. The Nodal Officer, O/o the PCCF, Government of Orissa, Bhubaneswar.
3. The Chief Conservator of Forests (Central), Regional Office, Bhubaneswar.
- ✓ 4. User Agency.
5. Guard file.
6. Monitoring Cell of FC Section.

  
(C.D. Singh)  
Assistant Inspector General of Forests

AHM. C.C.F (Nodal), BBSR  
0674 Fox - 2300049



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20-3-2019

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File No. 8-176/1997-FC (Vol.)  
Government of India  
Ministry of Environment, Forest and Climate Change  
(FC Division)

\*\*\*

Indira Paryavaran Bhawan,  
Jor bagh Aliganj Road,  
New Delhi - 110003.

Dated: January, 2019.  
11th March

SoC Dwy  
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19/3

27/3/19

M

To

The Principal Secretary (Forests),  
Government of Odisha,  
Bhubaneswar.

**Sub: Diversion of 29.41 ha of forest land (20.89 ha fresh forest land and 8.52 ha of forest land for re-diversion out of already diverted forest area of 227.89 ha for Kulda OCP of Mahanandi Coalfields Ltd.) in Sundargarh Forest Division of Sundargarh District, Odisha for construction of Basundhara Coal Washery (10 MTY) by M/s Mahanadi Coalfields Limited.**

Sir,

I am directed to refer to the State Government's letter No. YOF(Cons)91/2016/16137/F&E dated 29.08.2016 on above mentioned subject seeking prior approval of the Central Government under Section-2 of the Forest (Conservation) Act, 1980 and to say that the proposal has been examined by the Forest Advisory Committee constituted by the Central Government under Section-3 of the said Act.

After careful examination of the proposal of the State Government and on the basis of the recommendations of the Forest Advisory Committee, the Central Government hereby conveys its *'in-principle'* approval for diversion of 29.41 ha of forest land (20.89 ha fresh forest land and 8.52 ha of forest land for re-diversion out of already diverted forest area of 227.89 ha for Kulda OCP of Mahanandi Coalfields Ltd.) in Sundargarh Forest Division of Sundargarh District, Odisha for construction of Basundhara Coal Washery (10 MTY) by M/s Mahanadi Coalfields Limited under Forest (Conservation) Act, 1980 subject to fulfilment of the following conditions: -

- (i) Legal status of the diverted forest land shall remain unchanged;
- (ii) Compensatory afforestation shall be raised over the non-forest land equal in extent to the forest land being diverted within three years of Stage -II Clearance and maintained thereafter by the State Forest Department at the cost of the User Agency and at least 1000 plants per hectare shall be planted over identified non- forest land. If it is not possible to plant so many saplings in the area identified for CA, the balance saplings will be planted in any other forests as per prescriptions of approved working plan with provision for ten years on subsequent maintenance;
- (iii) 25% of CA cost will be deposited extra by the user agency for soil and moisture conservation (SMC) activities on the CA land;

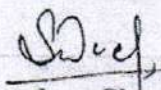
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- (iv) The admissible identified non-forest land for raising compensatory afforestation shall be transferred and mutated in favour of the State Forest Department before issue of the Stage-II clearance and the same shall be notified by the State Government as RF under Section-4 or PF under Section-20 of the Indian Forest Act, 1927 or under the relevant Section(s) of the local Forest Act, as the case may be, within a period of six months. The Nodal Officer (Forest Conservation) shall report compliance in this regard;
- (v) The land identified for the purpose of CA shall be clearly depicted on a Survey of India topo sheet of 1:50,000 scale;
- (vi) The User Agency shall transfer the cost of raising and maintaining the **compensatory afforestation** at the current wage rate in consultation with State Forest Department in the account of CAMPA of the concerned State **through online portal**. The scheme may include appropriate provision for anticipated cost increase for works scheduled for subsequent years;
- (vii) The User Agency shall transfer the funds for the **Net Present Value (NPV)** of the forest land being diverted under this proposal from the User Agency as per the orders of the Hon'ble Supreme Court of India dated 28.03.2008, 24.04.2008 and 09.05.2008 in Writ Petition (Civil) No. 202/1995 and the guidelines issued by this Ministry vide its letter No. 5-3/2007-FC dated 05.02.2009 **through online portal** of CAMPA account of the State Concerned;
- (viii) At the time of payment of the Net Present Value (NPV) at the present rate, the user agency shall furnish an undertaking to pay the additional amount of NPV, if so determined, as per the final decision of the Hon'ble Supreme Court of India;
- (ix) User Agency should ensure that the Compensatory levies (CA cost, NPV, etc.) are deposited through challan generated online on web portal and deposited in appropriate bank online only. Amount deposited through other mode will not be accepted as compliance of the Stage-I clearance;
- (x) State Government shall complete settlement of rights, in term of the Scheduled Tribes and Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006, if any, on the forest land to be diverted and submit the documentary evidence as prescribed by this Ministry's letter No. 11-9/1998-FC (Pt.) dated 03.08.2009 read with 05.07.2013, in support thereof;
- (xi) **Since an area of 8.52 ha of forest land is being re-diverted from already diverted forest area of 227.89 ha for Kulda OCP of Mahanandi Coalfields Ltd.) in Sundargarh Forest Division of Sundargarh District, Odisha for construction of Basundhara Coal Washery (10 MTY) by M/s Mahanadi Coalfields Limited, therefore, the land use plan and mining plan shall be got approved before Stage-II Clearance and a copy of the same be submitted to this Ministry for record;**
- (xii) The user agency shall prepare and implement Risk Management Plan and the user agency shall take all necessary measures to prevent fire hazards;
- (xiii) 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 proposed to be granted under the Mines and Minerals (Development and Regulation) Act, 1957, as amended and the Rules framed there-under;
- (xiv) The User Agency shall obtain the Environment Clearance as per the provisions of the

- Environmental (Protection) Act, 1986, if required;
- (xv) No labour camp shall be established on the forest land and the User Agency shall provide fuels preferably alternate fuels to the labourers and the staff working at the site so as to avoid any damage and pressure on the nearby forest areas;
- (xvi) The boundary of the diverted forest land shall be demarcated on ground at the project cost, by erecting four feet high reinforced cement concrete pillars, each inscribed with its serial number, distance from pillar to pillar and GPS co-ordinates;
- (xvii) The forest land shall not be used for any purpose other than that specified in the proposal and the forest land proposed to be diverted shall under no circumstances be transferred to any other agency, department or person without prior approval of the Central Government;
- (xviii) No damage to the flora and fauna of the adjoining area shall be caused;
- (xix) The user agency shall explore the possibility of translocation of maximum number of trees identified to be felled and shall ensure that any tree felling shall be done only when it is unavoidable and that too under strict supervision of the State Forest Department;
- (xx) The User Agency shall submit the annual self -compliance report in respect of the above stated conditions to the State Government, concerned Regional Office and to this Ministry by the end of March every year regularly;
- (xxi) Any other condition that the concerned Regional Office of this Ministry may stipulate with the approval of competent authority in the interest of conservation, protection and development of forests & wildlife; and
- (xxii) The user agency shall comply all the provisions of the all Acts, Rules, Regulations, Guidelines, Hon'ble Court Order (s) and NGT Order (s) pertaining to this project, if any, for the time being in force, as applicable to the project.

After receipt of the compliance report on fulfilment of the above conditions from the State Government, formal approval will be considered under Section-2 of the Forest (Conservation) Act, 1980. The transfer of forest land to the User Agency shall not be affected by the State Government till formal orders approving the diversion of forest land are issued by the Central Government.

Yours faithfully,

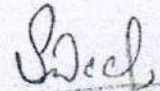


(Sandeep Sharma) 11.3.15

Asstt. Inspector General of Forests

Copy to:

1. The Principal Chief Conservator of Forests, Government of Odisha, Bhubaneshwar.
2. The Nodal Officer, O/o the PCCF, Government of Odisha, Bhubaneshwar.
3. The Addl. PCCF (Central), Regional Office, Bhubaneshwar
4. Monitoring Cell, FC Divisions, MoEF&CC
5. Guard File



(Sandeep Sharma) 11.3.15

Asstt. Inspector General of Forests (FC)

**COST BENEFIT ANALYSIS**

Cost benefit Analysis in respect of Diversion of 134.69 Ha of Forest Land for Kulda Expansion OCP of Mahanadi Coalfields Limited having mine lease area of 921.305 Ha for supply of coal produced from open cast coal mine (Proposal No. 50293/2020. State Serial No. OR-050/2021 dated 08/07/2021)

<b>Table – B Estimation of Cost of Forest Division</b>			
<b>S.No.</b>	<b>Parameters</b>	<b>Remarks</b>	<b>Cost (in Rs.)</b>
1	Ecosystem Service loss due to proposed forest division.	Economic Value of loss of ecosystem services due to proposed diversion of Forest – NPV amount of forest land being diverted as prescribed by Central Government (MoEF&CC)	<p>Ecosystem Services losses due to proposed forest diversion- NPV as per guidelines dt. 06.01.2022 of MoEF&amp;CC</p> <p>NPV of the forest land being diverted i.e.</p> <p>Reserved Forest (Eco Class II having density of 0.5-0.6) 83.24 Ha @ Rs. 15.958 lac (A) = Rs. 1328.34</p> <p>Revenue Forest (Eco Class II having density of 0.3-0.4) 51.45 Ha @ Rs. 14.37 lac (B) = Rs. 739.34 lac</p> <p><b>Total (A+B) = 2067.68 lac</b></p>
2	Loss of animal husbandry productivity including loss of fodder.	To be quantified and expressed in monetary term or 10% of NPV applicable whichever is maximum	<b>Rs. 206.77 Lakh</b>
3	Cost of Human Resettlement.	To be quantified and expressed in monetary term as per approved R&R Plan	Budgeted cost of human settlement for 975 families: <b>Rs. 5635.50 Lakh</b> (As per the R&R Plan submitted with Form-A Part-I)
4	Loss of public facilities and administrative infrastructure (roads, building, schools, dispensaries, electric	To be quantified and expressed in monetary terms on actual cost basis at the time of diversion	There is no public facilities and administrative infrastructure on the forest land to be diverted. Hence, there is no loss of public facilities.



	lines, railway etc.) on forest land, which would require forest land if these facilities were diverted due to project.		
5	Possession value of the forest land diverted.	30% of environment cost (NPV) due to loss of forest or circle rate of adjoining area in the district should be added as a cost component as possession value of forest land whichever is maximum	<b>Rs. 620.30 Lakh</b>
6	Cost of suffering to outsees	The social cost of rehabilitation of outsees (in addition to the cost likely to be incurred in providing residence, occupation, and social services as per R&R Plan) be worked out as 1.5 times of what outsees should have earned in two years had he not been shifted.	975 person x Rs. 450/- per day x 2 years (730 days) x 1.5 times = <b>Rs. 4804.31 Lacs</b>
7	Habitat Fragmentation Cost	While the relation between fragmentation and forest goods and services is complex, for the sake of simplicity the cost due to fragmentation has been pegged at 50% of NPV applicable as a thumb rule.	<b>Rs. 1033.84 Lakh</b>
8	Compensatory afforestation and soil moisture conservation cost	The actual cost of compensatory afforestation and soil and moisture conservation and its maintenance in future at present discounted value	<b>Rs. 543.31 Lakh</b>
Total cost due to diversion of forest land: (Rs. 2067.68 Lakh + Rs. 206.77 Lakh + Rs. 5635.50 Lakh + Rs. 620.3 lakh + Rs. 4804.31 Lakh + Rs. 1033.84 Lakh + Rs. 543.31 Lakh)			
<b>B. Total Cost to the society = Rs. 13877.87 Lakh</b>			

**Table – C Existing guidelines for estimating benefits of forest – diversion**

1	Increase in productively attribute to the specific project	To be quantified & expressed in monetary terms avoiding double counting.	The NPV obtained from selling of coal as per the Project Report of the Project at 100% production level is <b>Rs. 83490 Lakh</b> (cost base Jan' 14). Refer Annexure-II for NPV
2	Benefits to economy due to the specific project	The incremental economic benefit in monetary terms due to the activities attributed to the specific project	<p>Royalty @ Rs. 106.12/Ton for 339,560,000 T (Total extractable reserve of coal) <b>Rs. 360,341.07 Lakh</b></p> <p>NMET Fund i.e., 2% of royalty <b>Rs. 7206.82 Lakh</b></p> <p>DMF, i.e., 30% of royalty <b>Rs. 108102.32 Lakh</b></p> <p>CGST @ 2.5% of Rs. 659.08-Ton x 339,560,000 Ton <b>Rs. 55949.30 Lakh</b></p> <p>SGST @ 2.5% of Rs. 659.08-Ton x 339,560,000 Ton <b>Rs. 55949.30 Lakh</b></p> <p><b>Total: Rs. 587548.81 Lakh</b></p>
3	No. of population benefited due to specific project		The average population benefited due to this project is about 5000. Assuming a family of four, total number of family benefited: $5000/4 = 1250$ Benefit = $1250 \times \text{Rs. } 5772/\text{month} \times 12 \text{ months} \times 11 \text{ years}$ (life of the mine) = <b>Rs. 9523.80 lakh</b> (as per MGNREGA rates Rs.222 per day and in a month 26 days is equal to Rs.5722) Refer Annexure-III for MGNREGA rate.
4	Economic benefits due to direct and indirect employment due to the project		The employment potential of the project is 522 persons per day (as per Project Report of the project). The average wages to the employees @ (EMS Rs. 2597.57 (As per the Project report of the project) per person x 26 days per month x 12 months) per year will be <b>Rs.4230.51 Lakh</b> Total for 11 years; <b>Rs. 46535.61 Lakh</b> Refer Annexure-II for daily rated

			manpower requirement and EMS
5	Economic benefits due to Compensatory afforestation	Benefits from such compensatory forestation accruing over next 50 years monetized and discounted to the present value should be included as benefits of compensatory afforestation.	Rs. 15.95 lac x 286.96 ha (as per Guideline issued by MoEF vide letter No. F.No.5-3/2011_FC (Vol-I) dt. 06.01.2022) = <b>Rs. 4577.01 lacs</b>
Total benefits due to diversion of forest land for non-forest activity: (Rs. 83490 Lakh +Rs. 587548.81 Lakh + Rs. 9523.80 lakh +46535.61 Lakh +Rs. 4577.01 Lakh)			
<b>C. Total Benefit to the society = Rs. 731675.23 Lakh</b>			

**Total Cost to the Society: Rs. 13877.87 Lakh**

**Total Benefits to the Society: Rs. 731675.23 Lakh**

**Cost Benefit ratio = 1:52.72**

*Chiranjiv*  
26/07/2024  
Project Officer  
Kulda Open Cast Project  
Basundhara  
परियोजना अधिकारी  
कुल्दा कस्बे

*Divase*

**DIVISIONAL FOREST OFFICER  
SUNDARGARH FOREST DIVISION**

ENVIRONMENTAL  
CLEARANCE



Government of India  
Ministry of Environment, Forest and Climate Change  
(Impact Assessment Division)

To,

The Project Officer  
KULDA EXPANSION OCP MAHANADI COALFIELDS LIMITED  
Project Office, Kulda Expansion OC Project, P. O.-Basundhara, Dist.-  
Sundergarh, State-Orissa,,Sundargarh,Orissa-770076

**Subject:** Grant of Environmental Clearance (EC) to the proposed Project Activity under the provision of EIA Notification 2006-regarding

Sir/Madam,

This is in reference to your application for Environmental Clearance (EC) in respect of project submitted to the Ministry vide proposal number IA/OR/CMIN/271821/2022 dated 13 May 2022. The particulars of the environmental clearance granted to the project are as below.

- |  |   |
|--|---|
| 1. EC Identification No.                   | EC22A042OR116159                                |
| 2. File No.                                | J-11015/10/1995-IA-II(M)                        |
| 3. Project Type                            | Expansion7                                      |
| 4. Category                                | A   |
| 5. Project/Activity including Schedule No. | 1(a) Mining of minerals                         |
| 6. Name of Project                         | Kulda Expansion Opencast Project                |
| 7. Name of Company/Organization            | KULDA EXPANSION OCP MAHANADI COALFIELDS LIMITED |
| 8. Location of Project                     | Orissa  |
| 9. TOR Date                                | N/A   |

The project details along with terms and conditions are appended herewith from page no 2 onwards.

