

Letter No: OCPL/ 585
Date: 29-09-2023

Odisha Coal and Power Limited

(A Government of Odisha Company)

CIN : U10100OR20155GC018623

Website : www.ocpl.org.in

To

Divisional Forest Officer,
Sundargarh Forest Division,
Odisha.

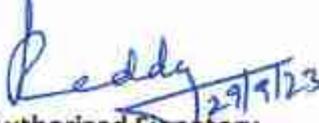
Sub: Submission of Stage I Compliance Report for Stage II approval reg. - Diversion of 15.701 Ha of Revenue Forest Land in Village Dulinga, Ghumudasan and Manoharpur, Tahasil Hemgir, Dist. Sundargarh for development of Manoharpur Coal Mine Block by Odisha Coal and Power Limited

Ref: 1. Forest Clearance (Stage I) granted by MoEF&CC vide letter no. File No.8-63/2011-FC dt. 20.10.2021

Sir,

With reference to the subject cited above and letter under ref 1, the compliance status of conditions stipulated in stage I clearance granted by MoEF&CC vide letter dt. 20.10.2021 is attached herewith for your kind consideration and further needful action please.

Yours faithfully,


Authorized Signatory
Odisha Coal and Power Limited

Encl: As above

Add. General Manager (Mines)
Odisha Coal and Power Ltd.

Proposal no. FP/OR/MIN/40025/2019

Compliance to the Conditions Stipulated in Stage-I (in Principle) Approval by the MOEF&CC, GoI, is to be submitted prior to Stage-II approval.

PART A STIPULATIONS:

1) Compensatory Afforestation (CA):

- i) The cost of compensatory afforestation at the prevailing wage rates as per compensatory afforestation scheme and the cost of survey, demarcation and erection of permanent pillars, if required on the CA land, shall be deposited in advance with the Forest Department by the user agency. The CA will be maintained for 10 years. The scheme may include afforestation of indigenous species with appropriate provision for anticipated cost increase for works scheduled for subsequent years.**

Demand notice of Rs 70,93,700/- has been raised vide letter dt. 29.03.2022 by DFO, Sundergarh Division towards total cost of the CA over 15.702 ha with 10 year maintenance which includes Cost of Survey, demarcation and erection of pillars on the periphery of CA land in the scheme and the same has been deposited in State CAMPA fund through e-parivesh portal. The UTR No. of payment made through e-parivesh portal is SBINR52022042079187190. The copy of payment challan in this regard is attached as Annexure A.

- ii) The non-forest land identified for CA shall be transferred and mutated in favour of the State Forest Department and subsequently notified by the State Government as RF under Section – 4 or PF under Section-29 of the Indian Forest Act, 1927 or under the relevant Section(s) of the local Forest Act before Stage-II approval. A copy of the final Notification shall be submitted along with the compliance of Stage-I approval.**

The non-forest land i.e. 15.7018 ha (CA land) identified by Odisha Coal and Power Limited (OCPL) in village Ankalbira under Hemgiri Tahasil in the District Sundargarh of State Odisha has been transferred and mutated in favour of Forest, Environment & Climate Change Department (State Forest Dept.) for Compensatory Afforestation Purpose. Copy of RoR is attached as Annexure B. Further, the identified CA land has been notified as Ankalbira PF by State Forest Dept. The copy of PF notification issued by Forest, Environment & Climate Change Department vide letter dt. 25.09.2023 is attached as Annexure C.


Addl. General Manager (Mines)
Odisha Coal and Power Ltd.

iii) The KML files of diverted area, the CA areas, the proposed SMC treatment area and the WLMP area shall be uploaded on the e-green watch portal with all requisite details prior to Stage II approval.

KML file showing the diverted area (i.e. 15.701 ha), CA area (15.7018 ha) is attached herewith in from of CD. However, the KML file showing the proposed SMC treatment area and WLMP area will be prepared by DFO, Sundargarh and will be uploaded on e-green watch portal.

2) State Government shall ensure that the CA area earmarked against earlier diversions of forest land under the provisions of FCA 1980 is mutated and notified as RF/PF as per the provisions of law. The compliance shall be submitted prior to Stage-II approval.

Earlier, Stage II approval for the diversion of 276.655 ha forest land has been obtained from the MoEF&CC vide letter dt. dated 20.08.2014 and transferred to OCPL vide letter dt. 30.11.2015 for which the Non-forest land identified for CA has already been transferred and mutated in favour of the State Forest Department for the purpose of compensatory afforestation and has been declared as "Sukhabandha A" Protected Forest and "Durubaga" Protected Forest vide notification no. 10F (Con)-55/ 2014/ 4216/F&E, dated 12/03/2015 and notification no. 10F (Con)-55/ 2014/ 4222/F&E, dated 12/03/2015 respectively U/S-33 of the Orissa Forest Act, 1972. The copy of RoR and PF notification is attached as Annexure D.

3) The User Agency shall transfer the funds towards the cost of 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.

The demand notice towards the cost of Net Present Value (NPV) of the forest land being diverted under this proposal for the payment has been raised by DFO, Sundargarh vide letter dt. 24.11.2021 amounting to Rs. 1,26,07,903/- and the same has been deposited in state specific CAMPA fund through e-parivesh portal. The UTR No. of payment made through e-parivesh portal is SBINR52022031772999840. The copy of payment challan in this regard is attached as Annexure E.

4) Compensatory levies to be realized from the User Agency under the project shall be transferred/ deposited, through e-challan, into the account of



CAMPA pertaining to the State concerned through e-portal (<https://parivesh.nic.in/>).

All the compensatory levies have been deposited in CAMPA account through e-challan generated form Parivesh Portal.

- 5) In consultation with the State Forest Department, following schemes/plans shall be prepared and implemented by the user agency in consultation with the State Forest Department and copies of the same will be submitted to the Ministry along with Stage-I compliance.**

The present proposal i.e. left out patches of 15.701 ha is a part of Manoharpur Coal Mine project and the schemes approved for 276.655 ha diversion proposal of Manoharpur coal mine will be followed for implementation at site. The schemes / plans were prepared in compliance with the condition stipulated in Stage II approval of Manoharpur Coal Mine Project accorded vide letter no 20.08.2014 by GoI for diversion 276.655 ha and hence the same are being and will be implemented.

- (i) Mitigative measures to minimize soil erosion and choking of stream, to be implemented within a period of three year of issue of Stage-II approval.**

Kindly refer point no. 5 as mentioned above.

- (ii) For planting of adequate drought hardy plant species and sowing of seeds, in the appropriate area within the mining lease to arrest soil erosion.**

Kindly refer point no. 5 as mentioned above.

- (iii) For construction of check dams, retention /toe walls to arrest sliding down of the excavated material along the contour.**

Kindly refer point no. 5 as mentioned above.

- (iv) To stabilize the overburden dumps by appropriate grading/ benching, which should also ensure angles of repose at any given place is less than 28°.**

Over burden dumps will be stabilized as per the Mining Plan (MP) approved by Ministry of Coal (MoC).

- (v) Top soil management plan.**


Addl. General Manager (Minnes)
Odisha Coal and Power Ltd.

Top soil management is being and will be carried out as per the Approved Mining Plan (MP). An undertaking in this regard is attached as Annexure F.

- 6) **The User Agency shall prepare a list of existing village tanks and other water bodies with GPS co-ordinates located within five km from the mine lease boundary. This list is to be duly verified by the concerned Divisional Forest Officer. The User Agency shall regularly undertake desilting of these village tanks and other water bodies so as to mitigate the impact of siltation of such tanks/water bodies. A detailed approved plan for desilting of identified ponds and water bodies to be prepared in consultation with forest department and shall be submitted to MoEF&CC.**

The present proposal i.e. left out patches of 15.701 ha is a part of Manoharpur Coal Mine project and the schemes approved for 276.655 ha diversion proposal of Manoharpur coal mine will be followed for implementation at site. The schemes / plans were prepared in compliance with the condition stipulated in Stage II approval of Manoharpur Coal Mine Project accorded vide letter no 20.08.2014 by GoI for diversion 276.655 ha and hence the same are being and will be implemented.

Further, desilting of the village tanks & other water bodies is being carried out every year in consultation with the Block Development Officer & Divisional Forest Officer (DFO). The copy of relevant document showing the same is attached as Annexure G. Further, an undertaking in this regard is also attached as Annexure H.

- 7) **The cost of felling of trees shall be deposited by the User Agency with the State Forest Department.**

Agreed and the necessary undertaking in this regard is attached as Annexure I.

- 8) **State government shall submit a certificate that no plantation activities has been taken by the Forest department under any scheme/plan/programme in the land proposed for CA in last 10 years.**

This stipulated condition will be complied by DFO, Sundargarh.

- 9) **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.**


Addl. General Manager (Mines)
Odisha Coal and Power Ltd.

The FRA certificate under Forest Right Act, 2006 has been obtained from the office of District Collector, Sundargarh vide letter 12.09.2023. The copy of same in this regard is attached as Annexure J.

Further, an undertaking regarding the settlement of all claims & rights and provision of ST&OTFD (Recognition of Forest Rights) Act, 2006 is also attached as Annexure K.

- 10) The compliance report shall be uploaded on e-portal (<https://parivesh.nic.in/>).**

The compliance report will be uploaded on e-portal (i.e. https://parivesh.nic.in). The necessary undertaking in this regard is attached as Annexure L.

PART B - STIPULATIONS.

- 1) Legal status of the diverted forest land shall remain unchanged.**

Agreed and the necessary undertaking in this regard is enclosed as Annexure M.

- 2) The compensatory afforestation over non-forest land, equal in extent to the forest land being diverted shall be raised by the State Forest Department at the project cost. The State Government shall ensure that compensatory afforestation over the non-forest land equal in extent to the forest land being diverted shall be raised within three years from the date of issue of Stage –II Clearance and maintained thereafter as per approved plan by the State Forest Department at the cost of the User Agency.**

OCPL has deposited the CA cost amounting to Rs 70,93,700/- in state CAMPA fund through e-parivesh portal as mentioned above in Point no. 1.

Further, State Forest Dept. will take up the plantation once Stage II approval is accorded.

- 3) At the time of payment of the 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.**

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 has already been submitted by OCPL during the Stage I approval which has been granted by MoEF&CC vide letter dt. 20.10.2021.

Further, an undertaking in this regard is again attached as Annexure N.


Addl. General Manager (Mines)
Odisha Coal and Power Ltd.

- 4) **Trees should be felled in phased manner as per the requirement in the approved Mining Plan with prior permission of concerned DFO.**

Agreed and the necessary undertaking in this regard is attached as Annexure O.

- 5) **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 the supervision of the State Forest Department.**

Agreed and necessary undertaking for the same is attached as Annexure P.

- 6) **The User Agency shall undertake mining in a phased manner after taking due care for reclamation of the mined over area. The concurrent reclamation as per the approved mining plan shall be executed by the User Agency from the very first year, and an annual report on implementation thereof shall be submitted to the Nodal Officer, Forest (Conservation) Act, 1980, in the concerned State Government and to the concerned Regional Office of the Ministry. If it is found from the annual report that the activities indicated in the concurrent reclamation plan are not being executed by the User Agency, the Nodal Officer or the concern Regional Officer of MoEF&CC may direct for suspension of mining activities till such time such reclamation is satisfactorily executed.**

Agreed and the necessary undertaking in this regard is enclosed as Annexure Q.

- 7) **The State Government and the user agency shall ensure that safety zone is maintained as per the prescribed norms. The following activities shall be undertaken by the user agency for the management of safety zone.**

We ensure that safety zone will be maintained as per the prescribed norms. The following activities shall be undertaken by the OCPL for the management of safety zone.

- (i) **User agency shall ensure demarcation of boundary of safety zone (7.5-meter strip all along the inner boundary of the mining lease area), and its protection by erecting adequate number of 6 feet high RCC boundary pillars inscribed with DGPS coordinates with barbed wire fencing and deploying adequate number of watchers under the supervision of the State Forest Department.**

Agreed and an undertaking in this regard is attached as Annexure R.

Addl. General Manager (Mines)
Odisha Coal and Power Ltd.

- (ii) Boundary of the safety zone of the mining lease, adjacent to habitation/roads, should be properly fenced by the user agency.**

Has been complied by OCPL as mentioned above in sub point no. i (Point no. 7).

- (iii) Safety zone shall be maintained as green belt around mining lease and to ensure dense canopy in the area, regeneration shall be taken up in this area by the user agency at project cost under the supervision of the State Forest Department; and**

Kindly refer the undertaking attached as Annexure R.

- (iv) The State Government and the user agency shall ensure that safety zone is maintained as per the prescribed norms.**

Kindly refer the undertaking attached as Annexure R.

- (v) The State Govt. and the user agency shall ensure that no mining shall be carried out in the land required to be maintained as safety zone all around the mining area.**

Agreed and an undertaking in this regard is attached as Annexure S.

- (vi) 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 under the supervisions of the State Forest Department. Afforestation will be done within three years from the date of Stage-II clearance and maintained thereafter in accordance with the approved Plan in consultation with the State Forest Department;**

Agreed and an undertaking in this regard is attached as Annexure T.

- 8) The User Agency shall comply with the Hon'ble Supreme Court order on re-grassing, and re-grass the mining area and any other areas which may have been disturbed due to mining to restore them to a condition which is fit for growth of fodder, flora, fauna, etc. in a timely manner.**

Agreed and the necessary undertaking for the same is attached as Annexure U.

- 9) 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**


Addl. General Manager (Mines)
Odisha Coal and Power Ltd.

under the Mines and Minerals (Development and Regulation) Act, 1957, as amended and the Rules framed there-under.

Agreed and the necessary undertaking is enclosed as Annexure V.

- 10) The User Agency shall obtain the Environment Clearance as per the provisions of the Environmental (Protection) Act, 1986, if required.**

Environment Clearance as per the provisions of the Environmental (Protection) Act, 1986, has already been granted by MoEF&CC vide letter dt. 30.12.2015. Further, an undertaking in this regard is attached as Annexure W.

- 11) 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.**

Agreed and the necessary undertaking in this regard is attached as Annexure X.

- 12) The boundary of the diverted forest land, mining lease and safety zone, as applicable, 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 DGPS coordinates.**

Agreed and the necessary undertaking is enclosed as Annexure Y.

- 13) The layout plan of the mining plan/ proposal shall not be changed without the prior approval of the Central Government and the forest land shall not be used for any purpose other than that specified in the proposal**

Agreed and the necessary undertaking is enclosed as Annexure Z.

- 14) 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.**

Agreed and the necessary undertaking is enclosed as Annexure A1.

- 15) No damage to the flora and fauna of the adjoining area shall be caused.**

Agreed and the necessary undertaking is enclosed as Annexure A2.


Addl. General Manager (Mines)
Odisha Coal and Power Ltd.

16) 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.

Agreed and the necessary undertaking is enclosed as Annexure A3.

17) 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.

Agreed and the necessary undertaking is enclosed as Annexure A4.

18) 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.

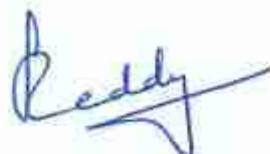
Agreed and the necessary undertaking is enclosed as Annexure A5.

19) Violation of any of these conditions will amount to violation of Forest (Conservation) Act, 1980 and action would be taken as prescribed in para 1.21 of Chapter 1 of the Handbook of comprehensive guidelines of Forest (Conservation) Act, 1980 as issued by this Ministry's letter No.5-2/2017-FC dated 28.03.2019.

Agreed and the necessary undertaking is enclosed as Annexure A6.

Submitted for your kind perusal please.

For Odisha Coal and Power Limited



(Authorized Signatory)

Addl. General Manager (Mines)
Odisha Coal and Power Ltd.



Date : 23 Nov 2023
 Account Number : 00000034653079601
 Description : CA-SURABHI-PUB OTH-ALL-INR
 Name : ODISHA COAL AND POWER LIMITED
 Currency : INR
 Corporate Address : PLOT NO N-3/135,IRC VILLAGE,NAYAPALLI
 BHUBANESWAR
 ODISHA-751015

 Branch : FORTUNE TOWER, BHUBANESWAR(04414)
 Rate of Interest (% p.a.) : 0.0%
 IFS Code : SBIN0004414
 Book Balance : 207397.04
 Available Balance : 207397.04
 Hold Value : 0.00
 MOD Balance : 0.00
 Uncleared Amount : 0.00
 Balance as on 20 Apr 2022 : 98,74,561.44

Account Statement from 20 Apr 2022 to 20 Apr 2022

Txn Date	Value Date	Description	Ref No./Cheque No.	Branch Code	Debit	Credit	Balance
20/04/2022	20/04/2022	TO CLEARING-PNB THE SAMAJI-753364	/ 753364	10409	10,000.00		98,64,561.44
20/04/2022	20/04/2022	BY TRANSFER-AS PER CUST REQ-	TRANSFER FROM 40902010461 ODISHA COAL AND POWER /	4414		65,05,73,150.00	66,05,37,711.44
20/04/2022	20/04/2022	CHQ TRANSFER-RTGS UTR NO: SBINR52022042079187190-753374 ORRISA CAMPA	/ 753374 ORRISA CAMPA	4414	70,93,747.20		65,34,43,964.24
20/04/2022	20/04/2022	CHQ TRANSFER-RTGS UTR NO: SBINR52022042079211512-753375 ODISHA COAL AND POWER LIMITED	/ 753375 ODISHA COAL AND POWER LIMITED	4414	12,00,00,047.20		53,34,43,917.04
20/04/2022	20/04/2022	TO TRANSFER-INB DMF 185000-	GTS0311566 TRANSFER TO 35519362362 DISTRICT MINERAL FOUND /	99922	19,63,220.00		53,14,80,697.04
20/04/2022	20/04/2022	TO TRANSFER-INB-	335214C60CCKT4485352 TRANSFER TO 35548913383 ONLINE TAX COLLECTION, /	99922	1,98,17,200.00		51,16,63,497.04
20/04/2022	20/04/2022	TO TRANSFER-INB-	335214C648CCKT4485832 TRANSFER TO 35548913383 ONLINE TAX COLLECTION, /	99922	3,92,644.00		51,12,70,853.04

**This is a computer generated statement and does not require a signature.

ANNEXURE-A



Odisha Coal and Power Limited
(A Government of Odisha Company)
CIN: U10100Or2015SGC018623
Website: www.ocpl.org.in

Letter No-OCPL/Finance/22-23/08
Date-20-04-2022

To
The Branch Manager,
State Bank of India,
Fortune Towers,
Chandrasekharapur,
Bhubaneswar-751023

Sub: RTGS to "ORRISA CAMPA" for Rs.70,93,700/-

Sir,

Enclose please find herewith the cheque No. 753374 Date-20-04-2022 amounting to Rs.70,93,747.20 (Rupees Seventy Lakh Ninety Three Thousand Seven Hundred Forty Seven and Twenty Paise Only) Issuing from our C/A No-34653079601. The amount may please be Transfer to the following Beneficiary.

Name of the Beneficiary	ORRISA CAMPA
Beneficiary Account No.	150825840025661
IFSC	UBIN0903710
Name of Bank	Union Bank of India
Branch Name	Lodhiana Complex, Delhi
Amount to be remitted (Rs.)	70,93,700.00
Bank Charges (Rs.)	47.20
Total Cheque Amount (Rs.)	70,93,747.20
In Word	Rupees Seventy Lakh Ninety Three Thousand Seven Hundred Forty Seven and Twenty Paise Only
UTR No.	SBINR52022042079187190

Thanking You.
Yours faithfully,

[Handwritten Signature]

Drawing & Disbursing Officer
Odisha Coal and Power Ltd.



[Handwritten Signature]

[Handwritten Signature]

Regd. Office: Zone-A, Ground Floor, Fortune Towers, Chandrasekharapur, Bhubaneswar-751023
Phone: +91 674 2300654/654, Fax: +91 674 2300657
Site Office: At/Po.: Hemgir, Dist.-Sundargarh-770013, Odisha

Add. General Manager (Mines)
Odisha Coal and Power Ltd.

AGENCY COPY	
  	
NEFT / RTGS CHALLAN for CAMPA Funds	
Date : 19-04-2022	
Agency Name.	ODISHA COAL AND POWER LIMITED
Application No.	5840025661
MoEF/SG File No.	8-63/2011-FC VOL.
Location.	ORRISA
Address.	Odisha Coal and Power Limited, Zone A, Ground Floor, Fortune Towers, Chandrasekharpur, Bhubaneswar-751023Khardha
Amount(in Rs)	7093700/-
Amount in Words :Seventy Lakh Ninety-Three Thousand Seven Hundred Rupees. Only	
NEFT/RTGS to be made as per following details;	
Beneficiary Name:	ORRISA CAMPA
IFSC Code:	UBIN0903710
Pay to Account No.	150825840025661 Valid only for this challan amount.
Bank Name & Address:	Union Bank Of India Lodhi Complex Branch, Block 11,CGO Complex, Phase I, Lodhi Road, New Delhi -110003
• This Challan is strictly to be used for making payment to CAMPA by NEFT/RTGS only	

BANK COPY	
  	
NEFT / RTGS CHALLAN for CAMPA Funds	
Date : 19-04-2022	
Agency Name.	ODISHA COAL AND POWER LIMITED
Application No.	5840025661
MoEF/SG File No.	8-63/2011-FC VOL.
Location.	ORRISA
Address:	Odisha Coal and Power Limited, Zone A, Ground Floor, Fortune Towers, Chandrasekharpur, Bhubaneswar-751023 Khardha
Amount(in Rs)	7093700/-
Amount in Words :Seventy Lakh Ninety-Three Thousand Seven Hundred Rupees. Only	
NEFT/RTGS to be made as per following details;	
Beneficiary Name:	ORRISA CAMPA
IFSC Code:	UBIN0903710
Pay to Account No.	150825840025661 Valid only for this challan amount.
Bank Name & Address:	Union Bank Of India Lodhi Complex Branch, Block 11,CGO Complex, Phase I, Lodhi Road, New Delhi -110003
• This Challan is strictly to be used for making payment to CAMPA by NEFT/RTGS only	

After making successful payment, User Agencies may send a line of confirmation through Email: helpdeskcampa@corpbank.co.in

Note:After making the required payment through challan, if the payment status has not been updated even after 7 working days, then kindly mail a copy of your challan with transaction date to Email: cb0371@unionbankofindia.com

UTR No- SBINR52022042079187190
Date- 20-04-2022



Schedule I Form No.39-A

PARTY COPY
ANNEXURE-B

ଖତିୟାନ

ମୌଜା : ଅକଲବିରା
ଥାନା : ହେମଗିରି
ଥାନା ନମ୍ବର : 134

ତହସିଲ : ହେମଗିରି
ତହସିଲ ନମ୍ବର : 246
ଜିଲ୍ଲା : ପୁରୀଗଡ଼

ଜମିଦାରଙ୍କ ନାମ ଓ ଖେଡ଼ାଟ ବା ଖତିୟାନର କ୍ରମିକ ନମ୍ବର	ଓଡ଼ିଶା ସରକାର ଖେଡ଼ାଟ ନମ୍ବର 1
୧) ଖତିୟାନର କ୍ରମିକ ନଂ	45/144
୨) ପ୍ରଭାର ନାମ, ପିତାର ନାମ , ଜାତି ଓ ବାସସ୍ଥାନ	ଜଙ୍ଗଲ ପରିବେଶ ଓ ଜଳବାୟୁ ପରିବର୍ତ୍ତନ ବିଭାଗ ଓଡ଼ିଶା ସରକାର ମାର୍ଚ୍ଚ ବନଖଣ୍ଡ ଅଧିକାରୀ ପୁରୀଗଡ଼ ମଣ୍ଡଳ

୩) ସର୍ବ						
୪) ଦେୟ	ଜମାକର	ଖଜଣା	ସେସ	ନିଷ୍କାର ସେସ ଓ ଅନ୍ୟାନ୍ୟ ସେସ ଯଦି କିଛି ଥାଏ	ମୋଟ	୫) କ୍ରମବର୍ଦ୍ଧନଶୀଳ ଖଜଣାର ବିବରଣୀ
		0.00	0.00	0.00	0.00	

୬) ବିଶେଷ ଅନୁସଙ୍ଗ
ଯଦି କିଛି ଥାଏ

ଏଲିନେସନ କେ ନଂ 17/2022 ହୁ ମୁ ଖା ଖା ନଂ 49 ଓ 51 ରୁ ଆସିଲା OCPL ଦ୍ୱାରା ଜଙ୍ଗଲ ଜମି ଉପରେ କୋରଲା
ଉତ୍ତୋଳନ କରାଯିବା ହେତୁ ତହସିଲ ପ୍ରତିପୁରଣ ପାଇଁ ଏହି ଜମି ପରିପୁରଣ ସମାପ୍ତତା ଉଦ୍ଦେଶ୍ୟ ପାଇଁ ରଦ୍ଦିତ


 ୩୦/୩/୨୩
 ତହସିଲଦାର, ହେମଗିରି
 ଜିଲ୍ଲା - ପୁରୀଗଡ଼

BLANK SPACE FOR STAMPING

ଅତିନ ପ୍ରକାଶନ ତାରିଖ : 30/03/1976
ଖଜଣା ପାର୍ଯ୍ୟ ତାରିଖ :

ଉତ୍ତମ ସୁନ୍ଦର ବିଭାଗ ସେକ୍ରେଟାରୀ, ଓଡ଼ିଶା



07/08/2023


Addl. General Manager (Mines)
Odisha Coal and Power Ltd.

କର୍ମସାମଗ୍ରୀ କ୍ରମିକ ନଂ : 45/144		କ୍ଷେତ୍ର : ଆକଳପିତା			କ୍ଷେତ୍ର : ସୁନ୍ଦରଗଡ଼	
ପୁରା ନମ୍ବର ଓ ବେଳା ନମ	ବିଷୟ ଓ ପୁରଣ ଖବର	ଦିସମର ବିକ୍ରୟିତ ବିକ୍ରୟଣା ଓ ଚୌକିଟି	ଉତ୍ପାଦନ			ମତାମତ
			କିଲୋ	ଟନ୍	ସେଣ୍ଟିମିଟର	
୭	୮	୯	୧୦	୧୧	୧୨	
291/631	ବନ୍ଧୁ ରଖାଇ		5	140	2.0801	ଖା ଖା ନଂ 49
349/632	ପତ୍ରାଞ୍ଜଳ		33	660	13.6217	ଖା ଖା ନଂ 51
2 ପୃଷ୍ଠ			38	800	15.7018	


 ୩୧/୮/୨୩
 ଦେପୁଟି ମ୍ୟାନେଜିଂ ଇଞ୍ଜିନିୟର, ହେମବିଭାଗ
 କଳିଙ୍ଗ - ସୁନ୍ଦରଗଡ଼

ରାଷ୍ଟ୍ରୀୟ ପୁରଣ ବିଭାଗ ଭେନ୍ୟୁ, ଓଡ଼ିଶା

07/08/2023

Kaddy

Addl. General Manager (Mines)
 Odisha Coal and Power Ltd.

GOVERNMENT OF ODISHA
FOREST, ENVIRONMENT & CLIMATE CHANGE DEPARTMENT

NOTIFICATION

Bhubaneswar, dated the 25.09.23

No.FE-DIV-FLD-0064-2021-{10F-(Cons)-112/2019}- 20137 /FE&CC, In exercise of the powers conferred under Section-33 of the Odisha Forest Act, 1972 (Odisha Act 14 of 1972), the State Government do hereby declare that the following land situated in Village – **Ankalbira** under Hemgiri Tahasil of Sundargarh District mutated and transferred in favour of Forest, Environment & Climate Change Department for raising Compensatory Afforestation thereon against the proposed diversion for non-forestry use of 15.701 ha of revenue forest land in the villages of Dulanga, Ghumudasan and Manoharpur under Hemgiri Tahasil of Sundargarh District for Coal Mining in Manoharpur Coal Mine Project by M/s Odisha Coal and Power Ltd. (OCPL) under DFO, Sundargarh communicated vide Government of India, MoEF&CC, Forest Conservation Division, New Delhi letter No.8-63/2011-FC, dt.20.10.2021 under Section-2 of the Forest (Conservation) Act, 1980, the limits of which are specified below and the area of which is 15.7018 Ha (38.800 Ac) shall be Protected Forest with effect from the date of issue of the Notification and shall be known as "**Ankalbira Protected Forest**".

Forest Block:

Name of the Protected Forest	: Ankalbira
Area in Ha	: 15.7018
Area in Acres	: 38.800
Name of the Village	: Ankalbira
Name of the Police Station	: Hemgiri
Name of the Tahasil	: Hemgiri
Name of the Sub-Division	: Sundargarh
Name of the District	: Sundargarh

Land Schedule:

Village	Khata No.	Plot No.	Kissam	Area in Ac.	Boundary description			
					North	South	East	West
Ankalbira	45/144	291/631	Bada Jungle	5.140	Plot No. 291 (P)	Plot No. 349	Plot No. 291 (P)	Plot No. 291 (P)
		349/632	Patra Jungle	33.660	Plot No. 291	Ankalbira Sheet-2 Boundary	Ankalbira Sheet-2 Boundary & Singarbahal RF boundary	Plot No. 286
Total				38.800 Ac. or 15.7018 ha				

By Order of the Governor

(Satyabrata Sahu)

Additional Chief Secretary to Government

P.T.O.

Addl. General Manager (Mines)
Odisha Coal and Power Ltd.

By e-mail: deputydirectorpp@rediffmail.com

Memo No. 20138 /FE&CC, Date 25.09.23

Copy with soft copy forwarded to the Director of Printing, Stationery and Publication, Odisha Cuttack for publication in an extra-ordinary issue of the Odisha Gazette and supply 10 copies of printed notification each to Forest, Environment & Climate Change Department/ Director of Land Records and Surveys, Odisha, Cuttack/ Collector, Sundargarh/ Divisional Forest Officer, Sundargarh Forest Division/ Tahasildar, Hemgiri Tahasil, Dist.- Sundargarh.

2. The Notification is statutory and may be assigned SRO number.

Memo No. 20139 /FE&CC, Date 25.09.23 OSD-cum-Special Secretary to Government

Copy forwarded to the Assistant Inspector General of Forests, Govt. of India, Ministry of Environment, Forest and Climate Change, (F.C. Division), Indira Paryavaran Bhawan, Jor Bagh Road, Aliganj, New Delhi-110003/ Deputy Director General of Forests (Central), Govt. of India, MoEF & CC, Integrated Regional Office, A/3, Chandrasekharpur, Bhubaneswar-23 for information and necessary action.

Memo No. 20140 /FE&CC, Date 25.09.23 OSD-cum-Special Secretary to Government

Copy forwarded to the Revenue & Disaster Management Department/ Steel & Mines Department/ Director of Land Records and Surveys, Odisha, Cuttack/ R.D.C. (N.D.), Sambalpur/ Collector, Sundargarh/ Tahasildar, Hemgiri Tahasil, Dist.- Sundargarh for information and necessary action.

Memo No. 20141 /FE&CC, Date 25.09.23 OSD-cum-Special Secretary to Government

Copy forwarded to the Principal Chief Conservator of Forests & HoFF, Odisha/ Principal Chief Conservator of Forests (WL) & CWLW, Odisha/ Principal Chief Conservator of Forests (FD&NO, FC Act), O/o the PCCF, Odisha w.r.t. his letter No.17292, dt.25.08.2023/ Regional Chief Conservator of Forests, Rourkela Circle/ Divisional Forest Officer, Sundargarh Forest Division for information and necessary action.

Memo No. 20142 /FE&CC, Date 25.09.23 OSD-cum-Special Secretary to Government

Copy forwarded to the Head State Portal, IT Centre, Odisha Secretariat, Bhubaneswar/ OE (IT) Section, FE&CC Department w.r.t. this Department letter No.21646/F&E Dt. 22.11.2016/ 5 spare copies for G.F. for information and necessary action.

Memo No. 20143 /FE&CC, Date 25.09.23 OSD-cum-Special Secretary to Government

Copy forwarded to the Deputy General Manager (Mines), Odisha Coal & Power Ltd, Zone-A, Ground Floor, Fortune Towers, Chandrasekharpur, Bhubaneswar-751023 for information and necessary action.

OSD-cum-Special Secretary to Government


Addl. General Manager (Mines)
Odisha Coal and Power Ltd.

Answer - C.C.
C

Land Received from CA against FCA projects for Compensatory Afforestation

Project Name: Division of 15.70 Hha of Revenue Forest Land in Village - Dullings, Ghansundasan and Mancharpur for development of Mancharpur Coal Mine by OCPL Project Type : Mining

Total Land Diverted:

Land type* Category of CA Land*

Select Circle* Select Division*

Select Range*

Site Name/Compartment/Block Details : *

Location Details(Optional)

Shape of Land received for CA*

Area of Land Received for CA (In Hect.):

Area of Land that has already been received(In Hect.): 0.000

Upload GPS File: No file chosen Upload Scanned copy of Map of the land received for CA No file chosen

(Please upload KML/KMZ file only.) (Please upload JPG/Jpg file only.)