Date: 25/05/2022

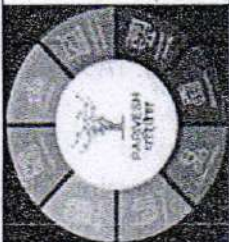
(e-signed)  
Lalit Bokolia  
Scientist F  
IA - (Coal Mining sector)

*Note: A valid environmental clearance shall be one that has EC identification number & E-Sign generated from PARIVESH. Please quote identification number in all future correspondence.*

*This is a computer generated cover page.*

PARIVESH

(Pro-Active and Responsive Facilitation by Interactive,  
and Virtuous Environment Single-Window Hub)



F No. J- 11015/10/1995-IA-II(M).  
Government of India  
Ministry of Environment, Forest and Climate Change  
(Impact Assessment Division)

\*\*\*\*\*

2<sup>nd</sup> Floor Vayu Wing,  
Indira Paryavaran Bhawan,  
Jorbagh Road, N Delhi - 3  
Email: lk.bokolia@nic.in Tel: 011-20819417  
Dated: 24<sup>th</sup> May, 2022

To

The Project Officer  
M/s The Mahanadi Coalfields Limited  
Kulda OCP Basundhara area PO- Balinga,  
Tehsil- Hemgir, Sundargarh, Odisha-770076  
Email: pokuldaexpansionmcl@gmail.com

**Sub: Expansion of Kulda Opencast Coal Mine Project from 19.6 MTPA to 21 (increase of 10% w.r.t 14 MTPA) in an ML area of 634.205 ha M/s Mahanadi Coalfields Limited, located at village Balinga, Tumulia, Siarmal, Kulda & Bankibahal, Tehsil: Hemgir, District Sundargarh (Odisha) - Environmental Clearance under OM vide no. F. No. IA3-22/10/2022-IA.III 07.05.2022- [Availing total 50% relaxation of OM dealing with exemption of public hearing under clause 7 (ii) of EIA notification].**

Sir,

This has reference to your online proposal No. IA/OR/CMIN/271821/2022 dated 13<sup>th</sup> May, 2022 submitted to this Ministry for grant of Environmental Clearance (EC) in terms of the provisions with MoEF & CC's Office Memorandum vide no. F. No. IA3-22/10/2022-IA.III (E 177258) dated 11.04.2022 & 07.05.2022 and as per EIA Notification, 2006) of the Environment Impact Assessment (EIA) Notification, 2006 under the Environment (Protection) Act, 1986 for Expansion of Expansion of Kulda Opencast Coal Mine Project from 19.6 MTPA to 21 (increase of 10% w.r.t 14 MTPA) in an ML area of 634.205 ha M/s Mahanadi Coalfields Limited, located at village Balinga, Tumulia, Siarmal, Kulda & Bankibahal, Tehsil Hemgir, District Sundargarh (Odisha).

2. Earlier, Environment Clearance (EC) was accorded by Ministry on 24.12.2002 for 10 MTPA in an ML area of 878.29 ha. Further, proposal was granted EC for production capacity of 14 MTPA in ML area of 634.205 Ha dated 10.01.2020. Later, EC was granted for expansion under Clause 7 (ii) of EIA notification, 2006 as per O.M. dated 15.09.2017 for 20% expansion each (total 40%) i.e. 16.80 MTPA & 19.6 MTPA on 02.03.2021 & 14.02.2022 respectively. Presently the proposal is considered by the Ministry at central level in view of the exigency, as per the provisions of O.M. F. No. IA3-22/10/2022-IA.III dated 07.05.2022.

3. Based on the submission of Project Proponent, Ministry hereby grants approval to Expansion of Kulda Opencast Coal Mine Project from 19.6 MTPA to 21 (increase of 10% w.r.t 14 MTPA) in an ML area of 634.205 ha M/s Mahanadi Coalfields Limited, located at village Balinga, Tumulia, Siarmal, Kulda & Bankibahal, Tehsil: Hemgir, District Sundargarh (Odisha), under the provisions of OM vide no. F. No. IA3-22/10/2022-IA.III 07.05.2022, under the Environment Impact Assessment

17

(EIA) Notification, 2006 and subsequent amendments/circulars thereto subject to the compliance of the following terms & conditions / specific conditions for environmental safeguards as stated below:-

- i. PP shall submit Certified Compliance Report of the EC vide No. F. No. No. J- F No. J-11015/10/1995-IA-II(M) dated 14<sup>th</sup> February, 2022 granted for total 40% expansion, along with EIA/EMP report, prepared based on standard ToRs for the additional capacity of 10% on PARIVESH portal within six months of enhancement of production beyond 40%.
- ii. In view of above para (i), Ministry shall ascertain the adequacy of the proposed environmental safeguards and stipulate necessary conditions, if required, which shall be monitored as a part of the EC compliance monitoring.
- iii. PP shall obtain necessary prior consent for enhanced capacity from State Pollution Control Board under Air and Water Act.
- iv. Environmental quality parameters arising out of proposed expansion shall be within the prescribed norms and the same shall be maintained as per prescribed norms.
- v. Hon'ble Supreme Court in an Writ Petition(s) Civil No. 114/2014, Common Cause vs Union of India & Ors vide its judgement dated 8th January, 2020 has directed the Union of India to impose a condition in the mining lease and a similar condition in the environmental clearance and the mining plan to the effect that the mining lease holders shall, after ceasing mining operations, undertake re-grassing the mining area and any other area which may have been disturbed due to their mining activities and restore the land to a condition which is fit for growth of fodder, flora, fauna etc. Compliance of this condition after the mining activity is over at the cost of the mining lease holders/Project Proponent".
- vi. All other terms and conditions as prescribed in Ministry's letter dated 10.01.2020 02.03.2021 & 14.02.2022 shall remain the same and this enhancement shall be read with EC dated 14.02.2022, which needs to be complied by PP.

This issues with the approval of the competent Authority

  
(Lalit Bokolia)  
Director

Copy to:

1. The Secretary, Ministry of Coal, Shastri Bhawan, New Delhi.
2. The APPCF, Regional office (EZ), Ministry of Environment, Forest and Climate Change, A-31, Chandrashekhapur, Bhubaneswar-751023 (Odisha)
3. The Secretary, Department of Environment & Forests, Government of Orissa, Secretariat Bhubaneswar (Odisha)
4. The Chairman, Orissa State Pollution Control Board, Parivesh Bhawan, A/118 Nilkanthnagar, Unit VIII, Bhubaneswar-751012 (Odisha)
5. The Chairman, Central Ground Water Authority, Jamnagar House, 18/11, Man Singh Road Area, New Delhi, Delhi 110001
6. The District Collector, Sundergarh, Government of Odisha
7. Monitoring File /Record File /PARIVESH Portal

  
(Lalit Bokolia)  
Signature Not Verified  
Digitally signed by Lalit Bokolia  
Scientist F  
Date: 5/25/2022 11:46:05 AM

STRICTLY RESTRICTED  
FOR COMPANY USE ONLY

The information given in this report is not to be communicated either directly or indirectly to the press or to any person not holding an official position in the CIL/Government.

**MINING PLAN AND MINE CLOSURE PLAN  
FOR  
KULDA EXPANSION OCP (21Mty)  
[EXPANSION IN AREA FROM 694.605 Ha TO 981.705 Ha]  
(REVISION - 4)**

Modified Mining Plan seeking approval under Rule 22E of MCR, 1960

Coal Block Name : Kulda Coal Block

Area in hectare (ha):	Block Area	- 584.00 ha
	Mining Lease Area	- 921.305 ha
	Project Area	- 981.705 ha

**IB VALLEY COALFIELD, BASUNDHARA AREA,  
Himgir tehsil, Dist. Sundergarh, State: Odisha**

Applicant: GENERAL MANAGER, BASUNDHARA AREA  
MAHANADI COALFIELDS LIMITED, ODISHA  
Email – gm-basundhara.mcl@coalindia.in

Targeted Capacity:

(a) Rated capacity: 21.00 Million Tonnes per year (Mty)

Name of the Accredited Mining Plan Preparing Agency (MPPA)  
preparing the mining plan with details:



JULY, 2022

**CENTRAL MINE PLANNING & DESIGN INSTITUTE LIMITED**  
(A Subsidiary of Coal India Ltd.)  
**REGIONAL INSTITUTE-VII**

Plot – E, 4; At: Samantapuri, P.O. – RRL; Bhubaneswar – 751013.

**MINING PLAN & MINE CLOSURE PLAN  
OF  
KULDA EXPANSION OCP (REVISION - 4), 21.0 MTY**

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## GENERAL INFORMATION

- 1 NAME AND ADDRESS OF THE APPLICANT : MAHANADI COALFIELDS LIMITED,  
JAGRUTI VIHAR, BURLA,  
SAMBALPUR-768020 (ORISSA)
- 2 STATUS OF THE APPLICANT : CENTRAL PUBLIC SECTOR UNDERTAKING  
(A SUBSIDIARY OF COAL INDIA LTD.)  
A GOVT. OF INDIA UNDERTAKING  
REGISTERED UNDER COMPANIES ACT, 1956
- 3 MINERAL WHICH THE APPLICANT INTENDS TO MINE : COAL
- 4 NAME, ADDRESS OF PERSON WHO PREPARED MINING PLAN : GUNTUR SRINIVAS  
CENTRAL MINE PLANNING AND DESIGN INSTITUTE LIMITED,  
REGIONAL INSTITUTE-VII, PLOT NO. E4  
NEAR GANDHI PARK, SAMANTAPURI,  
BHUBANESWAR-751013 (ODISHA).  
RQP REF.NO.-No. 34012/1/2015-CPAM, DTD. 05.10.2017
- 5 NAME AND ADDRESS OF PROSPECTING AGENCY : CENTRAL MINE PLANNING & DESIGN INSTITUTE LIMITED,  
REGIONAL INSTITUTE-VII, PLOT NO. E4  
NEAR GANDHI PARK, SAMANTAPURI,  
BHUBANESWAR-751013 (ODISHA).

### List of Abbreviations used:

- MoC : Ministry of Coal
- MoEF : Ministry of Environment and Forest
- EC : Environmental Clearance
- FC: Forestry Clearance
- CMPDIL : Central Mine Planning and Design Institute Limited.
- MCL : Mahanadi Coalfields Limited.
- NCCDC: National Coal Development Corporation.
- OC : Opencast
- IBM : Indian Bureau of Mines
- MECL: Mineral development Corporation Limited
- RH- Relative Humidity
- UHV- Useful Heat Value
- PR : Project Report
- CBA (A&D) Act- Coal Bearing Areas (Acquisition & Development) Act.
- Yr 1,2,- Production year 1,2
- Mt- Million tonnes
- Mty- Million tonnes per year
- OB- Overburden
- TPD- Tonnes per day
- kW- kilo watt
- kV-kilo volt
- FLP- Flame Proof
- lps-liters per second
- CO- Carbon Monoxide
- CH<sub>4</sub> Methane
- CHP- Coal Handling Plant
- MTK room- Mine Time Keeper Room
- RPM- Rounds per Minute
- SPM- Suspended Particulate Matter
- NO<sub>x</sub> Nitrogen Oxide/s
- EMP- Environmental Management Plan

## SUMMARISED DATA

PROJECT INFORMATION		
1.1	<b>INTRODUCTION</b>	
1.1.1	Name of Coal/Lignite Block	Kulda Block
1.1.2	Name of the Coalfield/ Lignite Field	<b>IB valley coalfield</b>
1.1.3	Base date of Mining Plan/ Mine Closure Plan	Costbase of mine closure : June 2022
1.1.4	Linked End Use Plant	This mine has been planned to meet the demand of the present & future thermal power stations (basket linkage).
1.1.5	Distance of End use Plant from the pit head of the projection in "km"	NA
1.1.6	Mode of Coal Transport	<ol style="list-style-type: none"> <li>1) <b>Within the Mine:</b> Truck transportation from mine face to pit top.</li> <li>2) <b>Surface Coal Transport:</b> The entire blast free coal will feed to proposed Silos to be located at Barpali loop except around 2.0Mty conventionally produced will be catered by the existing Feeder breaker circuits.</li> </ol> <p>However, till the commissioning of the proposed MGR Loop at Barpali yard the entire coal will be dispatched through Kanika and Sardega sidings as well as road sale.</p>
1.2	<b>LOCATION, TOPOGRAPHY AND COMMUNICATION</b>	
1.2.1	Location of coal deposit (District and State)	Himgir tehsil, <b>Dist. Sundergarh, State: Odisha</b>
1.2.2	Communication: PWD roads, railway lines, Air	<ul style="list-style-type: none"> <li>▪ Sundargarh-Raigarh all weather road is passing through the block.</li> <li>▪ Sundergarh, district HQ is on State Highway-10 (Sambalpur to Rourkela), is at a distance of about 40 km.</li> <li>▪ The block is also connected with two important towns of Orissa namely Rourkela at 145 km and Jharsuguda at 75 km.</li> <li>▪ Nearest rail head Himgir - 36 km by road (SE Rly.); Jharsuguda railway station - 75 km from the block.</li> <li>▪ The nearest port at Bay of Bengal - Paradip (at a distance of about 600 km. from the block)</li> <li>▪ The nearest airport from the block - Jharsuguda Airport.</li> </ul>
1.2.3	Availability of power supply, water, etc.	Power from existing 220/33 kV substation at Garjanbahal.
1.2.4	Prominent physiographic features,	<ul style="list-style-type: none"> <li>▪ The topography of the block is rugged with steep rise and fall.</li> <li>▪ The central and south eastern part lie at a comparatively higher elevation.</li> </ul>

	drainage pattern, natural water courses, rainfall data	<ul style="list-style-type: none"> <li>▪ Altitude of the block : 254 m to 320 m</li> <li>▪ Basundhara river flows along northwest and northern boundary of the block.</li> <li>▪ The ground slopes generally towards west and north and ground water is collected by Chattajhor nallah being fed by streamlets, which in turn feeds to river Basundhara.</li> <li>▪ Sub-tropical warm temperature</li> </ul> <p>The average annual rainfall is 1413 mm as measured at IMD Jharsuguda for the last 24 years.</p>																												
1.2.5	Land use and ownership/ occupancy & involvement of forest land	<table border="1"> <thead> <tr> <th rowspan="2">Sl.</th> <th rowspan="2">Particulars (ML-mining lease)</th> <th colspan="3">Total Area in ha</th> </tr> <tr> <th>Forest</th> <th>Non-forest</th> <th>Total</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>Quarry excavation area</td> <td>298.075</td> <td>241.905</td> <td>539.98</td> </tr> <tr> <td>2.</td> <td>Infrastructure including Safety zone (7.5m around mine boundary) and Embankment</td> <td>37.935</td> <td>164.458</td> <td>202.393</td> </tr> <tr> <td>3.</td> <td>External OB dump</td> <td>18.05</td> <td>160.882</td> <td>178.932</td> </tr> <tr> <td></td> <td><b>Total ML area</b></td> <td><b>354.06</b></td> <td><b>567.245</b></td> <td><b>921.305</b></td> </tr> </tbody> </table>	Sl.	Particulars (ML-mining lease)	Total Area in ha			Forest	Non-forest	Total	1.	Quarry excavation area	298.075	241.905	539.98	2.	Infrastructure including Safety zone (7.5m around mine boundary) and Embankment	37.935	164.458	202.393	3.	External OB dump	18.05	160.882	178.932		<b>Total ML area</b>	<b>354.06</b>	<b>567.245</b>	<b>921.305</b>
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1.2.6	Important surface features within the project area and major diversion or shifting involved	<p>Sundargarh-Raigarh all weather road is passing through the block ( diverted).</p> <p>Basundhara river &amp; Chattajor nallah around periphery of block.</p>																												
<b>1.3 DETAILS OF THE ALLOTTMENT AGREEMENT</b>																														
1.3.1	Name of the Alottee	MAHANADI COALFIELDS LIMITED (MCL)																												
1.3.2	Status of the Applicant Company	Central Public Sector Undertaking (A Subsidiary of Coal India Ltd.) A Govt. of India Undertaking Registered Under Companies Act, 1956																												
1.3.3	Details of allotment/ vesting order	NA																												
1.3.4	Name and address of the applicant	Mahanadi Coalfields Limited Jagruti vihar, Burla Dist: Sambalpur (Odisha) - 768020																												
1.3.5	Relationship between the applicant and allottee company	MCL is a subsidiary of Coal India Ltd. which is a Govt. of India Undertaking.																												
1.3.6	Name of the previous allottee of the Block	NA																												
1.3.7	Starting date of the mine as per CMDPA	NA																												
1.3.8	Rated capacity	<b>21.0 Mty</b>																												

1.3.9	as per CMDPA Production schedule as per opening permission (meeting provisions of CMDPA if any)													
1.3.10	End Use of Coal/Lignite as per allotment order if any	<ul style="list-style-type: none"> <li>To satisfy needs of different present &amp; future customers of MCL</li> </ul>												
<b>1.4</b>	<b>DETAILS OF THE PREVIOUS APPROVAL OF MINING PLAN</b>													
1.4.1	Date of Approval	Mining Plan/Mine Closure Plan of Kulda Expansion OCP (21 Mty), Revision-3 was approved by MCL Board ref no: MCL/SBP/CS/BD-248/Exct/2022/12600 dated 20/22.06.2022.												
1.4.2	Conditions, if any													
1.4.3	Scheduled year of start of production	This is a running mine.												
1.4.4	Proposed year of achieving the targeted production	Year-1												
1.4.5	Date of actual commencement of mining operations, if operations already started	2007-08												
1.4.6	Likely date of mining operations, if operations not yet started & reasons for non-commencement of operations	NA												
1.4.7	Planned production and actual levels achieved in last 3 years (Coal in Mte, OB in MM <sup>3</sup> , SR in M <sup>3</sup> /te)	<table border="1"> <thead> <tr> <th>O/CAST</th> <th>COAL (Mt)</th> <th>OB (Mcum)</th> </tr> </thead> <tbody> <tr> <td>2019-20</td> <td>13.63</td> <td>8.34</td> </tr> <tr> <td>2020-21</td> <td>15.73</td> <td>16.59</td> </tr> <tr> <td>2021-22</td> <td>18.50</td> <td>15.37</td> </tr> </tbody> </table>	O/CAST	COAL (Mt)	OB (Mcum)	2019-20	13.63	8.34	2020-21	15.73	16.59	2021-22	18.50	15.37
O/CAST	COAL (Mt)	OB (Mcum)												
2019-20	13.63	8.34												
2020-21	15.73	16.59												
2021-22	18.50	15.37												
1.4.8	Reasons for difference between the planned and actual production levels	Due to delay in forestry clearance & land acquisition.												

<b>1.5 PARAMETERS OF APPROVED MINING PLAN VIS-À-VIS PROPOSED MINING PLAN</b>			
		Approved Mining Plan	Proposed Mining Plan
1.5.1	Block Area in "Ha"	584	584
1.5.2	Block Area Projected "Ha"		
1.5.3	Lease area "Ha"	634.205	921.305
1.5.4	Project Area "Ha"	694.605	981.705
1.5.5	Life of the Project "Yrs"	3	11
1.5.6	Minimum and Maximum Depth of working "m"	Minimum - 10 m Maximum - 200 m	Minimum - 10 m Maximum - 238 m
1.5.7	Net Geological Block "Ha"	584	584
1.5.8	Production Target "MTPA"	21.0	21.0
1.5.9	Seams Available "As per GR"	<b>3 seams</b>	<b>3 seams</b>
1.5.10	Seams not considered for Mining with Reasons	Reserves have been estimated for all coal seams. 1b seam in certain patches are not considered where it is found non workable.	Reserves have been estimated for all coal seams. 1b seam in certain patches are not considered where it is found non workable.
1.5.11	Net Geological Reserve "Mt" (without barrier & slope)	438.90 (Total) 245.71 (Phase-I)	438.90
1.5.12	Blocked Reserve "Mt"	73.22	78.45
1.5.13	Mineable Reserve "Mt"	172.49 (Phase-I)	360.45
1.5.14	Extractable Reserves "Mt"	172.49 (Phase-I)	339.56
1.5.15	% of Extraction/recovery	70.20	77.37
1.5.16	Reserve Depleted (till the base date) Reserves "Mt"	120.93 till 31.03.2022	120.93 till 31.03.2022
1.5.17	Balance Extractable reserve "Mt"	<b>51.56 (Phase-I) As on 01.04.2022</b>	<b>218.627 As on 01.04.2022</b>
1.5.18	Average Grade	Range: D to G Mean: F	Range: D to G Mean: F
1.5.19	OB in MM <sup>3</sup>	55.72 (Phase-I)	243.006
1.5.20	SR MM <sup>3</sup> /te	1.08	1.11
1.5.21	Mining Technology	Shovel-Dumper in OB & Surface miner-front end loader-dumper in coal	Shovel-Dumper in OB & Surface miner-front end loader-dumper in coal
1.5.22	Coal Beneficiation envisaged	<b>Not applicable</b>	<b>Not applicable</b>
1.5.23	Handling of Rejects	<b>Not applicable</b>	<b>Not applicable</b>
	<b>Land use pattern "Ha"</b>		
1	Excavation Area	321.91 (Phase-I)	539.98
2	Infrastructure including Safety zone (7.5m around mine boundary) and Embankment	151.793	202.393
3	External OB dump	160.502	178.932
	<b>Total Lease area</b>	<b>634.205</b>	<b>921.305</b>
	Residential colony	37.5	37.5
	Rehabilitation site	22.9	22.9



	Total Outside Mine Lease Area	60.4	60.4													
	Total Project area	694.605	981.705													
1.5.25	Reasons for revision	<ul style="list-style-type: none"> <li>• Increase in area.</li> <li>• Change in mineable reserve &amp; stripping ratio</li> <li>• Change in mine life</li> </ul>														
<b>2.Exploration, Geology, Seam Sequence, Coal Quality and Reserve</b>																
2.1	DETAILS OF THE BLOCK															
2.1.1	Particulars of adjacent blocks: North, South, East, West	<b>North:</b> Basundhara East block (exhausted) separated by Basundhara river / Nala.	<b>South:</b> Garjanbahal block	<b>East:</b> No Blocks.	<b>West:</b> Siarmal & Siarmal Extension.											
2.1.2	Location of the Block District/State	Himgir tehsil, Sundergarh district, Odisha														
2.1.3	Area of the Block "Ha"	584 ha														
2.1.4	Area of the geological block projectised "in Ha" (Area of the geological block considered for liquidation of coal reserve)	584 ha														
2.1.5	Balance area yet to be projectised "Ha"	Nil														
2.1.6	Likely Reserve in the area yet to be projectised "Mte"	NA														
2.1.7	Co-ordinates of the Block Boundary	<table border="1"> <thead> <tr> <th colspan="3">Co-ordinates of the Block Boundary</th> </tr> <tr> <th>ID</th> <th>Latitude</th> <th>Longitude</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>22°01'02" N</td> <td>83° 43'28" E</td> </tr> <tr> <td>2</td> <td>22°03'03" N</td> <td>83°45'35" E</td> </tr> </tbody> </table>			Co-ordinates of the Block Boundary			ID	Latitude	Longitude	1	22°01'02" N	83° 43'28" E	2	22°03'03" N	83°45'35" E
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1	22°01'02" N	83° 43'28" E														
2	22°03'03" N	83°45'35" E														
2.1.8	The project area, lease area and geological block area in "Ha" shall also be envisaged.	Geological block area: 584 Ha Lease area: 921.305Ha Project area : 981.705Ha														
2.1.9	KML file of the proposed lease and geological block	Will be provided by MCL AutoCAD file with WGS84 system with marked coordinate grid values is provided in this report.														
2.1.10	Whether the proposed project area is confined within the allotted block boundary, if not, the reason for deviation from allotted block boundary, may be given	External Dump No.2 falls under coal bearing area towards dip side of Kulda block which belongs to MCL. Infrastructure is on non coal bearing area towards rise side of the block.  Colony & resettlement area is outside block area.														
2.1.11	If the project area extends outside the allotted block boundary, confirmation about	Some of the coal dispatch infrastructure are located in outside coal block which are non-coal bearing on the rise side as per coalfield geological plan. However external														

	non-occurrence of coal/lignite in the area under reference needs to be furnished	overburden dump no. 2 is on coal bearing area on the dip side of the block. Dipside block belongs to MCL only & the dump will be rehandled if this dipside area will be mined in future.
2.1.12	Type of the project (Operating/under Implementation) and year of starting	Kulda OCP is an operating mine. Base year of this Mining plan is 2022-23.
2.2	<b>EXPLORATION, GEOLOGY AND ASSESSMENT OF RESERVE</b>	
2.2.1	Regional geological set up of the area, local geology, structure, stratigraphic sequence, characteristics of the litho-logical units (coal seams/partings/overburden	<p>The IB Valley coalfield forms a half elliptical basin. It is closed towards south-east and open towards north-west. The basin has normal contact with the metamorphics in the north-western, northern, north-eastern, eastern and south-eastern part. It has a faulted contact with the metamorphics in the south-western boundary where younger formations viz. Raniganj and Barren Measure occur in juxtaposition with the metamorphic.</p> <p>In this coalfield the prominent geological formations are pre-cambrian as base over which Talchir, Karharbari and Barakar formations were deposited. The pre-cambrian rocks are exposed along the basin margin above which Talchir, Karharbari and Barakar rest successively as per the depositional sequence. Barakar and Karharbari are the two potential coal bearing formations in IB Valley coalfield with Barakar being the store house of majority of coal seams.( details in Chapter-4)</p>
2.2.2	Local geology, structure, stratigraphic sequence, characteristics of the litho-logical units (coal seams/ partings/ overburden)	<p>Detailed exploration in this block has established the existence of Barakar and Karharbari Formations under thin blanket of soil, sub-soil and laterite. The geological structure of the area has been interpreted on the basis of surface and sub-surface data obtained from boreholes.</p> <p>Strike of the strata is roughly NW-SE. The dip is generally 7° towards southwest. Dip is slightly higher in southern part and near faults compared to rest of the area. Existence of 3 no faults has been interpreted on the basis of borehole data.</p> <p>Three coal seams viz. Ib, Rampur and Lajkura seams have been proved in this block under report. Ib seam is the bottom most coal seam and is splitted in to 3 sections viz. Ib Top, Ib Middle &amp; Ib Bottom. Rampur seam is splitted into five sections namely Rampur-I, Rampur-II, Rampur-III Top,</p>

		Rampur-III bot., Rampur-IV and Rampur-V. Lajkura is also a thick seam and splitted into 4 sections viz; Lajkura-I, Lajkura-II, Lajkura-III and Lajkura-IV. Ib and Rampur seams occur covering almost entire block, whereas occurrence of Lajkura seam is restricted to the western half of the block. ( details in Chapter-4)												
2.2.3	Geological Block Area "Ha"	584 ha												
2.2.4	Status of Exploration of the block	Kulda block has been explored in detail and geological reports are available for the blocks.												
2.2.5	Area covered by 'detailed' exploration within the block (sq.km)	5.84 sq.km.												
2.2.6	Whether entire lease area has been covered by 'detailed' exploration	<b>Yes</b>												
2.2.7	No. of boreholes drilled within the block	130 boreholes;												
2.2.8	Whether any further exploration/study is required or suggested and time frame in which it is to be completed	No												
2.2.9	Year wise future programme of exploration	NA												
2.2.10	Overall borehole density within the block (no./sq.km) approx.	22.3 boreholes/sq.km.												
2.2.11	No of seams available as per GR (Geological Report)	3 seams												
2.2.12	Seams not considered for Mining with Reasons	Reserves have been estimated for all coal seams. Ib seam is excluded in some small patches where it is found less than workable thickness.												
2.2.13	Dip of the seam	<ul style="list-style-type: none"> <li>The strata generally dips 7° towards southwest.</li> </ul>												
2.2.14	Seam wise thickness	<table border="1"> <thead> <tr> <th>Coal seams</th> <th>Thickness (m)</th> </tr> </thead> <tbody> <tr> <td>Lajkura-IV</td> <td>12.42 - 14.39</td> </tr> <tr> <td>Lajkura-III</td> <td>2.02 - 4.89</td> </tr> <tr> <td>Lajkura-II</td> <td>30.05 - 34.07</td> </tr> <tr> <td>Lajkura-I</td> <td>12.09 - 14.43</td> </tr> <tr> <td>Rampur-V</td> <td>1.94 - 6.40</td> </tr> </tbody> </table>	Coal seams	Thickness (m)	Lajkura-IV	12.42 - 14.39	Lajkura-III	2.02 - 4.89	Lajkura-II	30.05 - 34.07	Lajkura-I	12.09 - 14.43	Rampur-V	1.94 - 6.40
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Lajkura-I	12.09 - 14.43													
Rampur-V	1.94 - 6.40													

		Rampur-IV	12.33- 21.58
		Rampur-III(Top)	2.97 - 11.92
		Rampur-III(Bot.)	0.16- 3.73
		Rampur-II	0.91 - 6.31
		Rampur-I	0.06 - 5.03
		IB (Top)	0.12 - 1.84
		IB(Middle)	0.30 - 4.28
		IB(Bottom)	0.22 - 3.28
2.2.15	Methodology of reserves estimation (also mention if any software package has been used).	<p><b>Basic Assumptions &amp; Norms Followed :</b></p> <ol style="list-style-type: none"> <li>1) In seam dirt bands of 1m and above thickness have been excluded from the thickness of the coal seams and considered as Intra-seam burden for which separate Iso-dirt bands have been drawn in respective seam Folio plans for estimating volume of in seam overburden.</li> <li>2) Coal seam having minimum 1m thickness &amp; consistent development has been considered for reserves estimation.</li> <li>3) Seams/sections having less than (&lt;)1m thickness have been accounted for OB above the corresponding seam.</li> <li>4) Normally, two coal seams or splits are considered separate if the intervening parting is 1m and more. However, depending upon regional continuity of the intervening parting the splits having even &lt; 1m. parting (at places) has also been considered as separate seams..</li> </ol>	
2.2.16	Net Geological Reserve of the block "Mte"	<b>438.90</b>	
2.2.17	Mineable Reserve of the block "Mte"	<b>360.45</b>	
2.2.17	Blocked Reserve "Mte"	78.45	
2.2.20	Corresponding extractable reserve of the block "Mte"	<b>339.56</b>	
2.2.21	Percentage of Extraction	<b>77.36</b>	
2.2.22	Reserve already depleted (Base date of Mining Plan)	120.93 till 31.03.2022	
2.2.23	Balance Reserve (as on Base Date)	<b>218.627 as on 01.04.2022</b>	

<b>3.1</b>	<b>MINING METHOD</b>	
3.1.1	Existing method of mining if the mine is under operation	Shovel dumper mining system in overburden and Surface Miner (windrowing), loader and dumper for coal extraction
3.1.2	Proposed method of mining with justification on	The prevalent mining and geological conditions comprise of the followings:

	suitability of method of mining	<p>i) Presence of 3 nos. thick coal horizons namely, (a) Ib (8 m), (b) Rampur (45 m), (c) Lajkura (50 m).</p> <p>ii) The above coal horizons contain multiple coal sections with intervening partings. Thickest coal seams/sections are Rampur (IV+V) (25 m) and Lajkura II (31 m).</p> <p>iii) Gradient of the seams (5° to 8°).</p> <p>iv) Low average stripping ratio of 1.11 cum per tonne as on 01.04.2022</p> <p>Considering the above prevalent mining and geological conditions, shovel dumper mining system in overburden and Surface Miner (windrowing), loader and dumper for coal extraction has been suggested.</p>																																																																																											
3.1.3	Coal production capacity proposed "Mtpa"	<b>21.0 Mtpa</b>																																																																																											
3.1.4	Justification for optimization Coal production capacity	Considering available strike length, thickness of seams & dumping requirement capacity of 21.0 Mty is justified.																																																																																											
3.1.5	Calendar year from which the production will start	Kulda OCP is an operating mine.																																																																																											
3.1.6	Year of Achieving rated production	<b>Year-1</b>																																																																																											
3.1.7	Coal production plan "MT"	OC (opencast mining) - Proposed , UG (Underground mining) – Not proposed																																																																																											
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	TOTAL			218.627	218.627	243.006	1.11
3.1.8	Peak/Rated Capacity						
	- By OC			21.0			
	- By UG			NA			
	- Overall			21.0			
3.1.9	Life of the mine:						
	- By OC			11			
	- By UG			NA			
	- Overall			11			
3.1.10	Whether the proposed external OB dump site is coal/lignite bearing: If so, whether coal/lignite below waste disposal area is extractable						External overburden dump No. 2 area is on coal bearing area on the dip side of the block. Dipside block belongs to MCL only & the dump will be rehandled if this dipside area will be mined in future.
3.1.11	Whether negative proving for coal/lignite in the proposed site for OB dump/infrastructure has been done						Some of the coal dispatch infrastructure are located in outside coal block which are non-coal bearing on the rise side as per coalfield geological plan. However external overburden dump No 2 is on coal bearing area on the dip side of the block. Dipside block belongs to MCL only & the dump will be rehandled if this dipside area will be mined in future.
3.1.12	Results of any investigation carried out for scientific mining, conservation of minerals and protection of environment; future proposals						No

3.1.13	Type of Equipment/ HEMM proposed	Equipment	Size/Specification	Total No
		<b>OVERBURDEN</b>		
		HYDRAULIC BACKHOE [660-760 HP]	5.9-6.1 cum.	10
		ELECTRIC ROPE SHOVEL [6.6 kv]	10 Cum.	4
		REAR DUMPER	100 T	34
		REAR DUMPER	60 T	75
		ELEC. R.B.H. DRILL TALL MAST	250 mm	6
		R.B.H. DRILL	160 mm	6
		DOZER	410 H.P.	10
		RIPPER DOZER	850 HP	3
		<b>COAL</b>		
		SURFACE MINER (WINDROW)	900-1100 HP	6
		HYDRAULIC BACKHOE [660-760 HP]	5.9-6.1 cum.	2
		FRONT END LOADER [-500 HP]	5.5-6.0 cum	9
		REAR DUMPER	60 T	63
		DOZER	410 H.P.	5