Land Received from CA against FCA projects for Compensatory Afforestation

S.No	Site Name	Land Type	Land Category	Land Area(In Hha)	District	Range	Notification under No.	Verification Status
1	Ankalbira-PF - Ankalbira village under Hengir Tahasil	Revenue Land (Non-forest)	CA	15.702	Sundargarh [Hengir]	Hengir [Sundargarh]		
2	Ankalbira-PF - Ankalbira village under Hengir Tahasil	Revenue Land (Non-forest)	CA	15.702	Sundargarh Hengir	Hengir [Sundargarh]	FF-DIV-PLC-0044-2021-(NCP-Code)132/2019-30137/FFCC-0446-25/09/2022	Notified Land
Total				31.404				


 DIVISIONAL FOREST OFFICER
 SUNDARGARH FOREST DIVISION

Amruteshwar - 2.1
7

Diverted Land Details

Project Name: Diversion of 15.701ha of Revenue Forest Land in Village-Dotinga, Ghumundasan and Manoharpur for development of Manoharpur Coal Mine by OCPL

Project Type: Mining

Total Land Diverted: 15.701

Please select the location (Range) of the diverted Forest Land

Select Circle * Rourkela

Select Division * Sundargarh

Select Range * --Select--

Forest Type * --Select--

Site Name / Compartment Detail *

Area of Diversion Forest land (in Hact.) *

Location Details of the diverted land

Shape of Diverted land * Block (Polygon)

Previously Diverted Area (in Hact.): 0.000

GPS Details of diverted Land No file chosen
(Please upload KML/KMZ file only)

Upload Scanned copy of Map No file chosen
(Please upload JPG/jpg file only)

List and Details of the issue of Forest Land diverted against PCA projects

S.No.	State	PCA Project	FO year of issue	Area Diverted (in Hact.)	Division	Circle	Location Details
1	OR	Diversion of 15	2021	15.701	Sundargarh	Copalpur	Ghumundasan, Or
			Total	15.701			


 DIVISIONAL FOREST OFFICER
 SUNDARGARH FOREST DIVISION

ଖତିୟାନ

1 ଡି 19
ଖତିୟାନ
ANNEXURE-D

ମୌଜା : କୁସୁଡ଼ଗା
ଥାନା : ହେମବିର
ଥାନା ନମ୍ବର : 70

ଚତୁପିଲ : ହେମବିର
ଚତୁପିଲ ନମ୍ବର : 196
ବିଲ୍ଲା : ପୁଲବଗଡ଼

କମିସନର ନାମ ଓ ଖେତାବାର ବା ଖତିୟାନର ନମ୍ବର	ଓଡ଼ିଶା ସରକାର ଖେତାବାର ନମ୍ବର 1
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୧) ଖତିୟାନର କୁମ୍ଭିକ ନମ୍ବର	120/273
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୨) ପ୍ରକାର ନାମ, ପିତାଙ୍କ ନାମ, କାଳି ଓ ବସସ୍ଥାନ	କମ୍ପାଇ ଓ ପରିବେଶ ବିକ୍ଷୟ ଓଡ଼ିଶା ସରକାର ମାର୍ଚ୍ଚ ୧୯୮୬ ବନମଣ୍ଡଳ ଅଧିକାରୀ ପୁରୁରଗଡ଼
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୩) ସ୍ୱରୂପ	କଳକର	ଖଜଣା	ସେସ୍	ନିୟୁତ୍ କେସ୍ ଓ ଅନ୍ୟାନ୍ୟ କେସ୍ ଯଦି କିଛି ଥାଏ	ମୋଟ	୪) କ୍ରମବର୍ତ୍ତନଶୀଳ ଖଜଣାର ବିବରଣୀ
୫) ଭେଦ					0.00	

୬) ବିଶେଷ ଅନୁସଙ୍ଗ ଯଦି କିଛି ଥାଏ	ଏଭିନେସନ କେ ନଂ 3/2013 ରୁ ମୁଖା ଗା ନଂ 124 ରୁ ଆସିଲା
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BLANK SPACE FOR STAMPING

ଅତିରିକ୍ତ ପ୍ରକାଶନ ତାରିଖ :
ଖଜଣା ଆର୍ଯ୍ୟ ତାରିଖ :


Addl. General Manager (Mines)
Odisha Coal and Power Ltd.

ମୁନର କ୍ରମିକ ନଂ: 120/273		ମୈଳା : ବୁକୁରା			କିଲୋ : ପୁନରଗତ	
ନମ୍ବର ଓ ତହସିଲ ନାମ	ଜିଲ୍ଲା ଓ ପୁରୀ ଖଣିଜ	କିସମର ବିସ୍ତାରିତ ବିବରଣ ଓ ଚୈତ୍ର	ରାଜସ୍ୱ			ମଲ୍ଲମ
			ଏ.	ଡି.	ହେକ୍ଟର	
୭	୮	୯	୧୦	୧୧	୧୨	୧୩
46	ପଡ଼ିଚ		11	650	4.7146	ସାହିଆ ବୁକୁରା ଖା ଖା ନଂ 124 ଏହି ଜମି ମନୋହରପୁର କୋଇଲା କ୍ଷେତ୍ର ଅର୍ଦ୍ଧଗତ ପରିସ୍ୱଇଚ ବନ୍ଦି କରଣ ନିମନ୍ତେ ଭଡ଼ିଷ୍ଟ
79	ପଡ଼ିଚ		4	110	1.6633	ସାହିଆ ବୁକୁରା ଖା ଖା ନଂ 124
78	ପଡ଼ିଚ		0	260	0.1052	ସାହିଆ ବୁ ଖା ଖା ନଂ 124
76	ପଡ଼ିଚ		7	400	2.9947	ସାହିଆ ବୁକୁରା ଖା ଖା ନଂ 124
58	ପଡ଼ିଚ		26	350	10.6635	ସାହିଆ ବୁ ଖା ଖା ନଂ 124
85	ପଡ଼ିଚ		0	640	0.2590	ସାହିଆ ବୁକୁରା ଖା ଖା ନଂ 124
77	ପଡ଼ିଚ		1	770	0.7163	ସାହିଆ ବୁକୁରା ଖା ଖା ନଂ 124
88	ପଡ଼ିଚ		15	000	6.0703	ସାହିଆ ବୁକୁରା ଖା ଖା ନଂ 124 ଏହି ଜମି ମନୋହରପୁର କୋଇଲା କ୍ଷେତ୍ର ଅର୍ଦ୍ଧଗତ ପରିସ୍ୱଇଚ ବନ୍ଦିକରଣ ନିମନ୍ତେ ଭଡ଼ିଷ୍ଟ
8 ପୂର୍			67	180	27.1669	


 Addl. General Manager (Mines)
 Odisha Coal and Power Ltd.

ଖତିୟାନ

ନୌକା : ଫ୍ରେମ୍‌ଗିଡ
 ଥାନା : ଫ୍ରେମ୍‌ଗିଡ
 ଥାନା ନମ୍ବର : 64

ତହସିଲ : ଫ୍ରେମ୍‌ଗିଡ
 ତହସିଲ ନମ୍ବର : 219
 ଜିଲ୍ଲା : ପୁରୀ

କମିସନର ନାମ ଓ ଖୋଜାଟ ବା ଖତିୟାନର ନମ୍ବର	ଓଡିଶା ସରକାର ଖୋଜାଟ ନମ୍ବର 1
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e) ଖତିୟାନର କ୍ରମିକ ନମ୍ବର	418/1027
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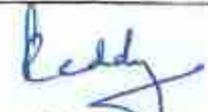
୨) ପ୍ରଜାର ନାମ, ପିଙ୍ଗର ନାମ, କାଡ଼ି ଓ ବାସସ୍ଥାନ	କଲ୍ୟାଣ ଓ ପରିବେଶ ବିଭାଗ ଓଡିଶା ସରକାର ମାଲ୍‌ଫ୍‌ଟ୍ ବନମଣ୍ଡଳ ଅଧିକାରୀ ପୁରୀ
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୩) ସ୍ୱରୂପ						
୪) ଲେସ୍	ଜଳକର	ଖଜଣା	ସେପ୍	ମିଥୁର ସେପ୍ ଓ ଅନ୍ୟାନ୍ୟ ସେପ୍ ଯଦି କିଛି ଥାଏ	ମୋଟ	୫) କ୍ରମବର୍ଦ୍ଧନଶୀଳ ଖଜଣାର ବିବରଣୀ
					0.00	

୬) ବିଶେଷ ଅନୁସଙ୍ଗ ଯଦି କିଛି ଥାଏ	ଏହିଖତିୟାନ କେ ନଂ 1/13 ଓ 2/13 ରୁ ମୁଖ୍ୟ ଖା ନଂ 516 ରୁ ଆସିଲା
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BLANK SPACE FOR STAMPING

ଅତିରିକ୍ତ ପ୍ରକାଶନ ତାରିଖ :
 ଖଜଣା ପାର୍ଯ୍ୟ ତାରିଖ :


 Addl. General Manager (Mines)
 Odisha Coal and Power Ltd.

ଖରିଦାନର କ୍ରମିକ ନଂ: 418/1027

ମୌଳ : ଚୂମକିର

ପୁଠା ନମ୍ବର ଓ ଚକର ନାମ	ନିରମ ଓ ପୁଠାର ଖାଲଣା	କିସମର ବିସ୍ତାରିତ ବିବରଣୀ ଓ ଚୌତୁରି	ରକମ		ମିଲ୍ : ପୁନରାବଳୀ ମନୁଷ୍ୟ
			ଏ. ₹	କି. ₹	
788/4522	ପଚିତ		28	000	11.3312
2336	ପଚିତ		36	520	14.7791
2415/4521	ପଚିତ		59	000	23.8765
774	ପଚିତ		21	210	8.5834
772/4520	ପଚିତ		44	350	17.9478
768	ପଚିତ		11	650	4.7146
766/4519	ପଚିତ		6	220	2.5171
759/4518	ପଚିତ		9	190	3.7191
198/4517	ପଚିତ		79	350	32.1118
83	ପଚିତ		91	170	36.8952
38/4516	ପଚିତ		40	000	16.1874

Kelly

ସ୍ୱାଧୀନ କ୍ରମିକ ନଂ: 418/1027

ମୌଳିକ : ହେମଗିରି

କିଲୋ ଗ୍ରାମରଗଡ଼

ପୁର ନମ୍ବର ଓ ବକର ନାମ	କିସମ ଓ ପୁର ଖଜଣା	କିସମର ବିସ୍ତାରିତ ବିବରଣ ଓ ଲୋଡ଼ି	ରକର			ମନୁସ୍ୟ
			ଏ.	କି.	ହେକ୍ଟର	
୭	୮	୯	୧୦	୧୧	୧୨	
2401	ପଡ଼ିତ		62	260	25.1958	ଡିଭିଜନର ପାହାଚ । ଖା ଖା ନଂ 516 ମନୋହରପୁର କୋଇଲା କ୍ଷେତ୍ର ଅର୍ଜୁନତ ପରିସ୍ଥଳକ ବନିକରଣ ନିମନ୍ତେ ଉଦ୍ଦିଷ୍ଟ
1895	ପଡ଼ିତ		61	670	24.9570	ଡିଭିଜନର ପାହାଚ । ଖା ଖା ନଂ 516 ମନୋହରପୁର କୋଇଲା କ୍ଷେତ୍ର ଅର୍ଜୁନତ ପରିସ୍ଥଳକ ବନିକରଣ ନିମନ୍ତେ ଉଦ୍ଦିଷ୍ଟ
2244	ପଡ଼ିତ		44	820	18.1380	ବାଉ ବେଉରା ପାହାଚ । ଖା ଖା ନଂ 516 ମନୋହରପୁର କୋଇଲା କ୍ଷେତ୍ର ଅର୍ଜୁନତ ପରିସ୍ଥଳକ ବନିକରଣ ନିମନ୍ତେ ଉଦ୍ଦିଷ୍ଟ
2241	ପଡ଼ିତ		25	220	10.2082	ବାଉ ବେଉରା ପାହାଚ । ଖା ଖା ନଂ 516 ମନୋହରପୁର କୋଇଲା କ୍ଷେତ୍ର ଅର୍ଜୁନତ ପରିସ୍ଥଳକ ବନିକରଣ ନିମନ୍ତେ ଉଦ୍ଦିଷ୍ଟ
15 ପୃଷ୍ଠ			620	630	251.1602	

Addl. General Manager (Mines)
Odisha Coal and Power Ltd.

GOVERNMENT OF ODISHA
FOREST AND ENVIRONMENT DEPARTMENT

ANNEXURE-D

NOTIFICATION

No. 10F(Con)-55/2014 F&E dated- 12.08.2014

In exercise of the powers conferred under Section 33 of the Orissa Forest Act, 1972 (Orissa Act 14 of 1972), the State Government do hereby declare that the following land situated in Village **Hemgir** under **Hemgir** Tahsil of the District of **Sundargarh**, mutated and transferred in favour of Forest & Environment Department for compensatory afforestation purposes against the approved diversion of forest land for Manoharpur Coal Mines of M/s. Odisha Power Generation Corporation Ltd in **Sundargarh** district of Odisha vide Stage-II forest clearance order No. 8-63/2011-FC dt. 20.8.2014 of Government of India, Ministry of Environment and Forests & Climate Change under Section 2 of the Forest (Conservation) Act, 1980, the limits of which are specified below and the area of which is 620.63 acres or 251.16ha, shall be Protected Forests with effect from the date of issue of the Notification and shall be known as "**Sukhabandha A Protected Forest**".

Forest Block:

Name of the Protected Forest	Sukhabandha A Protected Forest
Area in Ha	251.16ha
Name of the Village	Hemgir
Name of the Tahasil	Hemgir
Name of the Police Station	Hemgir
Name of the District	Sundargarh

Land Schedule:

Village	Site No.	Khata No.	Plot No.	Kissam	Area in acres
Hemgir	1	418 1027	2241	Patta	25.22
Total					25.22 acres

Boundary description

North : Hemgir Plot No. 2135, 2137, 2242, 2138
South : Reserved Forests
East : Hemgir Plot No. 2243
West : Hemgir Plot No. 2240



Addl. General Manager (Mines)
Odisha Coal and Power Ltd.

Land Schedule:

Village	Site No.	Khata No.	Plot No.	Kisumu	Area in acres
Hemgir	2	418/1027	2244	Patna	44.82
Total					44.82 acres

Boundary description

North: Hemgir Plot No. 2243
South: Hemgir Plot No. 2336, 2337
East: Hemgir Plot No. 1984
West: Hemgir Plot No. 2245, Reserved Forest

Village	Site No.	Khata No.	Plot No.	Kisumu	Area in acres
Hemgir	3	418/1027	1895	Patna	61.67
Total					61.67 acres

Boundary description

North: Hemgir Plot No. 1911, 1912, 1910, 1917, 1918, 1919, 1920, 1896, 1897
South: Village Sukhatundha
East: Hemgir Plot No. 3225
West: Hemgir Plot No. 1966, 1967, 1968, 1970

Village	Site No.	Khata No.	Plot No.	Kisumu	Area in acres
Hemgir	4	418/1027	2401	Patna	62.26
Total					62.26 acres

Boundary description

North: Hemgir Plot No. 3318 and village Sukhatundha
South: Reserved Forests
East: Hemgir Plot No. 2402, 2403, 2406, 2408
West: Hemgir Plot No. 2400

Village	Site No.	Khata No.	Plot No.	Kisumu	Area in acres
Hemgir	5	418/1027	38/4516	Patna	40.00
			83		7.17
			198/4517		39.35
			759/4518		0.19
			766/4519		0.22
			768		11.75
			772/4520		0.04
			771		1.21
Total					103.14 acres


Addl. General Manager (Mines)
Odisha Coal and Power Ltd.

Boundary description

North : Reserved Forests, Hemgir Plot Nos.

39,40,41,42,45,46,49,61,62,63,64,66,165,166,167,168,771,769,169,3164,171,175,175,
176, 177,189,196,197,193,192,191

South : Hemgir Plot No.

84,85,90,91,92,93,97,99,100,773,3263,707,758,757,755,754,761,760,764,765,766,753,742,767,
741,740,739,738,737,736,732,731,461,460,459,455,452,451,450,378,377,366,365,364,3165,
3262,3263,759

East : Hemgir Plot No. 775,776,777,843,844,845

West : Reserved Forests, Hemgir Plot No.

67,68,69,82,109,108,107,104,199,200,204,205,209,210,212, Village Jhulenbar

Village	Site No.	Khata No.	Plot No.	Kissam	Area in acres
Hemgir	6	418 1027	2336	Patita	36.52
Total					36.52 acres

Boundary description

North : Hemgir Plot No. 2244,2245

South : Hemgir Plot No. 2335,2338

East : Hemgir Plot No. 2337

West : Hemgir Plot No. 2245

Village	Site No.	Khata No.	Plot No.	Kissam	Area in acres
Hemgir	7	418 1027	788/4522	Patita	28.00
Total					28.00 acres

Boundary description

North : Reserved Forests

South : Hemgir Plot No. 788(P),789,790

East : Hemgir Plot No. 791

West : Hemgir Plot No. 786

Village	Site No.	Khata No.	Plot No.	Kissam	Area in acres
Hemgir	8	418 1027	2415-4521	Patita	59.00
Total					59.00 acres

Boundary description

North : Hemgir Plot No. 2448

South : Reserved Forests, Hemgir Plot No. 2415(P)

East : Hemgir Plot No. 2416, Village Kamalaga

West : Hemgir Plot No. 2415(P)

By Order of the Government

Special Secretary to Government


Addl. General Manager (Mines)
Odisha Coal and Power Ltd.

GOVERNMENT OF ODISHA
FOREST AND ENVIRONMENT DEPARTMENT
NOTIFICATION

No. 100 (Com)-55 (2014) (Forest) (LX) dated- 12.08.2014

In exercise of the powers conferred under Section 33 of the Orissa Forest Act, 1972 (Orissa Act 14 of 1972), the State Government do hereby declare that the following land situated in Village Durubaga under Hengli Taluk of the District of Sundargarh mutated and transferred in favour of Forest & Environment Department for compensatory afforestation purpose against the approved diversion of forest land for Minchappor Coal Mine of Orissa Power Generation Corporation Ltd in Sundargarh District vide Suggested forest clearance order F No. 8-63/20 (1-FC) dt. 20.8.2014 of Government of India, Ministry of Environment and Forests & Climate Change under Section 2 of the Forest (Conservation) Act, 1980, the limits of which are specified below and the area of which is 67.18 acres or 27.18 ha. shall be Protected Forest with effect from the date of issue of the Notification and shall be known as "Durubaga Protected Forest".

Forest Block:

Name of the Protected Forest:	Durubaga Protected Forest
Area in ha.	27.18
Name of the Village	Durubaga
Name of the Taluk	Hengli
Name of the Police Station	Hengli
Name of the District	Sundargarh

Land Schedule:

Village	Site No.	Khata No.	Plot No.	Khasra	Area in acres
Durubaga	1	120/273	446	Paitha	11.65
Total					11.65 acres

Boundary description

North: Reserved land
 South: Durubaga Plot No. 365,366,367,445,446
 East: Durubaga Plot No. 360,362,367,364
 West: Durubaga Plot No. 447


 Addl. General Manager (Mines)
 Odisha Coal and Power Ltd.

Land Schedule:

Village	Site No.	Khata No.	Plot No.	Khasra	Area in acres
Durubaga	2	120/273	358	Patita	26.88
			376		2.89
			378		0.26
			379		4.31
Total					34.34 acres

Boundary description

North - Reserved forests, Durubaga Plot No. 339,360,511,33,45,26
South - Durubaga Plot No. 351,352,353,356,357,370,371,373,380,381,383,389
East - Durubaga Plot No. 209, 36
West - Durubaga Plot No. 361,362,390,394,395,410

Village	Site No.	Khata No.	Plot No.	Khasra	Area in acres
Durubaga	3	120/273	177	Patita	1.77
Total					1.77 acres

Boundary description

North - Durubaga Plot No. 1389
South - Durubaga Plot No. 184
East - Durubaga Plot No. 178,176,179
West - Durubaga Plot No. 36

Village	Site No.	Khata No.	Plot No.	Khasra	Area in acres
Durubaga	4	120/273	185	Patita	0.60
Total					0.60 acres

Boundary description

North - Durubaga Plot No. 184
South - Durubaga Plot No. 190
East - Durubaga Plot No. 186,187
West - Durubaga Plot No. 200

Village	Site No.	Khata No.	Plot No.	Khasra	Area in acres
Durubaga	5	120/273	168	Patita	15.00
Total					15.00 acres


Addl. General Manager (Mines)
Odisha Coal and Power Ltd.

Boundary description

North : Durubaga Plot No. 47,48,49,103
South : Durubaga Plot No. 146
East : Durubaga Plot No. 104,105,109,110,145
West : Durubaga Plot No. 46,147,148,171

By Order of the Governor

Special Secretary to Government

Memo No. 11222 F&E Dated- 12-03-15

Copy forwarded to the Director of Printing, Stationery and Publication, Odisha Cuttack for publication in an extra ordinary issue of the Odisha Gazette and supply 10 copies of printed notification each to F&E Deptt./Director of Land Records and Surveys, Odisha, Cuttack/Collector, Sundargarh/ D.F.O., Sundargarh Forest Division Tahasildar, Hemgir Dist. Sundargarh

The Notification is statutory and may be assigned SRO number.

Joint Secretary to Government

Memo No. 11237 Dated- 12-03-15

Copy forwarded to the Director, Govt. of India, Ministry of Environment & Forest & Climate Change (F.C. Division), Indira Paryavaran Bhawan, Aliganj, Jorbagh Road, New Delhi - 110003/Additional Principal Chief Conservator of Forests (Central), Govt. of India, MoEF&C, Eastern Regional Office, A/3, Chandrasekharpur, Bhubaneswar-75 for information and necessary action.

Joint Secretary to Government

Memo No. 11223 Dated- 12-03-15

Copy forwarded to the Revenue & Disaster Management Deptt./Director of Land Records and Survey, Odisha, Cuttack/ R.D.(N.D.) Sambalpur, Collector, Sundargarh Tahasildar, Hemgir Dist. Sundargarh for information and necessary action.

Joint Secretary to Government

Memo No. 11225 Dated- 12-03-15

Copy forwarded to the Principal Chief Conservator of Forests, Odisha Bhubaneswar/Additional Principal Chief Conservator of Forests (Forest Diversion) & Nodal Officer, FC Act O/O the PCCF, Odisha/ RCCF, Rourkela D.F.O., Sundargarh for information and necessary action.

Joint Secretary to Government

Memo No. 11226 Dated- 12-03-15

Copy forwarded to the O.G.C. State Portal, N.E.C. IT Department, Odisha Secretariat, Bhubaneswar/ M's Luminous Infoways Pvt. Ltd, Sadhana, No-6/77, Nayapalli, Jayadev Vihar, Bhubaneswar-75 for information and necessary action. 15 spare copies to G.F.

Joint Secretary to Government


Addl. General Manager (Mines)
Odisha Coal and Power Ltd.

AGENCY COPY

यूनियन बैंक Union Bank of India



NEFT / RTGS CHALLAN for CAMPA Funds

Date : 16-03-2022

Agency Name.	ODISHA COAL AND POWER LIMITED
Application No.	5840025005
MoEF/SG File No.	8-63/2011-FC VOL.
Location.	ORRISA
Address.	Odisha Coal and Power Limited, Zone A, Ground Floor, Fortune Towers, Chandrasekharapur, Bhubaneswar-751023Khordha
Amount(in Rs)	12607903/-

Amount in Words :One Crore Twenty-Six Lakh Seven Thousand Nine Hundred and Three Rupees Only

NEFT/RTGS to be made as per following details;

Beneficiary Name:	ORRISA CAMPA ✓
IFSC Code:	UBIN0903710 ✓
Pay to Account No.	150825840025005 ✓ Valid only for this challan amount.
Bank Name & Address:	Union Bank Of India ✓ Lodhi Complex Branch, Block 11,CGO Complex, Phase I, Lodhi Road, New Delhi -110003

BANK COPY

यूनियन बैंक Union Bank of India



NEFT / RTGS CHALLAN for CAMPA Funds

Date : 16-03-2022

Agency Name.	ODISHA COAL AND POWER LIMITED
Application No.	5840025005
MoEF/SG File No.	8-63/2011-FC VOL.
Location.	ORRISA
Address:	Odisha Coal and Power Limited, Zone A, Ground Floor, Fortune Towers, Chandrasekharapur, Bhubaneswar-751023 Khordha
Amount(in Rs)	12607903/-

Amount in Words :One Crore Twenty-Six Lakh Seven Thousand Nine Hundred and Three Rupees Only

NEFT/RTGS to be made as per following details;

Beneficiary Name:	ORRISA CAMPA
IFSC Code:	UBIN0903710 ✓
Pay to Account No.	150825840025005 ✓ Valid only for this challan amount.
Bank Name & Address:	Union Bank Of India Lodhi Complex Branch, Block 11,CGO Complex, Phase I, Lodhi Road, New Delhi -110003



SBINR520 2203177 2999840

Keddy

Addl. General Manager (Mines)
Odisha Coal and Power Ltd.

PROFORMA FOR VERIFICATION OF DEPOSITS IN COMPENSATORY AFFORESTATION FUND

1.	Name of Office	Bhubaneswar
2.	State/District/Forest Division to which the proposal relates	Odisha/ Sundargarh/ Sundargarh Forest Division
3.	Name of User Agency, nature of proposal	Odisha Coal and Power Ltd. Odisha
4.	Nature and category of proposal	Transmission line
5.	Proposal number	FP/ OR/ MIN/ 40025/ 2019
6.	Extent of forest area involved	15.701 Ha
7.	Whether original or extension	Na
8.	If extension of lease, please clarify if proposal involves additional forest area and if so, specify	Na
9.	Date of 1st Stage clearance	Dt. 20/ 10/ 2021
10.	Extent of CAMPA charges, head wise viz.:	
	(a) Compensatory Afforestation	Rs.70,93, 700 /-
	(b) Additional Compensatory Afforestation	Na
	(c) Penal Compensatory Afforestation	Na
	(d) Catchment Area Treatment	Na
	(e) i) Wildlife Management Plan	Na
	(e) ii) Site Specific Wildlife Conservation Plan	Na
	(e) iii) Regional Wildlife Management Plan	Na
	(e) iv) Cast of Dwarf Plantation Scheme	Na
	(f) Additional charges for diversion of area falling under notified/protected areas	Na
(g) Net Present Value	Rs. 1,26,07,903/-	
(h)	Any other charges/levies (Please specify)	

ANNEXURE - ECA

	i)	Penal NPV			Na		
	ii)	Safety Zone			Na		
	iii)	1.5 times Safety Zone			Na		
	iv)	Scheme for Gap plantation and soil moisture conservation activities within 100 mtr from ML boundary			Na		
	v	Interest on belated payment of NPV			Na		
	Total				Rs. 1,97,01,603 /-		
11.	Whether payment made through challan or otherwise. In case of online payment, details of challan.				Challan and online payment.		
12.	Details of deposits						
Sl No.	Type of deposit (NPV/CA/IWMP /Others (specify))	Whether by RTGS/DD/NEFT (Specify)	UTR/ DD No.	Amount deposited (Rs.)	Date of deposit	Name of Bank from which amount transferred to account of CAF	Bank Account of CAF managed by CAMPA in which fund deposited
i)	NPV	Nil	SBINR5202203 1772999840	12607903	17.03.2022	Union Bank of India	A/c- 150825840025005
ii)	Interest on belated payment of NPV	Nil	Nil	Nil	Nil	Nil	Nil
iii)	Compensatory Afforestation Scheme	Nil	SBINR5202204 2079187190	7093700	20.04.2022	Union Bank of India	A/c- 150825840025661
iv)	Differential amount of Compensatory Afforestation Scheme	Nil	Nil	Nil	Nil	Nil	Nil
v)	Site Specific Wildlife Conservation Plan	Nil	Nil	Nil	Nil	Nil	Nil

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vi)	Regional Wildlife Management Plan	Nil	Nil	Nil	Nil	Nil	Nil
vii)	1.5 times Safety Zone etc	Nil	Nil	Nil	Nil	Nil	Nil
viii)	Dwarf species Plantation	Nil	Nil	Nil	Nil	Nil	Nil

Date:
Place: Sundargarh


Divisional Forest Officer
Sundargarh Forest Division
SUNDARGARH FOREST DIVISION


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

64

24

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**SCHEME
FOR
MITIGATIVE MEASURES TO MINIMIZE SOIL
EROSION AND CHOKING OF STREAMS**

in compliance

with

**Condition No.2 vi(a) of Stage-I Forest Clearance grant
Order**

Vide Letter No F.No. 8-63/2011-FC Dated.17.10.2012.

of Govt. of India, Ministry of Environment & Forests, New Delhi

for

Diversion of 276.655 Hects of Forest land

within 808.575 Hects total project area of

Manoharpur Coal Block of IB Valley Coalfields in

Sundargarh District of Odisha by

Odisha Power Generation Corporation Ltd.

Head of Mines
Odisha Coal and Power Ltd.

1. INTRODUCTION

The Ministry of Environment & Forest, Govt. of India have granted Stage-I approval vide their letter No **No F.No. B-63/2011-FC Dated.17.10.2012** for diversion 276.655 ha. of forest land in the total project area of 808.575 ha. of Manoharpur Coal Block in IB Valley Coalfields, Sundargarh District of Odisha in favour of Odisha Power Generation Corporation Ltd. subject to fulfilment of some conditions for environmental safeguards. One of the conditions i.e. **2.(vi) (a) "a plan containing appropriate mitigative measures to minimize soil erosion and chocking of streams shall be prepared and implemented"**. In compliance with the above condition, a detailed plan has been prepared, which is fully explained as below and shall be implemented in a time bound manner at the Project cost.

2. LOCATION

The total project area of 808.575 ha falls in Survey of India Topo sheet No. 64 O/13 and encompassed within the North Latitudes 21° 56' 19" to 21° 50' 04" and East Longitudes 83° 46' 00" to 83° 47' 28". The area is consisting of a series of N-S trending parallel ridges and valleys.

3. TOPOGRAPHY

The leasehold area is undulating and rugged in nature. The central and western part of the area are marked by higher elevation exhibiting hillocks and ridges. The eastern part is almost flat. General slope is from west to east. Maximum elevation is 312 m and minimum elevation is 225 m from MSL.

4. SOIL TYPE

Soil type in the study area is covered by the rocks of Barakar formation. The basement area comprising of metamorphic rocks are exposed to the eastern side of the block. Barring a narrow patch in the extreme south-western corner of the block, the area is undisturbed.

5. CLIMATE

The study area lies in tropical region where climate is characterised by very hot summers and cool winters. Summer is typically from March to June when monthly

temperature ranges from a maximum of 45°C during daytime to a minimum of 15°C at night. Winter is from November to February when the maximum temperature during day goes up to 33°C and minimum temperature at night becomes as low as 8°C. The average annual rainfall as recorded at IMD observatory at Sundargarh is 1053 mm.

6. DRAINAGE

There is no perennial nala in the applied M.L. area. Surface run-off water flows along the natural slopes, valleys and seasonal nalas and finally falls into a well defined seasonal nala in northern-eastern side to meet Gara Nala. This Gara Nala finally falls into Basundhara Nala which is a perennial one which finally falls into the Ib River.

7. EXISTING VEGETATION

The area consists of vegetation of dry deciduous species like Sal, Bija, Kurum, Jamun, Kendu, Asan etc. with canopy density 0.3 over virgin land. In general, various edaphic and climatic factors have contributed to the development of different types of forests. There is no defined protected areas like National Parks, Sanctuary or Biosphere reserves in this region. The buffer zone (10 Km radius) includes part of Kalapani, Panjipahar, Panikhula, Lalma, Jhatikhola, Baijore, Garjanjore, Garjanpahar, Kalamegha, Satparlia, Kantidunguri, Chhengapahar, Barghumura, Singarbahal, Tilla, kaudaraha, Bikramkhol, Rajpur, Girpahad, Makarchata Reserve forest area of Sundargarh Forest Division. MoEF has granted in-principle approval for diversion of 276.655 ha. which includes 2.023 ha. of Kantupahad Reserve Forest and 274.632 ha of Village Forest in 05 revenue villages.

FACTORS FOR SOIL EROSION AND CHOKING OF STREAMS

The mining activities and OB dump surface are the major areas from where soil erosion is possible. Besides, unless the flow of eroded soil in the seasonal or perennial streams are made effective, the stream beds will be filled up causing flood in later stage. The forms of erosion observed from the OB dump surface includes mainly rill and gully erosion. The storm water run-off from the hills, mine faces and OB dump slope areas carry substantial amounts of solids in the lower order streamlets and choke the higher order streams. These lower order streamlets and gullies have high erosive capacity due to gradient and pick up rock fragments and transport them due to high velocity of the stream water and deposit in the subsequent high order streams due to velocity drop. Streams can also erode by undercutting their banks resulting in mass-wasting

processes like slumps or slides. When the undercut material falls into the stream, the fragments are transported and deposited in the stream bed. The other mode of sediment transportation is very nominal.

8. OBJECTIVE OF THE SCHEME:

The objectives of the proposed scheme are as follows:

1. Minimization of erosion of surface soil from OB Dump.
2. Minimization of obstruction in natural water sources.
3. Proper Management of overburden materials so as to prevent siltation in the down streams.
4. Minimization of overflow of eroded soils from the mining areas to the cultivable lands, natural streams and inhabitations.

9. PROPOSED METHODOLOGY

To achieve the above objectives it has been proposed to take up both biological and structural works for soil and water conservation. The vegetative measures are to be adopted mostly in the upper reaches & around O.B dumping sites whereas the structural works are suggested in the drain & critical points around O.B. As per current practice, Settling Tanks are constructed across seasonal streams arising from the up-slope areas to arrest the sediment load to prevent choking of streams followed by de-silting before monsoon. The following activities are proposed to be taken up to mitigate soil erosion and choking of streams:

1. Settling tanks and garland drains will be constructed to reduce the flow velocity of run off and to settle the silts / sediments flown from the mining areas including overburden dumps, stockpiles and areas cleared of vegetation. Series of dry boulder walls adjacent to the settling tanks will be constructed contiguous to each O.B. dump within lease areas which have been demarcated at suitable location indicated in the attached plan. The location of the 4 settling tanks has been selected based on the convergence point of the O.B. dump with **Garia nalla**.
2. Periodic Sediment / silt removal / De-silting jobs will be undertaken in the settling tanks as well as from garland drains and plantation will be carried out on these de-silted materials.

3. Along with the above sedimentation control measures, erosion from OB dump slope areas will be controlled by erecting additional retaining / toe walls etc. The main purpose of these works will be to control soil erosion from OB dump and coal stockpile areas.

Sl.No.	Locations indentified	Area in ha.
1	On southern bank of Garia Nala contiguous to the northern part of the lease boundary	08.316
2	Surface area of O.B.Dump to be reclaimed in conceptual period	04.740
3	All along the approach road	08.032
	Total	21.088 OR 21.0 HA

MEASURES PROPOSED

A. Biological Measures

a) Plantation

Plantation in block model with JFM mode of suitable soil binding species will be carried out exclusively on the O.B.Dump surface over 4.740 or 5.0 ha to prevent soil erosion and chocking of stream. Besides, it is also proposed to plant soil binding species such as Agave & Vetiver in degraded and poor soils along the slope & toe of O.B. dumps for controlling soil erosion.

The list of species to be chosen for plantation is as follows:

Sl	Local Name	Scientific name
1	Amla	<i>Emblica officinalis</i>
2	Karanja	<i>Pongamia glabra</i>
3	Asan	<i>Terminalia alata</i>
4	Kurum	<i>Adina cordifolia</i>
5	Begunia	<i>Vitex negundo</i>
6	Neem	<i>Azadirachta indica</i>
7	Barakoli	<i>Zizyphus gilipyrus</i>
8	Kusuma	<i>Sleichera plexosa</i>

9	Bel	<i>Aegle marmelos</i>
10	Sunan	<i>Cassia fistula</i>
11	Kasi	<i>Bridelia retusa</i>

Planting shall be done during July in pre-dug pits of size 30 cm X 30 cm X 30 cm. A basal dose of N.P.K fertiliser shall be applied at the time of planting, besides mixing with insecticides to prevent termites & insects. Planning for plantation shall be such that fruit bearing trees and bamboo rhizomes should not be planted in close proximity. A minimum distance of 2.5 mt X 2.5 mt shall be maintained on every fourth plants in planting either of the species. Care should be taken to complete the planting during July while rains are still on during first or second week of July.

b) Weeding

Two weeding have been proposed along with soil working and manuring in the first year and due weeding, soil working and manuring of 2 doses of 15g each in a gap of 15 days in the second year and weeding proving in the third year. The first weeding along with manuring should be taken up soon after completion of plantation and the second weeding and soil working should be taken up after one month of the first weeding. Weeding should be done at a radius of one meter and soil working should be done to a depth of 15 cm. all the weeding along with soil working should be completed during November to December. The first weeding should be done along with replacement of causality that may occur during planting in the first year and after replacement of causality in the 2nd year.

c) Application of Insecticides.