4.1	SAFETY AND MANAGEMENT	
4.1.1	<p>Important safety aspects: Major Risks and uncertainties to the project viz. Proximity to river, adjacent working, geo-mining disturbances, slope stability and remedial measures suggested.</p> <p>It should also include proposed overall slope of the quarry and OB dump, dump height, strata control, fire and spontaneous heating, gas monitoring, disaster management, danger from inrush of water etc.</p>	<ul style="list-style-type: none"> <li>➤ Mine working &amp; waste dump slope failure.</li> <li>➤ Dangers due to handling and use of explosives and accidents due to fly-rocks following a faulty heavy blast.</li> <li>➤ Hazards associated with use of electricity</li> <li>➤ Accidents due to unruly operation of HEMM</li> <li>➤ Dust hazards</li> <li>➤ Fire hazards due to spontaneous heating of coal in stockpiles and exposed benches.</li> <li>➤ Fire hazards in stores &amp; workshops where inflammable &amp; highly inflammable materials are stored or used.</li> <li>➤ Danger of inundation from surface and/or ground water</li> </ul> <p>Major threat of Inundation is from Basundhara river/nala &amp; Chattajhor nallah, which flows along the northern and western boundary of the block. Embankment with a height</p>

		of three meter above the HFL has been proposed against Basundhara river.
4.2.2	A commitment from the Company Board that entire mining operation will be carried out as per the Statutory provision given under Mines Act 1952, Coal mine Regulation 2017 and wherever specific permission will be required the company will approach the concerned authorities.	Will be provided by MCL
<b>5.1</b>	<b>INFRASTRUCTURE FACILITIES</b>	
5.1.1	Mine infrastructure required e.g. Equipment maintenance planning, Office buildings, Workshop, Power supply arrangement, Water supply etc.	<ul style="list-style-type: none"> <li>• E&amp;M WORKSHOP</li> <li>• STORES</li> <li>• COLONY</li> <li>• PROJECT SUBSTATION</li> <li>• CHP SUBSTATION</li> <li>• PROJECT &amp; SITE OFFICE</li> <li>• WATER SUPPLY ARRANGEMENT</li> <li>• ETP &amp; STP PLANT</li> </ul>
5.1.2	Power supply	Main power supply is from 220KV Main sub-station at Garjanbahal which was charged in October 2012. Power is transmitted to 2x5 MVA, 33/6.6 KV substation near existing mine. (details in chapter 8)
5.1.3	Coal Handling Arrangement: Brief detail of the CHP/ Mode of Dispatch, Coal quality and Coal staking and handling arrangement	(details in chapter 7)



5.1.4	Coal washing and the proposed handling/ disposal of rejects	Not applicable						
<b>6.1</b>	<b>LAND REQUIREMENT</b>							
6.1.1	Total Land requirement for the mine in "Ha"	921.305 Ha for Mining Lease 981.705 Ha Total lease						
6.1.2	During mining Land use details:							
	Type	Land use (Proposed)	Land Use (Post Closure)					Total
			Plantation	Water Body	Pubic/ Company use	Forest land (Returned)	Undisturbed	
	Excavation Area	539.98	393.94	15.76		130.28		539.98
	Backfilled Area							
	Excavated Void							
	External dump	178.932	178.932					178.932
	Infrastructure including Safety zone (7.5m around mine boundary) and Embankment	202.393	60.718		125.484		16.191	202.393
	<b>Total Lease area</b>	<b>921.305</b>	<b>633.59</b>	<b>15.76</b>	<b>125.484</b>	<b>130.28</b>	<b>16.191</b>	<b>921.305</b>
	colony	37.5	7.5		30			37.5
	Resettlement	22.9	4.5		18.4			22.9
	Total outside area	60.4	12		48.4			60.4
	<b>Total Project area</b>	<b>981.705</b>	<b>645.59</b>	<b>15.76</b>	<b>173.884</b>	<b>130.28</b>	<b>16.191</b>	<b>981.705</b>
	Area outside lease area is indicative & may vary as per actual implementation of the project.							
6.1.3	Surface features over the block area	State highway from Sundergargh to Raigarh (diverted)						
6.1.4	Proposed rehabilitation programme	R & R benefits including well developed rehab site & other cash compensation will be given to PAF as per R & R policy of MCL & norms of state Govt. of Odisha						
<b>6.2</b>	<b>DETAILS OF LEASE</b>							
6.2.1	Status of Lease							
6.2.2	Existing Lease Area "Ha"	634.205						
6.2.3	Period for which Mining Lease has been granted/ is to be renewed/ is to be applied for	NA						
6.2.4	Date of expiry of earlier Mining Lease, if any	NA						
6.2.5	Whether the lease boundary/ required boundary is same as mentioned in the allotment order	mine excavation area falls within geological block but other infrastructure & external dumps are located outside geological block						
6.2.6	Lease Area (applied/ required) as per the Mining Plan under consideration (Ha)	Total Mining Lease Area = 921.305 Ha Total Project Area = 981.705 Ha						
6.2.7	Whether the applied lease area falls within the allotted block	Major part of lease area falls within geological block, Mine excavation area falls within allotted block, however external overburden dump No 2 has been located on dip side of the block which also belongs to MCL, some more land also is						

		required outside block for locating infrastructure/office and despatch arrangement.
6.2.8	Area (Ha) of lease which falls outside the delineated block/sub-block	337.305 Ha of additional land will be required outside block area which will be used for infrastructure, Ext. OB dump etc. (Excl. land for colony, R&R)
6.2.9	Details of outside area:	
	<input type="checkbox"/> Whether forms part of any other coal block <input type="checkbox"/> Whether it contains any coal/lignite reserves <input type="checkbox"/> Purpose for which it is required, e.g. roads/ OB dumps/ service buildings/ colony/safety zone/ others (specify)	<p>External dump No. 2 is proposed in dipside of Kulda block, which is dipside of present geological block and is owned by MCL only. Dumps will have to be rehandled while extending the mine into dipside block area or during final mine closure.</p> <p>Other infrastructure are located in non-coal bearing area which does not belong to any coal block</p>
6.2.10	Whether some part(s) of the allotted block has not been applied for mining lease	Total of geological block has been applied for mining.
	<ul style="list-style-type: none"> <li>- Total area in Ha of such part(s)</li> <li>- Total reserves in such part(s) (Mt)</li> <li>- Brief reasoning for leaving such part(s)</li> </ul>	NA
7.1	<b>ENVIRONMENTAL MANAGEMENT</b>	
7.1	Commitment from the project proponent that the company will comply Environment and Forest Condition stipulated in the respective clearances	Will be provided by MCL

8.1	<b>PROGRESSIVE &amp; FINAL MINE CLOSURE PLAN</b>								
8.1.1	Land Degradation and Technical Reclamation (Cumulative Area "Ha")								
		Land Degraded (ha)				Technically Reclaimed Area (ha)			
	Stage/ Year	Excav.	Dump (Extn + Top soil)	Infra/ others	Total	Backfill	Dump (Extn + Top soil)	Others	Total
		(A)	(B)	(C)	(D=A+B+C)	(E)	(F)	(G)	(H=E+F+G)
	Upto Base year (31.3.22)*	291.00	88.96	151.793	531.753	172.55	88.96	20.00	281.51
	Y-1 22-23	313.63	106.96	177.093	597.683	193.55	106.96	25	325.51
	Y-3 24-25	358.89	142.96	202.393	704.243	235.55	142.96	30	408.51
	Y-5 26-27	404.15	178.932	202.393	785.475	277.55	178.932	40	496.482
	Y-11 32-33	539.98	178.932	202.393	921.305	393.94	178.932	60.72	633.592
	Post Closure								
	Y-14 35-36	539.98	178.932	202.393	921.305	539.98	178.932	202.393	921.305
8.1.2	Biological Reclamation (Cumulative in "Ha")								
	Stage/ Year	Biologically Reclaimed Area					Undisturbed/ to be left for public/com use	Total	
		Agri-culture	Plantation/Grass carpetting	Water Body	Public/ Company Use	Forest land (Return)	Total		
	Upto Base Year (31.03.2022)		281.51				281.51		
	Y-1 22-23		302.91				302.91		
	Y-3 24-25		345.71				345.71		
	Y-5 26-27		388.51				388.51		
	Y-11 32-33		516.95				516.95		
	Post Closure								
	Y-14 35-36		633.59	15.76	125.484	130.28	905.114	16.191	921.305
	Out of additional area of 60.4 Ha( for colony, R&R), 12 Ha will be covered with plantation & remaining 48.4 Ha will be for public/company use.								
8.2	Post closure water quality management:				Details given in Chapter-11				
8.3	Post Closure Air Quality management				Details given in Chapter-11				

8.4	Waste Management (Figures in MM <sup>3</sup> )								
(All Figures are Cumulative and in MM <sup>3</sup> )									
	OB Removal (Cumulative)			External Dump (Cumulative)		Internal Backfilling (Cumulative)		Embankment (Cumulative)	
	Top soil	OB	Total	Top soil	OB	Top soil	OB	Top soil	OB
	(A)	(B)	(C=A+B)	(D)	(E)	(F)	(G)	(H)	(I)
	Upto Base Year(31.3.2022)	0.83	86.05	86.88	0.27	38.06	0.09	47.33	1.11
	Y-1 22-23	0.9	109.5	110.4	0.32	44.94	0.18	62.08	1.11
	Y-3 24-25	1.05	156.81	157.86	0.42	58.73	0.36	95.8	1.11
	Y-5 26-27	1.19	204.55	205.74	0.52	72.48	0.54	131.63	1.11
	Y-11 32-33	1.62	328.27	329.89	0.52	72.48	1.1	254.68	1.11
Note: (Column C= D+E+F+G+H+I)									
8.5	Top soil Management – (Including Action Plan for Top Soil Management)								
(All Figures are Cumulative and in MM <sup>3</sup> )									
Year/ Stage	Top Soil Removal (Cumulative) "in MCum"	Spreading Over Embankment	Spreading over the backfilled area	Spreading over External OB dump area	Total utilised Topsoil	Temp. Top soil storage			
Upto 31.3.2022	0.83		0.09	0.27	0.36	0.47			
Upto Yr-1	0.9		0.18	0.32	0.50	0.40			
Upto Yr-3	1.05		0.36	0.42	0.78	0.27			
Upto Yr-5	1.19		0.54	0.52	1.06	0.13			
Upto Yr-11	1.62		1.1	0.52	1.62	0			
8.6	Management of Coal Rejects	Not Applicable							
8.7	Restoration of Land used for Infrastructure	Details given in chapter-11 (Mine closure). Following items will be dismantled. <ul style="list-style-type: none"> <li>• Service building &amp; administrative offices</li> <li>• Weighbridge</li> <li>• Roads</li> </ul>							
8.8	Disposal of Mining Machinery	Details given in chapter-11 (Mine closure). Following items will be dismantled & disposed off or will be transferred. <ul style="list-style-type: none"> <li>• HEMM</li> <li>• BELT CONVEYOR &amp; CHP</li> <li>• Sub-station &amp; Power lines</li> </ul>							
8.9	Safety & Security	Details given in para 11.4.7 in chapter-11 (Mine closure).							
8.10	Abandonment Cost and Financial Assurance								
8.10.1	Abandonment Cost: Cost of Activities to be taken up for closure of the mine	Details of item wise cost of progressive & final closure will be assessed during & before starting of mining operations & while preparation of final mine closure plan. However a broad guideline has been detailed below:							

S.No	ACTIVITY	Mine Closure Cost (percentage weightage)	Remarks
A	<b>Dismantling of Structures</b>		To be included in final mine closure plan
	Service Buildings	0.2	
	Residential Buildings	2.67	
	Industrial structures like CHP, Workshop, field sub-station, etc.	0.3	
B	<b>Permanent Fencing of mine void and other dangerous area</b>		To be included in final mine closure plan
	Random rubble masonry of height 1.2 metre including leveling up in cement concrete 1:6:12 in mud mortar	1.5	
C	<b>Grading of high wall slopes</b>		To be included in final mine closure plan
	Levelling and grading of high wall slopes	1.77	
D	<b>OB Dump Reclamation</b>		
	Backfilling and Technical Reclamation (50%) + Handling/Dozing of OB Dump (50%).	88.66	71% for progressive and 17.66% for final mine closure.
E	<b>Landscaping</b>		
	Landscaping of the open space in leasehold area for improving its esthetics an eco-value	0.3	Equal weightage throughout the life of the mine.
F	<b>Plantation</b>		
	Plantation over cleared area obtained after dismantling	0.5	To be included in final mine closure plan
	Plantation around the quarry area and in safety zone	0.22	Equal weightage throughout the life of the mine.
	Bio-reclamation including plantation and post care	0.4	Equal weightage throughout the life of the mine.
G	<b>Post Closure Env. Monitoring / testing of parameters for three years</b>		For three years after mine closure
	Air Quality	0.22	
	Water Quality	0.2	
H	<b>Entrepreneurship Development (Vocational/skill development training for sustainable income of affected people</b>	0.26	Equal weightage throughout the life of the mine.
I	<b>Miscellaneous and other mitigative measures</b>	2.0	Equal weightage throughout the life of the mine.
J	<b>Post Closure Manpower cost for supervision</b>	0.8	To be included in final mine closure plan
	<b>TOTAL</b>	<b>100.00</b>	

8.10.2 Financial Assurance: Amount to be deposited in Escrow account as a security against the mine

Job No.- 172302017

MP&MCP of Kulda Expn. OCP, (21 Mty), Revision – 4

Summerised Data, Page - 17

activities to be carried out for the closure of the mine.				
WPI as on	April-2019			121.10
WPI as on base data	June-2022			154.0
		UG	OC	
Base Rate of Closure Cost "Rs. Crs./Ha"		0.01	0.06	
Closure cost "Rs. Crs./Ha" (Revised)		0.015	0.09	
Project Area in Ha			981.705	
Closure cost "Rs. Crs./Ha" (As per WPI as on June-2022)			0.11445	
Total Amount to be deposited into Escrow Account "Rs. In Cr.			112.356	
Amount already deposited into Escrow Account "Rs. In Cr.			42.7206	
Net Amount to be deposited into Escrow Account "Rs. In Cr.(from 2022-23 onwards)			69.6355	
Rate of compounding of Annual Closure Cost			5.00%	
Balance life of the project "In yrs"			11	
Annual Closure Cost in Crores			6.3305	
Total Amount to be deposited into Escrow Account after compounding @ of 5% "Rs. In Crs." (for 11 years of mine life)			89.936	
*Base year 2022-23 and Life of the mine considered is 11 years.				
PREPARED BY			CMPDI, RI-VII, BHUBANESWAR	
			GUNTUR SRINIVAS CHIEF MANAGER (MINING) TECHNICAL QUALIFIED PERSON on behalf of CMPDI	

Amount to be deposited in to Escrow Accounts annually (In Lakh)				
Year	OC	Year	UG	Total
Yr 1 (2022-23)	633.05		-	633.05
Yr 2	664.703		-	664.703
Yr 3	697.938		-	697.938
Yr 4	732.835		-	732.835
Yr 5	769.477		-	769.477
Yr 6	807.951		-	807.951
Yr 7	848.349		-	848.349
Yr 8	890.766		-	890.766
Yr 9	935.304		-	935.304
Yr 10	982.069		-	982.069
Yr 11	1031.172		-	1031.172
<b>Total</b>	<b>8993.614</b>		<b>-</b>	<b>8993.614</b>

## Chapter – 1

### INTRODUCTION

#### 1.1 PREAMBLE

MAHANADI COALFIELDS LIMITED is a subsidiary of COAL INDIA LIMITED formed in 03.04.1992. It is the one of the largest coal producing company in Coal India Limited which has been already awarded Mini Ratna, Cat-I status. It has ten areas in two coalfields of Odisha with 6 underground and 16 opencast mines. Total coal production of the company is 168.168 Mt in 2021-22 which was 23.14 Mt in 1992-93. Kulda opencast mine is an existing opencast mine in Basundhara area of Ib valley coalfield.

The Ib River coalfield lies in between latitude 21°31' to 22°14' North and longitude 83°32'00" to 84°10'00" East and falls mainly in Sundergarh, Jharsuguda and Sambalpur districts of Odisha. Coal reserves of this coalfield are about 28.07 billion tonnes (as on 1.4.2018) of which about 16.56 billion tonnes lie within a depth range of 300m. Quality of coal varies from grade C to G (largely F), suitable for power generation.

Gopalpur tract in general and Kulda and Garjanbahal blocks in particular gained importance as M/s MAPL (Mirant Asia Pacific Ltd.), formerly M/s CEPA/SEAP were interested to install 6x660MW capacity power plant adjacent to Hirakud water reservoir near Jharsuguda township at Hirma in the fringe of the coalfield. Subsequently coal linkages granted to M/s MAPL were cancelled due to uncertainty and slow progress of their IPP. Subsequently M/s. NTPC (National Thermal Power Corporation) and M/s NLC (Neyveli Lignite Corporation) showed interest to install their thermal power plant in Ib-valley coalfield. However, during initial stages alternate customers based on the linkage granted by SLC (Long Term) were identified and the project is having basket linkages.