The plantation site, after cleaning and burning, good quality seedlings may cause influx of insects which usually eats and damage the tender leaves and shoots of the plants. To get rid of such insect attack, application of insecticides should be taken up in required doses at desired intervals. Spraying of insecticides shall be done preferably in a sunny day and before forenoon.

d) Fire-line Tracing & Maintenance

Fire causes heavy loss to the forest during fire season. To prevent incidences of fire, the area should be divided into suitable blocks by tracing fire lines. Boundaries of



plantation patches and these blocks should be scrapped of forest growth to a width of three meters during Feb.-March and cut back materials and dry leaves stacked along these lines should be burnt under strict supervision. This operation should be carried out for three years.

e) Inspection, Monitoring and Evaluation

For success of this soil and water conservation programme, intensive inspection and technical guidance from concerned technical wing is required. It is proposed to provide sufficient fuel/conveyance charges for technical experts for proper execution of these programmes to State Forest Department.

f) Executing Agency

The proposed biological measures along with the maintenance works will be executed with internal resources by OPGC obtaining technical advice from the local Forest Deptt. executives.

B. Structural Measures

Vegetative method of erosion control are the most feasible and economic measures. However, as the pressure on land is increasing, need is felt to bring even highly eroded land under utilization. In these lands vegetative measures are not adequate to keep down the erosion. Some structural measures are required to be taken before vegetative measures are adopted. Structural measures, therefore, serve as supplementary to vegetative measures. The objective behind building mechanical structures is to reduce the degree and length of the slope, reducing run-off and consequently, reducing soil erosion.

a) Terracing of OB Dump Slope

It is proposed to construct terraces of the O.B. dump considering the volume of OB materials & area earmarked for dumping. The slope of individual terrace of 10m should be maintained considering the angle of repose of the soil i.e. $<28^\circ$. The terracing will be done by OPGC by deploying the operating mining equipment.

a) Settling Tanks.

The User Agency has planned to construct **four no. of settling tanks** over area of 8.33 ha as depicted in the revised Mining Plan to be approved MoC in suitable location at the toe of OB Dumps to arrest the soil and silt.

b) Desiltation

The de-silting works of the stream will be taken up as a regular measure to prevent sedimentation and choking of stream, as a part of yearly monsoon preparation program. This de-silting of streams will provide space and retention basins to hold the sediment laden runoff thereby allowing settling and clear water to flow down stream. This de-silting work will be undertaken at regular intervals. The implementation of the plans will be site specific in nature depending upon the severity of the sedimentation and choking of the stream.

10. INSPECTION, MONITORING AND EVALUATION

For successful implementation of the above Mitigative measures, intensive inspection and technical guidance from concerned technical wing is required. Sufficient fuel/conveyance charges for technical experts shall be provided by the user agency for proper execution of these programmes. Infrastructural facilities like GIS software along with GPS equipments will be provided by the user agency for the above post implementation monitoring

11. EXECUTING AGENCY

In all the cases, the works shall be executed by the User Agency having specialised departments headed by qualified persons with out-sourced man and machinery as and when required. To facilitate this, the user agency shall establish its own executing and supervision cells along with required infrastructural facilities. In order to maintain the quality of work, in house supervision through competent personnel shall be provided.

REQUIREMENT OF FUNDS

12. REQUIREMENT OF FUNDS

The total cost of the implementation of mitigative measures will be **Rs. 24,03,300.00** as detailed in **Annexure-IV**. For Implementation of the above mitigation measures, the above expenditure of will be made over the next seven years period. Therefore,

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budget provision of will be kept by the User Agency for implementation of the above mitigation measures over a period of next seven years. This budget will subject to increase in amount considering the increase in materials and labour charges. The tentative annual expenditure planned for the next five year for the implementation of mitigative measures is given in the following table:



Project Cell
OPGC Ltd



Divisional Forest Officer
Sundargarh Division



ANNEXURE-I

**COST ESTIMATE FOR BLOCK PLANTATION OF DRAUGHT HARDY
SPECIES 1600 SEEDLINGS/ Ha.
AT 2.5 m X 2.5 m SPACING.**

1	Name of the Plantation	Block Plantation - 13.056 Ha
2	No. of Seedlings to be planted	1600 Nos / Ha.
3	Spacing to be adopted	2.5 m x 2.5 m
4	Size of Pits	30cm x 30cm x 30cm.
5	Wage rate	Rs.150.00 / man-day
6	Species to be planted	Amla, Karanja, Asan, Kurum, Begunia, Neem, Barakoli, Kusuma, Bel,, Sunan, Kasi etc.
7	The user agency will pay the wage rate as and when enhanced.	

0th year (Advance work) Pre-planting operation.

Sl. No.	Item of work	Man days	Labour rate @ Rs. 150/-	Material cost.	Total.
1.	Survey, Demarcation & pillar posting.	2	300.00	-	300.00
2.	Site preparation.	12	1800.00	-	1800.00
3	Alignment and stacking of pits	2	300.00	-	300.00
4	Digging of Pitting (30 cm. cube)	40	6000.00	-	6000.00
5	Nursery cost (one year old seedling) part	80	6000.00	6000.00	12000.00
6	Contingencies & overheads	3	0	0	450.00
	Sub Total	139	14400.00	6000.00	20850.00
1stYear/ Planting					
7	Cost of raising 1600 seedlings (Balance)	25	3150.00	600.00	3750.00
8	Carriage of seedlings to site cleaning including casualty replacement.	30	4500.00	-	4500.00
9	Cost of insecticide & Fertilizer	24	0	3600.00	3600.00
10	1 st Weeding	10	1500.00		1500.00
11	Manuring	5	750.00	0	750.00
12	2 nd Weeding	6	900.00		900.00
13	Soil working	8	1200.00		1200.00
14	Fireline Tracing & Inspection patch.	3	450.00	0	450.00
15	Soil conservation measures in the form of staggered trenches of 2 mt. x 50 cm D& drainage line treatment percolation pits etc.	10	1500.00	0	1500.00

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16	Watch & ward and brush wood/ live fencing at 15% length of periphery to prevent cattle entry	15	2250.00	0	2250.00
17	Contingencies & overheads	4	0		600.00
	Sub Total	140	16200.00	4200.00	21000.00
2nd Year Maintenance					
18	Casualty replacement with nursery cost	12	1800.00	-	1800.00
19	Weeding	8	1200.00		1200.00
20	Application of Fertilizer	4	600.00	0	600.00
21	Cost of Fertilizer	12	0	1800.00	1800.00
22	Soil working	7	1050.00		1050.00
23	Fireline tracing	3	450.00		450.00
24	Watch and ward	18	2700.00	0	2700.00
25	Contingencies & overheads	3	0	0	450.00
	Sub Total	67	7800.00	1800.00	10050.00
3rd Year maintenance					
26	Weeding and pruning	8	1200.00		1200.00
27	Cost of Fertilizer	12	0	0	1800.00
28	Soil working	8	1200.00		1200.00
29	Fire line tracing	3	450.00		450.00
30	Watch and ward	18	2700.00		2700.00
31	Contingencies	3			450.00
	Sub Total	52	5550.00	0	7800.00
4th Year maintenance					
32	Weeding and pruning	8	1200.00		1200.00
33	Fire line tracing, (2 mt. wide fire line over 400 mt. long)	3	450.00		450.00
34	Watch and ward	18	2700.00		2700.00
35	Contingencies	3			450.00
	Sub Total	32	4350.00	0	4800.00
5th Year maintenance					
36	Weeding and pruning	8	1200.00		1200.00
37	Fire line tracing, (2 mt. wide fire line over 400 mt. long)	3	450.00		450.00
38	Watch and ward	18	2700.00		2700.00
39	Contingencies	3			450.00
	Sub Total	32	4350.00	0	4800.00

6 th Year maintenance				
40	Weeding and pruning	8	1200.00	1200.00
41	Fire line tracing (2 mt. wide fire line over 400 mt. long)	3	450.00	450.00
42	Watch and ward	18	2700.00	2700.00
43	Contingencies	3		450.00
Sub Total		32	4350.00	0
Grand Total		494	57000.00	12000.00
				74100.00
				0

ABSTRACT FOR @ 1600/- SEEDLINGS PER HA.

Year	Labour	Material	Contingencies	Total
0 th Year	14400.00	6000.00	450.00	20850.00
1 st Year	16200.00	4200.00	600.00	21000.00
2 nd Year	7800.00	1800.00	450.00	10050.00
3 rd Year	5550.00	0	2250.00	7800.00
4 th Year	4350.00	0	450.00	4800.00
5 th Year	4350.00	0	450.00	4800.00
6 th Year	4350.00	0	450.00	4800.00
Total	57000.00	12000.00	5100.00	74100.00
	380	80	34	494
Additional incentive (3%) for VSS/Fr./FG proposed for more than 80% survival and very good growth during 4 th year of maintenance as per recommendation of DPO and RECF.				2224.00
Additional EPA expenses if implemented through VSS at rate Rs 1200/- in 0 th Year, Rs. 2400/- in 1 st Year, Rs. 1800/- in 2 nd Year, Rs. 600/- in 3 rd Year, Rs. 600/- in 4 th Year, Rs. 600/- in 5 th Year and Rs. 600/- in 6 th year.				7800.00
Total Norm per ha. in JFM mode with incentives.				84124.00

Rs.84,124/- x 13.056 ha = Rs.10,98,323.00/-

(Rupees ten lakhs ninety eight thousand three hundred and twenty three) only

DGM (Civil) 
M/s Odisha Power Generation Corporation Ltd.

General Manager (Civil)
Project Cell
OPGC

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Odisha Coal and Power Ltd.

30/11/2011
30/11/2011

ANNEXURE- II

**Estimate for Digging of one no. of Staggered Trench of size 2 Mtr
x 0.5 Mtr x 0.5 Mtr along with Agave Plant on the dug out soil.**

(Wage rate @ Rs.150/- Per Man-day)

- (i) Earth work in excavation of staggered trench in hard soil including
Rough dressing and leveling the beds and heaping the dugout soil
At the downhill side of the trench and leveling the same too.

Size of a trench = 2.0 Mtr x 0.5 Mtr x 0.5 Mtr = 0.5 Cum

@ 294.32 per 2.83 Cum Rs. 52.00

- (ii) Cost of Agave Planting on the dugout soil and its maintenance
Including weeding, soil working, manuring, cost of fertilizer etc.
for three years

03 nos. of Agave plants per trench

@ Rs. 22.00 per plant on LS Rs. 66.00

TOTAL:- Rs 118.00

(Rupees One hundred eighteen) only

Cost of 250 nos. of staggered trenches covering one Ha.

= 100 x 118.00 = Rs. 11,800.00

For 13.056 Ha x Rs.11,800.00 = Rs.01,54,061.00

(Rupees One lakh fifty four thousand sixty one) only

1. Avenue Plantation on alongside of the roads.

Sl.No.	Location of Ponds	Dimension of Pond in Sq.Mt. With area available for Pln.	No. of Plants to be Planted with spacing 05.00 mt. From plant to plant and 1.5 mt from row to row
1	Beldhi-Pond	45 x 40 x 3	68
2	Kirpsira-Pond	80 x 70 x 3	120
3	Garajanbahal-Pond	90 x 80 x 3	136
4	Bendrichuan-Pond	50 x 40 x 3	72
5	Tithetanagar-Pond	40 x 30 x 3	56
		Total	452

Species to be Planted :-

- Bar (Ficus bengalensis)
- Aswastha (Ficus religiosa)
- Neem (Azadirachta indica)
- Kadam (Anthocephalus kadamba)
- Champa (Michelia champaka)
- Nageswar (Mesua ferrea)
- Baula (Mimosops elengi)
- Jamun (Syzygium cumini)
- Mango (Mangifera indica)
- Ashoka (Saraca indica)

Cost Estimate per ha – Wage rate Rs.150/-

Spacing – Plant to Plant 05.00 mt & line to line 1.5 m = 1,340 plant per ha

Length 100m / 5m = 20 Plants
 Width 100m/ 1.5 m = 67 Plants
 20 x 67 = 1340 plants per ha.

1st year	Particulars of work	Labour	Material	Total
	Clearance of Weed- Dec.	20	-	3000.00
	Pitting 60 cm ² December	134	-	20100.00

	Cost of Seedlings April	--	20100.00	20100.00
	Cost of foreign earth @ 0.5 cum per plant= 670 cum = 34 Truck Load June @ Rs.1,000/- per T.L.	--	34,000.00	34000.00
	Cost of Cow dung manure 05. cum = 34 truck loads @ Rs.2,000/- June	--	68,000.00	68000.00
	Planting July	67	--	10050.00
	Soil Working August	67	--	10050.00
	Watch & Ward -5 X7 months	05 @ Rs.4,500/-	--	157500.00
	Provision of Brushwood gabion @ Rs.100 each		134000	134000.00
	Sowing of grass seeds on the unset of monsoon 50 Kgs grass seeds to be sown @ 10 Kgs per site by 10L x 5 sites + 50 L - Rs.200/- per Kg of grass seed	6250.00	10000	16250.00
	Total			473050.00
2 nd year	Watch & Ward -5 X12 months	05 @ Rs.4,500/-	--	270000.00
	Maintenance of Brushwood gabion @ Rs.50 each		67000	67000.00
	Total @ Rs.155/- per plant			337000.00
3 rd year	Watch & Ward -5 X7 months	05@ Rs.4,500/-	--	270000.00
	Maintenance of Brushwood gabion @ Rs.50 each		67000	67000.00
	Total @ Rs.155/- per plant			3,37,000.00
4 th year	Watch & Ward -5 X7 months	05@ Rs.4,500/-	--	270000.00
5 th year	Watch & Ward -5 X7 months	05@ Rs.4,500/-	--	270000.00
6 th year	Watch & Ward -5 X7 months	05@ Rs.4,500/-	--	270000.00
7 th year	Watch & Ward -5 X7 months	05@ Rs.4,500/-	--	270000.00
	Grand Total @ Rs.1,660/- per plant.			22,27,050.00

Rs.1,660/- x 452 avenue plants = Rs.07,50,320.00.00

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TOTAL COST OF THE PROJECT

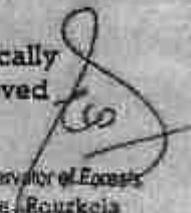
Sl. No	Description of the work	Funds Required (in Rs)
1	Biological Measures Block Plantation on JFM mode on Surface fo OB Dump (04.740 ha) + Surface fo OB Dump (8.032 ha)= 13.056 ha @ Rs.84,124/-	10,98,323.01
2	Special SCM such as staggered trenches (100 nos per hectare) @Rs.11,800/- x 13.056 ha	01,54,061.01
3	Avenue Plantation on the side of road 452 Nos. @ Rs.1,660.00	07,50,320.00
	Cost of settling Tank 4 Nos. @Rs.7612.72/- per Tank	30,451.01
	Total	20,33,155.01
	Price escalation @ 20%	04,06,631.01
	GRAND TOTAL	24,39,786.01 or 24,39,800.01

(Rupees Twenty four lakhs thirty nine thousand eight hundred) only.

In case of any increase in the man, material and machinery charges, provision for additional funds will be made as and when required.


Divisional Forest Officer
Sundergarh Division

Technically
Approved


Regional Chief Conservator of Forests
Rourkela Circle, Rourkela

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Photographs showing the Compliance at site to the condition no. Part A (5); (i) of FC Stage I for the Stage II approval of 15.701 Ha – Mitigative measures adopted at site to minimize the soil erosion

 <p>Coordinates - 21°58'03.21"N ; 83°47'06.84"E</p>	 <p>21°58'03.21"N ; 83°47'06.84"E</p>
<p>Technical reclamation of OB dump through spreading of top soil / sub soil and grass carpeting along with seedling planation over the slope in year 2021</p>	<p>Growing of seedlings and grass carpeting over slope of dump during 2023</p>
 <p>Coordinates - 21°58'07.64"N ; 83°47'00.49"E</p>	 <p>21°58'07.64"N ; 83°47'00.49"E</p>
<p>Technical reclamation of OB dump through spreading of top soil / sub soil and grass carpeting along with seedling planation over the slope in year 2022</p>	<p>Greenery developed over the slope of dump along with planation till June 2023 to stabilize the dump and minimize the soil erosion</p>
 <p>Coordinates - 21°58'09.71"N ; 83°47'52.06"E</p>	 <p>21°58'09.71"N ; 83°47'52.06"E</p>
<p>Garland drain around dump in the Year 2021</p>	<p>Garland drain around dump in the Year 2023</p>


 Addl. General Manager (Mines)
 Odisha Coal and Power Ltd.


 DIVISIONAL FOREST OFFICER
 SUNDARGARH FOREST DIVISION

(iii)

**SCHEME
FOR
PLANTING OF ADEQUATE DROUGHT HARDY PLANT
SPECIES AND SOWING OF SEEDS IN THE APPROPRIATE
AREA WITHIN THE MINING LEASE TO ARREST SOIL
EROSION**

In compliance

with Condition No.2(vi)(b) of the Stage-I approval order
of Govt. of India, Ministry of Environment & Forests, New Delhi

granted vide their Letter No F.No. 8-63/2011-FC Dated.17.10.2012.
for

Diversion of 276.655 Hects Forest land

within 808.575 Hects ML area of
Manoharpur Coal Block of IB Valley Coalfields in
Sundargarh District of Odisha by
Odisha Power Generation Corporation Ltd.

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Odisha Coal and Power Ltd.

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Odisha Coal and Power Ltd.

SCHEME FOR PLANTING OF DROUGHT HARDY PLANT SPECIES AND SOWING OF SEEDS IN THE APPROPRIATE AREA WITHIN MINING LEASE TO ARREST SOIL EROSION

The ministry of Environment & Forest, Govt. of India have granted Stage-I approval vide their letter No F.No. 8-63/2011-FC Dated.17.10.2012 for diversion 276.655 ha. of forest land in the total project area of 808.575 ha. of Manoharpur Coal Block in IB Valley Coalfields, Sundargarh District of Odisha in favour of Odisha Power Generation Corporation Ltd. subject to fulfillment of certain conditions for environmental safeguards. One of the conditions i.e. Condition No.2(v)(b) "Planting of adequate drought hardy plant species and sowing of seeds in the appropriate area within the mining lease to arrest soil erosion". In compliance with the above condition, a scheme is prepared, suggesting appropriate measures to prevent soil erosion as well as to increase the vegetation cover for restoring the area by planting of draught hardy plant species and sowing of seeds in the appropriate areas within the mining lease.

- OB Dump Area: on the dump surface & dump slope

1. FUTURISTIC PLAN:

Planning for plantation is done keeping the following objective:

- Compensate the damage to vegetation due to setting up and operation of the mine.
- Prevent the spread of fugitive dust generated due to mining and allied activities.
- Attenuate noise generated by the mine.
- Reduce soil erosion.
- Help stabilize the slope of external over-burden dumps.
- Increases green cover and improve aesthetics.
- Attract animals to re-colonize the area when the mine is abandoned.

Green belt and afforestation will be carried inside the mine lease area to restore and increase the green cover of the region. Progressive Green belt development and plantation in and around the mining complex shall continue to improve the control of soil erosion. Progressive green belt development and plantation in the available areas will be carried out in a phase wise manner till end of work. Saplings will be planted at the rate of 1600 trees /ha in block plantation mode in external/internal dumps and backfilled areas and in other areas & green belt. Stretches of un-worked areas in the lease area, which will not be covered by any activity, will also be selected for afforestation. Plantation will commence there from the initial years of

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the excavation and plantation will be expanded in such areas in progressive stages. Mandharpur Coal Block of IB Valley Coalfields by M/s Odisha Power Generation Corporation Ltd. will carry out plantation on some of the dumps, quarries, vacant areas and township.

Attempts will be made for plantation of drought resistant plant such as Neem (*Azadirachta Indica*), Karanja (*Pongamia glabra*), Asan (*Terminalia alata*), Kurum (*Sleichera oleosa*), Amla (*Emblica officinalis*), Mundi (*Mitragyna parviflora*), Balgoba (*Jatropha curcas*) and grass like *Vetiveria zizanioides*, will be selected for degraded lands, which will improve the environment. Plantation of Murga (*Agave sisilana*) will be undertaken along toe of hill slopes. These will be grown as a boundary fence or live hedge and can be used to reclaim eroded areas. The species for draught hardy species, if any more, will be selected in consultation with the State Forest Department.

Phase wise plantation activities on the OB dumps and excavated / mined out areas are dealt in the progressive mine closure plan.

It is proposed to take the extensive plantation of Vetiver on the dump slopes for stabilisation and moisture conservation.

The plantation program for the first five years is given as follows

Plantation details	Quantity
Plantation of draught hardy species in consultation with forest department within the lease area.	10.0 ha
Agave Plantation around the plantation area	2,200 mt
Sowing of Grass seeds over the plantation on gaps	10.0 ha

Draught hardy species over 10.0 ha will be planted in the areas where coal mining will be done after 10th year from the inception. However, Agave and vetiver will be planted on the stabilized slopes of the O.B. dump both in the lease area and outside area of the lease proposed for O.B. Dump.

2. CHOICE OF SPECIES :

The choice of species will be based on the following parameters: (i) Drought hardy, (ii) it should prevent soil erosion. Selection of the plant species shall be based on the inventory of the local forest species like Kusuma, Bel, Karanja, Kurum, Amla, Begunia etc. Some soil binding grasses

will be introduced. The grass seeds to be shown are given in the following table. Plant species suitable for plantation should not only be able to flourish in the area but must also have rapid growth rate, evergreen habit, large crown volume and small leaves with smooth surfaces. All these traits are difficult to get in a single species. Therefore a combination of these is sought while selecting trees for green belt / vegetation cover.

Name of Species	Usage	Habitat / Soil
<i>Chrysopogon fulvus</i>	Fodder	Red soil / Black cotton soil
<i>Isaloma laxum</i>	Fodder	Heavy black soil
<i>Eriopogon foveolatus</i>	Fodder	Skeletal soil
<i>Schima nervosum</i>	Fodder	Deep soil
<i>Sporobolus marginatus</i>	Fodder	Sandy soil
<i>Heteropogon contortus</i>	Non -Fodder	Eroded soil
<i>Cymbopogon nartii</i>	Non -Fodder	Eroded soil
<i>Cymbopogon dachylon</i>	Fodder	Wide range soil

3. METHODOLOGY:

It is proposed to plant the Seedlings in pits at about 2.5 m intervals along contours so that the tree density is about 1600 trees per ha. The pits shall be filled with a mixture of good quality soil and organic manure (cow dung, agricultural waste, kitchen waste). Since, tests on the soil of the lease area have shown availability of phosphorus, a limiting nutrient, is low, phosphoric fertilizers shall also be added. The saplings shall be planted just after the commencement of the monsoons to ensure maximum survival. The species selected for plantation must be locally growing varieties with fast growth rate and ability to flourish even in poor quality soils. The species for green belt development will be selected in consultation with the State Forest Department.

Plantation on the large overburden dumps cannot start till dumping activities have ceased at least in a part of the dump and the site is prepared for plantation. Once dumping is completed, a path will be cleared to the designated area so that the basic inputs (water, manure, and seedlings) can be carried up to the site. Next, a layer of top soil has to be spread over the area and roughly leveled. Grass seeds / seedlings will be planted on the soil layer to stabilize the soil. Trenches of 45 cm X 45 cm will be dug on the flat top of the dumps and the excavated material used to form a bund on the dip side of the trenches to trap maximum water in the trenches during rains. 60 cm X 60 cm pits will be dug in the contour trenches at 2-3 m intervals. The pits

will be filled with a mixture of top-soil, organic manure and phosphoric fertiliser. Saplings will be planted in these pits once monsoon has commenced to ensure maximum survival of the saplings.

Acacia mangium is widely used in the mining industry for rehabilitation of the waste dumps as it is a drought resistant species and binds the sterile mine waste consisting of lateritic strata. Like many other legumes, it is able to fix nitrogen in the soil. Initially hardy pioneering species, *Acacia mangium* will be planted to help build up the soil. Subsequently these will be replaced by species such as *Azadirachta Indica*, *Annona squamosa*, *Lucaena leucoccephala*, *Zizyphus mauritiana* etc.

Plantation on slope of the dumps will commence as soon as the first bench is ready. The terraces on the slopes will be sloped outward. 60 cm X 60 cm pits will be dug at 1.5 m intervals and filled with a mixture of top soil and organic manure. Before the commencement of the monsoon the slopes and terraces will be covered with a layer of soil and sprinkled with water. Just before the commencement of the monsoon, seeds of grasses and small shrubs will be sprinkled on the soil covering of the dump slopes or seedlings of such plants will be planted on the slopes. Tree species suggested for plantation on the dump slopes are the same as those suggested for dump tops.

4. POST PLANTATION CARE:

Prescribed Post Plantation care shall be adopted to ensure maximum survival of the plants. Funds for maintenance of the plants for the first five years after the plantation shall be kept. Plantation care such as immediately after planting the seedlings, watering will be done. Further watering will depend on the rainfall. In the dry seasons watering will be regularly done especially during March to June. Watering in one year planted saplings will be more frequent (thrice a week). Manuring will be done using organic manure (animal dung, agricultural waste, kitchen waste, etc.). Younger saplings will be surrounded with tree guards. Diseased and dead plants will be uprooted and destroyed and replaced by fresh saplings. Growth / health and survival rate of saplings will be regularly monitored and remedial actions will be undertaken as required.

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5. PRE-PLANTING AND PLANTING OPERATION

Different operations those will be taken up for plantation are as follows:

i) Raising of nursery:

Seedling required for plantation shall be raised in a temporary nursery nearer to the plantation site and perennial water sources. Nursery work will be started one year before the year of plantation so that second year seedling will be available for plantation. Teak, Neem, Bija, Mahul stumps and bamboo rhizomes shall be collected from Gopalpur nursery at Gopalpur. For other species, seeds shall be collected from plus trees and should be treated before dibbling to Polythene bag. The seedling should be raised 20% extra besides the actual requirement to compensate the casualties. Standard nursery practice will be followed for raising such polythene bag nursery.

ii) Alignment and pitting

Alignment and pitting will be taken up in the month of March-April, Pits of size 30cm X 30cm X 30cm will be dug maintaining a spacing of 2.5mtr X 2.5mtr.

iii) Actual Planting

The seedling will be planted in the dug out pits of size 30cm X 30cm X 30cm with spacing of 2.5mtr X 2.5mtr. Plantation should be taken up after first regular shower of monsoon and should be completed by the end of July. Species shall be planted as per suitability of the soil condition. NPK fertilizer @ 30gms per plant should be given as basal dosage. Anti-termite insecticide should also be applied to each pit while planting. Casualty if any noticed will be replaced with the excess seedling raised for the purpose. During second year also casualty replacement will be done for which seedling shall be raised.

iv) Weeding, Soil working & Manuring :

For establishment and better growth of the planted seedlings, weeding, soil working and manuring are necessary. It is prescribed to carryout two weedings, soil working and manuring during first year and second year of plantation and one weeding and soil working during third year. During the first year and second year first weeding and manuring shall be carried out during August-September and the second one during October-November. First weeding shall be an area weeding and the second will be of strip weeding. The weeding of third year will be an area weeding which will be carried out during August.

After each weeding, soil working will be done around each plant at radius of 0.5mtr and manuring of each plant will be done @30gms of NPK per plant.

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v) Application of insecticides:

The plantation site after planting good healthy seedling may cause influx of insects, which usually eat and damage the tender leaves and shoots of the plants. To get rid of such insects attack application of the insecticides will be taken up in required doses at desired intervals. Spraying of insecticides shall be done preferably in a sunny day before forenoon.

vi) Fire line tracing and Maintenance:

Fire causes heavy losses to the forest during fire session. To prevent incidence of fire, the area shall be divided in to suitable blocks by tracing fire lines. Boundaries of the plantation patches and these block lines will be scrapped of forest growth to a width of 3.0 mtr during February-March and the cut back materials and the dry leaves stacked along these lines will be burnt under strict supervision. This operation shall be carried out for three years.

vii) Post Plantation Care:

Immediately after planting the seedlings, watering will be done. Further watering will depend on the rainfall. In the dry seasons watering will be regularly done especially during March to June. Watering in one year planted saplings will be more frequent (thrice a week). Manuring will be done using organic manure (animal dung, agricultural waste, kitchen waste, etc.). Younger saplings will be surrounded with tree guards. Diseased and dead plants will be uprooted and destroyed and replaced by fresh saplings. Growth / health and survival rate of saplings will be regularly monitored and remedial actions will be undertaken as required.

6. INSPECTION, MONITORING AND EVALUATION

For successful implementation of the above Mitigative measures, intensive inspection and technical guidance from concerned technical wing is required. Sufficient fuel/ conveyance charges for technical experts shall be provided by the user agency for proper execution of these programme.

7. EXECUTING AGENCY

In all the cases, the works shall be executed by the User Agency having specialized departments headed by qualified persons with outsourced man and machinery as and where required. To facilitate this, the user agency shall establish it's own executing and supervision cells along with required infrastructural facilities. In order to maintain the quality of work, in

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house supervision through competent personnel shall be provided. The entire work shall be carried out through close coordination with the Forest Department.

8. REQUIREMENT OF FUNDS

The total cost of the implementation of mitigative measures will be Rs. 24,83,111.00 as detailed in Annexure-IV. For implementation of the above mitigation measures, the above expenditure will be made over the next seven years period. Therefore, budget provision will be kept by the user agency for implementation of the above plantation program a period of next seven years. This budget will subject to increase in amount considering the increase in materials and labour charges.


Divisional Forest Officer,
Sundargarh Forest Division.

Divisional Forest Officer
Sundargarh Division


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ANNEXURE-I

**COST ESTIMATE FOR BLOCK PLANTATION OF DRAUGHT HARDY SPECIES
1600 SEEDLINGS/ Ha.
AT 2.5 m X 2.5 m SPACING.**

1	Name of the Plantation	Block Plantation - 5.0 Ha
2	No. of Seedlings to be planted	1600 Nos / Ha.
3	Spacing to be adopted	2.5 m x 2.5 m
4	Size of Pits	30cm x 30cm x 30cm.
5	Wage rate	Rs.150.00 / man-day
6	Species to be planted	Kusuma, Bel, Karanja, Kurum, Amia, Begunia etc.
7	The user agency will pay the wage rate as and when enhanced.	

0th year (Advance work) Pre-planting operation.

Sl. No.	Item of work	Mandays	Labour rate @ 150/-	Material cost.	Total.
1	2	3	4	5	6
1.	Survey, Demarcation & pillar posting.	2	300.00	-	300.00
2.	Site preparation.	12	1800.00	-	1800.00
3	Alignment and stacking of pits	2	300.00	-	300.00
4	Digging of Pitting (30 cm. cube)	40	6000.00	-	6000.00
5	Nursery cost (one year old seedling) part	80	6000.00	6000.00	12000.00
6	Contingencies & overheads	3	0	0	450.00
	Sub Total	139	14400.00	6000.00	20850.00
1st Year/ Planting					
7	Cost of raising 1600 seedlings (Balance)	25	3150.00	600.00	3750.00
8	Carriage of seedlings to site cleaning including casualty replacement	30	4500.00	-	4500.00
9	Cost of insecticide & Fertilizer	24	0	3600.00	3600.00
10	1 st Weeding	10	1500.00	-	1500.00
11	Manuring	5	750.00	0	750.00
12	2 nd Weeding	6	900.00	-	900.00
13	Soil working	8	1200.00	-	1200.00
14	Fireline Tracing & Inspection patch.	3	450.00	0	450.00
15	Soil conservation measures in the form of staggered trenches of 2 mt. x 50 cm D & drainage line treatment percolation pits etc.	10	1500.00	0	1500.00
16	Watch & ward and brush wood/ live fencing at 15% length of periphery to prevent cattle entry	15	2250.00	0	2250.00
17	Contingencies & overheads	4	0	-	600.00
	Sub Total	140	16200.00	4200.00	21000.00

2 nd Year Maintenance					
18	Casualty replacement with nursery cost	12	1800.00	-	1800.00
19	Weeding	8	1200.00		1200.00
20	Application of Fertilizer	4	600.00	0	600.00
21	Cost of Fertilizer	12	0	1800.00	1800.00
22	Soil working	7	1050.00		1050.00
23	Fireline tracing	3	450.00		450.00
24	Watch and ward	18	2700.00	0	2700.00
25	Contingencies & overheads	3	0	0	450.00
	Sub Total	67	7800.00	1800.00	10050.00
3 rd Year maintenance					
26	Weeding and pruning	8	1200.00		1200.00
27	Cost of Fertilizer	12	0	0	1800.00
28	Soil working	8	1200.00		1200.00
29	Fire line tracing	3	450.00		450.00
30	Watch and ward	18	2700.00		2700.00
31	Contingencies	3			450.00
	Sub Total	52	5550.00	0	7800.00
4 th Year maintenance					
32	Weeding and pruning	8	1200.00		1200.00
33	Fire line tracing (2 mt. wide fire line over 400 mt. long)	3	450.00		450.00
34	Watch and ward	18	2700.00		2700.00
35	Contingencies	3			450.00
	Sub Total	32	4350.00	0	4800.00
5 th Year maintenance					
36	Weeding and pruning	8	1200.00		1200.00
37	Fire line tracing (2 mt. wide fire line over 400 mt. long)	3	450.00		450.00
38	Watch and ward	18	2700.00		2700.00
39	Contingencies	3			450.00
	Sub Total	32	4350.00	0	4800.00
6 th Year maintenance					
40	Weeding and pruning	8	1200.00		1200.00
41	Fire line tracing (2 mt. wide fire line over 400 mt. long)	3	450.00		450.00
42	Watch and ward	18	2700.00		2700.00
43	Contingencies	3			450.00
	Sub Total	32	4350.00	0	4800.00
	Grand Total	494	57000.00	12000.00	74100.00


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ABSTRACT FOR @ 1600/- SEEDLINGS PER HA.

Year	Labour	Material	Contingencies	Total
0 th Year	14400.00	6000.00	450.00	20850.00
1 st Year	16200.00	4200.00	600.00	21000.00
2 nd Year	7800.00	1800.00	450.00	10050.00
3 rd Year	5550.00	0	2250.00	7800.00
4 th Year	4350.00	0	450.00	4800.00
5 th Year	4350.00	0	450.00	4800.00
6 th Year	4350.00	0	450.00	4800.00
Total	57000.00	12000.00	5100.00	74100.00
	380	80	34	494
Additional incentive (3%) for VSS/Pr/FG proposed for more than 80% survival and very good growth during 4 th year of maintenance as per recommendation of DFO and RCCF.				2224.00
Additional EPA expenses if implemented through VSS at rate Rs.1200/- in 0 th Year, Rs. 2400/- in 1 st Year, Rs.1800/- in 2 nd Year, Rs.600/- in 3 rd Year, Rs.600/- in 4 th Year, Rs.600/- in 5 th Year and Rs.600/- in 6 th year..				7800.00
Total Norm per ha. in JFM mode with Incentives.				84124.00

Rs.84,124.00 X 10.0 ha.=Rs.8,41,240.00 (Rupees Eight lakhs forty one thousand two hundred forty)only.


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ANNEXURE-II

COST NORM FOR AGAVE PLANTATION (FOR 5 ROWS & 40 METRE) Wage Rate-150/- Per Man-day

0TH YEAR OPERATION.				
Sl. No	Name of the work	Man-day	Material	Total
1	Site clearance alignment and stacking	2	0	300.00
2	Cost of lining materials including transportation	2	334.00	334.00
3	Digging pits and application of lime	6		900.00
4	Cost of 200 Ac including transportation	11	1667.00	1667.00
5	Carriage and planting	2		300.00
6	Soil working and application of bio-fertilizers (twice)	8		1200.00
7	Cost of fertilizer	2	334.00	334.00
8	Contingency		334.00	334.00
	Total:	33	2669.00	5369.00
1 ST YEAR OPERATION				
1	Causality replacement (20%) including cost of suckers and pitting	2	334.00	634.00
2	Weeding and application of fertilizer	6		900.00
3	Cost of bio-fertilizer	2	250.00	250.00
	Total:	10	584.00	1784.00
2 ND YEAR OPERATION				
1	Weeding, Soil working and application of fertilizers	6		900.00
2	Cost of bio-fertilizer	2	250.00	250.00
3	Plant protection measures including material cost	1	250.00	250.00
	Total:	09	500.00	1400.00
3 RD YEAR OPERATION				
1	Weeding, Soil working and application of fertilizers	7		1050.00
2	Cost of bio-fertilizer	2	292.00	292.00
3	Plant protection measures including material cost	2	292.00	292.00
	Total:	11	584.00	1634.00
4 TH YEAR OPERATION				
1	Weeding, Soil working and application of fertilizers	7		1050.00
2	Cost of bio-fertilizer	2	292.00	292.00
3	Plant protection measures including material cost	2	292.00	292.00
	Total:	11	584.00	1634.00


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5 TH YEAR OPERATION				
1	Weeding, Soil working and application of fertilizers	8		1200.00
2	Cost of bio-fertilizer	2	334.00	334.00
3	Plant protection measures including material cost	2	334.00	334.00
	Total:	12	668.00	1868.00
6 TH YEAR OPERATION				
1	Weeding, Soil working and application of fertilizers	8		1200.00
2	Cost of fertilizer and insecticides	2	334.00	334.00
3	Plant protection measures including material cost	2	334.00	334.00
	Total:	12	668.00	11868.00
	Grand Total:-	98	6257.00	15557.00

Cost norm for Agave fencing with five rows over 2,200.0 meter= 15,557/ 40m X 2,200.0 mt
=Ru.08,55,635/-

(Rupees Eight lakhs fifty five thousand six hundred and thirty five) only

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ANNEXURE-III

Cost of grass field creation per ha. Labour rate Rs.150/ day				
Sl No	Purpose	No of Labour / Quantity of materials	Rate in Rs	Amount in Rs
1st year				
1	Nurturing the land by ploughing & levelling	10 Nos	150/ labour	1500
2	Adding FYM and good earth	2 TL FYM 2TL good earth	500/TL FYM 500/TL Good earth	2000
3	Cost of grass seed 1kg per ha		500/kg	500
4	Broadcast, Sowing and leveling	4Nos	150/ labour	600
5	Watch and ward for a month	1Nos	4500/month	4500
6	Sprinkling of water intermittently till the grass seed germinates	2 Nos	4500/month	9000
7	Weeding of unwanted grass	4Nos	150/labour	600
	Total			18700.00
2nd year				
1	Weeding the land by removal of unwanted grass and replacing grass on patches devoid of grass	05 Nos	150/ labour	750
2	Adding FYM and good earth	1.0 TL FYM 1.0 TL good earth	500/TL FYM 500/TL Good earth	1000
3	Cost of grass sleeves to replace failures		On LS	500
4	Replacing sleeves on failure patches	4Nos	150/ labour	600
5	Watch and ward for a month	1Nos	4500/month	4500
6	Sprinkling of water Intermittently till the grass sleeves get established	1Nos	4500/month	4500
	Total			11,850.00
3rd year				
1	Weeding the land by removal of unwanted grass and replaing grass on patches devoid of grass	10 Nos	150/ labour	1500
2	Adding FYM and good earth	1.0 TL FYM 1.0 TL good earth	500/TL FYM 500/TL Good earth	1000
3	Watch and ward for a month	1Nos	4500/month	4500
	Total			7,000.00

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ABSTRACT

Ist year	...	Rs.18,700.00
2nd year	...	Rs.11,850.00
3 rd year	...	Rs. 7,000.00
Total	...	Rs.37,550.00

Rs.37,350.00 x 10 ha = Rs.03,73,500.00

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ANNEXURE-IV

TOTAL COST OF THE PROJECT

Sl. No	Description of the work	Funds Required (In Rs)
1	Afforestation of jupt jungle in next five year over 10.00 Ha x Rs.84,124.00	08,40,124.00
2	Plantation of Agave for 2,200,00 mtrs @Rs.15,557.00 per 40 mt	08,55,635.00
3	Cost for Sowing of Grass seeds 10.0 Ha @ Rs.37,500.00	03,75,500.00
	TOTAL	20,69,259.00
	Price escalation @ 20%	4,13,852.00
	Grand Total	24,83,111.00

(Rupees Twenty four lakhs eighty three thousand one hundred and eleven) only.

Technically
Approved

Regional Chief Conservator of Forests
Rourkela Circle, Rourkela

Divisional Forest Officer,
Sundargarh Forest Division.

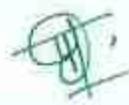
Divisional Forest Officer,
Sundargarh Division

Head of Mines
Odisha Coal and Power Ltd.

Photographs showing the Compliance at site to the condition no. Part A (5); (ii) of FC Stage I for the Stage II approval of 15.701 Ha – Plantation programme carried out at site to control the soil erosion

 <p>Coordinates – 21°58'00.75"N; 83°47'48.49"E</p>	 <p>21°58'00.75"N; 83°47'48.49"E</p>
 <p>Coordinates – 21°57'55.54"N; 83°47'15.01"E</p>	 <p>21°57'55.54"N; 83°47'15.01"E</p>
Plantation in project area between 2019 to 2023	
 <p>21°58'00.75"N; 83°47'48.49"E</p>	 <p>21°57'55.54"N; 83°47'15.01"E</p>
Growth of Trees (June 2023)	


Addl. General Manager (Mines)
Odisha Coal and Power Ltd.


DIVISIONAL FOREST OFFICER
SUNDARGARH FOREST DIVISION

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**SCHEME
FOR
CONSTRUCTION OF CHECK DAMS, RETENTION/TOE
WALLS TO ARREST SLIDING DOWN OF THE
EXCAVATED MATERIALS ALONG THE CONTOUR**

**in compliance
with the
Condition No .2(vi)(c) of
Stage-I Forest Clearance grant Order**

**Vide Letter No F.No. 8-63/2011-FC Dated.17.10.2012.
of Govt. of India, Ministry of Environment & Forests, New Delhi**

**for
Diversion of 276.655 Hects Forest land**

**within 808.575 Hects total project area of
Manoharpur Coal Block of IB Valley Coalfields in
Sundargarh District of Odisha by
Odisha Power Generation Corporation Ltd.**

Odisha Coal and Power Ltd.

Head of Mines
Odisha Coal and Power Ltd.

1. **INTRODUCTION:**

The Ministry of Environment & Forest, Govt. of India have granted Stage-I approval vide their letter No F.No. 8-63/2011-FC Dated 17.10.2012 for diversion 276.655 ha. of forest land in the total project area of 808.575 ha. of Manoharpur Coal Block in IB Valley Coalfields, Sundargarh District of Odisha in favour of Orissa Power Generation Corporation Ltd. subject to fulfillment of some conditions for environmental safeguards. One of the conditions i.e. **No.2(vi) (c) Construction of check dams, retention/ toe walls to arrest sliding down of the excavated material along the contour.** In compliance with the same, a plan has been prepared, which is fully explained as below and shall be implemented in a time bound manner.

2. **OBJECTIVE OF THE SCHEME:**

In this scheme, considering the topography and contours of the lease area, emphasis has been given to arrest sliding down of excavated materials along the contour by constructing Check Dam and retention wall at specified locations in the mining lease. Locations are judiciously selected within the leasehold and plans are prepared. GPS reading of such locations are furnished below.

The Salient features of the drainage management plan scheme are as follows:

1. The overall drainage planning has been done in such a manner that it maintains the overall slope direction so that run off distribution is not affected.
2. Garland drains have been planned on all around the external dumps (depending on contours). The garland drains shall be routed through catch pits and settling tanks to settle out suspended solids in the storm water. The clean water will be discharged to natural water courses.
3. Grass and bushes in drains hold back solid particles during the flow of water in the drain. Small stone barriers across the drain will check water current and arrest solids. These need to be cleaned periodically.
4. Stone pitching will be made at suitable places as per requirement to regulate water flow. Some of the drains which will serve for a long time shall be made pucca.
5. Settling tanks and garland drains shall be cleaned regularly, especially during monsoon.
6. Outside of the garland drains on the drainage lines shall be reinforced with green cover of non-browsable species like *Jatropha curcas* (Bigoba), *Vitex negundo* (Begunia), *Gliricidia maculate* (Gilli flower) and *Erythrina Indica* (Palohua) etc.


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3. PROPOSED PLAN

The leasehold area is undulating in nature. The central and western part of the area are marked by higher elevation exhibiting hillocks and ridges. The eastern part is almost flat. General slope exist from west to east. Maximum elevation is 312 m and minimum elevation is 225 m from MSL.

Due to this geological feature of the lease, the external dumps will be higher than the adjoining ground level. The materials from the slopes of these dumps are likely to flow during heavy rains and disturb the topography of its adjoining land, till it is completely stabilized by biological means. In order to curb this situation retaining walls of minimum one & half meter height has been planned all along the peripheral contour of the external dumps to arrest the possibility of material running down on the hill slopes. Waste dumping has been planned in a manner such that backfilling can be maximized with a view to reclaim the degraded land as much as possible and at the same time minimizing external dumping. External dumping has been planned only when backfilling is not feasible. On completion of external dumping/ backfilling, top soil will be spread on the dumped material and water sprinkling on the soil will be carried out. Grasses will be planted on the soil. Subsequently, saplings of selected species of trees will be planted in soil filled pits on the stabilized dumps.

4. METHODOLOGY

Hence the Garland drain serves the dual purpose of protection against rolling boulders on the slopes. Immediately outside the Garland drain around 2.0 meters depth will be dug to arrest the solids passing. The drains will be provided with settling tanks. After physical reclamation, top soil shall be spread on the dumped material and water sprinkling on the soil will be carried out. Grasses will be planted on the soil with subsequent plantation of seedlings of selected species for stabilizing the dumps / backfilled areas by biological reclamation.

5. MEASURES TO BE ADOPTED

Garland drains shall be constructed around the OB dumps and quarry to arrest the excavated material from the dump slopes. The water will be collected by network of garland drains which will lead to the settling pits. The run off / storm water flowing through the network of garland drains around quarries and dumps will be led to settling pits to settle out suspended solids. The clear water will be discharged to the nearby seasonal streams/ nala. Coagulant, if necessary, will be added in the settling pits in monsoon season.

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Odisha Coal and Power Ltd.

A) Details of Garland drains to be constructed around OB dumps are as under:

Name of the O.B. Dump	Perimeter
North-East	1236.26
Adjacent to Mine	2141.98
South-East	642.76
East	7551.41
Total:-	11,772.41

Details of the cost estimate for Garland drains is enclosed vide Annexure-III.

B) Construction of Settling Tanks:

Obtaining the catchments area from the topo sheet, the peak discharge should be calculated & then assuming the depth of flow, the span of Settling Tanks is to be found out. The proper designs of length, top width, bottom width, apron etc. are to be made with the help of the technical expert. The structure should be checked against overturning & sliding etc. Proper abutment at both sides should be made with earth filling so that excess run-off would pass through only Settling Tanks without any breach elsewhere.

Each terrace should be inward slope with catch drain at the inward slope of terrace. Catch drain of individual terrace should be connected to the garland drain outside the periphery of dump. These catch drains should be made up of half concrete open pipes to avoid wash-offs.

The following 4 nos. of settling Tanks shall be constructed to reduce the flow of run-offs. To be placed at an interval of every 50mt over a length of 14,000 m of the Garland drain = 280 Nos.

Name of the Settling tanks	Length (in m)	Breadth (in m)
1) North-east	209.97	80.84
2) Adjacent to Mine	178.49	45.98
3) South-east	302.86	130.11
4) East	297.84	103.81

The detailed cost estimates for construction of the above setting tanks is enclosed vide Annexure-III & IV.

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Odisha Coal and Power Ltd.

6. **INSPECTION, MONITORING AND EVALUATION**

For successful implementation of the above proposed program, intensive inspection and technical guidance from concerned technical wing is required. Sufficient fuel/conveyance charges for the executing agency and technical experts shall be provided by the user agency for proper execution of these program.

7. **EXECUTING AGENCY**

In all the cases, the works shall be executed by the User Agency having specialized departments headed by qualified persons with outsourced man and machinery as and where required. To facilitate this, the user agency shall establish it's own executing and supervision cells along with required Infrastructural facilities. In order to maintain the quality of work, In house supervision through competent personnel shall be provided. The entire work shall be carried out through close coordination with the Forest Department.

8. **REQUIREMENT OF FUNDS**

The total cost of the implementation of proposed programmes will be **Rs.4,85,500.00** as detailed in **Annexure-V**. For implementation of the above mitigation measures, the above expenditure will be made over the next five years period. Therefore, budget provision will be kept by the user agency for implementation of the above mitigation measures a period of next five years. This budget will subject to increase in amount considering the increase in materials and labour charges.


Dy. General Manager (Civil)
Project Cell
OPGC Ltd


Divisional Forest Officer,
Sundargarh Forest Division.

Divisional Forest Officer
Sundargarh Division.


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ANNEXURE - I

I. Detail Estimate of Loose Boulder Structure Check Dam

Span-4 mt. Ht. = 1.3mt. Slope-U/S:- 1:1.5 D/S slope: 1:2.0

1. Levelling the unshaped surface of the selected site & layout the structure foundation L.S. 1 MD. Rs. 150.00
2. Excavation of foundation in hard soil within initial lead of 50 mtr. including rough dressing and breaking of clods to maximum size 5 cm. to 7 cm. laying in layer not exceeding 0.3 in depth to strengthening both side U/S approx. bund of loose boulder structure.
- | | | | |
|--|-------|-----------|-------------------|
| Base with apron- $1 \times 6.15 \times 5.00 \times 0.30 =$ | 9.225 | | |
| Wing wall - $4 \times 0.50 \times 0.50 \times 0.30 =$ | 0.30 | 9.525 cum | Rs. 376.00 |
| @ Rs. 3948.00 per 100 cum. | | | |
3. Rough stone dry packing up to GL
- | | | | |
|--|-------|--------------|----------------------|
| Base with apron - $1 \times 6.15 \times 5.00 \times 0.30 =$ | 9.225 | | |
| Wing wall - $4 \times 0.50 \times 0.50 \times 0.30 =$ | 0.30 | | |
| Above GL | | | |
| Super structure- $1 \times \frac{5.15 + 0.50}{2} \times 1.30 \times 4.0 =$ | 14.95 | | |
| | 0.50 | | |
| Wing wall - $4 \times 0.50 \times 0.50 \times 0.50 =$ | 2.24 | | |
| Side wall- | 2.99 | | |
| | 1.08 | | |
| i. $2 \times \frac{0.50 + 1.80}{2} \times 1.95 \times 0.5 =$ | 0.50 | | |
| | | 31.785 cum | |
| ii. $2 \times \frac{0.5 + 1.80}{2} \times 2.6 \times 0.5 =$ | | Grand total- | |
| | | | |
| iii. $2 \times 0.6 \times 1.8 \times 0.5 =$ | | | |
| iv. $2 \times 1.0 \times 0.5 \times 0.5 =$ | | | |
| @ Rs. 343.00 per cum | | | Rs. 10,902.00 |

Rs. 11,428.00

Total no of Check Dams (02 Nos) will involve cost amounting Rs. 22,856.00

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ANNEXURE-II

Detail Estimate of Loose Boulder Structure (S.C.M)/ retaining wall with Cement pointing on the surface of boulder wall

Span = 2 mt
 Height = 0.6 mt
 Slope-U/S = 1:1.5
 D/Slope = 1:2

Sl.No	Work	Cost in Rs.
1	Levelling the unshaped surface of the selected site & layout the structure foundation L.S. 1 M.D	150.00
2	Excavation of foundation in hard soil within initial lead of 50 mts including rough breaking and breaking of clods to maximum size 5 cm. To 7 cm. Lying in layer not exceeding 0.3 inch in depth to strengthen both side U/S approx. Bund of loose boulder structure. Base with apron- $1 \times 3.70 \times 3.00 \times 0.30 = 3.33$ Wing wall- $4 \times 0.50 \times 0.50 \times 0.30 = 0.30$ @ Rs. 6580.00 per 100 cum Total: = 3.63 = 238.85 or	240.00
3	Rough stone dry packing Up to G.L. Base with apron- $1 \times 3.70 \times 3.00 \times 0.30 = 3.33$ Wing wall- $4 \times 0.50 \times 0.50 \times 0.30 = 0.30$ Above G.L. Super structure- $1 \times 2.00 \times \frac{2.70+0.60}{2} \times 0.60 = 1.98$ Wing wall - $4 \times 0.50 \times 0.50 \times 0.30 = 0.3$ Side wall (i) $2 \times \frac{0.50 + 1.10}{2} \times 0.90 \times 0.5 = 0.72$ (ii) $2 \times \frac{0.50 + 1.10}{2} \times 0.90 \times 0.5 = 0.72$ (iii) $2.00 \times 0.6 \times 0.6 \times 0.5 = 0.36$ (iv) $2 \times 1.0 \times 0.5 \times 0.5 = 0.50$ Total = 8.21 CuM @ Rs. 572.00 per CuM = 4,696.12 or 4,700.00	4700.00
4	Cement pointing on the Surface of Boulder Wall @ 1250/m ² = 6m ²	7500.00
	G. Total	12590.00

Rs.12,590/- X 2 Nos. = Rs.25,180.00 (Rupees Twenty five thousand one hundred eighty) only
 In the mining provision of retaining wall in the mining Plan.

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ANNEXURE-III

**ESTIMATE FOR PER 1m CONSTRUCTION OF GARLAND DRAIN
(Length = 1m, Width: 1.2m, Depth: 0.6m)**

1	Cleaning of jungles along garland drain:	L	B	D	TOTAL
	Sq m	1	10.00	10.00	10.00
			Total		10.00
2	Earth Work in excavation in foundation trenches or drains	L	B	W/H	TOTAL
	Cum	1	1.20	0.6	0.72
			Total		0.72
3	PCC 1:4:8	L	B	W/H	TOTAL
	Cum	1	1.00	1.20	0.12
			Total		0.12
4	RR Masonary	L	B	W/H	TOTAL
	Cum	1	1.00	0.40	0.20
			Total		0.20
5	20 mm cement Plaster (1:5)	L	B	W/H	TOTAL
	Cum	1	1.00	1.00	1.00
			Total		1.00
6	25 mm cement concrete flooring (1:2:4)	L	B	W/H	TOTAL
	Cum	1	1.00	0.60	0.60
			Total		0.60

DESCRIPTION OF ITEM	UNIT	QTY.	RATE	AMOUNT (Rs)
Cleaning jungle including uprooting of rank vegetation, grass, brush wood, trees and saplings of girth up to 30 cm measured at a height of 1 m above ground level and removal of rubbish up to a distance of 50 m outside the periphery of the area cleared.	SQM	10.00	3.61	36.10
Earth work in excavation in foundation trenches or drains (not exceeding 1.5 m in width or 10 sqm on plan) including dressing of sides and ramming of bottoms, lift up to 1.5m, including getting out the excavated soil and disposal of surplus excavated so	CUM	0.72	125.21	90.15
Providing and laying in position cement concrete 1:4:8 (1 Cement: 4 coarse sand: 8 graded stone aggregate 40 mm nominal size) of specified grade excluding the cost of centring and shuttering - All work upto plinth level.	CUM	0.12	3484.56	418.15
Random rubble masonry with local available hard stone (laterite) in foundation and plinth at plinth level and superstructure with cement mortar 1:6 (1 cement: 6 coarse sand).	CUM	0.20	1545.55	309.11
20 mm cement plaster of mix 1:5 (1 cement: 5 fine sand).	SQM	1.00	138.78	138.78
25 mm thick cement concrete flooring 1:2:4 (1 cement: 2 coarse sand: 4 graded stone aggregate 20 mm nominal size) finished with a floating coat of neat cement including cement slurry, but excluding the cost of washing of steps etc. complete.	SQM	0.60	287.20	172.32
Cost for construction of 1 m Garland drain				1164.61
Total Cost for 150m of Garland Drain = 280 X Rs. 1164.61 = Rs. 3,26,891.00				


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ANNEXURE-IV**ESTIMATE FOR PER RMT CONSTRUCTION OF SETTLING POND**
(Length: 1m, Width: 3.0m, Height: 1.5m)

DESCRIPTION OF ITEM	UNIT	QTY.	RATE	AMOUNT (Rs)
Earth work in excavation by mechanical means (Hydraulic excavator) / manual means over areas in (exceeding 30 cm in depth 1.5 m in width as well as 10 sqm on plan) including disposal of excavated earth, lead up to 50 m and lift up to 1.5 m, disposed earth to be levelled and neatly dressed, in all kinds of soil.	CUM	4.50	123.16	554.22
Collection, loading, unloading and stacking of local boulder (laterite) from collecting area to work site including the cost of transportation of boulder at site, lead up to 10 Km as directed by Engg - in - charge.	CUM	1.01	775.77	785.47
Dry stone pitching 22.50 cm thick excluding the cost of supply of hard stone (laterite) and including the cost of preparing surface complete.	SQM	4.50	125.22	563.49
Cost for construction of 1 Settling Tank (Length: 1m, Width: 3.0m, Height: 1.5m)				1903.18
Cost for construction of 1 Settling Tank (Length: 4m, Width: 3.0m, Height: 1.5m)				7612.72

Total Cost for 04 Nos. Settling Tank = 04 X Rs. 7612.72 = Rs. 30,451.00

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ANNEXURE-V

TOTAL COST OF THE PROJECT

Sl. No	Description of the work	Funds Required (in Rs)
1.	Cost of Check Dam 2 Nos. @ Rs.11,428.00	22,856.00
2	Cost of Retaining wall with Cement pointing on the surface of boulder wall - 2 Nos. @ Rs. 12,590/- each	25,180.00
3	Construction of Garland Drain 280 Nos. @Rs.1164.61/-	3,26,091.00
4	Cost for construction of 4 nos. Settling Tanks	30,451.00
	Total	4,04,578.00
5	Price escalator @ 20%	80,916.00
	GRAND TOTAL	4,85,494.00 or Rs.4,85,500.00

(Rupees Four lakhs eighty five thousand five hundred) only

In case of any increase in the man, material and machinery charges, provision for additional funds will be made as and when required.

Technically
Approved

Regional Chief Conservator of Forests
Rourkela Circle, Rourkela

Divisional Forest Officer,
Sundargarh Forest Division.

Divisional Forest Officer
Sundargarh Division

Head of Mines
Odisha Coal and Power Ltd.

ANNEXURE-V

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Technically
Approved

Regional Chief Conservator of Forests
Rourkela Circle, Rourkela

Divisional Forest Officer,
Sundargarh Forest Division.

Divisional Forest Officer
Sundargarh Division

ANNEXURE - E (02)

Photographs showing the Compliance at site to the condition no. Part A (5); (iii) of FC Stage I for the Stage II approval of 15.701 Ha – Construction of Toe wall at site to arrest sliding down of excavated material



Coordinates - $21^{\circ}58'03.21''N$; $83^{\circ}47'06.84''E$

Construction of retaining wall along dump in the year 2021



Coordinates - $21^{\circ}58'03.21''N$; $83^{\circ}47'06.84''E$

Retaining wall view in the Year 2023



Addl. General Manager (Minas)
Odisha Coal and Power Ltd.



DIVISIONAL FOREST OFFICER,
SUNDARGARH FOREST DIVISION

Annexure D/d
ANNEXURE-4

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SCHEME
FOR
STABILIZATION OF OVER BURDEN DUMPS
BY GRADING & BENCHING AND ITS MANAGEMENT

with

Condition no - 2 (vf)(d) of

Stage-I Forest Clearance Grant Order

Vide Letter No F.No. B-63/2011-FC Dated.17.10.2012.

of Govt. of India, Ministry of Environment & Forests, New Delhi

for

Diversion of 276.655 Hects Forest land

within 808.575 Hects total project area of

Manoharpur Coal Block of IB Valley Coalfields in

Sundargarh District of Odisha by

Odisha Power Generation Corporation Ltd.

1. INTRODUCTION

The ministry of Environment & Forest, Govt. of India have granted Stage-I approval vide their letter No **F.No. 8-63/2011-FC Dated.17.10.2012** for diversion 276.655 ha. of forest land in the total project area of 808.575 ha. of Manoharpur Coal Block in IB Valley Coalfields, Sundargarh District of Odisha in favour of Odisha Power Generation Corporation Ltd. subject to fulfilment of some conditions for environmental safeguards. One of the conditions i.e. **2.(vi) (d) "Stabilize the Over Burden Dumps by appropriate grading/benching so as to ensure that angles of repose at any given place is less than 28° "**. In compliance with the above condition, a detailed plan has been duly prepared which is fully explained as below and shall be implemented in a time bound manner.

2. LOCATION

The total project area of 808.575 ha. is delineated in Survey of India Topo sheet No. 64 O/13 within the North Latitudes 21° 56' 19" to 21° 58' 04" and East Longitudes 83° 46' 00" to 83° 47' 28". The area consists of a series of N-S trending parallel ridges and valleys.

3. TOPOGRAPHY

The leasehold area is undulating and rugged in nature. The central and western parts of the area are marked by higher elevation exhibiting hillocks and ridges. The eastern part is almost flat. General slope is from west to east. Maximum elevation is 312 mtr and the minimum elevation is 225 mtr from MSL.

4. SOIL TYPE

Soil type in the study area is covered by the rocks of Barakar formation. The basement area comprising of metamorphic rocks are exposed to the eastern side of the block. Barring a narrow patch in the extreme south-western corner of the block, the area is undisturbed.


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5. CLIMATE

The study area lies in tropical region where climate is characterised by very hot summers and cool winters. Summer is typically from March to June when monthly temperature ranges from a maximum of 45°C during daytime to a minimum of 15°C at night. Winter is from November to February when the maximum temperature during day goes up to 33°C and minimum temperature at night becomes as low as 8°C. The average annual rainfall as recorded at IMD observatory at Sundargarh is 1053 mm.

6. DRAINAGE

There is no perennial nala in the applied M.L. area. Surface run-off water flows along the natural slopes, valleys and seasonal nalas and finally falls into a well defined seasonal nala in northern-eastern side to meet Garia Nala. This Garia Nala finally falls into Basundhara Nala which is a perennial one which finally falls into the Ib River.

7. EXISTING VEGETATION

The area consists of vegetation of dry deciduous species like Sal, Bija, Kurum, Jamun, Kendu, Asan etc. with canopy density 0.3 over virgin land. In general, various edaphic and climatic factors have contributed to the development of different types of forests. There is no defined protected areas like National Parks, Sanctuary or Biosphere reserves in this region. The buffer zone (10 Km radius) includes part of Kalapani, Panjipahar, Panikhula, Lalma, Jhatkhol, Baljore, Garjanjore, Garjanpahar, Kalamegha, Satparlia, Kantidunguri, Chhengapahar, Barghumura, Singaribahal, Tilia, kaudaraha, Bikramkhol, Rajpur, Girpahad, Makarchata Reserve forest area of Sundargarh Forest Division. The purposed forest area of 276.655 ha. come mainly under **Village Forest including 2.023 ha.** under Kanhpahad Reserve Forest. Vegetation analysis (primary) shows that the forest is Sal (*Shorea robusta*) dominated forests. The dominance of Sal is followed by Kendu (*Diospyros melanoxylon*), Char (*Buchanania lanzan*), Karla, Sahaj (*Anogissus latifolia*) and Mahul (*Mdhuca indica*). There is no endangered plant species in this area.

8. PHASE WISE MINING ACTIVITY

The lease is divided into three quaries for achieving the targeted production quantity of 8 MTPA. The quantity of Mineable Reserve available on date is about 150 MT. It has

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been proposed to conduct mining activities in the virgin area of 808.575 ha. Concurrent reclamation and restoration activities will be undertaken in the mined out area of the quarries.

STABILIZATION OF OVER BURDEN DUMP:

Size of O.B. Dumps

Name of the O.B. Dump	Perimeter
North-East	1236.26
Adjacent to Mine	2141.98
South-East	842.75
East	7551.41
Total:-	11,772.41

1. Waste Generation

Waste Generation during first five years of plan period

Year	Quarry-1	Total (m ³)
1 st	5.67 M ³	5.67 M ³
2 nd	11.43	11.43
3 rd	16.34	16.34
4 th	19.12	19.12
Total	52.56 M³	52.56 M³

Generation of waste during entire Mine life= 432.11m³

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The salient features of OB/waste dump management practices:

1. Total 70% will be disposed of in the mined out area and 20% will be used for maintenance of mine road and nearby village road. Remaining 10% of waste will be disposed on the proposed dump.
2. Retaining walls and garland drains will be provided around the dumps.
3. In total 4 nos. O.B. Dumps have been proposed which are located in **North-east, Adjacent to Mine, South-east and East of the coal mining area.**

Maximum Height & Spread of Dumps at Conceptual stage

Total waste	=	432.11 m ³
Surface area required for 4 O.B. dumps.	=	146.536 ha.
Average height	=	58.0 m

Terraces will be created each with 10.00 m height.

Precautionary Measures To Be Adopted During Waste Disposal Are As Follows: -

- i) The ultimate dump slope should be maintained at 20-22°, i.e. less than 28° with individual terrace slopes not exceeding 37°.
- ii) Each terrace should be inward slope with catch drain at the inward slope of terrace.
- iii) Catch drain of the individual terrace should be connected to the garland drain outside the periphery of dump. Catch drain preferably to be made up of half concrete open pipes followed by settling tanks to avoid wash offs and have provision berms at the outer side to reduce gully formation due to rainwater wash offs.

As retreating method of dumping has been proposed for dump stabilization dead terraces have to be planted along with dump slopes from first year onwards.

Objective of the plan

The objectives of the proposed plan are as follows:

1. Proper Management and scheduling of overburden materials so as to minimize external dumping.

2. To provide methodologies and Implement the proposed actions in time bound manner to prevent slope failures there by providing stable OB dump slopes.
3. Stabilization of the over burden dumps by plantation.
4. Prevention of overflow of eroded soils from the fines, OB dump areas leading to siltation in the streams natural streams.

9. STRUCTURAL MEASURES

A) Preservation of Top Soil:-

In any excavation work/expansion of mining operation, the User Agency shall dump the top soil separately for future use. However, the User Agency is advised to preserve the top soil with top priority for its use in top dressing of refilling area, terrace slopes and other places where plantation measures are to be taken up.

B) Terracing:-

As per planning, one terrace of 10.00 mts height will be left at the conceptual stage as the major part of waste will be used for back filling, construction of roads, filling of ditches & other works. The slope should be within the permissible range considering angle of repose of the soil & space available there by maintaining the angle of repose within 28°.

C) Settling Tank:

Considering the gradient of the site & run-off, it is suggested to take up 4 Settling Tanks across the gullies with proper design. The dimensions of the Settling Tanks are as given below and the estimates of the 2mtr depth and 3mtr span.

Construction of Settling Tanks:

The following 4 nos. of settling Tanks shall be constructed to reduce the flow of run-offs.

Name of the Settling tanks	Length (in m)	Breadth (in m)
1) North-east	209.97	80.84
2) Adjacent to Mine	178.49	45.98
3) South-east	302.86	130.11
4) East	237.84	103.81

The detailed cost estimate for construction of the above setting tanks are enclosed vide Annexure-I.

Obtaining the catchments area from the topo sheet, the peak discharge should be calculated & then assuming the depth of flow, the span of Settling Tanks is to be found out. The proper designs of length, top width, bottom width, apron etc. are to be made with the help of the technical expert. The structure should be checked against overturning & sliding etc. Proper abutment at both sides should be made with earth filling so that excess run-off would pass through only Settling Tanks without any breach elsewhere.

Each terrace should be inward slope with catch drain at the inward slope of terrace. Catch drain of individual terrace should be connected to the garland drain outside the periphery of dump. These catch drains should be made up of half concrete open pipes to avoid wash-offs.

D) Construction of Garland drain

The User Agency has planned to construct Garland Drain at the toe of each Dump viz. **North-east, Adjacent to Mine, South-east and East** in order to arrest the soil loss from OB dump thereby preventing downward sediment flow.

Name of the O.B. Dump	Perimeter in m
1) North-east	1236.26
2) Adjacent to Mine	2141.98
3) South-east	842.76
4) East	7551.41
Total:-	11,772.41 running meter (Rah)

The detailed cost estimate for construction of the above Garland drains are enclosed vide Annexure-II.

10. Maintenance /managerial Measure:-

The User Agency will take steps for water sprinkling in critical areas prone to air pollution. The operation will continue from winter to summer. It will also take steps for desiltation of small pondages likely to be created due to check-dams, retaining walls & siltation tanks. It is suggested to take up desiltation works at least thrice during rainy season in order to check over flow of silts to downstream.

The conservation structures to be constructed around the dumps need maintenance work for their proper functioning. Structures will be constructed depending upon the requirement arising out of any increase in production and mine development.