The Gopalpur tract in which Kulda OCP is located has favourable geomining characteristics. However, due to its remoteness from the existing mine field and absence of rail link, the development of large scale mining activities in this sector is

linked to establishment of pit-head power stations in this region. Rail link from Jharsuguda to this area has already started its operation.

This sector has been number of geological blocks (ref. Plate Gen-II) which are under different stages of exploration. All of them are virgin except Basundhara, Kulda & Garjanbahal blocks. At Basundhara coal production had commenced in 96-97 in Basundhara (East) OC project which was exhausted in 06-07. Mining operations in Basundhara (W) OC project have also started after the approval of the PR in October 2003. Mining operations in Kulda OC project have started its coal production in 07-08 after approval of the PR in January 2005. Mining operations in Garjanbahal OC project have started in 2018-19.

## 1.2 KULDA OCP & IT'S LINKAGE

Gopalpur sector of Ib-valley coalfield forms the north western part of Ib River coalfield which is a greenfield area with huge mining potential. Detailed exploration was undertaken by CMPDI to assess the quarriable potentiality of coal seams with primary view of opening up of new mining projects to the extent possible. This sector has high potential for opencast mining operations including the proposed project namely Kulda Opencast Project.

Coal demand from Ib-valley coalfield has increased many fold due to its strategic location with Howrah-Mumbai railway line passing through the coalfield. Coal of this coalfield is suitable for thermal power plants.

Many pit head power plants and other coal based plants have come up due to easy availability of coal and water. The southern, western & central India power stations have to depend on Ib valley coalfield for their growth. The Howrah-Mumbai line passes through the coalfield. So coal can move from this coalfield to western India power houses via rail route. Coal to Tamil Nadu Electricity Board is also supplied via rail-cum-sea route through Vishakhapatnam and Haldia ports. Coal can



easily move from this coalfield to Eastern India and Northern India as well. Necessary infrastructures like rail and port facilities are being developed/ augmented in the region.

The proximity of Ib-valley coalfield to Hirakud reservoir has generated a lot of opportunities for setting-up super thermal power stations in the vicinity of the coalfield.

Power Houses of Punjab State Electricity Board, Haryana State Electricity Board have also been linked to MCL and will be supplied coal from this coalfield. The New Power houses of TNEB, KPCL, WBPDC, CESC and DVC are also linked to the coalfield.

The consumers of MCL are linked to the company and not to any specific coalfield. The actual supply from any coalfield of MCL will depend upon the production and transport logistics. This project will help MCL to meet huge demand from Ib-valley coalfield.

### **1.3 STATUS OF KULDA OCP**

The Advance Action Proposal (AAP) of the project was sanctioned by Govt. in October 1995 for a capital investment of Rs.8.624 crores.

#### **PROJECT REPORT**

Project Report (PR) was approved by MCL Board in March 1995 and subsequently by CIL Board in May 1995. The PR could not be processed further due to lack of forestry clearance and EMP clearance. Later project report was revised with different size of HEMM. This proposal was approved by MCL Board on 24.11.2001 and by CIL Board on 6.3.2002. Finally the proposal of Kulda OCP (UCE-August,2004 cost base) was sanctioned by CCEA in January,2005 for coal and OB outsourcing variant (enclosed as Annexure-II).

The Project Report for Kulda Expansion OCP (Normative capacity 15.00 Mty; 5.00 Mty incremental) (Peak Capacity 18.75 Mty) was approved by MCL Board in its 159<sup>th</sup> meeting held on 25.06.2014 at an additional capital investment of Rs. 289.03 crore up to target year and Rs. 30.22 crore beyond target year to be implemented in incremental coal and incremental OB both by outsourcing (enclosed as Annexure-III).

### **MINING PLAN**

Mining Plan for Kulda OCP (10.0 Mty) was approved by MoC, Govt. of India vide letter no: 34012/(4)/2011-CPAM dated 1st July 2011 for total project area of 990 ha including Lalma RF area.

Mining Plan/Mine Closure Plan of Kulda Expansion OCP (Revision-1) (Expansion from 10 Mty to 15 Mty) was approved by MoC, Govt. of India vide letter no: 34012/(4)/2011-CPAM dated 26th December 2016 (enclosed as Annexure-IV) for total project area of 694.605 ha (ML area 634.205 ha) excluding Lalma RF area.

Mining Plan/Mine Closure Plan of Kulda Expansion OCP (Expansion from 15 Mty to 18.75 Mty) was approved by MCL Board ref no: MCL/SBP/CS/CR-19/2020-21/10992 dated 10.06.2020 for total project area of 981.705 ha including Lalma RF area.

Mining Plan/Mine Closure Plan of Kulda Expansion OCP (19.6 Mty) was approved by MCL Board ref no: MCL/SBP/CS/CR-42/2020-21/11330 dated 30.11.2020 excluding Lalma RF area.

MCL desired 50% enhancement of production over EC capacity (14 Mty) to achieve 21 Mty from Kulda OCP. EMP clearance of Kulda Expn. OCP for capacity 14 Mty is based on Mining Plan/Mine Closure Plan of Kulda Expansion OCP (Revision-2) (Expansion from 15 Mty to 19.6 Mty) for total project area of 694.605 ha (ML area 634.205 ha) excluding Lalma RF area.

MP/MCP of Kulda Expansion OCP (Revision-3) (21.0 Mty) for total project area of 694.605 ha excluding Lalma RF area is based on previous MP/MCP of Kulda Expansion OCP (Revision-2) (Expansion from 15 Mty to 19.6 Mty) for total project area of 694.605 ha (ML area 634.205 ha) excluding Lalma RF area (Ref:Annexure-VI).

Subsequently, MCL directed CMPDI to Prepare this Mining Plan & Mine Closure Plan of Kulda Expansion OCP (Revision-4) for a Capacity of 21 MTPY including the 134.69 ha of forest land from Lalma RF With a total Project Area of 981.705 Ha. This MP&MCP report has been prepared due to expansion in area from 694.605 Ha to 981.705 Ha.

#### **STATUS OF EMP**

EMP clearance for Kulda OCP (10.00 Mty) has been received vide letter No.J/11015/10/95-IA.II(M) dated 24.12.2002 .Total mine lease area was 929.60 Ha inclusive of 279.20 Ha of forest land. But EMP clearance has been accorded for 878.29Ha inclusive of 227.89 Ha of forestland. EMP clearance for Expansion of Kulda OCP from 10 Mtpa to 14 Mtpa has been received vide letter No.J/11015/10/1995-IA.II(M) dated 22.03.2018. EMP clearance has been accorded for 634.205 Ha including 227.89 Ha of forest land (excluding Lalma forest area). Subsequently Environmental clearance for ML area of 634.205 Ha for 19.6 Mty capacity has been obtained in February-2022 (Annexure- VII).

#### **STATUS OF FORESTRY CLEARANCE**

Stage-I forestry clearance was received for land required for a period of 20 years from MOEF in two stages for 50.72ha on 25.07.2001 and 177.17ha on 22.01.2002 respectively. Stage-II clearance was obtained on 08.08.2007 for 227.89 ha of land for 20 years of mine workings.

#### 1.4 PRESENT STATUS

Kulda Expansion OCP is a running project and has obtained all statutory clearances. Kulda OCP started its mining operations in 2007-08. Coal extracted till 31.3.2022 is 120.9 Mt and OB removed till 31.3.2022 is 86.884Mcum.

**Actual production details:**

YEAR	COAL (in Mt)	OB ( in Mcum)
2007-08	0.15	0.29
2008-09	2.47	1.48
2009-10	3.43	0.90
2010-11	5.02	5.80
2011-12	5.54	5.33
2012-13	5.50	2.71
2013-14	5.27	2.08
2014-15	4.80	5.71
2015-16	8.02	2.79
2016-17	9.99	5.31
2017-18	10.07	8.22
2018-19	12.81	5.95
2019-20	13.63	8.34
2020-21	15.733	16.598
2021-22	18.5	15.376
<b>Total upto 31.03.2022</b>	<b>120.9</b>	<b>86.884</b>

#### 1.5 PRESENT REVISION OF MINING PLAN

Mining Plan for Kulda OCP (10.0 Mty) was approved by MoC, Govt. of India vide letter no: 34012/(4)/2011-CPAM dated 1st July 2011 for total project area of 990 ha including Lalma RF area.

Mining Plan/Mine Closure Plan of Kulda Expansion OCP (Revision-1) (Expansion from 10 Mty to 15 Mty) was approved by MoC, Govt. of India vide letter no: 34012/(4)/2011-CPAM dated 26th December 2016 for total project area of 694.605 ha (ML area 634.205 ha) excluding Lalma RF area.

In earlier approved Mining Plan of Kulda Expn. OCP (Revision-2) (15 Mty to 19.6 Mty), mining operation was carried out in two phases. In Phase-I, surface boundary was restricted within notified lease area for which forest clearance has

been obtained by the project authority i.e. excluding Lalma Forest. In Phase-II, remaining part of the block was to be worked after obtaining forest clearance for this area. Mining Plan/Mine Closure Plan of Kulda Expansion OCP (19.6 Mty) was approved by MCL Board ref no: MCL/SBP/CS/CR-42/2020-21/11330 dated 30.11.2020 excluding Lalma RF area

Mining Plan/Mine Closure Plan of Kulda Expansion OCP (Expansion from 15 Mty to 18.75 Mty) has been prepared in January ,2020 and was approved by MCL Board ref no: MCL/SBP/CS/CR-19/2020-21/10992 dated 10.06.2020 for total project area of 981.705 ha including Lalma RF area.

MCL desired 50% enhancement of production over EC capacity (14 Mty) to achieve 21 Mty from Kulda OCP. EMP clearance of Kulda Expn. OCP for capacity 14 Mty is based on Mining Plan/Mine Closure Plan of Kulda Expansion OCP (Revision-2) (Expansion from 15 Mty to 19.6 Mty) for total project area of 694.605 ha (ML area 634.205 ha) excluding Lalma RF area.

Hence, MP/MCP of Kulda Expansion OCP (Revision-3) (21.0 Mty) for total project area of 694.605 ha excluding Lalma RF area is based on previous MP/MCP of Kulda Expansion OCP (Revision-2) (Expansion from 15 Mty to 19.6 Mty) for total project area of 694.605 ha (ML area 634.205 ha) excluding Lalma RF area.

In this present MP&MCP of Kulda Expn. OCP (Revision-4) for 21Mty, total area including Lalma forest has been considered for mining operations. This report (Revision-4) has been prepared due to expansion in area w.r.t Approved MP&MCP of Kulda Expn. OCP (Revision-3).

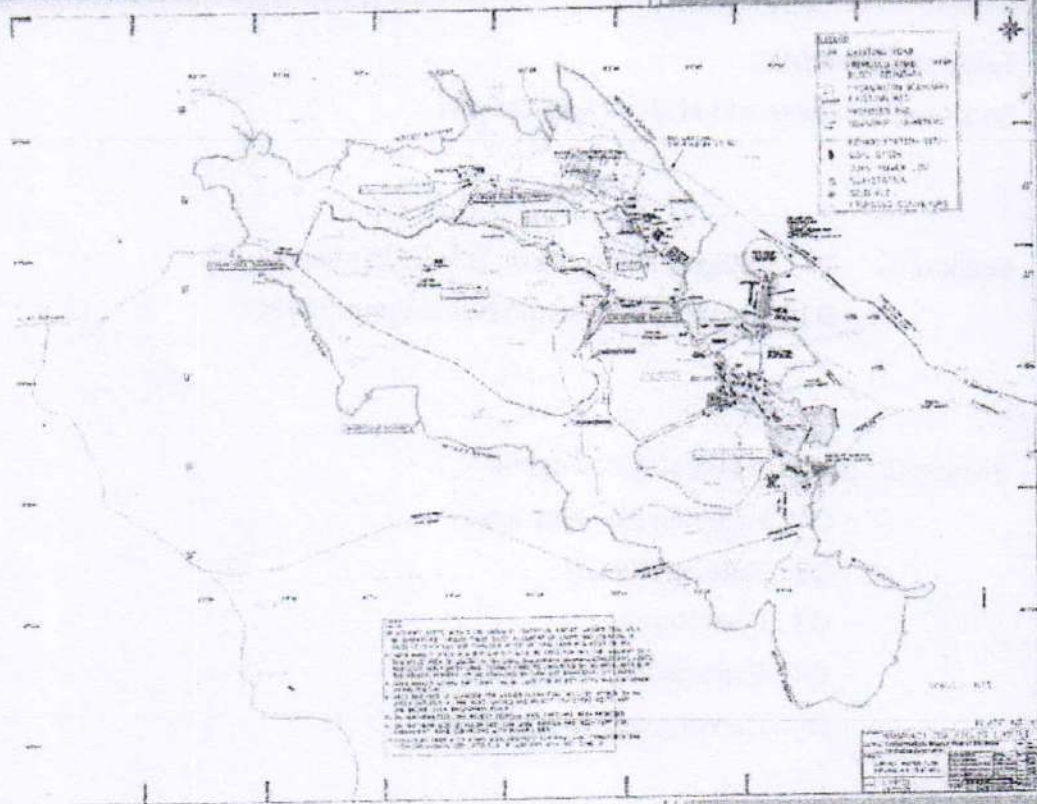
## **1.6 DIFFICULTIES AND CONSTRAINTS IN MINING WITH ASSOCIATED RISK**

Following constraints are envisaged and should be considered while implementation of the report:

- a) Land acquisition and rehabilitation of the villagers.

# **BASUNDHARA RIVER MANAGEMENT PLAN**

A Strategic Framework for conservation of Basundhara river from coal mining



**Client:**  
DBL - Siarmal Coal Mines Pvt Ltd

**Consultant:**  
Kalinga Commercial Corporation  
Limited,  
C-112, Housing Board Colony,  
Baramunda,  
Bhubaneswar-751003

## Objective :

The overall objective of Basundhara River Management Plan (BRMP) is to have a plan and vision to develop an integrated approach for the protection of the Basundhara river from the mining in both the left side and right side of the said river and its tributaries namely Chatudhara nalla and Chattajor nalla .

The BRMP will guide to implement the mitigating measures systematically to take care of the negative impacts of open cast coal mining along both the sides of Basundhara river and it's catchment for protection and conservation of Basundhara river system as a whole in a sustainable manner. The BRMP is embedded in the central idea pertaining to maintenance of river health standard which is crucial to enhance livability and productivity in the mining area.

## Table of Contents :

Section A : River and Mining Development

Section B : B1 : Design philosophy of BRMP framework  
B2 : Impacts of mining on Basundhara River

Section C : Study of hydrological regime  
C1 : Hydrological study area  
C2 : Data availability  
C3 : Field Survey  
C4: Estimation of flood discharge  
C5 : Carrying capacity of river

Section D : Mitigating measures

Section E :  
E1: Recommendations  
E2: Conclusion

*D. K. Kulkarni*  
Project Officer  
Siarmal OCP  
Mahanadi Coalfields Limited



## A : River and Mining Development

The following coal mines are located adjacent to the Basundhara river system. Out of these, Siarmal open cast mine(OCP) and Basundhara (West) extension OCP are upcoming mines whereas the Basundhara (West) expansion OCP, Kulda OCP and Garjanbahal OCP are in operation .The date of opening of the mines in operation as well as other details are given in the **table-1**.

**Table-1**

Name of mine	Siarmal OCP	Basundhara (West) Expansion OCP	Basundhara (West) Extension OCP	Kulda OCP	Garjanbahal OCP
Mining lease area (ha)	2290.449	437.100	323.920	634.205	653.830
Date of opening	Upcoming	16.02.2004	Upcoming	07.12.2007	24.05.2018
Present level of production (in MT)	N.A.	0.94	N.A.	21.00	15.60
Average day production (in MT)	N.A.(50MT PA)	2575.34	N.A.(8.75 MTPA)	57534.25	42739.73
Location in respect to Basundhara river	Left side	Right side	Right side	Left side	Left side
Land use	Attached herewith	Attached herewith	Attached herewith	Attached herewith	Attached herewith

The index map is attached as Drg.1

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Project Officer  
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Mahanadi Coalfields Limited





## **B1 : Design philosophy of BRMP framework**

In view of meeting the overall objective of Basundhara River Management Plan (BRMP) so as to protect Basundhara river from the ongoing and proposed mining adjacent to the river, the design philosophy of BRMP is to prepare a plan and vision to develop an integrated approach with suitable mitigating measures and interventions in a holistic manner for the protection of the Basundhara river from the mining in the open cast mines given in Table-1.