In the conceptual period total waste/OB to be generated is around 432.11 m³. The dump management will be done in the following manner.

- Garland drain will be made around the O.B Dump whenever possible.
- During course of mining, waste material will be stacked on the dumping yard.

- Garland drain and a series of setting pit will be made around the dumps to arrest soil erosion.
- Water sprinkling arrangements will be installed to control fugitive dust emission in active dump.
- The dump height will be maintained at 10 meters with berms & terraces. The maximum overall dump height will be maintained at 30 mtrs with ultimate dump slope angle maintained at $<28^\circ$

11. PROPOSED METHODOLOGY

Due to the geological feature of the mining lease area, the external dumps will be higher than the adjoining ground level. The materials from the slopes of the dump are likely to flow during heavy rains and disturb the topography of its adjoining land, till it is completely stabilized by biological means. In order to curb this situation, retaining walls of minimum one & half meter high have been planned all along the peripheral contour of the external dumps to arrest the possibility of material running down on the hill slopes. Waste dumping has been planned in a manner such that backfilling can be maximized with a view to reclaim the degraded land as much as possible and at the same time minimizing external dumping.

The methods to be adopted for stabilization of OB dumps are as follows:

1. **Vegetative methods / Biological Measures :**
 - a. Undertaking Plantation on the OB dump surface , sowing seeds of stylos grass etc
2. **Bio-engineering Measures :**
 - a. Plantation of vetiveria grass
3. **Structural methods :**
 - a. Terracing of slopes, plugging of gullies
 - b. Construction of Garland drains around OB dumps

Appropriate grading and benching terracing will be carried out in dumps to reduce the overall slope to maintain within the angle of repose of material (or 28°). All external dumps and backfilled will be biologically reclaimed. Terracing will be carried out in

dumps keeping in view the dump progress and area available to minimise the utilisation of virgin land. The details of dumps and terraces to be made have been summarized as follows:

A. Biological Measures:

Plantation on OB dumps

It is proposed to undertake plantations over the dump. The area will be stocked by way of raising plantation at the rate 1600 plants per hectare in block plantation method. Taking into consideration the site specific soil condition, indigenous species growing naturally are proposed to be planted. It is also proposed to plant hardy species such as Agave & Vetiver Plants as it can survive in degraded and poor soils along the slope & toe of O.B. dump and prove to be most useful for controlling soil erosion.

The list of species to be adopted for the plantation is as follows:

Sl.	Botanical Name	Local Name
1.	<i>Samania saman</i>	<i>Bada Chakunda</i>
2.	<i>Pongamia piannata</i>	<i>Karanja</i>
3.	<i>Terminalia tomentosa</i>	<i>Asan</i>
4.	<i>Terminalia bellerica</i>	<i>Bahada</i>
5.	<i>Emblica officinalis</i>	<i>Amia</i>
6.	<i>Alstonia scholaris</i>	<i>Chhatian</i>
7.	<i>Bombusa vulgaris</i>	<i>Badl Baunsa</i>
8.	<i>Mangifera indica</i>	<i>Mango</i>

Sowing Seeds: It is suggested to sow grass seed on the slope of terrace & at other barren place for preservation of top soil. The grasses recommended are as per the following table:

List of grass seeds to be sown on surface of Over Burden Dump and in vacant barren places for preservation of Top Soil

Name of Species	Usage	Habitat / Soil
<i>Chrysopogon fulvus</i>	Fodder	Red soil / Black cotton soil
<i>Iselema laxum</i>	Fodder	Heavy black soil
<i>Eremopogon foveolatus</i>	Fodder	Skeletal soil
<i>Schima nervosum</i>	Fodder	Deep soil
<i>Sporobolus marginatus</i>	Fodder	Sandy soil
<i>Heteropogon contortus</i>	Non-Fodder	Eroded soil
<i>Cymbopogon martini</i>	Non-Fodder	Eroded soil
<i>Cynodon dactylon</i>	Fodder	Wide range soil

Soil Treatment & Planting Activities: The topsoil to be encountered during mining operation will be stored for utilization during plantation on OB dump areas. Planting shall be done during July in pre-dug pits of size 30cmX30cmX30cm. A basal dose of N.P.K fertiliser of 15g shall be applied at the time of planting, besides mixing with insecticides to prevent termites & insects. A minimum distance of 2.5 mt X 2.5 mt shall be maintained on every fourth plants in planting either of the species. Care should be taken to complete the planting during July while rains are still on during first or second week of July. The proposed biological measures along with the maintenance works will also be executed with internal resources by the user agency in consultation with local Forest Deptt. It is proposed to provide sufficient fuel/conveyance charges for technical experts for proper execution of these programmes to the executing agency. A cost estimate of plantation over 146.536 hectares dump area in block plantation mode has been planned.

Bio-Engineering Measures:

Bio-engineering approach is proposed to be adopted with a view to retain loose spoils from being transported to the water course. Coal mine spoils are typically devoid of organic matter and the micro-flora count is not very conducive for plant. So in spite of plantation, survival and growth is observed to be very less. To combat this problem, actions are needed to supplement the organic carbon need and at the same time develop a micro eco-system with organisms tolerant to harsh environment.

C. Structural Measures

Wash offs and rolling down of excavated materials from the dump slopes give way to slope failures and the dumps become unstable. Hence structural measures like construction of Garland Drains & Setting Pits etc. should be adopted for prevention of wash offs and to arrest excavated material from OB dump.

Garland drain: A plan for erosion control measures from OB dump slopes to prevent the wash-offs at the source itself at a cost of **Rs 580.13 lakhs** has been prepared separately.

Benching/Terracing across the OB dump slope

The slopes of external dumps shall be planned at an overall angle of less than 28° with individual lifts at less than 37° . As the dumps attain final position, the slopes will be terraced and proper vegetation will be laid which will cause binding of the soil preventing any slope failure. Garland drain will be built all-around the external dumps which will have weep holes for passage of storm water.

It is proposed to construct 5/6 step bench/terraces of the O.B. dump to intercept the flow of materials during torrential rain and provide stability. The slope of individual terrace should be within the permissible range considering the angle of repose of the soil and space available, thereby maintaining the overall angle of repose within 28° .

The terracing will be done through the internal resources by deploying the operating mining equipments and technical staffs to be employed.

12. INSPECTION, MONITORING AND EVALUATION

For successful implementation of the above Mitigative measures, intensive inspection and technical guidance from concerned technical wing is required. Sufficient fuel/ conveyance charges for technical experts shall be provided by the user agency for proper execution of these programmes. Infrastructural facilities like GIS software along with GPS equipments will be provided by the user agency for the above post implementation monitoring. Necessary facilities for carrying out R & D works by expert agencies on new technologies of OB / fines dump management will be made by user agency.

13. EXECUTING AGENCY

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In all the cases, the works shall be executed by the User Agency having specialised departments headed by qualified persons with outsourced man and machinery as and where required. To facilitate this, the User Agency shall establish its own executing and supervision cells along with required infrastructural facilities. In order to maintain the quality of work, in-house supervision through competent personnel shall be provided. The entire work shall be carried out through close coordination with the Forest Department.

REQUIREMENT OF FUNDS

1. REQUIREMENT OF FUNDS

The total cost of the implementation of OB dump stabilisation plan is Rs. **03,44,46,349.00** as detailed in Annexure-VII. For implementation of the above plan, the above expenditure of Rs 9.28 lakh will be made over the first five years period. Therefore, budget provision will be kept by the user agency for implementation of the biological, structural and bio-engineering measures during the period of first five years. This budget will subject to increase in amount considering the increase in materials and labour charges.


DGM (Civil)
M/s Odisha Power Generation Corporation Ltd.

 General Manager (Civil)
Project Cell
 OPGC Ltd


Assistant Forest Officer
Banspali Division

ANNEXURE-I

COST ESTIMATE FOR BLOCK PLANTATION OF 1600 SEEDLINGS/PER Ha.

1. Type of the Plantation.	Block Plantation.
2. No. of seedlings to be planted.	1600 Nos. per hectare.
3. Spacing to be adopted.	2.5m x 2.5m
4. Size of pits.	30cm x 30cm x 30cm
5. Wage rate.	Rs. 150/- per manday.

0th year (Advance work) Pre-planting operation.

Sl. No.	Item of work	Mandays	Labour rate @ Rs. 150/-	Material cost.	Total.
1	2	3	4	5	6
1.	Survey, Demarcation & pillar posting.	2	300.00	-	300.00
2.	Site preparation.	12	1800.00	-	1800.00
3.	Alignment and stacking of pits	2	300.00	-	300.00
4.	Digging or Pitting (30 cm. cube)	40	6000.00	-	6000.00
5.	Nursery cost (one year old seedling) per	80	6000.00	6000.00	12000.00
6.	Contingencies & overheads	3	0	0	450.00
	Sub Total	139	14400.00	6000.00	20850.00

1stYear/ Planting

7.	Cost of raising 1600 seedlings (Balance)	25	3150.00	800.00	3750.00
8.	Carriage of seedlings to site cleaning including casualty replacement.	30	4500.00	-	4500.00
9.	Cost of insecticide & Fertilizer	24	0	3600.00	3600.00
10.	1 st Weeding	10	1500.00		1500.00
11.	Manuring	5	750.00	0	750.00
12.	2 nd Weeding	8	900.00		900.00
13.	Soil working	8	1200.00		1200.00
14.	Fireline Tracing & inspection patch.	3	450.00	0	450.00
15.	Soil conservation measures in the form of staggered trenches of 2 mt. x 50 cm D& drainage line treatment percolation pits etc.	10	1500.00	0	1500.00
16.	Watch & ward and brush wood, live fencing at 15% length of periphery to prevent cattle entry	19	2250.00	0	2250.00
17.	Contingencies & overheads	4	0		600.00
	Sub Total	140	16200.00	4200.00	21000.00

2 nd Year Maintenance				
18	Casualty replacement with nursery cost	12	1800.00	1800.00
19	Weeding	8	1200.00	1200.00
20	Application of Fertilizer	4	600.00	0
21	Cost of Fertilizer	12	0	1800.00
22	Soil working	7	1050.00	1050.00
23	Fireline tracing	3	450.00	450.00
24	Watch and ward	18	2700.00	0
25	Contingencies & overheads	3	0	0
	Sub Total	67	7800.00	1800.00
3 rd Year maintenance				
26	Weeding and pruning	8	1200.00	1200.00
27	Cost of Fertilizer	12	0	0
28	Soil working	8	1200.00	1200.00
29	Fire line tracing	3	450.00	450.00
30	Watch and ward	18	2700.00	2700.00
31	Contingencies	3		450.00
	Sub Total	52	5550.00	0
4 th Year maintenance				
32	Weeding and pruning	8	1200.00	1200.00
33	Fire line tracing.(2 mt. wide fire line over 400 mt. long)	3	450.00	450.00
34	Watch and ward	18	2700.00	2700.00
35	Contingencies	3		450.00
	Sub Total	32	4350.00	0
5 th Year maintenance				
36	Weeding and pruning	8	1200.00	1200.00
37	Fire line tracing.(2 mt. wide fire line over 400 mt. long)	3	450.00	450.00
38	Watch and ward	18	2700.00	2700.00
39	Contingencies	3		450.00
	Sub Total	32	4350.00	0
6 th Year maintenance				
40	Weeding and pruning	8	1200.00	1200.00
41	Fire line tracing.(2 mt. wide fire line over 400 mt. long)	3	450.00	450.00
42	Watch and ward	18	2700.00	2700.00
43	Contingencies	3		450.00
	Sub Total	32	4350.00	0
	Grand Total	494	57000.00	12000.00

ABSTRACT FOR @ 1600/- SEEDLINGS PER HA.

Year	Labour	Material	Contingencies	Total
0 th Year	14400.00	8000.00	450.00	20850.00
1 st Year	16200.00	4200.00	600.00	21000.00
2 nd Year	7800.00	1800.00	450.00	10050.00
3 rd Year	5550.00	0	2250.00	7800.00
4 th Year	4350.00	0	450.00	4800.00
5 th Year	4350.00	0	450.00	4800.00
6 th Year	4350.00	0	450.00	4800.00
Total	57000.00	12000.00	5100.00	74100.00
	380	80	34	494
Additional Incentive (3%) for VSS/Fr/FG proposed for more than 80% survival and very good growth during 4 th year of maintenance as per recommendation of DFO and RCCF.				2224.00
Additional EPA expenses if implemented through VSS at rate Rs.1200/- in 0 th Year, Rs. 2400/- in 1 st Year, Rs.1800/- in 2 nd Year, Rs.600/- in 3 rd Year, Rs.600/- in 4 th Year, Rs.600/- in 5 th Year and Rs.600/- in 6 th year.				7800.00
Total Norm per ha. in JFM mode with incentives.				84124.00

Rs.84,124.00 x 5.00 ha = Rs.4,20,620.00

N.B. There is only one existing dump need to be stabilized as detailed below:

Name of the area	Area in ha.
1. Dump No.-1W & 1S	05.00

Rs.84,124.00 x 05.ha = Rs.4,20,620.00

(Rupees four lakhs twenty thousand six hundred and twenty) only

DGM (Civil)

M/s Odisha Power Generation Corporation Ltd.

By, General Manager (Civil)

Project Cell

OPGC Ltd

Head of Mines
Odisha Coal and Power Ltd.

ANNEXURE-II

COST NORM FOR AGAVE PLANTATION (FOR 5 ROWS & 40 Mtrs.)

Wage Rate-150/- Per Man-day

0TH YEAR OPERATION.

Sl. No.	Name of the work	Man-day	Material	Total
1	Site clearance alignment and stacking	2	0	300.00
2	Cost of lining materials including transportation	2	334.00	334.00
3	Digging pits and application of lime	6		900.00
4	Cost of 200 Ac including transportation	11	1667.00	1667.00
5	Carriage and planting	2		300.00
6	Soil working and application of bio-fertilizers (twice)	8		1200.00
7	Cost of fertilizer	2	334.00	334.00
8	Contingency		334.00	334.00
	Total:	33	2669.00	5369.00

1ST YEAR OPERATION

1	Causality replacement (20%) including cost of suckers and pitting.	2	334.00	634.00
2	Weeding and application of fertilizer	6		900.00
3	Cost of bio-fertilizer	2	250.00	250.00
	Total:	10	584.00	1784.00

2ND YEAR OPERATION

1	Weeding ,Soil working and application of fertilizers	5		900.00
2	Cost of bio-fertilizer	2	250.00	250.00
3	Plant protection measures including material cost	1	250.00	250.00
	Total:	09	500.00	1400.00
3rd YEAR OPERATION				
1	Weeding ,Soil working and application of fertilizers	7		1050.00
2	Cost of bio-fertilizer	2	292.00	292.00
3	Plant protection measures including material cost	2	292.00	292.00
	Total:	11	584.00	1634.00
4th YEAR OPERATION				
1	Weeding ,Soil working and application of fertilizers	7		1050.00
2	Cost of bio-fertilizer	2	292.00	292.00
3	Plant protection measures including material cost	2	292.00	292.00
	Total:	11	584.00	1634.00
5th YEAR OPERATION				
1	Weeding ,Soil working and application of fertilizers	8		1200.00
2	Cost of bio-fertilizer	2	334.00	334.00
3	Plant protection measures including material cost	2	334.00	334.00
	Total:	12	668.00	1868.00

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6 th YEAR OPERATION				
1	Weeding, Soil working and application of fertilizers.	8		1200.00
2	Cost of fertilizer and insecticides	2	334.00	334.00
3	Plant protection measures including material cost	2	334.00	334.00
	Total:	12	668.00	11868.00
	Grand Total:-	98	6257.00	15557.00

Cost norm for Agave fencing with five rows 2100 meter= 15,557/ 40m X 2100 mt
=Rs.8,16,743.00/-

(Rupees Eight lakhs sixteen thousand seven hundred and forty three) only


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 M/s Odisha Power Generation Corporation Ltd.
 General Manager (Civil)
 Project Cell
 OPGCL


 Head of Mines
 Odisha Coal and Power Ltd.

ANNEXURE-III

Cost of grass field creation per ha. Labour rate Rs.150/ day				
Sl No	Purpose	No of Labour / Quantity of materials	Rate in Rs	Amount in Rs
<u>1st year</u>				
1	Nurturing the land by ploughing & levelling	10 Nos	150/ labour	1500
2	Adding FYM and good earth	2 TL FYM 2TL good earth	500/TL FYM 500/TL Good earth	2000
3	Cost of grass seed 1kg per ha		500/kg	500
4	Broadcast, Sowing and leveling	4Nos	150/ labour	600
5	Watch and ward for a month	1Nos	4500/month	4500
6	Sprinkling of water intermittently till the grass seed germinates	2 Nos	4500/month	9000
7	Weeding of unwanted grass	4Nos	150/labour	600
Total				18700.00
<u>2nd year</u>				
1	Weeding the land by removal of unwanted grass and replacing grass on patches devoid of grass	05 Nos	150/ labour	750
2	Adding FYM and good earth	1.0 TL FYM 1.0 TL good earth	500/TL FYM 500/TL Good earth	1000
3	Cost of grass sleeves to replace failures		On LS	500
4	Replacing sleeves on failure patches	4Nos	150/ labour	600
5	Watch and ward for a month	1Nos	4500/month	4500
6	Sprinkling of water intermittently till the grass sleeves get established	1Nos	4500/month	4500
Total				11,850.00
<u>3rd year</u>				
1	Weeding the land by	10 Nos	150/ labour	1500

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	removal of unwanted grass and replacing grass on patches devoid of grass			
2.	Adding FYM and good earth	1.0 TL FYM 1.0 TL good earth	500/TL FYM 500/TL Good earth	1000
3	Watch and ward for a month	1Nos	4500/month	4500
	Total			7,000.00

ABSTRACT

1st year	+	Rs. 18,700.00
2nd year	-	Rs. 11,850.00
3 rd year	-	<u>Rs. 7,000.00</u>
Total	-	Rs. 37,550.00

Rs. 37,550.00 x 05.00 ha = Rs. 1,87,750.00
 (Rupees one lakh eighty seven thousand seven hundred fifty) only

[Signature]
 DGM (Mines)
 M/s Odisha Power Generation Corporation Ltd.
 General Manager (Civil)
 Project Cell
 OPGCL

[Signature]
 Head of Mines
 Odisha Coal and Power Ltd.
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ANNEXURE-IV

Estimate for Vetiveria plantation on the OB dump slopes for 5,000 sq meter or 0.5 Ha

Cost norm				
Sl.No	Name of the Work	Man Days	Material Rs.	Total Cost in Rs
1st YEAR OPERATION				
1	Site clearance, alignment and stacking	2	-	300
2	Cost of lining materials including transportation.	8	1200	1200
3	Staking and Digging of pits.	40	-	6000
4	Cost of Clumps 500 per Ha including transportation.	80	12000	12000
5	Carriage and planting	60	-	9000
6	Soil working and application of fertilisers(twice)	20	-	3000
7	Cost of fertiliser	8	1200	1200
8	Watch and ward	2	300	300
	Total	220	13700	33000
2nd YEAR OPERATION				
9	Casualty replacement (20%) including cost of clumps.	26	2400	3900
10	Weeding and application of fertilisers	20	-	3000
11	Cost of fertilisers and insecticides	8	1200	1200
12	Watch and ward	2	300	300
	Total	56	3900	8400
3rd YEAR OPERATION				
13	Weeding, soil working and application of fertilisers.	10	-	1500
14	Plant protection measures including watch and ward.	2	300	300
	Total	12	300	1800
	Grand Total	288	17900	43200

ABSTRACT

Year of operation	Cost norm per Ha	Total cost for 0.5 Ha
1 st year	33000.00	16,500.00
2 nd year	8400.00	4,200.00
3 rd year	1800.00	900.00
Total	43,200.00	21,600.00

(Rupees Twenty one thousand and six hundred) only


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ANNEXURE - V

ESTIMATE FOR PER 1m CONSTRUCTION OF GARLAND DRAIN

(Length = 1m, Width: 1.2m, Depth: 0.6m)

1	Cleaning of jungles along garland drain:	L	B	D	TOTAL	
	Sq.m 1	1.00	10.00	10.00	10.00	
			Total		10.00	
2	Earth Work in excavation in foundation trenches or drains	L	B	W/H	TOTAL	
	Cum 1	1.00	1.20	0.6	0.72	
			Total		0.72	
3	PCC 1:4:8	Cum 1	1.00	1.00	0.12	0.12
			Total		0.12	
4	RR Masonary	Cum 1	1.00	0.40	0.50	0.20
			Total		0.20	
5	20 mm cement Plaster (1:6)	Cum 1	1.00	1.00	1.00	1.00
			Total		1.00	
6	25 mm cement concrete flooring (1:2:4)	Cum 1	1.00	0.60	0.60	0.60
			Total		0.60	

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DESCRIPTION OF ITEM	UNIT	QTY.	RATE	AMOUNT (Rs)
Cleaning jungle including uprooting of rank vegetation, grass, brush wood, trees and saplings of girth up to 30 cm measured at a height of 1 m above ground level and removal of rubbish up to a distance of 50 m outside the periphery of the area cleared.	SQM	10.00	06.00	60.00
Earth work in excavation in foundation trenches or drains (not exceeding 1.5 m in width or 10 sqm on plan) including dressing of sides and ramming of bottoms, lift up to 1.5m, including getting out the excavated soil and disposal of surplus excavated so	CUM	0.72	209.00	150.48
Providing and laying in position cement concrete 1:4:8 (1 Cement: 4 coarse sand: 8 graded stone aggregate 40 mm nominal size) of specified grade excluding the cost of centering and shuttering - All work upto plinth level.	CUM	0.12	5808.00	696.96
Random rubble masonry with local available hard stone (laterite) in foundation and plinth at plinth level and superstructure with cement mortar 1:6 (1cement: 6 coarse sand).	CUM	0.20	2576.00	515.20
20 mm cement plaster of mix 1:6 (1cement: 6 fine sand).	SQM	1.00	231.00	231.00
25 mm thick cement concrete flooring 1:2:4 (1 cement: 2 coarse sand: 4 graded stone aggregate 20 mm nominal size) finished with a floating coat of neat cement including cement slurry, but excluding the cost of nosing of steps etc. complete.	SQM	0.60	479.00	287.40
Cost for construction of 1 M Garland drain				1,941.04

Total Cost for 14,000 m of Garland Drain = 14,000 m X Rs. 1,941.00 = Rs.02,71,74,000.00

(Rupees Two Crores seventy one lakhs seventy and four thousand) only

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ANNEXURE-VI

ESTIMATE FOR PER RMT CONSTRUCTION OF SETTLING POND
(Length: 1 m, Width: 3.0m, Height: 1.5m)

DESCRIPTION OF ITEM	UNIT	QTY.	RATE	AMOUNT (Rs)
Earth work in excavation by mechanical means (Hydraulic excavator) / manual means over areas in (exceeding 30 cm in depth 1.5 m in width as well as 10 sqm on plan) including disposal of excavated earth, lead up to 50 m and lift up to 1.5 m, disposed earth to be levelled and neatly dressed, in all kinds of soil.	CUM	4.50	205.27	923.72
Collection, loading, unloading and stacking of local boulder (laterite) from collecting area to work site including the cost of transportation of boulder at site, lead up to 10 Km as directed by Engg - In - charge.	CUM	1.01	1,292.95	1,305.88
Dry stone pitching 22.50 cm thick excluding the cost of supply of hard stone (laterite) and including the cost of preparing surface complete.	SQM	4.50	208.70	939.15
				3,168.75
Cost for construction of 1 Settling Tank (Length: 10m, Width: 8.0m, Height: 1.5m)				84,578.00

Total Cost for 01 Nos. Settling Pond = Rs. 84,578.00

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ANNEXURE -VII

TOTAL COST OF THE PROJECT

Sl. No	Description of the work	Funds Required (in Rs)
1	Biological Measures	
	Afforestation over the OB dumps -05.00 ha Block-JFM	04,20,620.00
	Cost for Sowing of Grass seeds over over 05.00 Ha	01,87,750.00
	Plantation of Agave for 2,100 meter	08,16,743.00
2	Bio-engineering measures	
	Plantation of <i>Vetiveria zizanioides</i> on slopes of OB/Fines dumps 0.5 Ha	21,600.00
3	Structural Measures	
	Cost for construction of 01 no. Gariand drains (14,000 m)	02,71,74,000.00
	Cost for construction of 01 nos. Settling Pond - 1	84,578.00
	Total	02,87,05,291.00
	Price escalation @ 20%	57,41,058.00
	GRAND TOTAL	03,44,46,349.00

(Rupee Three crores forty four lakhs forty six thousand three forty nine) Only

Technically
Approved

Regional Chief Conservator of Forests
Rourkela Circle, Rourkela

Divisional Forest Officer
Sundargarh Forest Division

Head of Mines
Odisha Coal and Power Ltd.

ANNEXURE - E (E2)

Photographs showing the Compliance at site to the condition no. Part A (5); (iv) of FC Stage I for the Stage II approval of 15.701 Ha – OB dump stability through proper grading / benching and at site



Coordinates - 21°58'03.21"N ; 83°47'06.84"E


Addl. General Manager (Mines)
Odisha Coal and Power Ltd.


DIVISIONAL FOREST OFFICER,
SUNDARGARH FOREST DIVISION

**SCHEME
FOR
STRICT ADHERENCE TO THE PRESCRIBED TOP SOIL
MANAGEMENT**

**in compliance
with the
Condition No .2(vi)(e) of
Stage-I Forest Clearance grant Order**

Vide Letter No F.No. 8-63/2011-FC Dated.17.10.2012.
of Govt. of India, Ministry of Environment & Forests, New Delhi

**for
Diversion of 276.655 Hects Forest land**

**within 808.575 Hects ML area of
Manoharpur Coal Bloc of IB Valley Coalfields in
Sundargarh District of Odisha by
Odisha Power Generation Corporation Ltd.**

Head of Mines
Odisha Coal and Power Ltd.

1. INTRODUCTION

The ministry of Environment & Forest, Govt. of India have granted Stage-I approval vide their letter No F.No. 8-63/2011-FC Dated.17.10.2012 for diversion 276.655 ha. of forest land in the total project area of 808.575 ha. of Manoharpur Coal Block in IB Valley Coalfields, Sundargarh District of Odisha in favour of Orissa Power Generation Corporation Ltd. subject to fulfillment of some conditions for environmental safeguards. One of the conditions i.e. No.2(vi) (e) "strict adherence to the prescribed top soil management". In compliance with the same, a plan has been duly prepared which is fully explained as below and shall be implemented in a time bound manner.

2. TOPOGRAPHY & SOIL QUALITY OF THE AREA

The leasehold area is undulating and rugged in nature. The central and western parts of the area are marked by higher elevation exhibiting hillocks and ridges. The eastern part is almost flat. General slope is from west to east. Maximum elevation is 312 mtr and the minimum elevation is 225 mtr from MSL.

Soil type in the study area is covered by the rocks of Barakar formation. The basement area comprising of metamorphic rocks are exposed to the eastern side of the block. Barring a narrow patch in the extreme south-western corner of the block, the area is undisturbed.

The water retention capacity of soil varies from location to location inside the lease hold area. The water retention capacity of soil in agricultural field, valley areas is high and that in the barren land is comparatively low. Most of the soil found to be slightly acidic in nature and this may be due to weathering and bacterial action on available sulphur.

The top soil inside the mining area is scanty. Whatever top soil is available has to be excavated during the development of the mine pits. Precautionary measures will be taken so that this valuable resource is not wasted. This excavated top-soil will be utilized for concurrent plantation works in the mine as per this plan. Some of the top soil will be stored temporarily until it is used for plantation works / dump reclamation. Minimum storage time shall be attempted to avoid nutrient

4/

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loss. A combination of settling tank and garland drain etc. shall be constructed around the Top Soil Stack yard to minimize soil loss.

The non-coal bearing area is covered with infrastructure, dumps and top soil yard.

3. PLAN FOR TOP SOIL MANAGEMENT

This Topsoil Management Plan provides description of the soil stripping and stockpiling procedures to minimize top soil degradation and maximize availability of suitable soils for future rehabilitation within the mining lease of Manoharpur Coal Block of IB Valley Coalfields. Topsoil is to be stripped in areas proposed to be disturbed including the proposed mining on virgin forest lands, outside mine area and infrastructure area (including roads). A comprehensive top soil management plan has been prepared keeping in the view the conservation, regeneration and afforestation in and around the top soil to be stored.

In the non-coal bearing area, there exists very thin layers of top soil, which is very difficult to slice down and is stored separately for use during future reclamation. However, grass seed will be sown over this area to prevent erosion of the top soil.

4. OBJECTIVES

The objectives of Top soil management are to:

- a) Provide sufficient stable topsoil material for rehabilitation work of dumps, areas to be back filled and degraded lands;
- b) Identify soil resources and optimize the recovery of topsoil resource;
- c) Identify surface areas requiring stripping (to minimize over clearing);
- d) Manage topsoil reserves so as not to degrade the resource;
- e) Identify stockpile locations and dimensions;

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5. FUTURISTIC TOP SOIL GENERATION FROM MINING ACTIVITIES

Soil studies have shown that the average thickness of topsoil in the virgin areas will be around 50 cm - 150 cm. The quantity of topsoil to be stripped from the site will be used during first 10 years to rehabilitate the OB dumps, areas to be backfilled and other barren/degraded areas.

The plan illustrates major areas of soil stripping during the mine life. Prior to stripping, vegetation will be removed or reduced by jungle/bush clearing. A proposed procedure for soil handling is presented below which includes soil handling measures which optimize the retention of soil characteristics (in terms of nutrients and micro-organisms) favourable to plant growth:

6. METHODOLOGY

In accordance with the above objective of providing sufficient stable soil material for rehabilitation and to optimize soil recovery, the following strategies have been adopted:

1. Topsoil stockpiles are to be located outside quarry areas ;
2. Stripping off the topsoil by dozers rather than scrapers to minimize structural degradation;
3. Construction of stockpiles with a "rough" surface condition to reduce erosion hazard,
4. Improve drainage and promote revegetation;
5. Revegetation of stockpiles with appropriate fertilizer/FYM etc. to minimize weed manifestation, maintain soil organic matter levels, soil structure and microbial activity and maximize the vegetative cover of the stockpile.
6. To utilize stripped top soil as soon as possible for rehabilitation in phase wise in accordance with the rehabilitation pattern as per Mining Plan.


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7. MANAGEMENT PLAN OF EXCAVATED TOPSOIL

To minimize the detrimental effects of long-term storage of topsoil in stockpiles, the following procedures will be implemented prior to any soil stripping activities,

1. Appropriate delineation of areas to be stripped/mined; an area of **2.683** hectares will be demarcated for storage of top soil near Manoharpur Coal Block area. The perimeter of this top soil stock pile will be **716.70** meter.
2. The topsoil stripping and stockpiling will be completed using conventional earth-moving equipment such as bulldozers, graders and dumpers. In areas where the topsoil is relatively thin, the topsoil will be removed in such a way to minimize mixing of topsoil and sub-soils.
3. Stockpiles will have sediment control measures such as toe/retaining wall. The stockpile will be surrounded by boulder wall or similar erosion control devices to prevent soil erosion.
4. Following stockpiling, samples of the topsoil will be collected for analysis and test for pH, nitrogen, and organic content to establish an initial nutrient composition of the topsoil.
5. Permanent measures include establishment of vegetation and broadcasting seeds of local shrubs / grasses to mitigate soil erosion and dust emissions.
6. Physical covering of soil stockpiles with geo-textile fabric to prevent it from being washed off.
7. Prior to use of the topsoil for reclamation, samples of the topsoil will again be collected for analysis, including pH, nitrogen, and organic content and compare these results with the initial condition. If required, soil amendment will be performed before re-spreading the topsoil to mitigate any deficiencies in the topsoil so that the topsoil is productive and a topsoil thickness and fertility commensurate with pre-construction activities is achieved. Fertilizer application rates will be established upon

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Odisha Coal and Power Ltd.

evaluation of the soil nutrient content. If needed, additional similar quality topsoil will be purchased to meet reclamation needs.

- B. Re-spreading of topsoil will be undertaken in those areas requiring reclamation, to approximate pre-plantation thickness of approximately 2 - 3 cm by manual means, or as required.

(B) PLAN FOR CONSERVATION OF TOP SOIL FROM BARREN LANDS:

The forest land of the region is prone to soil erosion as the entire landscape is affected due to mining activity in the vicinity. Soil erosion problem varies from area to area within the lease, depending on the topography, soil types, vegetation, and management interactions of the catchment. Hence, it is very important to control erosion of top soil from the area, enhance moisture conservation for enrichment of water table for more availability of water so that the top soil is conserved for supporting the growth of forests.

TOP SOIL CONSERVATION PLAN

Area from which top soil collected	Topsoil Spreading on Back filled area	Top soil spreading on OB Dump
Entire ML area	70%	30%

METHODS

The Top soil will be collected and stored preferably at one place and the top surface will be sown with grass seeds so that a mat of grass turf is made over the surface of the top soil and this will prevent erosion of the top soil by rain water and/or weathering conditions like blow of wind.

8. INSPECTION, MONITORING AND EVALUATION

For successful implementation of the above management and conservation measures, intensive inspection and technical guidance from concerned technical wing is required. Sufficient fuel/ conveyance charges for technical experts shall be provided by the user agency for proper execution of these programmes. Infrastructural facilities like GIS software along with GPS equipments, Research & Development works, will be provided by the User Agency for the above post implementation monitoring.

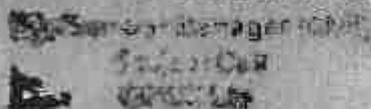
9. EXECUTING AGENCY

In all the cases, the works shall be executed by the User Agency having specialized departments headed by qualified persons with outsourced man and machinery as and where required. To facilitate this, the user agency shall establish its own executing and supervision cells along with required infrastructural facilities. In order to maintain the quality of work, in house supervision through competent personnel shall be provided. The entire work shall be carried out through close coordination with the Forest Department.

10. REQUIREMENT OF FUNDS

The total cost of the implementation of mitigative measures will be **Rs. 18,61,706.00** as detailed in **Annexure-III**. For implementation of the above too soil conservation and management measures, the above expenditure will be made. This budget will subject to increase in amount considering the increase in materials and labour charges.


DGM (Civil)
M/s Odisha Power Generation Corporation Ltd.




Head of Mines
Odisha Coal and Power Ltd.