## **B2 : Impacts of Coal Mining on Basundhara River**

1. Drying of the river
2. Decreasing the carrying capacity of the river
3. Breaching of river embankments
4. Change of course of the river
5. Change of quality of river water

### **B2.1 Drying of the river:**

Due to open excavation of deep pits ,the water of the river may be diverted to such pits through seepage or leakage and may dry

Decreasing the carrying capacity of the river by reducing it's cross section ;

Overburden of organic material and soil overlie a mineral deposit. Overburden generation is denoted by stripping ratio which is the ratio of overburden that needs to be removed to the amount of ore removed .Low stripping ratio translates into low quantities of waste. Mining operation also results in excavation of large quantities of top soil. Poor storage of these overburden and top soil can lead to runoff and ultimately reaches the river and partly deposited inside the river reducing the cross section of the river thus reducing the carrying capacity of the river..

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Project Officer  
Siarnal OCP  
Mahanadi Coalfields Limited



## B2.2 Breaching of river embankments

The presence of deep cuts/pits adjacent to the river embankments may endanger the stability of the embankments initiating slip circles on the country sides. The embankments may be more vulnerable to such breaching during floods due to high water level inside the river.

## B2.3 Change of course of river

A number of open cast mines may create a continuous path for the flow of water leading to change of the course of the river.

## B2.4 Change of quality of river water

### I) Due to water;

Open cast mines involve the removal of top soils, overburden and interburden between seams as well as stacking and transportation of coals. The surface water from precipitation and the runoff generated out of the precipitation comes in contact with the stacks of these top soil, overburden, interburden and coals in and around the mining area and get contaminated. The contaminated surface water finally enters into the river making the river water polluted.

### II) Due to air;

Most of the mining operations such as Drilling, Blasting, Excavation, Collection, Transportation and Handling of coal with vehicular movement on haul roads, Screening, Sizing, Segregation and Storage etc. generate Fugitive Dust. A coal stack of 50000 tonnes can generate 250 tonnes of dust out of which around 1.25 tonne (@ 0.5% ) is fugitive dust. The dusts will come in contact with river water creating pollution of water.

*D/S*  
Project Officer  
Siarmal OCP  
Mahanadi Coalfields Limited



Annexure-VIII

Cost estimation (approximate) for strengthening of Basundhara river, Chattadhara Nalla and Chattajor Nalla

Sl.No.	Name of stream	Length (m)	Height of left embankment (m)	Top width (m)	Slope of bank (for 1 m vertical)	Bottom width (m)	Quantity (cum)	River side slope length (m)	Slope surface area (sqm)	Country side slope length (m)	Slope surface area (sqm)
<b>Left embankment</b>											
1	Chattadhara Nalla	4535	3	5	1.5	14	129247.5	15.8	71653	5.408	24525.28
2	Chattajor Nalla Basundhara river from RD	6014	3	5	1.5	14	171399	6.5	39091	5.408	32523.71
3	17.365km upto RD 20.865 km	3500	4	5	1.5	17	154000	22.2	77700	7.211	25238.5
4	Basundhara river from RD 20.865 km to 24.50 km	3635	4	5	1.5	17	159940	31.4	114139	7.211	26211.99
3	Basundhara river from RD 24.5 km to 31.05 km	6550	5	5	1.5	20	409375	32.3	211565	9.014	59041.7
<b>Right embankment</b>											
1	Chattadhara Nalla	4535	3	5	1.5	14	129247.5	9.5	43082.5	5.408	24525.28
2	Chattajor Nalla Basundhara river from RD	6014	3	5	1.5	14	171399	7.5	45105	5.408	32523.71
3	17.365km upto RD 20.865 km	3500	3	5	1.5	14	99750	21.5	75250	5.408	18928
4	Basundhara river from RD 20.865 km to 24.50 km	3635	3	5	1.5	14	103597.5	30.5	110867.5	5.408	19658.08

*Handwritten:* **Project Officer**  
**Sarmal OCP**  
Sarmal Coalfields Limited





*Syank*

Project Officer  
Siarmal OCP  
Janadi Coalfields Limited

Sl.No	Item of work	Qty	Unit	Rate(Rs.)	Amount(Rs.)
3	Basundhara river from RD 24.5 km to 31.05 km	6550	3	1.5	14 186675
				Total	1714630.5
5					29.7 194535
					5.408 35422.4
					<u>298598.6</u>
1	Rate of earthwork in filling per cum with compaction upto 95% at OMC	1714631	Cum	350	= 600120675
2	Providing Geo mattress on river side slopes for slope protection alongwith the launching apron	982988	Sqm	2000	= 1965976000
	Providing dub grass turfing on country side slopes for slope protection	298598.6	Sqm	70	= 20901905.43
3	Providing bathing ghats on the banks of Basundhara river	20	no		
4				1000000	20000000
				Total	= 2606998580
					OR SAY 261.00 Crores

## COAL EVACUATION PLAN

In the proposed project all the coal has been planned to be dispatched through belt and further loading through SILO. For implementation of the same the dispatch arrangement is divided into three phases.

The details of the same along with timeline are given below:

PHASE	EVACUATION SYSTEM	STATUS
Phase - I	Commissioning of Sardega Rapid Loading System (RLS) (20.0 MTPA with 2.0 km Conveyor Belt)	Already started and is under trial and commissioning.
Phase-II	Commissioning of additional 5.42 Km pipe conveyor from Kulda-Garjanbahal to Sardega RLS (12.5 MTPA)	Under Tendering Stage. Expected to be commissioned By Dec-2025.
Phase-III	Commissioning of Barpalli Bulb loop with belt conveying from input to Barpali Bulb (90 MTPA capacity SILOs / RLS with conveyor arrangement)	Under Tendering Stage. Expected to be commissioned By Dec-2025.
Phase-IV	Construction of Basundhara Washery of 15 MTPA and connecting it with Kulda-Barpali line.	Expected to be commissioned by Mar-2026.

### Production Matrix

The PR capacity of Integrated Kulda-Garjanbahal OCP is 40 MTY. The Mining plan is under preparation and as per the guidelines for Mine Plan & Mine Closure Plan, the targeted capacity shall be 150% of the rated capacity i.e. 60 MTY. The Basundhara (W) extension OCP, for which EC/FC is under process, will require 8.75 MTY coal dispatch system through environment friendly method. In view of the above the overall production capacity of Integrated Kulda-Garjanbahal OCP and Basundhara (W) extension OCP stands at 68.75 MTY for which mechanized dispatch arrangements are to be planned.

**Total Production Capacity=68.75 MTY.**

### Proposed Dispatch Arrangement

#### 1. Part-I:

- A. **Raw Coal Circuit-** This circuit shall be planned to handle 28 MTY of raw coal consisting of the following provisions-
- Independent Receiving Arrangements-TRH (28 MTY)
  - Truck Loading Station (4 MTY)
  - Overground bunker of 30,000-40,000 Te storage capacity

- Evacuation of raw coal through 2 nos. of 4000 te RCC SILOs to handle 24 MTY i.e. 2X12 MTY at Barpali bulb.
- The coal evacuation shall be done through 02 nos of parallel conveyor streams.

**B. Circuit for washery-** This circuit shall be planned to handle 15 MTY of raw coal consisting of the following provisions-

- Independent Receiving Arrangement-TRH (15 MTY)
  - Overground bunker of 20,000 Te storage capacity
  - Evacuation of washed coal through 1 no. of 4000 te RCC SILOs to handle washed coal of 12 MTY (approx.) at Barpali bulb.
  - The coal evacuation shall be done through 02 nos of parallel conveyor streams.
  - There will be provision for 02 nos of Transfer Houses, one for feeding raw coal of 15 MTY to proposed washery and other for receiving washed coal of 12 MTY (approx.). Hence, the circuit before tapping of raw coal to washery shall be designed for 15 MTY. The washed coal circuit from washery upto SILO shall be designed to handle 12 MTY (approx.) of coal.
  - The arrangement shall be so designed that in case of non-operation/maintenance of washery, there shall be bypass arrangement so that this circuit can handle 12 MTY of raw coal from TRH to SILO.
  - In case provision of Overhead ground Bunker is to be kept for washed coal storage i.e. after receipt of washed coal, then the capacity of individual raw coal feeding conveyor should be kept @70% of the total coal feeding qty in order to avoid commitment charges . Further two way chutes provision should be made for both raw coal feeding and Washed coal receiving arrangement at the transfer houses for increased system reliability.
- One no. of bridge of sufficient width along the side of Belt conveyor shall also be included in the scope this contract across Basundhara River.
  - A separate substation 3X12.5MVA(tentative) 33/6.6KV and 33KV overhead line from 220/33 kv substation shall be planned to cater the power demands of the circuits mentioned at Part-I A & B.

2. **Part-II :**

**Washery Unit** - A washery to handle 15 MTY of raw coal is proposed with the following provisions-

- 02 nos of parallel conveyors shall tap raw coal from the transfer house as mentioned in Part 1.B to the washery before bunker. The scope of raw coal receiving conveyor from the Transfer house by two parallel conveyors and Discharge of Washed coal by two parallel conveyors and construction of transfer house for washed coal conveyors will be in the scope washery operator.

- Washery shall be constructed with sufficient capacity of raw coal bunker and Washed coal bunker inside the washery considering the capacity of washed coal bunker (20000 Te) in the CHP circuit.
- From the washery, 12MTY washed coal shall be delivered to the next transfer house for onward evacuation through SILO at Barpali bulb as mentioned earlier at Part 1.B. The feeding conveyor to washery and washed coal conveyor from washery shall be taken up in the scope of part-II.
- Additional provision of Truck Loading Station of 4 MTY shall be designed for unloading of washed coal onto trucks as per requirement.
- A separate substation 2X10 MVA(tentative) 33/6.6KV and a 33KV overhead line from 220/33 KV sub-station shall be planned to cater the power demands of the circuits mentioned at Part-II.
- This washery arrangement along with TLS deliberated under part-II will be dedicated for washery and may be taken up through a single comprehensive work by Washery Department.
- Necessary sampling and belt weigher arrangement is to be provided on the coal feeding conveyor to washery
- CMPDIL may explore Possibility for supply of raw coal from Raw Coal Circuit (A) 28 MTY to circuit for Washery 15 MTY by suitable means in case of emergency.

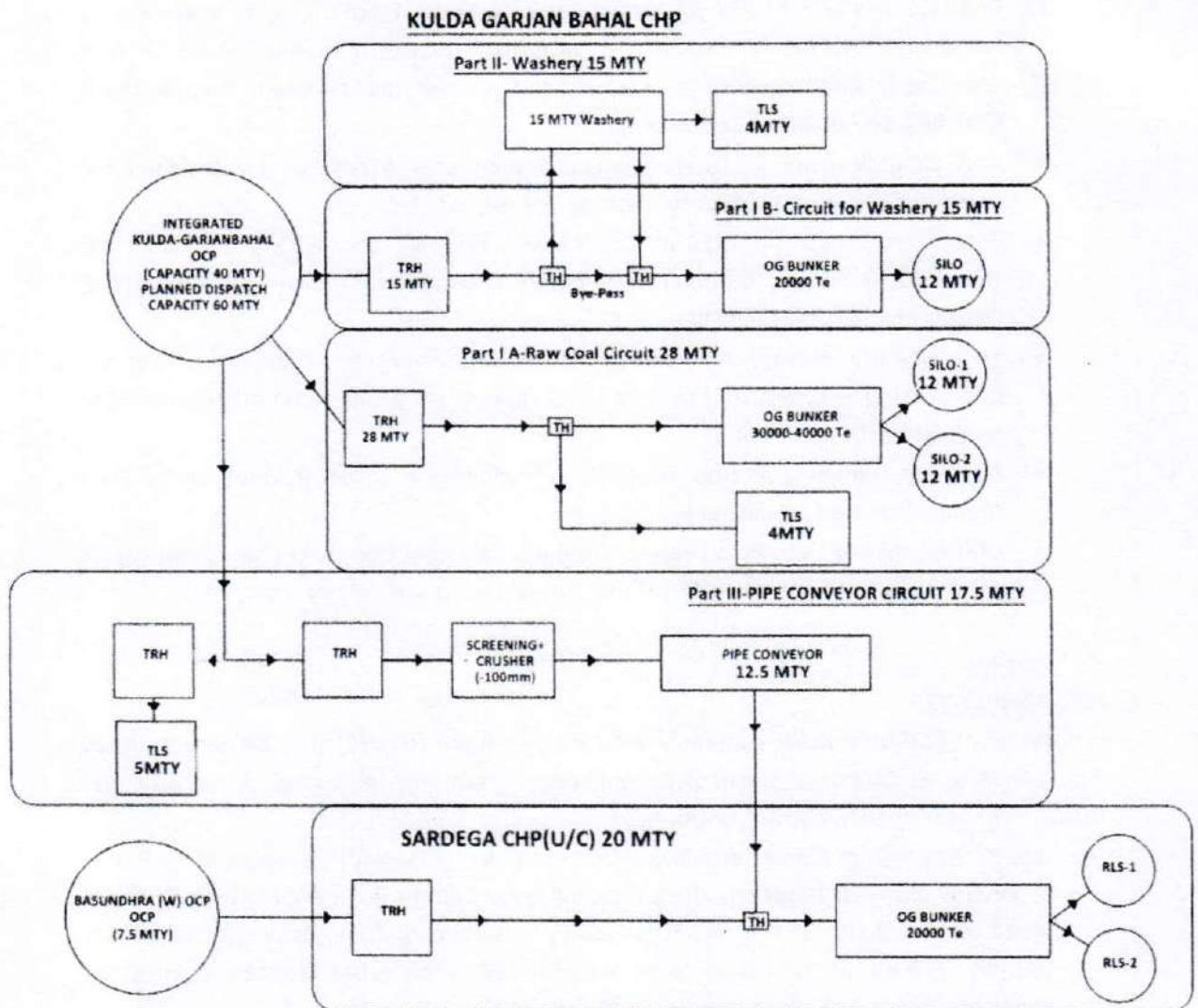
### 3. **Part-III:**

#### **PIPE CONVEYOR:**

Evacuation of coal from Kulda-Garjanbahal OCP to Sardega CHP(U/C) shall be done through Pipe conveyor as proposed previously. However, considering the production matrix the following improvements may be considered:

- Pipe conveyor from Kulda-Garjanbahal OCP to Sardega CHP with a capacity of 12.5 MTY as already planned. However, since Pipe conveyor System is a new Technology and is sensitive to the size of the raw coal feeding, a screening cum crushing arrangement (output=-100 mm) is necessary to be incorporated in the existing system before pipe conveyor for overcoming operational difficulties.
- The capacity of the crushing arrangement shall be optimized based on average percentage of oversized coal receipt.
- Truck Loading Station shall be enhanced to 5 MTY.
- CHP with RLS at Sardega siding(U/c) shall evacuate 20 MTY of coal (7.5 MTY from Basundhara(W) and 12.5 MTY from Kulda-Garjanbahal OCP through Pipe conveyor.
- A separate substation 2X5 MVA(tentative) 33/6.6KV and 33KV overhead line from 220/33 kv sub-station shall be planned to cater the power demands of the circuits mentioned at Part-III.

4. The tentative coal flow diagram of circuits mentioned at part-I A & B, Part-II & Part -III for a total evacuation capacity of 68 MTY mentioned above has been depicted below-







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



Phone No-06622-272243, E-Mail- dfo.sundargarh@odisha.gov.in

Letter No. 3986 /4F (Misc.) /Dated. 26/07/2024

To

The Deputy Director General of Forests,(Central)  
Ministry of Environment, Forest & Climate Change,  
Regional Office, Bhubaneswar.

Sub: - Proposal for diversion of forest land over 134.69Ha for expansion of Kulda Open Cast Coal Mining Project of Basundhara Area of Mahanadi Coalfields Limited.  
**-Submission of monitoring report.**

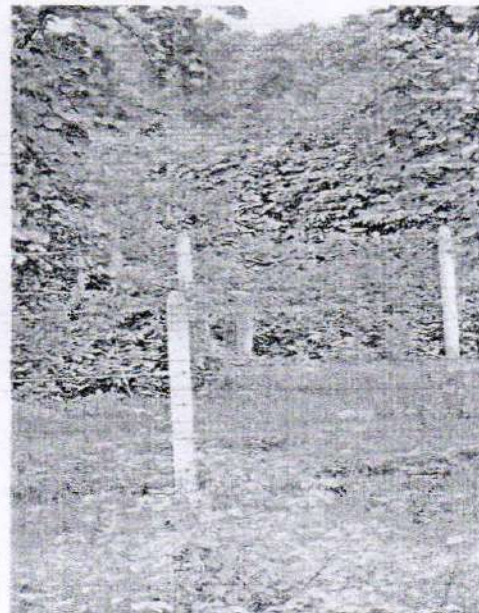
Ref: - Your Letter No.9-7/2024-FC dt.11.06.2024 of MoEF & CC, Govt of India & Memo No.12449 dt.25.06.2024 of CCF (Nodal) O/o the PCCF & HoFF, Odisha.