ANNEXURE - I

Cost of grass field creation per ha. Labour rate Rs.150/ day				
Sl No	Purpose	No of Labour / Quantity of materials	Rate in Rs	Amount in Rs
1st year				
1	Nurturing the land by ploughing & levelling	10 Nos	150/ labour	1500
2	Adding FYM and good earth	2 TL FYM 2TL good earth	500/TL FYM 500/TL Good earth	2000
3	Cost of grass seed 1kg per ha		500/Kg	500
4	Broadcast, Sowing and levelling	4Nos	150/ labour	600
5	Watch and ward for a month	1Nos	4500/month	4500
6	Sprinkling of water intermittently till the grass seed germinates	2 Nos	4500/month	9000
7	Weeding of unwanted grass	4Nos	150/labour	600
	Total			18700.00
2nd year				
1	Weeding the land by removal of unwanted grass and replacing grass on patches devoid of grass	05 Nos	150/ labour	750
2	Adding FYM and good earth	1.0 TL FYM 1.0 TL good earth	500/TL FYM 500/TL Good earth	1000
3	Cost of grass sleeves to replace failures		On LS	500
4	Replacing sleeves on failure patches	4Nos	150/ labour	600
5	Watch and ward for a month	1Nos	4500/month	4500
6	Sprinkling of water intermittently till the grass sleeves get established	1Nos	4500/month	4500
	Total			11,850.00
3rd year				
1	Weeding the land by removal of unwanted grass and	10 Nos	150/ labour	1500

	replacing grass on patches devoid of grass			
2	Adding FYM and good earth	1.0 TL FYM 1.0 TL good earth	500/TL FYM 500/TL Good earth	1000
3	Watch and ward for a month	1Nos	4500/month	4500
	Total			7,000.00

ABSTRACT

1st year... Rs.18,700.00

2nd year ... Rs.11,850.00

3rd year ... Rs. 7,000.00

Total ... Rs.37,550.00

Rs.37,550.00 x 10 ha = Rs.03,75,500.00

(Rupees Three lakhs seventy five thousand and five hundred) only

ASL
Divisional Forest Officer,
Sundargarh Forest Division.
Sundargarh

ANNEXURE-II

COST NORM FOR AGAVE PLANTATION (FOR 5 ROWS & 40 Mtrs.)

Wage Rate-150/- Per Man-day

0TH YEAR OPERATION.

Y
Head of Mines
Odisha Coal and Power Ltd.

Sl. No.	Name of the work	Man-day	Material	Total
1	Site clearance alignment and staking	2	0	300.00
2	Cost of lining materials including transportation	2	334.00	334.00
3	Digging pits and application of lime	6		900.00
4	Cost of 200 suckers including transportation	11	1667.00	1667.00
5	Carriage and planting	2		300.00
6	Soil working and application of bio-fertilizers (twice)	8		1200.00
7	Cost of fertilizer	2	334.00	334.00
3	Contingency		334.00	334.00
	Total:	33	2669.00	5369.00
1st YEAR OPERATION				
1	Causality replacement (20%) including cost of suckers and pitting	2	334.00	634.00
2	Weeding and application of fertilizer	6		900.00
3	Cost of bio-fertilizer	2	250.00	250.00
	Total:	10	584.00	1784.00
2nd YEAR OPERATION				
1	Weeding, Soil working and application of fertilizers	6		900.00
2	Cost of bio-fertilizer	2	250.00	250.00
3	Plant protection measures including material cost	1	250.00	250.00
	Total:	9	500.00	1400.00
3rd YEAR OPERATION				
1	Weeding, Soil working and application of fertilizers	7		1050.00
2	Cost of bio-fertilizer	2	292.00	292.00
3	Plant protection measures including material cost	2	292.00	292.00
	Total:	11	584.00	1634.00
4th YEAR OPERATION				
1	Weeding, Soil working and application of fertilizers	7		1050.00
2	Cost of bio-fertilizer	2	292.00	292.00
3	Plant protection measures including material cost	2	292.00	292.00
	Total:	11	584.00	1634.00
5th YEAR OPERATION				
1	Weeding, Soil working and application of fertilizers	6		900.00
2	Cost of bio-fertilizer	2	334.00	334.00

4
Head of Mines
Odisha Coal and Power Ltd.

3	Plant protection measures including material cost	2	334.00	334.00
	Total:	12	668.00	1868.00
6th YEAR OPERATION				
1	Weeding, Soil working and application of fertilizers	8		1200.00
2	Cost of fertilizer and insecticides	2	334.00	334.00
3	Plant protection measures including material cost	2	334.00	334.00
	Total:	12	668.00	11868.00
	Grand Total:-	98	6257.00	15557.00

Cost norm for Agave fencing with five rows 1,000m = Rs. 15,557.00 / 40 Meter X 2,200 meter = Rs. 08,55,635/-

(Rupees eight lakhs fifty five thousand six hundred and thirty five) only


DGM (Civil)
M/s Odisha Power Generation Corporation Ltd.

Manager (Civil)

ANNEXURE - III


 Head of Mines
 Odisha Coal and Power Ltd.

Detailed Estimate of Retaining wall/ Toe wall
 (Loose Boulder collected locally with cement-Sand mortar to seal the surface over the surface of Boulder wall)

Sl. No.	Description of Items	No	Length	Width	Height	Qty	Unit	Rate	Amount in Rs
1	2	3	4	5	6	7	8	9	10
For one K.M. Length									
1	Rough Stone Dry Packing with local boulder only labour charges (Local boulder will be Supplied by our Company)	1	1000	(1.00+1.50)/2	1.20	1500	Cum		
		1	1000	1.50	0.30	450	Cum		
						1950	Cum	295.00	575250.0
2	Irregular cement sand patches on both the sides of the wall with 2" thick cement sand mortar (1:3) on top	1	1000	1.00		1000	Sqm		
		2	1000	1.20		2400	Sqm		
						3400	Sqm	75.00	255000
									830250.
									Rate per one K.M. Length
									Total

Cost for Running Meter/
length

830.25

716.70 rmt x Rs.830.25 per rmt = Rs.5,95,040.00

(Rupees Five lakh ninety five thousand forty) only

✓

Head of Mines
Odisha Coal and Power Ltd.

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ANNEXURE – III

TOTAL COST OF TOP SOIL CONSERVATION & MANAGEMENT

Sl.No	Description of the work	Funds Required (in Rs)
1	Cost for sowing of Grass seeds over 2.683 ha. @ 37550/- per ha.	Rs. 01,00,747.00
2	Cost of Agave plantation encircling the top soil mound over 2200 mt	Rs.08,55,635.00
3	Cost of erection of 716.70 mtr. dry toe wall/ retaining wall around top soil pile @Rs.830.25 RML	Rs.05,95,040.00
	TOTAL	Rs.15,51,422.00
4	Price escalation @ 20%	Rs.03,10,284.00
	Grand Total	Rs. 18,61,706.00

(Rupees Eighteen lakhs sixty one thousand seven hundred and six) only.
In case of any increase in the man, material and machinery charges, provision for additional funds will be made as and when required.

Technically
Approved

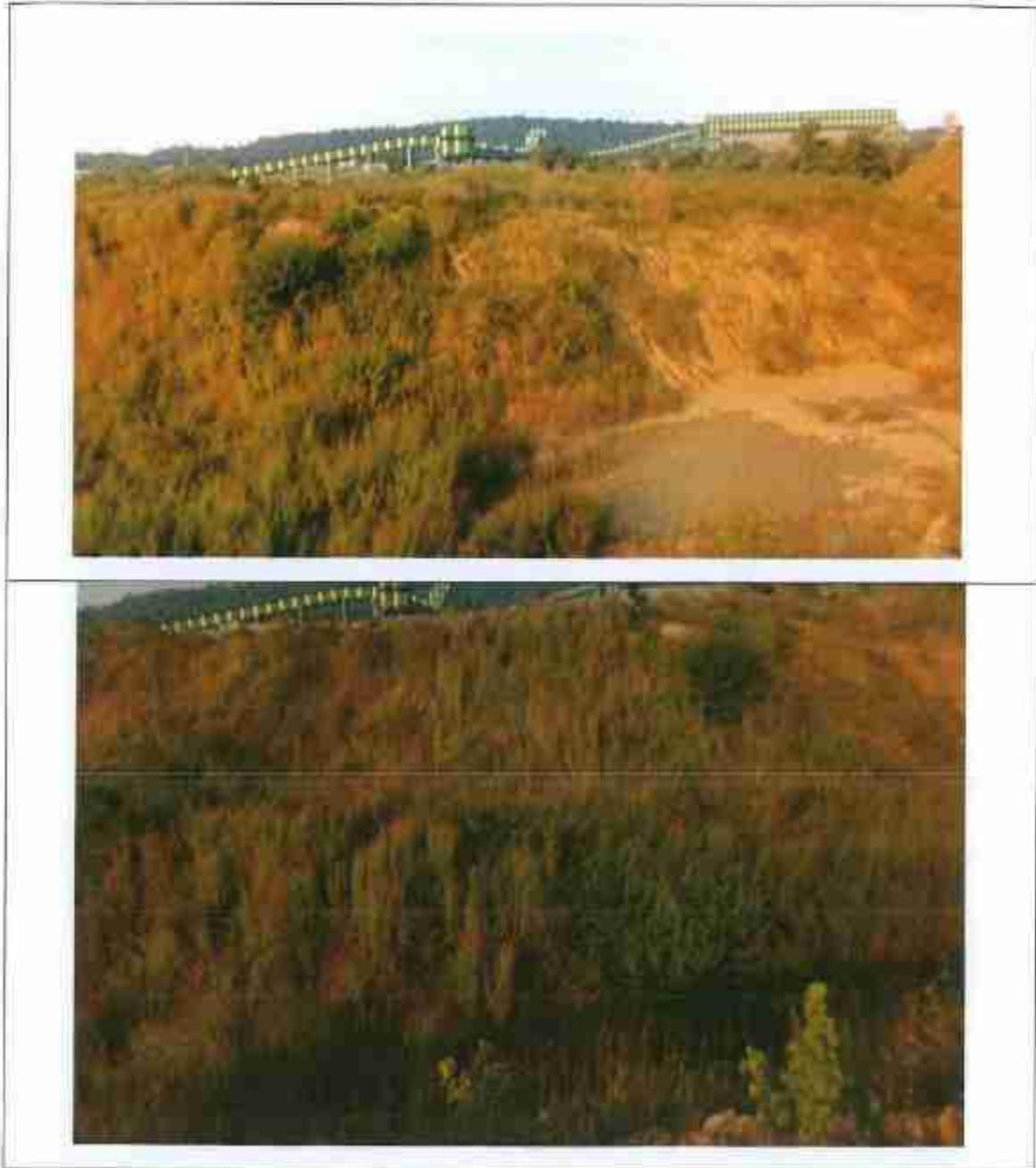
Regional Chief Conservator of Forests
Rourkela Circle, Rourkela

Divisional Forest Officer
Sundergarh Division

Head of Mines
Odisha Coal and Power Ltd.

ANNEXURE- E (E4)

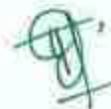
Photographs showing the Compliance at site to the condition no. Part A (5); (iv) of FC Stage I for the Stage II approval of 15.701 Ha – Top soil management (Storage of top soil at top soil dump)



Coordinates - 27°57'54.57"N ; 83°47'30.00"E



Addl. General Manager (Mines)
Odisha Coal and Power Ltd.



DIVISIONAL FOREST OFFICER
SUNDARGARH FOREST DIVISION

Odisha Coal and Power Limited

(A Government of Odisha Company)

CIN : U10100OR20155GC018623

Website : www.ocpl.org.in

ANNEXURE-F

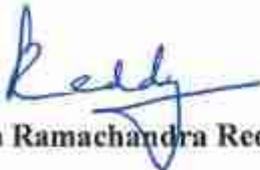
**“Manoharpur Coal Mine Block at Hemgir, Dist. Sundargarh, Odisha” of
Odisha Coal and Power Limited (OCPL)**

UNDERTAKING REGARDING STAGE I ORDER COMPLIANCE OF 15.701 HA

I, **Mr. Lella Ramachandra Reddy**, on behalf of Odisha Coal and Power Limited (OCPL), do hereby solemnly affirm, declare and undertake as under;

- (i) That top soil management is being and will be carried out as per the Approved Mining Plan (MP).

For Odisha Coal and Power Ltd.



Lella Ramachandra Reddy

Authorized Signatory

Addl. General Manager (Mines)
Odisha Coal and Power Ltd.

ANNEXURE -G



Odisha
Coal and
Power
Limited

Odisha Coal and Power Limited
(A Government of Odisha Company)
CIN: U10100OR20153OC018623
Website: www.ocpl.org.in

Letter No. OCPL/HGR/CSR/2021/273
Date: 18/05/2021

To
Block Development Officer,
Panchayat Samiti Office,
Hemgir.

Sub: Renovation of Durubaga New tank with Bathing Ghat under Depository Scheme
Ref: Your Letter no. 637 dtd. 20.04.2021.

Sir,

With reference to the subject cited above, considering the request of Panchayat Samiti Office, HEMGIR, Odisha Coal and Power Limited has approved the job under its peripheral development program for the work "Renovation of Durubaga New Tank with Bathing Ghat".

We have deposited an amount of Rs. 10, 00,000/- against the sanctioned job under depository scheme to your Account no. 37611226705 on 18.05.2021. This includes the 2% towards project management cost which may be credited to Sundargarh District Peripheral Society, Sundargarh from your good office against this work. A copy of the detailed estimate of the job may be provided to our office at Hemgir for our internal records.

Further to request you to kindly submit the Utilization Certificate for the said amount along with before/ after photographs after the completion of the job.

Enclosed: Copy of Pay in Slip.

Thanking you,

Yours faithfully,

J. K. Kishore
18/5/2021

DGM, CSR & R&R
Mob. No. 9778902001

DIVISIONAL FOREST OFFICER
SUNDARGARH FOREST DIVISION

CC: O.I.C. Mining-cum-Joint Secretary, SDPDS, Sundargarh, For Your Information.

K. D. Dey
Add. General Manager (Mines)
Odisha Coal and Power Ltd.



Odisha
Coal and
Power
Limited

Odisha Coal and Power Limited
(A Government of Odisha Company)
CIN: U10100OR2015SGC018623
Website: www.ocpl.org.in

Ref: OCPL/HGR/CSR/2021/158
Date: 17th March 2021

To,
The Block Development Officer
Hemgir

Subject: Deposit of fund towards Periphery development Project of M/s OCPL
Ref: Your letter No-478, Dated: 16th March 2021

Sir,

With reference to the subject cited above, we have deposited Rs.9, 80,000/- in your below mention bank detail for executing the below mention Periphery Development work.

Sl. No.	Proposed Work	GP	Village	Estimate cost (Rs.)
01	Renovation of Tank with Bathing Ghat at Katarbaga, Nuabandh	Durubaga	Katarbaga	4,90,000/-
02	Completion of open Pandal near Shiv Temple ground at Durubaga	Durubaga	Durubaga	4,90,000/-
	Total			9,80,000/-

Bank Detail

A/c Name: BDO, Hemgir
A/c No: 37611226705
Bank: State Bank of India, Hemgir
IFSC: SBIN0013618

Photocopy of RTGS deposit is attached herewith for your kind reference.
Request you to execute the above work as early as possible and after completion of the work send us the utilization certificate.

This is for your kind information & necessary action.

Yours Faithfully

S. S. Sankar
19/03/2021
DGM-CSR & RR
Mobile-9778902001

R. Sankar
19/03/21
Section Officer
Hemgir Block

Reddy
Add. General Manager (Mines)
Odisha Coal and Power Ltd.

[Signature]
DIVISIONAL FOREST OFFICER
SUNDARGARH FOREST DIVISION



Odisha
Coal and
Power
Limited

OCPL
Odisha Coal and Power Limited
(A Government of Odisha Company)
CIN: U10100OR2015SGC018623
Website: www.ocpl.org.in

Ref: OCPL/HGR/CSR/2021/277
Date: 19-05-2021

To,
The Block Development Officer
Hemgir

Subject: Deposit of fund towards Periphery development Project of M/s OCPL
Ref: Your letter No-478, Dated: 16th March 2021

Sir,
With reference to the subject cited above, we have deposited Rs.9,80,000/- through NEFT dated-30/4/2021 in your below mention bank detail for executing the below mention Periphery Development work.

Sl. No.	Proposed Work	GP	Village	Estimate cost (Rs.)
01	Renovation of Sarbahal Bandh & Bathing Ghat	Sanghumuda	Sarbahal	4,90,000/-
02	Renovation of Kiripsira Bandh	Sanghumuda	Kiripsira	4,90,000/-
	Total			9,80,000/-

Bank Detail

A/c Name: BDO, Hemgir
A/c No: 37611226705
Bank: State Bank of India, Hemgir
IFSC: SBIN0013618

Request you to execute the above work as early as possible and after completion of the work send us the utilization certificate.

This is for your kind information & necessary action.

Yours Faithfully

B. Jagannath
DGM-CSR & RR 19/5/2021
Mobile-9778902001

Received
[Signature]
Block Development Officer
Hemgir

[Signature]
Addl. General Manager (Mines)
Odisha Coal and Power Ltd.

[Signature]
DIVISIONAL FOREST OFFICER
SUNDARGARH FOREST DIVISION

Photographs showing Renovation of Pond with Bathing Ghat in compliance to condition no. (6), Part A of FC Stage I Clearance for Stage II approval of 15.701 Ha



Renovation of Pond with Bathing Ghat at village Durubaga
(21°57'59.68"N ; 83°45'7.67"E)



Renovation of Pond with Bathing Ghat at village Kiripsira
(21°59'6.39"N ; 83°46'55.02"E)


Addl. General Manager (Mines)
Odisha Coal and Power Ltd.


DIVISIONAL FOREST OFFICER
SUNDARGARH FOREST DIVISION

Odisha Coal and Power Limited

(A Government of Odisha Company)

CIN : U10100OR20155GC018623

Website : www.ocpl.org.in

ANNEXURE - H

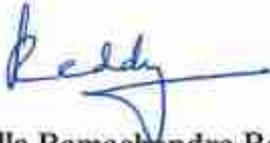
**“Manoharpur Coal Mine Block at Hemgir, Dist. Sundargarh, Odisha” of
Odisha Coal and Power Limited (OCPL)**

UNDERTAKING REGARDING STAGE I ORDER COMPLIANCE OF 15.701 HA

I, **Mr. Lella Ramachandra Reddy**, on behalf of Odisha Coal and Power Limited (OCPL), do hereby solemnly affirm, declare and undertake as under;

- (i) That desilting of village ponds and water bodies are being and will be carried out in consultation with District Administration and Divisional Forest Officer.

For Odisha Coal and Power Ltd.



Lella Ramachandra Reddy

Authorized Signatory

Addl. General Manager (Mines)
Odisha Coal and Power Ltd.



Odisha Coal and Power Limited

(A Government of Odisha Company)

CIN : U10100OR20155GC018623

Website : www.ocpl.org.in

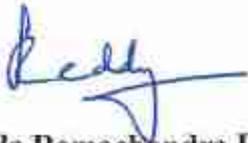
**“Manoharpur Coal Mine Block at Hemgir, Dist. Sundargarh, Odisha” of
Odisha Coal and Power Limited (OCPL)**

UNDERTAKING REGARDING STAGE I ORDER COMPLIANCE OF 15.701 HA

I, **Mr. Lella Ramachandra Reddy**, on behalf of Odisha Coal and Power Limited (OCPL), do hereby solemnly affirm, declare and undertake as under;

- (i) That cost of felling of trees will be deposited by the User Agency at an appropriate stage as per applicable norms.

For Odisha Coal and Power Ltd.



Lella Ramachandra Reddy

Authorized Signatory

Addl. General Manager (Mines)
Odisha Coal and Power Ltd.

Form-II

(For projects other than linear projects and Plantations)
[Rule 6 (3) (e) of Forest (Conservation) Rules 2003 as amended up to date]
Government of Odisha

OFFICE OF THE DISTRICT COLLECTOR, SUNDARGARH

No. 3016 ITDA(FRA) Dated: 12.9.22.

TO WHOM SOEVER IT MAY CONCERN

In compliance of the Rule 6 (3) (e) of Forest (Conservation) Rules 2003 [as amended vide the Forest (Conservation) second Amendment Rules 2014; Forest (Conservation) second Amendment Rules 2014; and Forest (Conservation) Amendment Rules 2016] it is certified that 15.701 Hectares of forest land proposed to be diverted in favour of Odisha Coal & Power Limited in the district falls within the jurisdiction of village Ghumudasan, Dulinga and Manoharpur under Hemgir Tahasil. It is further certified that:

(a) the complete process of recognition and vesting of forest rights under the FRA, 2006 has been carried out for the entire 15.701 Hectares of forest land proposed for diversion. There are 13 nos. of IFR title holders vested with forest land of 3.893 Hectares out of the proposed area of 15.701 Hectares and subsequently, their claims have been rejected by the DLC held on 02.07.2016. The claimants had filed W.P. (C) before the Hon'ble High Court, Odisha and the matter is under sub-judice. A copy of records of all consultations and meetings of the Forest Rights Committee (s), Gram Sabha (s), Sub-Division Level Committee (s) and the District Level Committee are enclosed as Annexure-I to Annexure-III.

(b) the proposal for such diversion (with full details of the project and its implications, vernacular/ local language) have been placed before each concerned Gram Sabha or forest-dwellers, who are eligible under the FRA, 2006.

(c) each of the concerned Gram Sabha (s), has certified that all formalities/ process under the FRA have been carried out and that they have given their consent to the proposed diversion and the compensation and ameliorative measures, if any, having understood the purpose and details of proposed diversion. As regards to the compensation, the user agency Odisha Coal & Power Limited (OCPL) has given undertaking to the effect that "Compensation amount will be given to the affected FRA title holders as per applicable Laws/Rules of Govt., if the said land is acquired by the user agency, Odisha Coal & Power Limited (OCPL) in future". Copies of certificate issued by the Gram Sabha Resolution of village Ghumudasan, Duling and Manoharpur village are enclosed as Annexure-I.

(d) the discussion and decisions on such proposals had taken pace only when there was a quorum of minimum 50% of the members of Gram Sabhas present;

(e) the diversion of forest land for facilities managed by the Government as required under Section 3 (2) of the FRA have been completed and the Gram Sabhas have given their consent to it;

(f) the rights of Primitive Tribal Groups and Pre-Agricultural Communities, where applicable have been specifically safeguarded as per Section 3 (1) of the FRA, 2006.

Encl: As above.

Addl. General Manager (Mines)
Odisha Coal and Power Ltd.

(Dr. Gavali Parag Harshad, IAS)
COLLECTOR,
SUNDARGARH

Land Scheduled of proposed land of Village- Ghumudasan

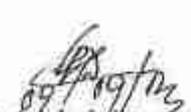
Sl. No.	Khata No.	Plot No.	Kisam	Area in Acre
1	54 (AJA)	1107	Jungle	0.880
2	54 (AJA)	1092	Jungle	4.300
3	54 (AJA)	987	Jungle	0.230
4	54 (AJA)	997	Jungle	0.250
5	54 (AJA)	998	Jungle	0.030
6	54 (AJA)	911	Jungle	0.200
7	54 (AJA)	752	Jungle	0.200
8	54 (AJA)	1019	Jungle	0.650
9	54 (AJA)	566	Jungle	2.590
10	54 (AJA)	924	Jungle	0.148
11	54 (AJA)	7	Jungle	1.320
			Total	10.798
			Or Say	4.370 ha.

Land Scheduled of proposed land of Village- Dulinga

Sl. No.	Khata No.	Plot No.	Kisam	Area in Acre
1	55	393	Jungle	4.340
2	55	319	Jungle	3.830
3	55	318	Jungle	1.620
4	55	423	Jungle	9.730
5	55	425	Jungle	1.160
6	55	387	Jungle	0.340
7	55	406	Jungle	0.260
8	55	180	Gramya Jungle	2.500
9	55	382	Jungle	2.700
			Total	26.480
			Or Say	10.716 ha.

Land Scheduled of proposed land of Village- Manoharpur

Sl. No.	Khata No.	Plot No.	Kisam	Area in Acre
1	75 (AJA)	16/1096	Jungle	1.090
2	75 (AJA)	125	Jungle	0.200
3	75 (AJA)	127	Jungle	0.130
4	75 (AJA)	714	Jungle	0.100
			Total	1.520
			Or Say	0.615 ha.


Project Administrator,
ITDA, Sundargarh


COLLECTOR,
SUNDARGARH


Addl. General Manager (Mines)
Odisha Coal and Power Ltd.

LIST OF IFR TITLE HOLDERS IN THE PROPOSED AREA OF DIVERSION

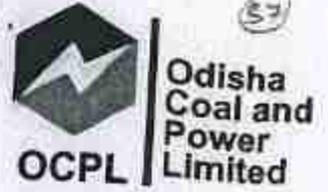
SI No.	Village	Name of title holder	Khata No.	Plot No.	Area in Acre
1	Ghumudasan	Iswar Behera, S/o- Kusa Behera	54	1092/1	0.550
2	Ghumudasan	Mohan Behera, S/o- Kusa Behera	54	1092	0.600
3	Ghumudasan	Jilaram Majhi, S/o- bhulku Majhi	54	987/1	0.500
4	Ghumudasan	Lingaraj Majhi, S/o- Jilaram Majhi	54	987/1	0.450
5	Ghumudasan	Baleram Majhi, S/o- Bhulku Majhi	54	7/1	0.620
				987/1	0.820
6	Ghumudasan	Naresh Majhi, S/o- Chatriam Majhi	54	1019/3	0.380
7	Ghumudasan	Jageswar Majhi, S/o- Daitari Majhi	54	1019/3	0.300
8	Ghumudasan	Debasekhar Majhi, S/o- Tikeswar Majhi	54	1019/4	0.250
9	Ghumudasan	Kandarpa Bhoi, S/o- Siridi Bhoi	54	7/3	0.300
10	Ghumudasan	Giri Bhoi, S/o- Kamai Bhoi	54	7/2	0.300
11	Manoharpur	Bhakte Oram, S/o- Madan Oram	75	714/2	1.400
12	Manoharpur	Mahendra Kisan, S/o- Kirtan Kisan	75	714/1	2.250
13	Manoharpur	Dharmu Oram, S/o- Layo Oram	75	714/2	0.900
				Total	9.620
				Or say	3.893 ha.


 05/09/23
 Project Administrator,
 IIDA, Sundargarh


 COLLECTOR,
 SUNDARGARH


 Add. General Manager (Mines)
 Odisha Coal and Power Ltd.

ANNEXURE - K



Odisha Coal and Power Limited
(A Government of Odisha Company)
CIN : U10100OR20155GC018623
Website : www.ocpl.org.in

**“Manoharpur Coal Mine Block at Hemgir, Dist. Sundargarh, Odisha” of
Odisha Coal and Power Limited (OCPL)**

UNDERTAKING REGARDING STAGE I ORDER COMPLIANCE OF 15.701 HA

I, **Mr. Lella Ramachandra Reddy**, on behalf of Odisha Coal and Power Limited (OCPL), do hereby solemnly affirm, declare and undertake as under;

- (i) That FRA (Forest Right Act) certificate in lieu of the proposed diversion has been obtained from the office of the District Collector, Sundargarh vide letter dt. 12.09.2023 and settlement of all claims & rights and provision of ST&OTFD (Recognition of Forest Rights) Act, 2006 will be complied as per applicable rules.

For Odisha Coal and Power Ltd.

Lella Ramachandra Reddy

Authorized Signatory

Addl. General Manager (Mines)
Odisha Coal and Power Ltd.

**DIVISIONAL FOREST OFFICER
SUNDARGARH FOREST DIVISION**

ANNEXURE-1



Odisha Coal and Power Limited

(A Government of Odisha Company)

CIN : U10100OR20155GCO18623

Website : www.ocpl.org.in

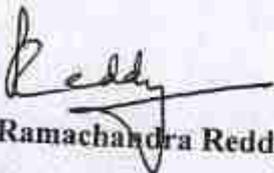
**“Manoharpur Coal Mine Block at Hemgir, Dist. Sundargarh, Odisha” of
Odisha Coal and Power Limited (OCPL)**

UNDERTAKING REGARDING STAGE I ORDER COMPLIANCE OF 15.701 HA

I, **Mr. Lella Ramachandra Reddy**, on behalf of Odisha Coal and Power Limited (OCPL), do hereby solemnly affirm, declare and undertake as under;

- (i) That compliance report will be uploaded on e-portal ([https:// parivesh.nic.in/](https://parivesh.nic.in/)).

For Odisha Coal and Power Ltd.



Lella Ramachandra Reddy

Authorized Signatory

Add. General Manager (Mines)
Odisha Coal and Power Ltd.



**DIVISIONAL FOREST OFFICER
SUNDARGARH FOREST DIVISION**

ANNEXURE-M



Odisha
Coal and
Power
Limited

Odisha Coal and Power Limited

(A Government of Odisha Company)

CIN : U10100OR20155GC018623

Website : www.ocpl.org.in

**“Manoharpur Coal Mine Block at Hemgir, Dist. Sundargarh, Odisha” of
Odisha Coal and Power Limited (OCPL)**

UNDERTAKING REGARDING STAGE I ORDER COMPLIANCE OF 15.701 HA

I, **Mr. Lella Ramachandra Reddy**, on behalf of Odisha Coal and Power Limited (OCPL), do hereby solemnly affirm, declare and undertake as under;

- (i) That legal status of the land will remain unchanged.

For Odisha Coal and Power Ltd.

Lella Ramachandra Reddy

Authorized Signatory

Addl. General Manager (Mines)
Odisha Coal and Power Ltd.

**DIVISIONAL FOREST OFFICER
SUNDARGARH FOREST DIVISION**

ANNEXURE-N



42
Odisha
Coal and
Power
Limited

Odisha Coal and Power Limited

(A Government of Odisha Company)

CIN : U10100OR20155GC018623

Website : www.ocpl.org.in

**“Manoharpur Coal Mine Block at Hemgir, Dist. Sundargarh, Odisha” of
Odisha Coal and Power Limited (OCPL)**

UNDERTAKING REGARDING STAGE I ORDER COMPLIANCE OF 15.701 HA

I, **Mr. Lella Ramachandra Reddy**, on behalf of Odisha Coal and Power Limited (OCPL), do hereby solemnly affirm, declare and undertake as under;

- (i) That the cost of NPV & additional cost of NPV as would be assessed by the State Government (GoO) and such escalated cost of NPV if so determined as per the decision of Hon'ble Supreme Court of India; will be deposited to the Forest Department on receipt of demand notice from Divisional Forest Officer, Sundargarh.

For Odisha Coal and Power Ltd.

Lella Ramachandra Reddy

Authorized Signatory

Add. General Manager (Mines)
Odisha Coal and Power Ltd.

**DIVISIONAL FOREST OFFICER
SUNDARGARH FOREST DIVISION**

ANNEXURE-0



Odisha
Coal and
Power
Limited

Odisha Coal and Power Limited

(A Government of Odisha Company)

CIN : U10100OR20156GC018623

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**“Manoharpur Coal Mine Block at Hemgir, Dist. Sundargarh, Odisha” of
Odisha Coal and Power Limited (OCPL)**

UNDERTAKING REGARDING STAGE I ORDER COMPLIANCE OF 15.701 HA

I, **Mr. Lella Ramachandra Reddy**, on behalf of Odisha Coal and Power Limited (OCPL), do hereby solemnly affirm, declare and undertake as under;

- (i) That trees will be felled in phased manner as per the actual requirement in line with the approved Mining Plan with prior permission of concerned DFO.

For Odisha Coal and Power Ltd.

Lella Ramachandra Reddy

Authorized Signatory

Addl. General Manager (Mines)
Odisha Coal and Power Ltd

**DIVISIONAL FOREST OFFICER
SUNDARGARH FOREST DIVISION**

ANNEXURE - P



Odisha Coal and Power Limited

Odisha Coal and Power Limited

(A Government of Odisha Company)

CIN : U10100OR20155GC018623

Website : www.ocpl.org.in

“Manoharpur Coal Mine Block at Hemgir, Dist. Sundargarh, Odisha” of Odisha Coal and Power Limited (OCPL)

UNDERTAKING REGARDING STAGE I ORDER COMPLIANCE OF 15.701 HA

I, **Mr. Lella Ramachandra Reddy**, on behalf of Odisha Coal and Power Limited (OCPL), do hereby solemnly affirm, declare and undertake as under;

- (i) That OCPL will 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 the supervision of the State Forest Department.

For Odisha Coal and Power Ltd.

Lella Ramachandra Reddy

Authorized Signatory

Addl. General Manager (Mines)
Odisha Coal and Power Ltd.

**DIVISIONAL FOREST OFFICER
SUNDARGARH FOREST DIVISION**

ANNEXURE-Q

**“Manoharpur Coal Mine Block at Hemgir, Dist. Sundargarh, Odisha” of
Odisha Coal and Power Limited (OCPL)**

UNDERTAKING REGARDING STAGE I ORDER COMPLIANCE OF 15.701 HA

I, **Mr. Lella Ramachandra Reddy**, on behalf of Odisha Coal and Power Limited (OCPL), do hereby solemnly affirm, declare and undertake as under;

- (i) That mining activity will be carried out in phased manner after taking due care for reclamation of mined over area. The concurrent reclamation as per the Approved Mining Plan (MP) is being and will be executed by the OCPL as per the timelines prescribed in MP and an annual report on implementation thereof will be submitted to the Nodal Officer, Forest (Conservation) Act, 1980 and to the concerned Regional Office of the MoEF&CC. If any violation shall be noticed, the mining activity will be suspended by the Authority as per the applicable rules.

For Odisha Coal and Power Ltd.



Lella Ramachandra Reddy
Authorized Signatory

Add. General Manager (Mines)
Odisha Coal and Power Ltd.



DIVISIONAL FOREST OFFICER
SUNDARGARH FOREST DIVISION

SCHEME FOR

FENCING, PROTECTION AND

AFFORESTATION OF THE SAFETY ZONE

AREA OVER 5.108 HA.

PERTAINING TO THE PROPOSAL FOR

DIVERSION OF 276.655 HA. FOREST LAND

WITHIN THE MINING LEASE

AREA OF 808.575 HA. IN MANOHARPUR COAL

BLOCK OF IB-VALLEY COAL FIELDS IN

SUNDARGARH FOREST DIVISION

BY

M/S ODISHA POWER GENERATION

CORPORATION LTD.

IN COMPLIANCE WITH CONDITION NO.2(xiii)

OF THE STAGE-I APPROVAL GRANTED BY

GOI, MOEF VIDE THEIR LETTER

F.NO.8-63/2011-FC DTD.17.10.2012.

SCHEME FOR FENCING, PROTECTION AND AFFORESTATION OF THE SAFETY ZONE OVER 5.108 HA. FOR DIVERSION OF 276.655 HA. FOREST LAND WITHIN THE MINING LEASE AREA OF 808.575 HA. IN MANOHARPUR COAL BLOCK OF IB VALLEY COALFIELDS BY M/S ODISHA POWER GENERATION CORPORATION LTD. IN SUNDARGARH DISTRICT OF ODISHA.