Sir,

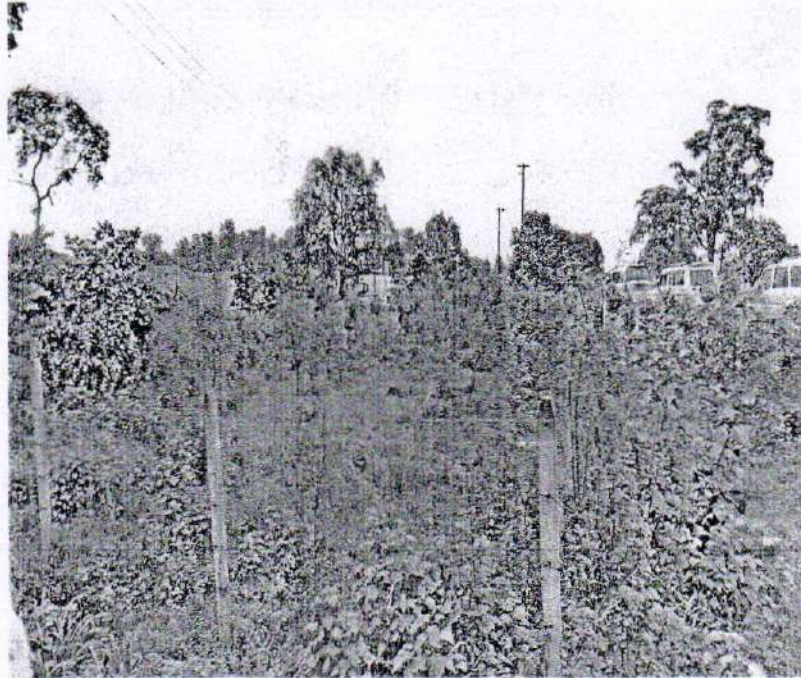
In inviting a reference to the letter cited above, it is to apprise that, the site visit has been conducted by the undersigned on 25.07.2024, relating to status of compliance of conditions, stipulated in the approval dated 08.08.2007 granted over 227.89Ha of forest land for Kulda OCP of MCL. The details of observations over the implementation of the conditions & stipulations by the User Agency is furnished below: -

1) As per the field position the photo of Mining Lease Boundary Pillars: -

The Lease boundary pillars were installed on the field and were on the correct position.



2) Fencing, Protection and regeneration of Safety Zone: A part of Mine boundary including safety zone was covered by the concrete boundary wall and barbed wire fencing was done in some part. However, regeneration was not good in rest part, because no maintenance of fencing was done.

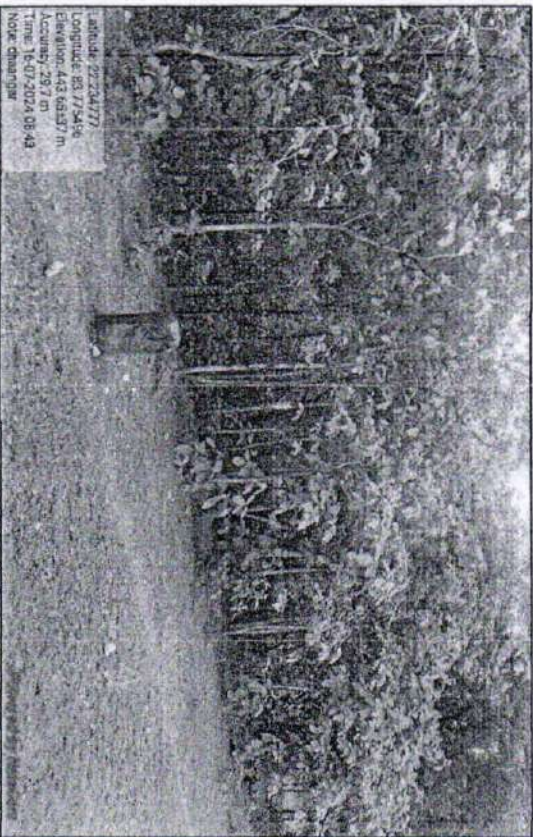


per the field observations, the natural regeneration in the Safety Zone maintained along the mine boundary can be seen as below at some places.

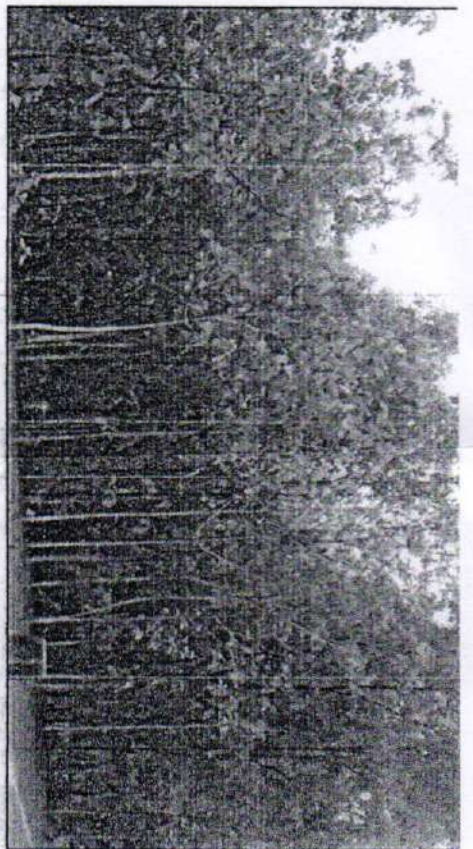


The plantation on degraded forest land, measuring one and a half times the safety zone (3.23Ha) has been taken up at Dhangergudi RF, Ujalpur Range . The photos of the same have been attached herewith.

**Compliance report on continuous rain gowd in FC Stage II**  
**with respect to Kolda OCP, issued vide no. – 8-176/1997-FC, Date – 08.08.2007**

S. No	FC conditions (General, Specific & Others)	Compliance Report	Status
1	Legal status of the diverted forest land shall remain unchanged.	The legal status of the diverted forest land remains unchanged.	Complied
2	<p>Compensatory afforestation shall be raised and maintained by the state forest department at the project cost.</p> <p>Fencing, protection and regeneration of the safety zone area (7.5 meters strip all along the outer boundary of the mining lease area) shall be done at the project cost. Besides this, afforestation on degraded forest land, to be selected elsewhere, measuring one and a half times the area under safety zone, shall also be done at the project cost.</p> <p>Wherever possible and technically feasible, the User Agency shall undertake afforestation measures in the blanks within the lease area, as well as along the roads outside the lease area diverted under this approval, in consultation with the state forest department at the project cost.</p>	 <p>Compensatory Afforestation has been done already in an area of 459.01Ha at project cost (Kunkani R.F. &amp; Dhangergudi R.F. (455.78 Ha + 3.23 Ha. (SZ)=459.01 Ha) in Ujalpur &amp; Lephripada Range of Sundargarh Forest Division at a cost of Rs. 67.50 Lakhs.</p>	Being Complied

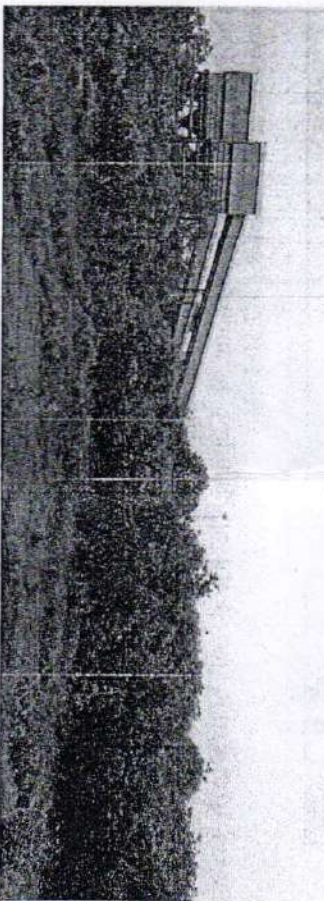
Annexure - IX  
 Annexure - XXX

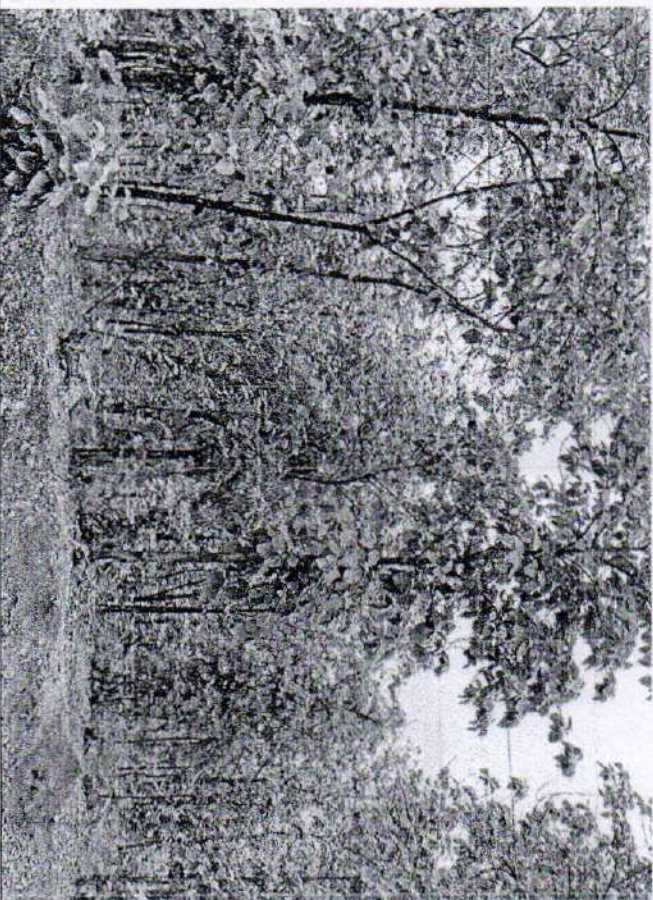


Apart from the above, Kulda has done the following external plantation works :

Location	Number of plants	Area	Cost Involved
Plantation in the villages Taparia, Kalepani, Hengir & Lephripada	1,00,000	62.5 Ha	3.32 Crores
Miyawaki Plantation at Sundargarh	80,000	10 Ha	5.70 Crores

Fencing, protection and regeneration of the safety zone area (7.5 meters strip all along the outer boundary of the mining lease area) has been done at the project cost.



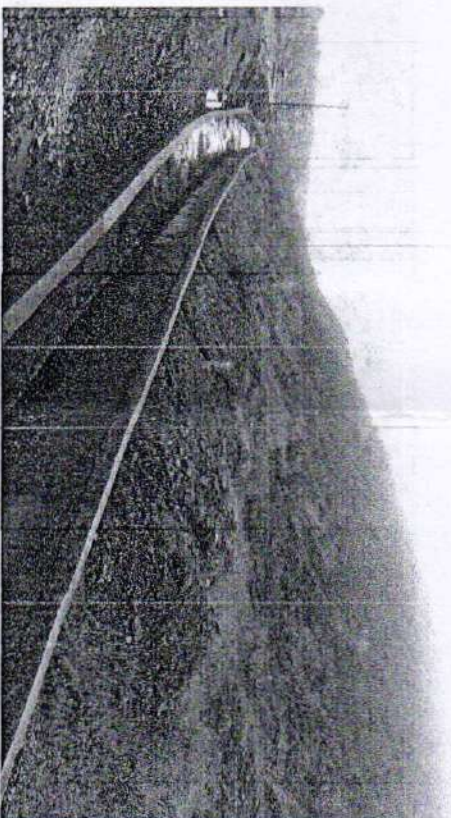


3

Following activities shall be undertaken by the state forest government at the project cost:  
 Proper Mitigative measures to minimize soil erosion and choking of streams shall be prepared and implemented.  
 Planting of adequate drought hardy plant species and sowing of seeds to arrest soil erosion.  
 Construction of check dams, retention walls/toe walls to arrest sliding down of the excavated material along the contour.

Completed

The total runoff generated over the overburden dumps is collected back in the mine sump inside the mine which acts as settling ponds. This water is reused for dust suppression. The drains are regularly de-silted and maintained. 5.81 km long garland drain with check dams has been constructed to channelize runoff from the dump to the groundwater recharge pit. RCC Retaining wall of length 604 m has been constructed at the foot of external OB Dump. Gabion wall of length 450m was constructed around internal dump.



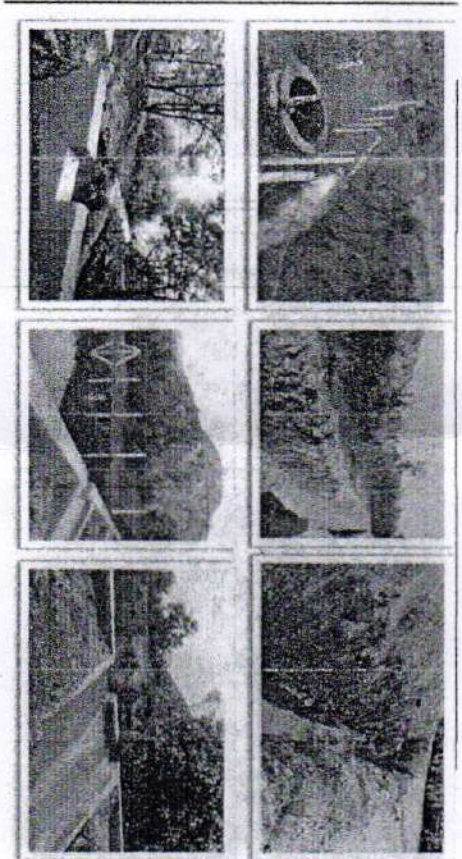
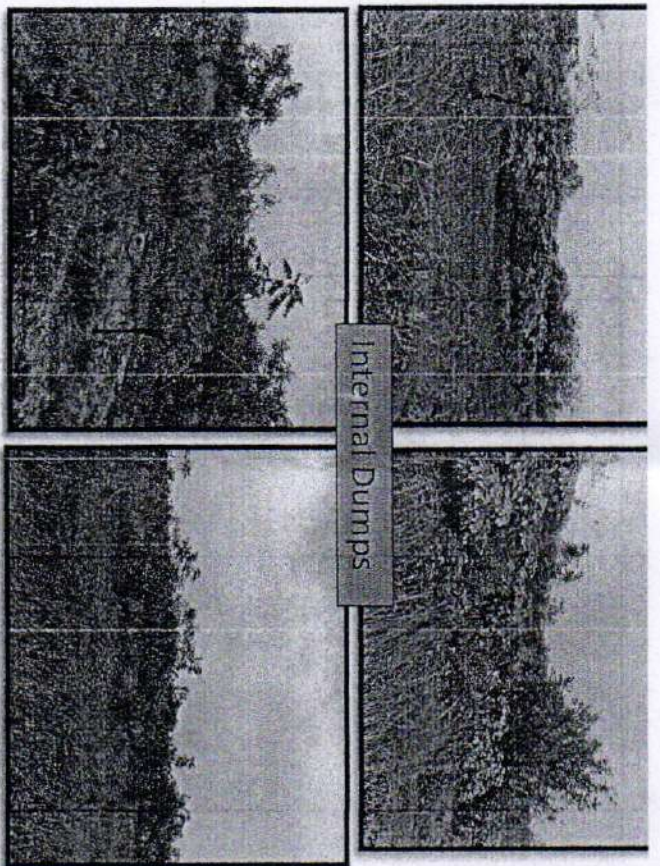
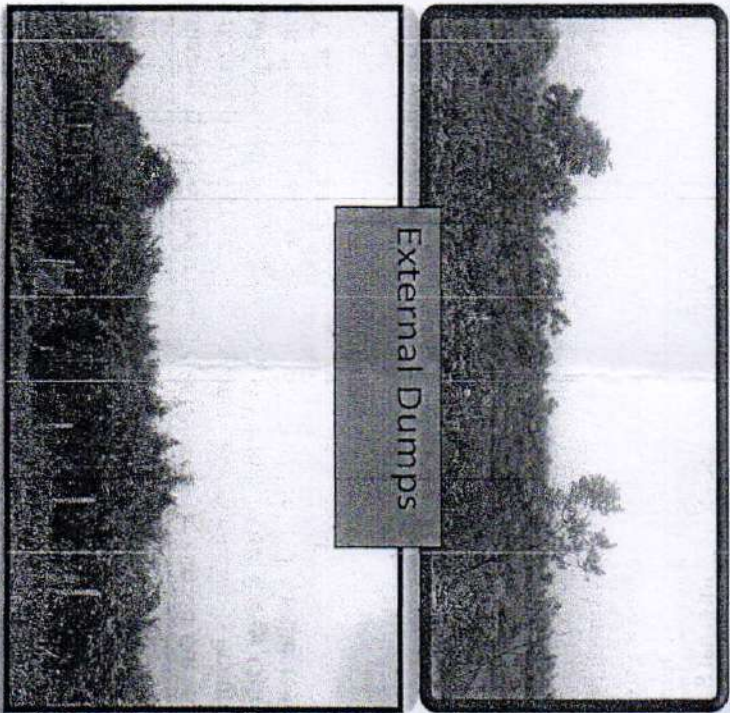


Fig : Garland Drains around Dumps with Check Dams

<p>4</p> <p>The period of diversion under this approval shall be twenty (20) years subjected to possession of valid lease by User Agency under the MMDR Act, 1957.</p>	<p>The project commenced on 2007 and the FC is valid till 2027.</p>	<p>Complied</p>						
<p>5</p> <p>The user agency shall take up planting work on the static dumps during the advance mining operations. All the dumps shall be fully reclaimed by afforestation immediately after closure of the mines in the shortest possible period under supervision of the State Forest Department.</p>	<p>There is only one active external OB dump at present and reclamation of the same is under progress. Progressive reclamation is under progress in internal dumps as well. All the dumps will be fully reclaimed after closure of the mine.</p> <table border="1" data-bbox="263 1099 598 1848"> <tr> <td>Area of Internal Backfilled dump Technically Reclaimed till now</td> <td>25.69 Ha</td> </tr> <tr> <td>Area of Internal Backfilled dump Biologically Reclaimed till now</td> <td>22.69 Ha</td> </tr> <tr> <td>Area of External OB dump biologically reclaimed</td> <td>33.18 Ha</td> </tr> </table>	Area of Internal Backfilled dump Technically Reclaimed till now	25.69 Ha	Area of Internal Backfilled dump Biologically Reclaimed till now	22.69 Ha	Area of External OB dump biologically reclaimed	33.18 Ha	<p>Assured to comply</p>
Area of Internal Backfilled dump Technically Reclaimed till now	25.69 Ha							
Area of Internal Backfilled dump Biologically Reclaimed till now	22.69 Ha							
Area of External OB dump biologically reclaimed	33.18 Ha							



Any tree felling shall be done only when it is absolutely necessary and unavoidable, and that too under strict supervision of the State Forest Department.