1. INTRODUCTION:

M/s Orissa Power Generation Corporation Ltd.(OPGCL) has been allocated over 800.575 hectares of lease area in Manoharpur Coal Block of IB Valley Coalfields under Hemgir Tahasil in Sundargarh District of Odisha by the Ministry of Coal, Govt. of India. The applied area of 276.655 ha. of virgin forest for non-forestry purposes includes 5.108 ha. towards Safety zone. The Govt. of India, Ministry of Environment & Forests vide their Letter **F.No. 8-63/2011-FC Dated.17.10.2012** have granted Stage-I approval for the above diversion. In this approval, GoI, MoEF have stipulated certain conditions for fulfillment. As per condition No.2 (xiii) of the Stage-I approval order, the User Agency either himself or through State Forest Department shall have to undertake fencing, protection and regeneration of the Safety Zone area of the said mines at the project cost.

Hence, the present scheme aims at preparation of scheme for fencing, protection and regeneration of safety zone over 5.108 ha. within the lease area.

The location of the Safety zone area has been shown in the map enclosed in the Scheme vide **Annexure-III**.

2. TOPOGRAPHY AND SOIL:

The topography of the areas is mainly gentle slope and having some small hills. The soil is mostly sandy loam on the plain and gritty, hard compact and with morrum on the slope. The soil is mainly devoid of hummus, shallow in depth. The area experiences tropical climate with monsoonal rainfall.

3. EXISTING VEGETATION.

The vegetation comprises Sal, Asan, Kasi, Kendu, Char, Harida, Bahada, Kusuma, Sunari, Kurel etc.

4. OBJECTIVE OF THE SCHEME:

The objectives of the proposed scheme are as under:-

- 1) To comply with the condition No.2 (xiii) of the Stage-I approval order granted vide MoEF Letter No.8-63/2011-FC dt.17.10.2012. The stipulation is as follows;

"The User Agency either himself or through the State Forest Department shall undertake fencing, protection and afforestation of the safety zone area (7.5 meter strip all along the outer boundary of the area identified to undertake mining), at the project cost"

- ii) To restock the degraded forest land within safety zone by planting suitable species.
- iii) To improve the micro-edaphic conditions by undertaking suitable soil and moisture conservation measures.
- iv) To protect the area against encroachment, illicit felling, fire occurrence, grazing etc., so as to check further degradation of the area.

5. PROPOSED TECHNIQUE:

To achieve the above objectives, it has been proposed to take up RDF plantation in ANR mode @ 300/ha. at a spacing of 2.50 mtr x 2.50 mtr in the gaps with in the Safety Zone area of the mining lease of Manoharpur Coal Block of Ib Valley Coalfields by Odisha Power Generation Corporation Ltd.. The said plantation work will be done in the first year, followed by maintenance during 2nd, 3rd, 4th, 5th & 6th year. The detailed expenditure statement is enclosed as **Annexure-I**.

(A) Survey & Demarcation.

The M.L. area has been surveyed and demarcated in the field by the User Agency at their cost erecting 4 feet high reinforced concrete pillars inscribed with their serial number, forward and back bearing and distance from pillar to pillar as per specification, in consultation with the Range Officer, Hemgir. The outer perimeter of the safety zone area over 10864 RMT. will be fenced with barbed wire. Similarly, the inner perimeter of the safety zone area over 10789 RMT will also be fenced with barbed wire at the Project cost. Thus, total perimeter i.e., the outer and inner perimeter comes to 21653 RMT (10864 RMT + 10789 RMT).

(B). REGENERATION, CLEANING AND TENDING OPERATION:

The operation aims at tending the existing crop silviculturally for better growth. It involves removal of inferior and diseased tree growth. During this operation, climber etc which interferes with the growth of the principal and secondary species are to be cut. This operation helps sapling grow better and faster. The site clearance is to be done by cutting and removing the unwanted species.

The following operation will be carried out during the operation.

- i) Cutting back of individual inferior poles interfering with the growth of better ones.
- ii) Cutting back of malformed and diseased individuals.
- iii) Singling of coppice shoots & retaining healthier ones.
- iv) Cutting of climbers.

During 1st year operation, climber cutting, high stump cutting and cutting back of shrubs, herbs, malformed and diseased plants will be done.

(C) Plantation.

The safety zone area will be planted with indigenous species at a spacing of 2.5 mtr X 2.5 mtr. RDF Plantation in ANR mode @300 nos. of seedlings per ha. will be planted over the safety zone area of 5.108 ha. So,1532 nos. of seedlings will be required for planting over the entire area. As far as possible, species suitable for the site shall be planted as detailed below;

1. Teak (*Tectona grandis*)
2. Bamboo (*Dendrocalamus strictus*)
3. Bahada (*Terminalia belerica*)
4. Sisoo (*Daibergia sissoo*)
5. Neem (*Azadirachta indica*)
6. Gambhar (*Gmelina arborea*)
7. Harida (*Terminalia chebula*)

The following items of work will be taken up for planting the area.

(i) Raising of Nursery :-

Seedlings for plantation will be raised in a temporary nursery nearer to the site where water source is available. 20% more seedlings than the actual requirement will be raised in the nursery to meet the casualties and damage due to transportation and unforeseen causes. Seedlings will be raised in polythene bags of 9" x 5" size following standard nursery practice.

(ii) Site Clearance:

The miscellaneous unwanted growths in the Safety Zone area will be cleared before taking up pitting work.

(iii) Alignment and pitting.

Alignment and pitting will be taken up in March-April. Pits of size 30 cm x 30 cm x 30 cm will be dug, maintaining a spacing of 2.5 mtr. X 2.5 mtr. in the safety zone area.

(iv) Actual planting.

Planting will be carried out just after 1st regular monsoon shower and will be completed latest by 2nd week of July. A basal dose of NPK fertilizer @ 30 gms. per plant will be applied at the time of plantation. Chloropyrifus (insecticide) will be applied to each pit to protect the plants against termite attack. Casualties noticed, if any, will be replaced with the excess seedlings raised for the purpose when required.

v) Weeding, Soil working and Manuring.

For establishment and better growth of the planted seedlings, weeding and manuring are necessary. It is prescribed to carry out two weeding during first year, and one weeding each during second and third year. After each weeding, soil working will be done around each plant at a radius of 0.5 m., followed by manuring @ 20 gms. of Urea per plant.

(vi) Application of Insecticides.

To get rid of insect attack, application of insecticides will be taken up inside the plantation area as and when required. Spraying of insecticides shall be done preferably in a sunny day in the forenoon.

(vii) Fire line tracing and maintenance.

Because of the mining activities, possibility of fire occurrence in the planted area can not be ruled out. So, it is proposed that the boundary of the planted area will be scrapped off to a width of 3 mtr. to preclude occurrence of fire.

(D) Soil and Moisture Conservation.

Since the area is undulating, soil and moisture conservation work will be taken up by constructing small loose boulder structures / staggered trenches / contour trenches, drainage line treatment, percolation pit etc. as per the field requirement. For the purpose 20 MD per ha. has been provided.

(E) Fencing.

As this patch is located around the mining area, there is possibility of grazing by stray animals. As per the stipulation, barbed wire fencing along the outer periphery of the Safety Zone over a length of 10864 RMT. with eight strands of barbed wire & 2 cross supported by fixing RCC fence posts at a spacing of 2.5 mtr. will be done. In the same way, it is proposed to fence the inner perimeter of the mining lease boundary of safety zone area over a length of 10789 RMT. The fence on both sides of Safety Zone will be raised by User Agency himself. In addition to fencing, the User Agency should also engage a Security Guard round the clock at his own cost for watch & ward of the plantation in addition to the norm provided in **Annexure-II**. The User Agency has furnished an undertaking to complete the fencing work within a month of approval of this scheme which is enclosed vide **Annexure-III**.

(F) Executing Agency:

As the area is located around the Mines and very small, it is proposed that the User Agency shall execute the fencing work and the Forest Department shall execute and maintain the Safety Zone plantation.

FINANCIAL FORECAST.

For implementation of all the prescriptions outlined above Rs. 3,20,14,988.00/- (Rupees Three crore twenty lakh fourteen thousand nine hundred eighty eight) only will be required as detailed below. As there will be time lag between the preparation of the scheme and its implementation, 20% escalation cost over and above the plantation cost has been provided. As the User Agency shall execute the barbed wire fencing and engage a Security Guard on their own at the cost of Rs. 3,06,11,250.00, they have to pay only the cost of plantation and its maintenance amounting to Rs. 14,03,800.00 to be executed by the DFO, Sundargarh.

To be executed by DFO			
1.	RDF Plantation in ANR mode over 5.108 ha. @ Rs.97650/- per ha.including watering charges @Rs.24000/- per year for 1 st , 2 nd & 3 rd year	Rs	4,98,796.00
2.	Clearance of weeds, cutting of climbers, singling of economically important species @5 MD / ha. / year for next 2 years. i.e., 2 nd & 3 rd year.	Rs	7662.00
3.	Soil Moisture Conservation @ 20 MD per ha.	Rs	15324.00
4.	Plantation watcher 2 no. (2 x 4500 x 12 x 6)	Rs	6,48,000.00
	Sub-total:	Rs	11,69,782.00
	Add 20% escalation	Rs	2,33,956.00
(a)	Total:	Rs	14,03,738.00 or say 14,03,800.00
To be executed by User Agency			
1	Barbed wire Fencing over 21.653 Kms. @11,25,000/- per Km. (Both outer & inner periphery of the Safety Zone).	Rs	2,43,59,625.00
2	Security Guard 3 no. (3 x150 x 365 x 7)	Rs	11,49,750.00
	Sub-total :-	Rs	2,55,09,375.00
	Add 20% escalation	Rs	51,01,875.00
(b)	Total:-	Rs	3,06,11,250.00
	Grand Total (a+b):-	Rs	3,20,14,988.00

(Rupees Three crore twenty lakh fourteen thousand nine hundred eighty eight) only

Technically Approved
[Signature]
Regional Chief Conservator of Forests
Rourkela Circle, Rourkela

[Signature]
Divisional Forest Officer,
Sundargarh Division.
Divisional Forest Officer
Sundargarh Division

ANNEXURE-II**COST ESTIMATE FOR (RDF) PLANTATION OF 300 SEEDLINGS/HECT.**

1.	Type of the Plantation.	RDF Plantation.
2.	No. of seedlings to be planted.	300 Nos. per hectare
3.	Spacing to be adopted.	2.5m x 2.5m
4.	Size of pits.	30cm x 30cm x 30cm.
5.	Wage rate.	Rs 150/- per manday.

0th year (Advance work) Pre-planting operation.

Sl. No.	Item of work	Mandays	Labour rate @ Rs 150/-	Material cost.	Total.
1	2	3	4	5	6
1.	Survey, Demarcation & pillar posting.	2	300.00	-	300.00
2.	Site preparation.	2	300.00	-	300.00
3.	Cutting of high stumps.	3	450.00	-	450.00
4.	Alignment and stacking of pits	1	150.00	-	150.00
5.	Pitting (30 cm. cube)	8	1200.00	-	1200.00
6.	Cost of raising 300 seedlings (Part)	14	1200.00	900.00	2100.00
	Sub Total	30	3600.00	900.00	4500.00
1stYear/ Planting					
7	Cost of raising 300 seedlings (Balance)	6	900.00	-	900.00
8	Carriage of seedlings to site clearing including casualty replacement.	6	900.00	-	900.00
9	1 st Weeding	2	300.00		300.00
10	2 nd Weeding	2	300.00		300.00
11	Soil working	2	300.00		300.00
12	Manuring /Insecticide application	1	150.00		150.00
13	Fireline tracing and inspection path	2	300.00		300.00
14	Cost of insecticides for plantation	3	0	450.00	450.00
15	Cost of chemical fertilizer for plantation 12 Kg. @ Rs. 35/-	6	0	900.00	900.00
16	Silvicultural operation involving clearance of weeds and cutting of climbers, stgling of shoots on each stool etc.	15	2250.00		2250.00
17	Soil Conservation	12	1800.00		1800.00
18	Watch and ward	5	750.00		750.00
19	Contingencies	3	0	0	450.00
20	Watering at least 10 days in a month for 5 month on LS				24000.00
	Sub Total	65	7950.00	1350.00	33750.00
2nd Year Maintenance					
21	Casualty replacement with nursery cost	2	300.00	-	300.00
22	Complete Weeding & Pruning	2	300.00		300.00
23	Soil working and manuring	2	300.00		300.00
24	Fire line tracing.	1	150.00		150.00
25	Cost of fertilizer	4		600.00	600.00
26	Soil Conservation	6	900.00		900.00
27	Watch and ward	8	1200.00	0	1200.00
28	Contingencies	2			300.00
29	Watering at least 6 days in a month for 8 month(April to July & Dec to March) on LS				24000.00
	Sub Total	27	3150.00	600.00	28050.00

Sl. No.	Item of work	Mandays	Labour rate @ Rs 150/-	Material cost.	Total.
1	2	3	4	5	6
3rd Year maintenance					
30	Weeding and pruning	2	300.00		300.00
31	Soil working	2	300.00		300.00
32	Fire line tracing.	1	150.00		150.00
33	Soil Conservation	6	900.00		900.00
34	Watch and ward	6	900.00		900.00
35	Contingencies	2			300.00
36	Watering at least 6 days in a month for 8 month(April to July & Dec to March) on LS				24000.00
	Sub Total	19	2550.00		26850.00
4th Year maintenance					
37	Weeding and pruning	2	300.00		300.00
38	Fire line tracing.(2 mt. wide fire line over 400 mt. long)	1	150.00		150.00
39	Watch and ward	6	900.00		900.00
40	Contingencies	1			150.00
	Sub Total	10	1350.00		1500.00
5th Year maintenance					
41	Weeding and pruning	2	300.00		300.00
42	Fire line tracing.(2 mt. wide fire line over 400 mt. long)	1	150.00		150.00
43	Watch and ward	6	900.00		900.00
44	Contingencies	1			150.00
	Sub Total	10	1350.00		1500.00
6th Year maintenance					
45	Weeding and pruning	2	300.00		300.00
46	Fire line tracing.(2 mt. wide fire line over 400 mt. long)	1	150.00		150.00
47	Watch and ward	6	900.00		900.00
48	Contingencies	1			150.00
	Sub Total	10	1350.00		1500.00
	Grand Total	171	21300.00	2850.00	97650.00

ABSTRACT

Year	Labour	Material	Contingencies	Total
0 th Year	3600.00	900.00	0	4500.00
1 st Year	7950.00	1350.00	450.00	33750.00
2 nd Year	3150.00	600.00	300.00	28050.00
3 rd Year	2550.00	0	300.00	26850.00
4 th Year	1350.00	0	150.00	1500.00
5 th Year	1350.00	0	150.00	1500.00
6 th Year	1350.00	0	150.00	1500.00
Total	21300.00	2850.00	1500.00	97650.00
Person days Equivalent	14	19	10	171

NB:- The watering provision has provided for first 3 years basing on the norm of urban tree plantation to ensure better growth and survivability.


 Divisional Forest Officer,
 Sundargarh Division.

Divisional Forest Officer,
 Sundargarh Division

ANNEXURE-II

ESTIMATE FOR BARBED WIRE FENCING

Estimate for 1 kilometer

1. No. of Pillars required	:	500 Nos.
Cost of 1 Pillar	:	Rs 568.00
Transportation charges to the site	:	Rs 244.00
Cost of base fixing	:	Rs 244.00
Cost of fixing barbed wire @ Rs 49.0	:	Rs 49.00
Total cost for Fixing 1 pillar	:	Rs 1105.00
Total cost for fixing 500 pillars	:	Rs 5,52,000.00
Cost of Barbed wire (1 Qtls.) Rs 13,200.00		
Cost of Barbed wire (5+2 strand)		
7500 Mtrs or 15 Qtls.	:	Rs 1,98,000.00
2. Total Cost for fencing 1 KM.	:	Rs 7,50,000.00
3. Maintenance for 2 nd year (10%)	:	Rs 75,000.00
4. Maintenance for 3 rd year (10%)	:	Rs 75,000.00
5. Maintenance for 4 th year (10%)	:	Rs 75,000.00
6. Maintenance for 5 th year (10%)	:	Rs 75,000.00
7. Maintenance for 6 th year (10%)	:	Rs 75,000.00
8. Total Cost for fencing with Maint. for 1 KM.	:	Rs 11,25,000.00


 Divisional Forest Officer,
 Sundargarh Division.

Divisional Forest Officer
 Sundargarh Division

ANNEXURE - R(A)

**“Manoharpur Coal Mine Block at Hemgir, Dist. Sundargarh, Odisha” of
Odisha Coal and Power Limited (OCPL)**

UNDERTAKING REGARDING STAGE I ORDER COMPLIANCE OF 15.701 HA

I, **Mr. Lella Ramachandra Reddy**, on behalf of Odisha Coal and Power Limited (OCPL), do hereby solemnly affirm, declare and undertake as under;

- (i) That the safety zone (i.e. 7.5 m) is being and will be maintained as per the prescribed norms.
- (ii) That the demarcation of boundary of safety zone (7.5 m) strip all along the boundary of mining lease area and its protection by erecting adequate number of 4 feet height RCC boundary pillars inscribed with DGPS coordinates with barbed wire fencing has been provided and will be maintained as per the prescribed norms.
- (iii) That the boundary of safety zone of the mining lease has been fenced through barbed wire fencing and will be maintained as green belt and adequate plantation & regeneration will be taken up by OCPL to ensure the dense canopy in the safety zone area.

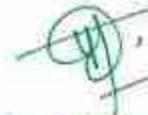
For Odisha Coal and Power Ltd.



Lella Ramachandra Reddy

Authorized Signatory

Addl. General Manager (Mines)
Odisha Coal and Power Ltd.



DIVISIONAL FOREST OFFICER
SUNDARGARH FOREST DIVISION

ANNEXURE-R(B)

Photographs showing the Compliance at site to the condition no. Part B (7); (i & ii) of FC Stage I for the Stage II approval of 15.701 Ha – Fencing & Protection of Safety zone area around mining lease area



Barbed wire fencing with pillars provided around safety zone area


Addl. General Manager (Mines)
Odisha Coal and Power Ltd.


DIVISIONAL FOREST OFFICER
SUNDARGARH FOREST DIVISION

ANNEXURE-R(C)

Photographs showing the Compliance at site to the condition no. Part B (7); (iii) of FC Stage I for the Stage II approval of 15.701 Ha – Plantation carried out in barren spaces of safety zone area



Coordinates – 21°58'23.60"N; 83°47'00.45"E



21°58'23.60"N; 83°47'00.45"E



21°58'27.80"N; 83°47'04.33"E


Addl. General Manager (Mines)
Odisha Coai and Power Ltd.

DIVISIONAL FOREST OFFICER
SUNDARGARH FOREST DIVISION

ANNEXURE - S



Odisha Coal and Power Limited

(A Government of Odisha Company)

CIN : U10100OR20155GC018623

Website : www.ocpl.org.in

**“Manoharpur Coal Mine Block at Hemgir, Dist. Sundargarh, Odisha” of
Odisha Coal and Power Limited (OCPL)**

UNDERTAKING REGARDING STAGE I ORDER COMPLIANCE OF 15.701 HA

I, **Mr. Lella Ramachandra Reddy**, on behalf of Odisha Coal and Power Limited (OCPL), do hereby solemnly affirm, declare and undertake as under;

- (i) That no mining will be carried out in the land required to be maintained as safety zone all around the mining area.

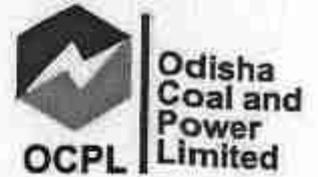
For Odisha Coal and Power Ltd.

Lella Ramachandra Reddy

Authorized Signatory

Addl. General Manager (Mines)
Odisha Coal and Power Ltd.

**DIVISIONAL FOREST OFFICER
SUNDARGARH FOREST DIVISION**



Odisha Coal and Power Limited

(A Government of Odisha Company)

CIN : U10100OR20155GCO18623

Website : www.ocpl.org.in

ANNEXURE-T

**“Manoharpur Coal Mine Block at Hemgir, Dist. Sundargarh, Odisha” of
Odisha Coal and Power Limited (OCPL)**

UNDERTAKING REGARDING STAGE I ORDER COMPLIANCE OF 15.701 HA

I, **Mr. Lella Ramachandra Reddy**, on behalf of Odisha Coal and Power Limited (OCPL), do hereby solemnly affirm, declare and undertake as under;

- (i) That Afforestation on one and half times of the safety zone area (i.e. approx. 7.0 ha) has already been carried out inside the Garjanpahad Reserve Forest by the State Forest Department. Further, if any afforestation needs to be carried out on degraded forest land, the same will be done in consultation with the State Forest Department as per applicable norms.

For Odisha Coal and Power Ltd.


Lella Ramachandra Reddy
Authorized Signatory

Addl. General Manager (Mines)
Odisha Coal and Power Ltd.


DIVISIONAL FOREST OFFICER
SUNDARGARH FOREST DIVISION

Regd. Office: Zone-A, Ground Floor, Fortune Tower, Chandrasekharpur, Bhubaneswar - 751023

Phone: +91 674 2300654/664, Fax : +91 674 2300657

Site Office : A/Po.: Hemgir, Dist - Sundargarh - 770013, Odisha.

Amexal-T/A
CS

SCHEME FOR AFFORESTATION ON DEGRADED
FOREST LAND, ONE AND HALF TIMES IN EXTENT TO
THE AREA USED FOR SAFETY ZONE
OVER 8.00 HA. IN GARJANPAHAR R.F. UNDER
HIMGIR RANGE
OF
SUNDARGARH FOREST DIVISION
IN COMPLIANCE WITH CONDITION NO.2 (xiv) OF
STAGE-I APPROVAL ACCORDED BY GOI, MOEF
VIDE THEIR LETTER F.NO.8-63/2011-FC
DT.17.10.2012 FOR DIVERSION OF 276.655 HA. OF
FOREST LAND IN MANOHARPUR COAL BLOCK OF
IB-VALLEY COAL FIELDS IN SUNDARGARH
DISTRICT OF ODISHA IN FAVOUR OF
M/S ODISHA POWER GENERATION
CORPORATION LTD.

(59)

SCHEME FOR AFFORESTATION ON DEGRADED FOREST LAND, ONE AND HALF TIMES IN EXTENT TO THE AREA USED FOR SAFETY ZONE OVER 8.00 HA. IN GARJANPAHAR R.F. UNDER HIMGIR RANGE OF SUNDARGARH FOREST DIVISION IN COMPLIANCE WITH CONDITION NO.2 (xiv) OF STAGE-I APPROVAL ACCORDED BY GOI, MOEF VIDE THEIR LETTER F.NO.8-63/2011-FC DT.17.10.2012 FOR DIVERSION OF 276.655 HA. OF FOREST LAND IN MANOHARPUR COAL BLOCK OF IB-VALLEY COAL FIELDS IN SUNDARGARH DISTRICT OF ODISHA IN FAVOUR OF
M/S ODISHA POWER GENERATION CORPORATION LTD.

1. INTRODUCTION:

The ministry of Environment & Forest, Govt. of India have granted Stage-I approval vide their letter **No F.No. 8-63/2011-FC Dated, 17.10.2012** for diversion 276.655 ha. of forest land in the mining lease area of 808.575 ha. of Manoharpur Coal Block in IB Valley Coalfields, Sundargarh District of Odisha In favour of Orissa Power Generation Corporation Ltd. subject to fulfillment of some conditions for environmental safeguards. One of the conditions i.e. 2(xiv) stipulates that the User Agency, either himself or through the State Forest Department shall undertake afforestation on degraded forest land, one and half time in extent to the area used for safety zone. In compliance with the same, a plan has been duly prepared which is fully explained as below and shall be implemented in a time bound manner. The total Safety Zone area comes to 5.108 ha. within the ML area of 276.655 ha. Accordingly, 1.5 times the Safety Zone area of 5.108 ha. calculates to 7.662 ha. (5.108 ha. X 1.5 times). But the Scheme has been prepared over 8.0 ha. as per the details mentioned in the said Scheme.

The ANR plantation proposed in the site is in consonance with Working Plan prescriptions as the said area comes under Rehabilitation Working Circle. The degraded forest land has been verified in the field by the Forest Officials and is found suitable for ANR plantation and is free from encroachment and encumbrances.

The ANR plantation @ 300 nos. of seedlings per ha. at a spacing of 2.5 Mtr x 2.5 Mtr will be taken up over 8.0 Ha. of identified degraded forest area with a larger maintenance period of 7 years as per GoI, MoEF letter No. 8-63/2011-FC Dtd. 17.10.2012. The cost estimate for this ANR plantation calculated as per approved cost norm for ANR with Gap plantation including regeneration work is enclosed as Annexure-II. Hence, at present, 1.5 times Safety Zone Afforestation Scheme is prepared over 8.0 ha. of degraded forest land selected in Garjanpahar RF of Hemgir Range against the required 7.662 ha. (5.108 x 1.5).

2. IDENTIFICATION OF THE DEGRADED FOREST AREA:

An area of 8.0 ha. of degraded forest land has been identified in **Garjanpahar RF of Hemgir Range** for taking up afforestation. The location of the afforestation area has been shown in the map enclosed to the Scheme vide Annexure-I.

. The area is located in the western side of the proposed PCA area of the said mines. The area has been inspected by Range Officer, Hemgir and is found suitable for taking up afforestation activities , being free from encroachment & encumbrances. Non-encroachment and non-encumbrance certificate furnished by the Range officer is enclosed as **Annexure-III.**

3. TOPOGRAPHY AND SOIL :

The forest land identified for this purpose is mainly gentle slope and having some small hills. The soil is mostly sandy loam on plain and gritty, hard compact and with morrum on the slope. The soil is mainly devoid of humus, shallow in depth. The area experiences tropical climate with monsoonal rainfall.

4. CLIMATE

The area has a tropical climate with monsoonal rains from June to September and occasional rains during winter are a regular phenomenon of the Site. This area also experiences occasional gusy wind to heavy thunderstorms during summer season(April to June) . Monsoon breaks out in early to middle of June and continues up to September. The average annual rainfall is about 1648 mm under the influence of southwest monsoon. On an average there are about 100 rainy days. The humidity is maximum in the months of July to August (90%) and minimum in February (36%). The wind velocity varies between 40 KMPH and 80 KMPH, although occasional higher values have also been reported. Lightening incidents are rarely reported in this area 0.0001107.

5. EXISTING VEGETATION.

The degraded forest land identified for raising plantation is predominantly hilly with Sal(Shorea robusta) crop and its associate species like Asan(Terminalia tomentosa) , Dhaura(Anogeissus latifolia), Chara(Buchanania lanzan) , Kendu(Diospyros melanoxylon, etc In bushy and pole stages. Sal is the predominant species constituting 90% of the toal existing natural growth. The slope is moderate to steep but fit for carrying out plantation activities. The density of the vegetation is 0.2.

6. OBJECTIVE OF THE SCHEME:

The objectives of the proposed scheme are as under:-

- i) To meet the stipulation No.2(xiv) of the Stage-I approval order granted for diversion of 276.655 ha. of forest land vide MoEF Letter No.8-63/2011-FC dt.17.10.2012. The stipulation is as follows;
 " The User Agency either himself or through the State Forest Department shall undertake afforestation on degraded forest land, one and half time in extent to the area used for safety zone".
- ii) To restock the degraded forest land by planting suitable species as per the site conditions.
- iii) To improve the micro-edaphic conditions by undertaking suitable soil and moisture conservation measures.

- iv) To protect the area against encroachment, illicit felling, fire occurrence, grazing etc., so as to check further degradation of the area.
- v) To provide employment to the local people mainly involving SC/ST population.
- vi) To create awareness among the local villagers for protection and maintenance of plantation and forest.

7. PROPOSED TECHNIQUE:

To achieve the above objectives, it has been proposed to take up ANR Plantation @ 300/ha. at a spacing of 2.50 mtr x 2.50 mtr in the identified gaps of 8.0 ha in Garjanpahar RF of Hemgir Range. The said plantation work will be done in the first year, followed by maintenance during 2nd, 3rd, 4th, 5th & 6th year. The detailed expenditure statement is enclosed as **Annexure-II**.

(A). SURVEY AND DEMARCATION:

The area will be surveyed and demarcated in the field with the help of G.P.S. Stone cairn of usual size will be heaped at visible distance along the boundary line. This operation will be helpful in future maintenance and management.

(B). REGENERATION, CLEANING AND TENDING OPERATION:

The operation aims at tending the existing crop silviculturally for better growth. It involves removal of inferior and diseased tree growth. During this operation, climber etc which interferes with the growth of the principal and secondary species are to be cut. This operation helps sapling to grow better and faster. The site clearance is to be done by cutting and removing the scattered growth of Eupatorium and all other unwanted species.

The following operation will be carried out during the operation.

- i) Cutting back of individual inferior poles interfering with the growth of better ones.
- ii) Cutting back of malformed and diseased individuals.
- iii) Singling of coppice shoots & retaining healthier ones.
- iv) Cutting of climbers.
- v) Cutting back of high stumps flush to the ground.
- vi) Pruning the branches of the poles up to hand reach.

During 1st year operation, climber cutting, high stump cutting and cutting back of shrub, herbs, malformed and diseased plants will be done.

(C). PLANTATION:

The area will be stocked by way of raising plantation @200 plants per ha. in ANR mode with Plantation. Taking in to consideration the soil condition, the local habitation and suitability of the site, the following species are selected.

1. *Pongamia pinnata* (Karanja)
2. *Azadirachta Indica* (Neem)
3. *Embllica officinalis* (Amla)
4. *Terminalia bellerica* (Bahada)
5. *Simaruba glauca* (Simaruba)

The following operations will be taken up for plantation;

i) Raising of nursery:

Seedlings required for plantation shall be raised in a temporary nursery nearer to the planting site and water sources. Nursery work will be started one year before the year of plantation so that one year old seedlings will be available for plantation. The seedlings shall be raised 20% extra besides the actual requirement to compensate the casualties. Seedlings will be raised in polythene bags of 9" x 5" size following standard nursery practice.

ii).Alignment and pitting:

Alignment and pitting will be taken up in the month of March-April, Pits of size 30cm x 30cm x 30cm will be dug maintaining a spacing of 2.5mtr x 2.5mtr @200 seedlings per ha. It is proposed to take up Plantation in the identified gaps of 8.0 ha .

iii) Actual Planting:

The seedlings will be planted in the dug out pits of size 30cm x 30cm x 30cm with a spacing of 2.5mtr x 2.5mtr. @200 seedlings per ha. Plantation would be taken up after first regular shower of monsoon and completed by the end of July. Species would be planted as per suitability of the soil condition. NPK fertilizer @30gms per plant would be applied as basal dosage. Anti-termite insecticide would also be applied to each pit while planting. Casualties, if any noticed, should be replaced with the excess seedlings raised for the purpose. During second year also, casualty replacement will be done for which seedlings shall be raised.

iv) Weeding, Soil working & manuring :

For establishment and better growth of the planted seedlings, timely weeding, soil working and manuring are necessary. It is prescribed to carry out two weedings, soil working and manuring during the first year and second year of plantation and one weeding and soil working during third year. During first year and second year, first weeding and manuring shall be carried out during August-September and the second one during October-

-5-

November along with soil working. First weeding shall be around the plants and the second one will be of strip weeding. The weeding of third year will be around the plants, which will be carried out during August.

After each weeding, soil working will be done around each plant at a radius of 0.5mtr, and manuring of each plant, will be done @30grms of NPK per plant in ring form.

v) Application of insecticides:

The plantation site, after planting good healthy seedlings, may cause influx of insects, which usually eat and damage the tender leaves and shoots of the plants. To get rid of such insect attack, application of insecticides will be taken up in required doses at desired intervals. Spraying of insecticides shall be done preferably in a sunny day in the forenoon as per requirement.

vi) Fire line tracing and maintenance :

Fire causes heavy losses to the forest and plantation during fire season. To prevent incidence of fire, the area shall be divided in to suitable blocks by tracing fire lines. Boundaries of the plantation patches and these block lines will be scrapped off the growth to a width of 3.0 mtr during February-March and the cut back materials and the dry leaves stacked along these lines will be burnt under strict supervision. This operation shall be carried out for six years. Provision is being made in the norm for the purpose. Besides this, it has been proposed to engage fire watcher for 6 years @ 1 watcher per 10 ha.

8. SOIL CONSERVATION MEASURES:

The site selected for one & half times Safety Zone Afforestation is degraded Reserve Forest; undulated and gullies formed due to heavy erosion. So the following special type of Soil Conservation Measures is proposed to improve the site. Further, it is proposed to take up maintenance of the structures during the next year to have better result. 4 MD per ha. is proposed for the purpose.

(i) LOOSE BOULDER STRUCTURE :-

Taking into consideration the degradation of the area due to Soil erosion, it has been proposed to take up Soil Conservation Measures by construction of Loose Boulder Structures over the area of size (1mt=3 Nos., 2mt = 5 nos.)

Name of the Range	Name of the Site	Area in ha.	Nos. of LBS	
			1mt	2mt
Hemgir	Garjanpahar RF	8.8130	3	5
			Rs.2693/- per LBS = 8,079/-	@ Rs.5339/- per LBS = 26,695/-

The details of estimate of 1M span & 2M span size of Loose Boulder Structure is given in **Annexure-IV & V.**

(ii) **PERCOLATION PIT:** - For Soil and moisture conservation in plain area over 2.0 ha., percolation pit of size 1m x 1m x 0.5m will be required. So, 120 nos. of percolation pits will be required at the norm of 60 pits per ha. The total cost will come to Rs. 3870/- @ Rs. 32.25 per pit).

9. **WATCH AND WARD:**

To protect the area against grazing, fire accident and other biotic interference, it is proposed to engage watchers for five years after the year of plantation. The cost has been included in the cost estimate.

Sl. No.	Name of Range	Name of the Site	Area in ha.
1.	Hemgir	Garjanpahar RF	8.0

10. **FENCING:**

Barbed wire fencing is proposed to be undertaken in the site.

To protect the ANR plantation from biotic interference, barbed wire fencing is to be done over 1.107 Kms around the area on the boundary line fixing with RCC pillars of 6' 6" high as per the mentioned boundary line details and as per the cost norm for the barbed wire fencing enclosed as **Annexure -VI**. The amount required for barbed wire fencing of 1.107 Kms is Rs.12,45,375/- only.