The tree felling has been done in 0 phases only when required, under the strict supervision of DFO, Sundargarh. The tree felling work has been executed by the OFDC as per the work order given by DFO Sundargarh.

Completed

The user agency shall ensure that no damage to the flora and fauna of the area is caused.

No damage to the flora and fauna of the area has been caused.

Completed

Reclamation plan shall be strictly implemented which shall be monitored regularly by the State Forest Department. The user agency shall submit progress report of reclamation works to the State Forest Department and the regional office, Bhubaneswar.

The reclamation process under Kulda OCP is being carried out as per the approved mining plan in progressive manner. The plantation is being done by DFO, Sundargarh and is being monitored by the Forest Range Officer. The progress in the reclamation work is being submitted to the regional of MoEF&CC at Bhubaneswar at a frequency of six months.

Being completed

**DETAILS OF PLANTATION DONE FOR RECLAMATION OF LAND**

Year	Area	Number of Plants	Location
2019-20	3.36	8400	Internal Backfilled Area + External OB Dump
2020-21	5.23	13075	Internal Backfilled Area
2022-23	14.3	35780	Internal Backfilled Area
2023-24	22.4	56000	External OB Dump

**PLANTATION PLANNED TO TAKEN UP IN 2024-25**

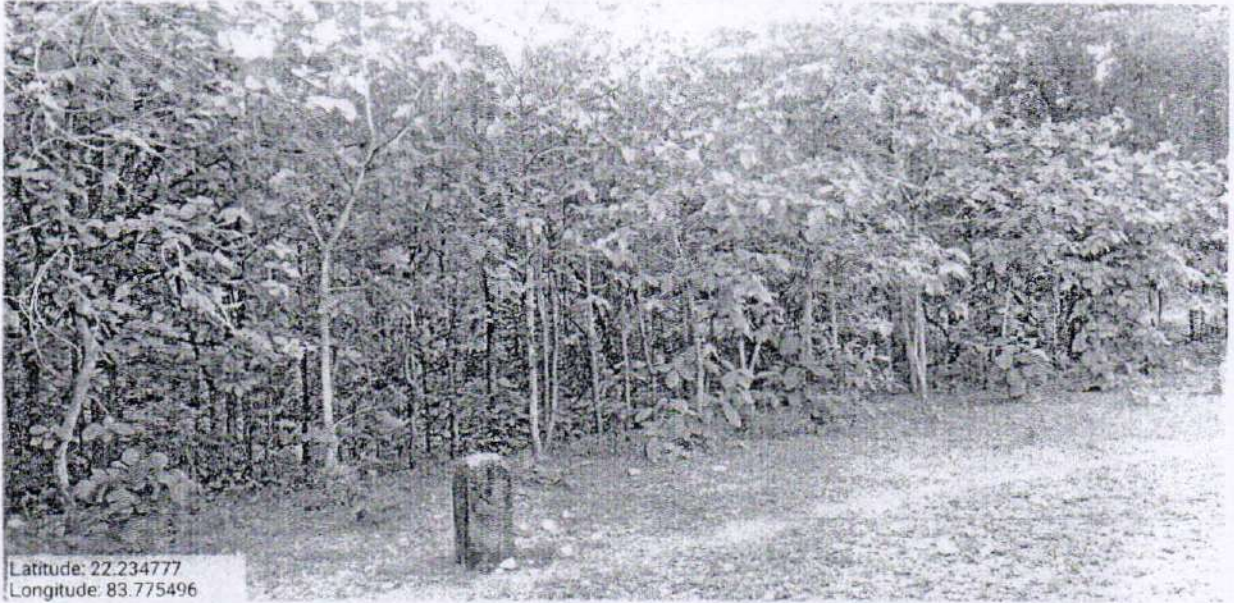
Area	Number of Plants	Location
25.39 Ha	48476	Kulda External OB Dump Slope Plantation
6 Ha	15000	Kulda – Internal Dump (3.5 Ha),



			Ext Dump (2 Ha) & Slope (0.5Ha)	
			<b>Total</b>	<b>63476</b>
9	It shall be ensured that no labour camps are set up inside the forest area.	No camps have been set up within the forest area.		Complied
10	The mining lease area shall be demarcated on ground at the project cost, using four feet high RCC pillars, with each pillar inscribed with the serial number, forward and backward bearings and distance between two adjacent pillars.	Complied		Complied
11	The forest land shall not be used for any purpose other than that specified in the proposal.	The Forest land of 8.52 Ha has been processed for re-diversion for Basundhara Washery and stage-I clearance has been obtained accordingly vide no. - 8-176/1997-FC (Vol.), date - 11.03.2019. And the remaining forest area of 219.37 Ha is only used for the purpose specified in the proposal.		Complied
12	The forest land thus diverted shall be non-transferable. Whenever and whatever extent of forest land is not required by the user agency, it shall be surrendered to the state forest department after proper rehabilitation under intimation to this ministry.	Shall be complied as per the progress of the mines.		Assured to comply
13	Any other condition that the CCP (central), Regional, Bhubaneswar, may impose from time to time for protection of flora and fauna in the forest area, shall also be applicable.	Noted and agreed to comply.		Assured to comply

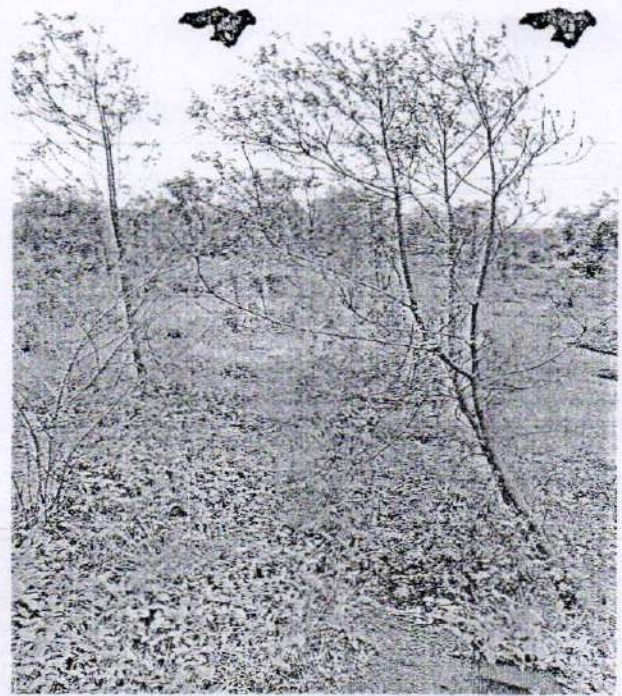
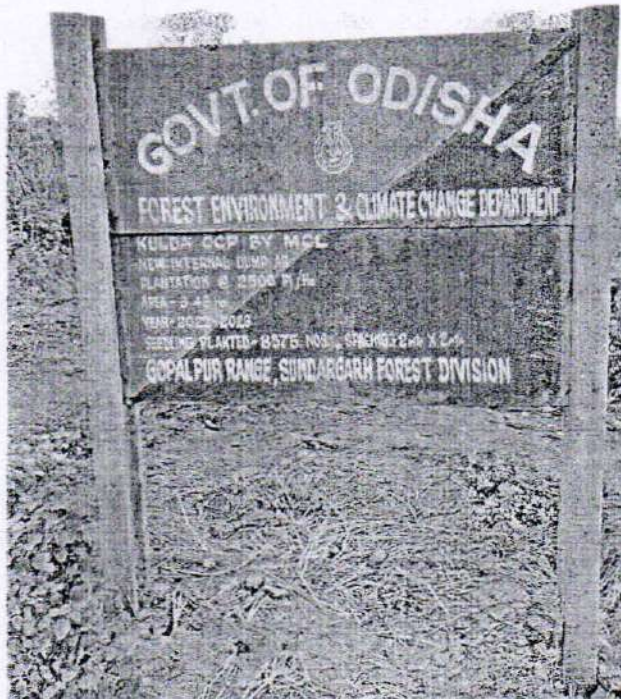
*Pradyumn*  
20/11/2021

*Pradyumn*  
Project Officer  
Kulda OCP  
Basundhara Area  
Project Officer  
Kulda Opencast Project  
ଫିଲଡ୍ ଅଫିସର  
କୁଲଡା ଓପେନକାସ୍ଟ ପ୍ରକଳ୍ପ

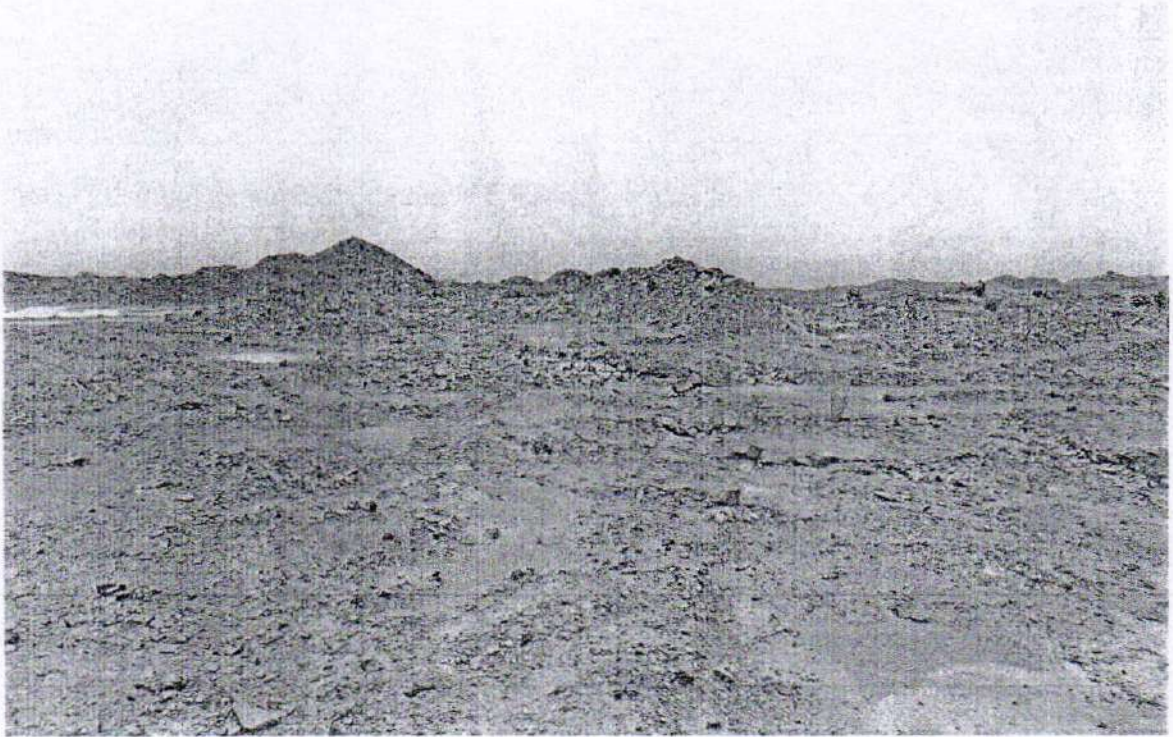


Latitude: 22.234777  
Longitude: 83.775496

- 3) Biological reclamation was done by plantation of suitable species on the internal dump, progressively in each year. Visited the plantation over internal dump done in the year 2022-23. The species planted were mainly Neem, Karanj, etc., however the soil was stabilized and the growth was also good. Growth on the slopes was slightly less due to gully erosion.



- 4) Technical reclamation was done in the internal dump area by spreading the top soil on the dump and plantation over the dumps.



- 5) Plantation going on for the current year on the internal dump area: -





6) Activities undertaken to minimize erosion and to arrest the sliding down of the excavated materials along the contour:

A garland drain was dug all along the mine boundary to collect the runoff water and channelize it to avoid the erosion. Toe walls were created at the foot of the dumps to prevent sliding off of the dumps due to erosion and slumping. Embankment was created at the end of the excavated portions mine areas.



Garland Drain

7)



*Toe walls*



7)



8) The Green Belt Plantation done in the year 2018 & tree growth: -

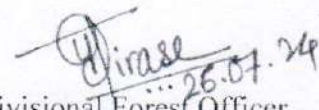




Therefore, the monitoring report as per the field observations along with the photos of the above site is enclosed herewith for kind perusal and necessary action.

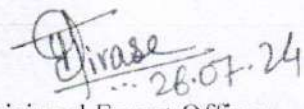
Encl: - As above.

Yours faithfully

  
... 26.07.24  
Divisional Forest Officer,  
Sundargarh Forest Division.

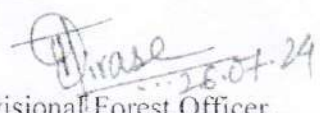
Memo No. 3987/4F(Misc) Dt. 26/07/2024.

Copy forwarded to the Principal Chief Conservator of Forests, Forest Diversion & Nodal Officer, FC-Act, O/o the Principal Chief Conservator of Forests & HoFF, Odisha, Bhubaneswar for favour of kind information and necessary action with reference to his Memo No.12448 dt.25.06.2024.

  
... 26.07.24  
Divisional Forest Officer,  
Sundargarh Forest Division.

Memo No. 3988/4F(Misc) Dt. 26/07/2024.

Copy forwarded to the Regional Chief Conservator of Forests, Rourkela Circle, Rourkela for favour of kind information and necessary action with reference to his Memo No.12449 dt.25.06.2024 of CCF (Nodal) O/o the PCCF & HoFF, Odisha.

  
... 26.07.24  
Divisional Forest Officer,  
Sundargarh Forest Division.

ମହାନଦୀ କୋଲଫିଲ୍ଡସ୍ ଲିମିଟେଡ୍  
महानदी कोलफील्ड्स लिमिटेड  
Mahanadi Coalfields Limited  
(A subsidiary of Coal India Limited)

Office Of The Project Officer,  
Kulda OCP, Basundhara Area  
At/PO:-Balinga-770076  
Dist:-Sundargarh (Orissa)  
FAX: 06621-286144



**MCL**

Ref.No. : MCL/GM/BA/KOCP/

Dated : 22.07.2024

## UNDERTAKING

It is undertaken that, R&R in respect of all the villages Balinga, Bankibahal, Kulda, Siarmal, Tumulia and 09 other villages have already been undertaken by the Claims Commission, set up by the Hon'ble Supreme Court of India in SLP© 6933 of 2007.

The approval from Ministry of Tribal affairs, Government of India for Rehabilitation and Resettlement has been sought for and it is hereby undertaken that the same will be submitted as soon as it is obtained.

*Chiranjib*  
26/07/2024  
Project Officer  
Kulda OCP  
Basundhara  
Project Officer  
Kulda Open Cast Project  
परियोजना अधिकारी  
कुल्दा खनिको-बहा

*Chirase*  
DIVISIONAL FOREST OFFICER  
SUNDARGARH FOREST DIVISION



X-7

MEMORANDUM

TO: SAC, [illegible]

FROM: [illegible]

SUBJECT: [illegible]

[illegible text]

[illegible text]

[illegible text]

55-1050