11. **MOTIVATION OF PEOPLE:**

As per Govt. resolution of 1993 and 2011, the villagers of the adjoining villages i.e. Durubuga & Kamlaga are to be involved in protection and management of plantation raised under 1.5 times Safety Zone Afforestation. Before execution of the work, a meeting will be conducted in the above villages and resolution regarding support to plantation activities will be made. To motivate the people in this direction, they will be provided with incentives in shape of different community articles, buildings and other different community amenities of fixed and movable type through entry point activities (EPA). Health camps shall also be organized in the villages. Thus, 15% of the plantation cost has been earmarked for expenditure on this score.

12. **EXECUTING AGENCY :**

The Divisional Forest Officer, Sundargarh Division shall execute the work by involving the local VSS mentioned above.

13. **INSPECTION, MONITORING & EVALUATION:**

In order to make the Afforestation under this one & half times Safety Zone Afforestation Scheme successful, intensive inspection of the plantation by the Forest field staff and the Officers at the Divisional level is necessary. Moreover, frequent monitoring and evaluation shall have to be done at different stages. Hence, it is proposed that the User Agency shall provide 5% of the plantation cost for the same.

14. REQUIREMENT OF FUNDS :

For implementation of all prescriptions outlined above, Rs. **34,66,100.00** (Rupees Thirty four lakh sixty six thousand one hundred) only will be required as detailed below. As there will be efflux of time between the writing of the scheme and its implementation, the User Agency will pay enhanced wage rate as and when required.

1.	ANR plantation over 8.0 Ha. @Rs. 97650/- per hectare including watering charges @Rs.24000/- per year for 1 st , 2 nd & 3 rd year	Rs.	7,81,200.00
2.	Clearance of weeds, cutting of climbers, singling of economically important species @5 MD / ha. / year for next 2 years. I.e., 2 nd & 3 rd year.	Rs.	12,000.00
3.	Barbed wire fencing with 5 th year maintenance over 1.107 Km. @Rs.11,25,000/- per Km.	Rs.	12,45,375.00
4.	Soil Conservation measure		
	(i) Loose boulder structure 1m span size 3 nos. @ Rs. 2693/-	Rs.	8,079.00
	(ii) Loose boulder structure 2m span size 5 nos. @ Rs. 5339/-	Rs.	26,695.00
	(iii) Percolation pit 120 nos. @ Rs. 32.25 per pit	Rs.	3,870.00
5.	SMC (1 st year maintenance) @ 4 MD per ha.		5,769.00
6.	Plantation watcher (1 no.) (1 x 4500 x 12 x 6)	Rs.	3,24,000.00
	Total Plantation cost	Rs.	24,06,988.00
7.	Monitoring & Evaluation @ 5% of the plantation cost.	Rs.	1,20,349.00
8.	15% of the total plantation cost for motivation of VSS / People involved as per Govt. Resolution of 1993 & 2011.	Rs.	3,61,048.00
	TOTAL:-	Rs.	28,88,385.00
9.	Add 20% for escalation	Rs.	5,77,677.00
	Grand Total:-	Rs.	34,66,062.00
		Rs.	Or,
			34,66,100.00

(Rupees Thirty four lakh sixty six thousand one hundred) only to be deposited towards plantation cost by the User Agency.


Divisional Forest Officer,
Sundargarh Division.

Divisional Forest Officer
Sundargarh Division

Technically
Approved


Regional Chief Conservator of Forests
Buruikela Circle, Boudkela

ANNEXURE-II
COST ESTIMATE FOR (ANR) PLANTATION OF 200 SEEDLINGS/HECT.

1.	Type of the Plantation.	ANR Plantation.
2.	No. of seedlings to be planted.	200 Nos. per hectare
3.	Spacing to be adopted.	2.5m x 2.5m
4.	Size of pits.	30cm x 30cm x 30cm
5.	Wage rate.	Rs.150/- per manday.

0th year (Advance work) Pre-planting operation.

Sl. No.	Item of work	Mandays	Labour rate @ Rs 150/-	Material cost.	Total.
1	2	3	4	5	6
1.	Survey, Demarcation & pillar posting.	2	300.00	-	300.00
2.	Site preparation.	2	300.00	-	300.00
3.	Cutting of high stumps.	3	450.00	-	450.00
4.	Alignment and stacking of pits	1	150.00	-	150.00
5.	Fitting (30 cm. cube)	8	1200.00	-	1200.00
6.	Cost of raising 200 seedlings (Part)	14	1200.00	900.00	2100.00
	Sub Total	30	3600.00	900.00	4500.00
1stYear/ Planting					
7	Cost of raising 200 seedlings (Balance)	6	900.00	-	900.00
8	Carriage of seedlings to site cleaning including casualty replacement.	6	900.00	-	900.00
9	1 st Weeding	2	300.00		300.00
10	2 nd Weeding	2	300.00		300.00
11	Soil working	2	300.00		300.00
12	Manuring /Insecticide application	1	150.00		150.00
13	Fireline tracing and inspection path	2	300.00		300.00
14	Cost of insecticides for plantation	3	0	450.00	450.00
15	Cost of chemical fertilizer for plantation 12 Kg. @ Rs. 35/-	6	0	900.00	900.00
16	Silvicultural operation involving clearance of weeds and cutting of climbers, siging of shoots on each stool etc.	15	2250.00		2250.00
17	Soil Conservation	12	1800.00		1800.00
18	Watch and ward	5	750.00		750.00
19	Contingencies	3	0	0	450.00
20	Watering at least 10 days in a month for 5 month on LS				24000.00
	Sub Total	65	7950.00	1350.00	33750.00
2nd Year Maintenance					
21	Casualty replacement with nursery cost	2	300.00	-	300.00
22	Complete Weeding & Pruning	2	300.00		300.00
23	Soil working and manuring	2	300.00		300.00
24	Fire line tracing.	1	150.00		150.00
25	Cost of fertilizer	4		600.00	600.00
26	Soil Conservation	6	900.00		900.00
27	Watch and ward	8	1200.00	0	1200.00
28	Contingencies	2			300.00
29	Watering at least 6 days in a month for 8 month(April to July & Dec to March) on LS				24000.00
	Sub Total	27	3150.00	600.00	28050.00

Sl. No.	Item of work	Mandays	Labour rate @ Rs 150/-	Material cost.	Total.
1	2	3	4	5	6
3rd Year maintenance					
30	Weeding and pruning	2	300.00		300.00
31	Soil working	2	300.00		300.00
32	Fire line tracing.	1	150.00		150.00
33	Soil Conservation	6	900.00		900.00
34	Watch and ward	6	900.00		900.00
35	Contingencies	2			300.00
36	Watering at least 6 days in a month for 8 month(April to July & Dec to March) on LS				24000.00
Sub Total		19	2550.00		26850.00
4th Year maintenance					
37	Weeding and pruning	2	300.00		300.00
38	Fire line tracing.(2 mt. wide fire line over 400 mt. long)	1	150.00		150.00
39	Watch and ward	6	900.00		900.00
40	Contingencies	1			150.00
Sub Total		10	1350.00		1500.00
5th Year maintenance					
41	Weeding and pruning	2	300.00		300.00
42	Fire line tracing.(2 mt. wide fire line over 400 mt. long)	1	150.00		150.00
43	Watch and ward	6	900.00		900.00
44	Contingencies	1			150.00
Sub Total		10	1350.00		1500.00
6th Year maintenance					
45	Weeding and pruning	2	300.00		300.00
46	Fire line tracing.(2 mt. wide fire line over 400 mt. long)	1	150.00		150.00
47	Watch and ward	6	900.00		900.00
48	Contingencies	1			150.00
Sub Total		10	1350.00		1500.00
Grand Total		171	21300.00	2850.00	97650.00

ABSTRACT

Year	Labour	Material	Contingencies	Total
0 th Year	3600.00	900.00	0	4500.00
1 st Year	7950.00	1350.00	450.00	33750.00
2 nd Year	3150.00	600.00	300.00	28050.00
3 rd Year	2550.00	0	300.00	26850.00
4 th Year	1350.00	0	150.00	1600.00
5 th Year	1350.00	0	150.00	1500.00
6 th Year	1350.00	0	150.00	1500.00
Total	21300.00	2850.00	1500.00	97650.00
Person days Equivalent	14	10	10	171

NB:- The watering provision has been provided for first 3 years basing on the norm of urban tree plantation to ensure better growth and survivability.


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

ANNEXURE-IV

1. Detail Estimate of Loose Boulder Structure (S.M.C.)

Span - 1 mtr.
Ht. = 0.6 mtr
Slope- U/S :- 1:1.5
D/S slope :- 1:2

1.	Leveling the unshape surface of the selected site & layout the structure foundation L.S. 1 MD.			Rs.	150.00
2.	Excavation of foundation in hard soil within initial lead of 50 mtr. including rough dressing and breaking of clods to maximum size 5 cm. to 7 cm. laying in layer not exceeding 0.3 in depth to strengthening both side U/S approx. bund of loose boulder structure.				
	Base with apron- $1 \times 3.60 \times 1.60 \times 0.30 =$	1.728			
	Wing wall- $4 \times 0.50 \times 0.30 \times 0.30 =$	0.180	1.908 cum		
	@ = 6580.00 per 100 cum.			Rs.	128.54
3.	Rough stone dry packing up to GL				
	Base with apron- $1 \times 3.60 \times 1.60 \times 0.30 =$	1.728			
	Wing wall- $4 \times 0.50 \times 0.30 \times 0.30 =$	0.180	1.908 cum		
	Above GL				
	Super structure - $1 \times 1.00 \times 2.60+0.50 \times 0.60 =$	0.930			
	-----2				
	Wing wall- $4 \times 0.50 \times 0.30 \times 0.30 =$	0.180			
	Side wall-				
i.	$2 \times 0.3 + 0.9 \times 0.3 =$	0.324			
	-----2				
ii.	$2 \times 0.3 + 0.9 \times 1.2 \times 0.3 =$	0.432			
	-----2				
iii.	$2 \times 0.5 \times 0.9 \times 0.3 =$	0.270			
iv.	$2 \times 1.0 \times 0.3 \times 0.3 =$	0.180	2.316 cum		
			4.224 cum		
	@ = 571.70 per cum			Rs.	2,414.86
				Rs.	2,693.40
				Or	
				Rs.	2,693.00
				G.Total:-	

(Rupees two thousand six hundred ninety three) only


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

ANNEXURE-VI

ESTIMATE FOR BARBED WIRE FENCING

Estimate for 1 kilometer

1. No. of Pillars required	:	500 Nos.
Cost of 1 Pillar	: Rs	568.00
Transportation charges to the site	: Rs	244.00
Cost of base fixing	: Rs	244.00
Cost of fixing barbed wire @ Rs 49.0	: Rs	49.00
Total cost for Fixing 1 pillar	: Rs	1105.00
Total cost for fixing 500 pillars	: Rs	5,52,000.00
Cost of Barbed wire (1 Qtls.) Rs 13,200:00		
Cost of Barbed wire (5+2 strand)		
7500 Mtrs or 15 Qtls.	: Rs	1,98,000.00
2. Total Cost for fencing 1 KM.	: Rs	7,50,000.00
3. Maintenance for 2 nd year (10%)	: Rs	75,000.00
4. Maintenance for 3 rd year (10%)	: Rs	75,000.00
5. Maintenance for 4 th year (10%)	: Rs	75,000.00
6. Maintenance for 5 th year (10%)	: Rs	75,000.00
7. Maintenance for 6 th year (10%)	: Rs	75,000.00
8. Total Cost for fencing with Maint. for 1 KM.	: Rs	11,25,000.00


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

ANNEXURE - U



Odisha
Coal and
Power
Limited

OCPL

Odisha Coal and Power Limited

(A Government of Odisha Company)

CIN : U10100OR20155GC018623

Website : www.ocpl.org.in

**“Manoharpur Coal Mine Block at Hemgir, Dist. Sundargarh, Odisha” of
Odisha Coal and Power Limited (OCPL)**

UNDERTAKING REGARDING STAGE I ORDER COMPLIANCE OF 15.701 HA

I, **Mr. Lella Ramachandra Reddy**, on behalf of Odisha Coal and Power Limited (OCPL), do hereby solemnly affirm, declare and undertake as under;

- (i) That OCPL will comply with the Hon'ble Supreme Court order on re-grassing, and re-grass the mining area and any other areas which may have been disturbed due to mining to restore them to a condition which is fit for growth of fodder, flora, fauna, etc. in a timely manner.

For Odisha Coal and Power Ltd.

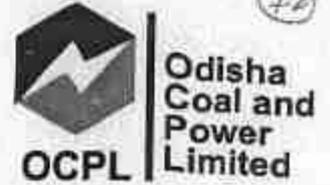
Lella Ramachandra Reddy

Authorized Signatory

Addl. General Manager (Mines)
Odisha Coal and Power Ltd.

**DIVISIONAL FOREST OFFICER
SUNDARGARH FOREST DIVISION**

ANNEXURE-V



Odisha Coal and Power Limited

(A Government of Odisha Company)

CIN : U10100OR20155GC018623

Website : www.ocpl.org.in

**“Manoharpur Coal Mine Block at Hemgir, Dist. Sundargarh, Odisha” of
Odisha Coal and Power Limited (OCPL)**

UNDERTAKING REGARDING STAGE I ORDER COMPLIANCE OF 15.701 HA

I, **Mr. Lella Ramachandra Reddy**, on behalf of Odisha Coal and Power Limited (OCPL), do hereby solemnly affirm, declare and undertake as under;

- (i) That period of diversion of the said forest land under this approval will 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.

For Odisha Coal and Power Ltd.

Lella Ramachandra Reddy

Authorized Signatory

Addl. General Manager (Mines)

Odisha Coal and Power Limited

**DIVISIONAL FOREST OFFICER
SUNDARGARH FOREST DIVISION**

Amr... 4V
 ORIGINAL 73



12,77,78,483/-
 1000/-
 12,77,77,483/-
 12,77,77,488/-

इंडिया ORISSA

A61721



e-Registration
 I.D. No. 1291702185
 Document No. 11741700182
 Book No. 1 Vol. 4
 Dated 17th day of May 2017
 Registering Officer
 Hemgir

Fee paid
 Rs. 5,11,39/-
 Rs. 5,11,200/-



Dr. K. C. Brahma
 Chief Executive Officer
 Registrar of Mortgages
 Hemgir

This INSTRUMENT was executed on the 17th day of May 2017 between the Governor of Orissa (hereafter referred to as the "State Government" which expression shall where the context so admits be deemed to include the successors and assigns) of the one part,

AND

OdishakalaH aud. Po (Pvt) Limited (OOPL) a privately registered Indian company under the Companies Act -2013 Act incorporated in India and having its Registered Office at Gopalpur (B) Dist. Puri, Odisha, India, Charitra shekh, at-pur- Bhubaneswar-751023) and its power of attorney holder Mr. Kshirod Choudhary Brahma S/O Late Mr. Brahma Quasi Executive Officer (CEO), OCPPL (hereinafter referred to as the "Party" which expression shall where the context so admits be deemed to include the successors and assigns) of the other part.

K-

11/12 -12

Dr. K. C. Brahma
 Chief Executive Officer
 Power of Attorney Holder of
 Govt. and POWPL Ltd.

Collector
 SUNDARGARH

संजय कुमार भार
 मुख्य प्रबंधक (दस्तावेज)
 सी. एम. पी. डी. आई., शे. सं-7
 Ref. No. 34015(22)2005-CPAM/dt.02.12.2015

AN-6

157

आनन्द कुमार
 ANANDA KUMAR
 Under Secretary / Under
 Secretary / Minister
 भारत सरकार / Govt. of India
 शास्त्री भवन / Shastri Bhawan
 नई दिल्ली / New Delhi

WHEREAS Manoharpur Coal Block measuring 652.8853ha located in Village-Manoharpur, Kathapali, Dulinga, Ghumudasan and Paramandapur under Sadar subdivision of Sundargarh District was earlier allocated by the Ministry of Coal, Govt. of India in favour of Odisha Power Generation Corporation Ltd. (OPGC), Zone A, 7th Floor, Fortune Tower, Bhubaneswar-751023 had applied for a Mining Lease for Coal to the State Govt.

WHEREAS, the allocation of 204 coal blocks including Manoharpur & Dip side of Manoharpur coal blocks allocated to Odisha Power Generation Corporation Ltd were cancelled by Hon'ble Supreme Court of India by its judgment dated 25th August, 2014 (read with its order dated 24th September, 2014).

WHEREAS, the aforesaid Coal Blocks were subsequently allotted by the Nominated Authority, Ministry of Coal, Govt. of India in favour of Odisha Coal and Power Limited (OCPL), a Govt. Company of State of Odisha vide Allotment Order No. 103/25/2015/NA dated 31.08.2015 under the Coal Mines (Special Provisions) Act, 2015 & Rules framed there under.

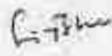
WHEREAS, The Lessee have applied to the state Govt. in accordance with the Mineral Concession Rules, 1960 (Hereinafter refer to as the said Rules) for a Mining Lease (ML) for COAL in respect of the lands described in Part-I, of the Schedule hereunder written and have deposited with the state Govt. the sum of Rs. 10,000/- (Rupees Ten Thousand) Only (In State Bank Of India, Himgir in TDA A/C No. 36793221522, on 21.04.2017) as security and the sum of Rs. 1,000/- (Rupees One Thousand) Only for meeting the preliminary expenses for a mining lease and WHEREAS, the Central Government has approved the grant of lease.

WITNESSETH that in consideration of the Rents and Royalty, Covenants and agreements by and in these presents and the schedule hereunder written reserved and contained and on the part of the lessee to be paid observed and performed, the State Government (with the approval of the Central Government) hereby grants vide order NO. 10728/SM, dated- 31/12/2016 of Steel and Mines Deptt. Govt. Of Odisha, Bhubaneswar.

All those the mines beds/ veins seams of COAL (here state the mineral or minerals) situated, lying and being in or under the lands which are referred to in Part i of the said Schedule, together with the liberties, powers and privileges to be exercised or enjoyed in connection herewith which are mentioned Part II of the said Schedule, subject to the restrictions and conditions as to the exercise and enjoyment of such liberties, powers and privileges which are mentioned in Part III of the said Schedule, EXCEPT and reserving out of this demise unto the State Government the liberties, powers and privileges mentioned in Part-IV of the said Schedule TO HOLD the premises


(Chief Executive Officer)
Power of Attorney Holder of
Odisha Coal and Power Ltd.


COLLECTOR
SUNDARGAPI


संजय कुमार भार
मुख्य प्रबंधक (टाइलिंग)
सी. एम. पी. डी. आर्. अ. सं. -7
Ref. No. 34011/(22)2005-CPAN/ML/03.12.2010

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AN-7


आनन्द कुमार मण्डल
ANANDA KUMAR MANDAL
अवर सचिव / Under Secretary
कोयला विभाग / Ministry of Coal
केंद्रा भवन / Govt. of India
शास्त्री भवन / Shastri Bhawan
नई दिल्ली / New Delhi

hereby granted and demised unto the lessee from the GI-tiday of May 2017 for the term of 30 years thence next ensuing YIELDING AND PAYING therefore unto the State Government the several rents, royalties mentioned in Part V of the said Schedule at the respective times there in specified subject to the provisions contained in Part VI of the said Schedule and the lessee hereby covenants with the State Government as in Part-VII of the said Schedule is expressed and the State Government hereby covenants with the lessee as in Part-VIII of the said Schedule as expressed AND it is hereby mutually agreed between the parties hereto as in Part-IX of the said Schedule is expressed.

IN WITNESS WHEREOF of these presents have been executed in manner hereunder appearing the day and year first above written.

The Schedule above referred to.

PART - I

[THE AREA OF THIS LEASE]

LOCATION AND AREA OF THE LEASE: -

All that tract of lands situated in (Manoharpur Coal Block) at Village:- Manoharpur, Kathafali, Dulinga, SanGhumra, Durubaga and Paramanandapur under Himgiri Tahasil, Sadar Sub-Division, Distt. Sundargarh , Subregister Office Himgiri, PS-Himgiri, bearing Cadastral Survey No. R44 R/13 containing an area of 1613.28 Acres or 652.885 ha or thereabouts delineated on the plan hereto annexed and bounded as follows:-

Or. K. C. Brahma
(Chief Executive Officer)
of Attorney Holder of
Odish, Coal and Power Ltd.

Li-3/ha

[Signature]

COLLECTOR
SUNDARGARH

आनन्द कुमार मण्डल
ANANDA KUMAR MANDAL
अपर सचिव / Under Secretary
कोयला मंत्रालय / Ministry of Coal
भारत सरकार / Govt. of India
शासकीय भवन / Shashi Bhawan
नई दिल्ली / New Delhi

संजय कुमार भार

मुख्य प्रबंधक (टाउनशिप)

सी. एस. पी. चौ. थाई., थं. सं.-7

Ref. No. 34011/(20)2005 CPAM dt. 02.12.2010

3
AN-8

Boundary description of M.L. area over 1613.28 Acres or 652.8853 Hects. for coal in villages - Manoharpur, Durubaga, Paramanandapur, Kathafali, Dulanga, Ghumudasan and Reserved forests under Hemgir tahasil, Sadar Sub-division of Sundargarh district of Odisha Coal and Power Ltd.

Reference topo sheet No.-F44 R/13

R.F. -1:50,000

The Manoharpur Coal Block Surveyed with WGS 84 Datum line and UTM projection system through Odisha Space Applications Centre in the year 2013.

STARTING STATION - The starting station 'A' is situated on the North-Western corner of Manoharpur coal block. The linear coordinates of 'A' are Easting: 785503.0924, Northing: 2431315.9704 and latitude 21°57'47.02716", Longitude 83°45'52.02216".

WESTERN BOUNDARY - The western boundary starts from starting station 'A' to station 'B' with a distance of 2981.404 mtrs. through intermediate stations from A1 to A59 and the detailed description is attached in Annexure - I The Western side boundary is limited by 'Dip side of Manoharpur' coal block.

SOUTHERN BOUNDARY - The southern boundary starts from station 'B' to station 'C' with a distance of 2105.027 mtrs. through intermediate stations from B1 to B42 and the detailed description is attached in Annexure - II The Southern boundary is limited by Dulunga coal block.

EASTERN BOUNDARY - The Eastern boundary runs from station point 'C' to station point 'H' with a total distance of 3181.456mtrs. through stations 'D', 'E', 'F' & 'G'. The detailed description regarding the boundary stations and intermediate pillars is attached in Annexure-III.

NORTHERN BOUNDARY - The northern boundary runs along the Garta Nalla from station point 'H' to 'A' through stations T, 'J', 'K', 'L', 'M', 'N', 'O', 'P', 'Q', 'R', 'S' with a distance of 2657.399 mtrs. The detailed description of the boundary pillars and intermediate stations are attached in Annexure -IV.

Thus the Manoharpur coal block traverse runs from station 'A' and closes at station 'S' with a total distance 10925.286 and covers an area of 1613.28 Acres or 652.8853Hects. of land.

Kashis
(?)
Dr. K. C. Brahma
(Chief Executive Officer)
Power of Attorney Holder of
Odisha Coal and Power Ltd.


COLLECTOR
SUNDARGARH

संयोजक कार्यालय
मुख्य प्रबंधक (पुस्तकालय)
श्री. एम. पी. डी. आर. ४, सं. सं. - ७
Ref. No. 34011/2212085-CPAM/JR/02.12.2010

AN-9


आनन्द कुमार मण्डल
ANANDA KUMAR MANDAL
आवर सचिव / Under Secretary
कोयला मंत्रालय / Ministry of Coal
भारत सरकार / Govt. of India
शासि भवन / Shasiri Bhawan
नई दिल्ली / New Delhi

ABSTRACT OF BALANCE LAND

SLNO	NAME OF VILLAGE	Private land	Govt. Land	Forest Land	Total	Remarks
1	Manoharpur	496.31	381.67	386.82	1264.80	
2	Dufanga	105.51	16.83	15.01	137.35	
3	Kathafall	14.46	105.79	31.89	152.14	
4	Ghumudasan	3.16	23	11.76	17.22	
5	Darubaga	0.00	5.01	14.63	19.64	
6	Paramanandapur	0.47	3.05	13.61	17.13	
7	Reserve forest			5.00	5.00	
TOTAL		619.91	514.85	478.72	1613.28	Ac
		250.874	208.276	193.735	652.885	Ha

K.S.

IV(D)FO

Dr. K. C. Brahma

Dr. K. C. Brahma
(Chief Executive Officer)
Power of Attorney Holder of
Odisha Coal and Power Ltd.

COLLECTOR
SUNDARGARH

Signature

Signature

ANANDA KUMAR MANDAL
Under Secretary
Ministry of Coal
Government of India
Shastri Bhawan
New Delhi

राजेश कुमार भर
मुख्य प्रबंधक (प्रशासन)
सी. एम. पी. डी. आर्डी, शे. ३०-७
Ref. No. 34011/(22)2005-CPM/02.1R.010

AN-10

10. General Conditions of Allotment:

- (i) The conditions of Allotment Order issued on 31.08.2015 vide letter no 103/25/2015/NA by the Nominated Authority, Ministry of Coal, Government of India is made a part of this lease and is included below:
- (ii) The Allotment is made to Odisha Coal and Power Limited incorporated in India under the Companies Act, 2013 with corporate identity number U101000R2015SGC018623 for production of Coal from Manoharpur Coal Blocks for utilisation of the Coal in the End-Use-Plant of Odisha Power Generation Corporation Ltd, situated at Banharpali, Jharsuguda, Odisha as follows:

Sl. No.	Name of Specified End Use Plant	Address	Configuration	Capacity
1	Odisha Power Generation Corporation Ltd, Expansion Power Project (Unit 3 & 4)	1b Thermal Power Station, Banharpali, Jharsuguda, Odisha	2 X 660 MW	1320 MW

- (iii) WHEREAS the Nominated Authority has in accordance with the provisions the Coal Mines (Special Provisions) Act, 2015 (the "Act") and the Coal Mines (Special Provisions) Rules, 2014 (the "Rules") conducted the allotment of the relevant Schedule I Coal Mines;
- (iv) AND WHEREAS the allottee is eligible to receive this allotment order with respect to the mine, including, inter-alia-
- the coal bearing land acquired by the prior allottee and the lands, in or adjacent to the coal mines used for coal mining operations acquired by the prior allottee; and
 - any existing mine infrastructure as defined in clause U) of sub-section (1) of section 3 of the Act;

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Dr. K. C. Brahma
(Chief Executive Officer)
Power of Attorney Holder of
Odisha Coal and Power Ltd.

COLLECTOR
SUNDARGARH

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AN-11

संयुक्त प्रमुख
मुख्य प्रबंधक (निष्पत्ति)
श्री एम. पी. जी. आर्डी., ब्लॉक सं-7
Ref. No. 34011/(22)2015-CP&M dt. 01.12.2010

आनन्द कुमार मण्डल
ANANDA KUMAR MANDAL
अवर सचिव / Under Secretary
क्षेत्रीय कार्यालय / Ministry of Coal
भारत, रायपुर / Govt. of India
शास्त्री भवन / Shaastri Bhawan
नई दिल्ली / New Delhi

- (v) AND WHEREAS the allottee has furnished a performance bank guarantee dated April 27, 2015 for an amount equal to INR 1,53,92,00,000 (Indian Rupees One Hundred Fifty Three Crore and Ninety Two Lakhs) issued by Yes Bank in accordance with the Allotment Document and in accordance with the provisions of sub-section (6) and sub-section (12) of section (8) of the Act.
- (vi) AND WHEREAS the allottee has entered into an Allotment Agreement dated March 30, 2015 (as amended) with the Nominated Authority in accordance with the provisions of sub rule (5) of rule (13).
- (vii) On and from August 31, 2015 ("allotment date") and in accordance with sub-section (4) of section 8 read with sub-section (12) section 8 of the Act, with respect to the mine, the following shall stand fully and absolutely transferred and vested in the allottee, namely:-
 - a all the rights, title and interest of the prior allottee in and over the land and mine infrastructure free from all encumbrances.
 - b entitlement to a mining lease to be granted by the State Government with the terms and conditions of the Allotment Agreement forming a part of it on making an application
- (viii) The Odisha Coal and Power Limited (OCPL) will do exploration and coal mining in accordance with the provisions of the Coal Mines (Nationalization) Act 1973 the Mines and Minerals (Development & Regulation) Act, 1957, the Contract Labour (Regulation & Abolition) Act, 1970 all the minerals, environmental and labour laws and along with other regulations governing coal industry.
- (ix) Mining of Coal from the area shall be carried out in accordance with the applicable Statutes/Rules/Orders/Directions governing the mining of coal in the country.
- (x) Coal produced from the allocated Manoharpur coal block will not be supplied to the consumers of Coal India Limited / SCCL against their existing linkages.

11. Additional Conditions:

- (i) There should be synchronization between the captive coal mining operations and the development of end-use (power generation) plant so that no situation arises where the company is left with coal

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Dr. K. C. Brahma
(Chief Executive Officer)
Power of Attorney Holder of
Odisha Coal and Power Ltd.

L-m

COLLECTOR
SUNDAR

आनन्द कुमार मण्डल
ANANDA KUMAR MANDAL
अवर सचिव / Under Secretary
कोयला विभाग / Ministry of Coal
राज्य सरकार / Govt. of India
शास्त्री भवन (Shastri Bhawan)
नई दिल्ली / New Delhi

112

AN-12

संजय कुमार धार

मुख्य प्रबंधक (उत्पादन)

सी. एम. पी. डी. आई. अ. सं.-7

(80)

extracted from the captive block when the end-use plant is yet to be operational. However, Coal production may be commenced to have a buffer stock to meet the immediate need of the Plant on the commissioning date (CoD) or the coal produced from the mine can be sold/kept with MCL as per the guidelines of Ministry of Coal.

- (ii) The lessee shall furnish to the Central Government detailed plan for disposal of unusable containing carbon materials obtained during the process of mining or any process thereafter including washing etc. so as to avoid any need for disposal of the same through sale etc. at a later stage.
- (iii) Violation of any of the conditions will render the allocation of the block/grant of the lease as the case may be liable for cancellation.

12. Special Conditions:

The lessee shall also fulfil the following the special conditions:

- (i) The lessee has to take necessary steps for obtaining approval of the Central Government for use of forest land for non-forest purposes.
- (ii) De-reservation/exchange of gochar land is to be made as per the provisions of Odisha Government Land Settlement Act, 1962/Land Acquisition Manual
- (iii) The Company shall abide by the approved policy of Government of Odisha for coal mining.
- (iv) The lessee Company shall contribute to the District Mineral Foundation of Sundargarh District at the applicable rates according to the provisions of section 98 of the Mines and Minerals (Development & Regulation) Act, 1957 and the Mines and Minerals (Contribution to District Mineral Foundation) Rules 2015.
- (v) The lessee Company shall also contribute to the National Mineral Exploration Trust at the rate of 2% of the royalty payable by the lessee company in accordance with the provisions of section 9C of the Mines and Minerals (Development & Regulation) Act, 1957.
- (vi) Additional condition as per letter No. 9179 dtd. 21.10.2014 of Director of Mines, Odisha, Bhubaneswar.

K. C. Brahma
Dr. K. C. Brahma
(Chief Executive Officer)
Power of Attorney Holder of
Odisha Coal and Power Ltd.

[Signature]
SUNDARGARH

113

AN-13

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[Signature]
श्रीमान् कुमार मण्डल
मुख्य सचिव (निष्पन्न)
स. एन. पी. डी. आर्. सी. ए. - 7
Ref. No. 34011/22/2005-CPAM dt. 02.12.2010

[Signature]
आनन्द कुमार मण्डल
ANANDA KUMAR MANDAL
अवर सचिव / Under Secretary
कोयला मंत्रालय / Ministry of Coal
भारत सरकार / Govt. of India
शास्त्री भवन / Shaastri Bhawan
नई दिल्ली / New Delhi

(8)

The Lessee shall abide by the outcome of the WP(C) No. 15013 of 2013 and Misc Case No.14094 of 2013 relating to Indian Stamp (Odisha) Amendment Act, 2013 and Indian Stamp (Odisha) Amendment Rules, 2013 pending before the Hon'ble High Court of Odisha and accordingly shall pay the differential Stamp Duty, if any.

IN WITNESS WHEREOF these presents have been executed in the manner hereunder appearing the day and year first above written.

In Presence of

1. *Sudam Chandra Patel*
Sr. Clerk, Mining Section
Collectorate, Sundargarh


Collector, Sundargarh
For and on behalf of the
Governor, Odisha.

**COLLECTOR
SUNDARGARH**

2. *Satybrata Patel*
Jr. Mining Section
Collectorate, Sundargarh

In Presence of

nih j r j y
1. Nihar Ranjan Satpathy
D.G.M. Mines
Odisha Coal & Power Ltd.

K. f. c.
Chief Executive Officer
Power of attorney Holder of
Odisha Coal & Power Ltd.

D. f. k. k. m. o. d.
2. Dillip Kumar Rout / O - // (O. r. m. m. t. k. / (of
Executive Assistant
Odisha Coal & Power Ltd.

Or. K. C. Brahma
(Chief Executive Officer)
Power of Attorney Holder of
Odisha Coal and Power Ltd.

Li-va

संयुक्त कार्यालय भर
मुख्य प्रशासक (उत्खनन)
सी. एम. पी. डी. आई., को. सं.-१
Ref. No. 34011/(20)2005-CPAM (L.O. 12.2010)

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AN-14


अनामन्दा कुमार मण्डल
ANAMANDA KUMAR MANDAL
Under Secretary
Ministry of Coal
Government of Odisha
Bhubaneswar
New Delhi

ANNEXURE - W



Odisha
Coal and
Power
Limited

OCPL

Odisha Coal and Power Limited

(A Government of Odisha Company)

CIN : U10100OR20155GC018623

Website : www.ocpl.org.in

**“Manoharpur Coal Mine Block at Hemgir, Dist. Sundargarh, Odisha” of
Odisha Coal and Power Limited (OCPL)**

UNDERTAKING REGARDING STAGE I ORDER COMPLIANCE OF 15.701 HA

I, **Mr. Lella Ramachandra Reddy**, on behalf of Odisha Coal and Power Limited (OCPL), do hereby solemnly affirm, declare and undertake as under;

- (i) That OCPL has obtained the Environment Clearance as per the provisions of the Environmental (Protection) Act, 1986.

For Odisha Coal and Power Ltd.

Lella Ramachandra Reddy

Authorized Signatory

Addl. General Manager (Mines)
Odisha Coal and Power Ltd.

**DIVISIONAL FOREST OFFICER
SUNDARGARH FOREST DIVISION**

Praxma W
83

No. J-11015/139/2008-IA-II(M) Pt. file
Government of India
Ministry of Environment, Forest & Climate Change
IA-II (Coal Mining) Division

Indira Paryavaran Bhawan,
Jorbagh Road, N Delhi-3

Dated: 30th December, 2015

To,
The General Manager, (Mines)
M/s Odisha Coal and Power Limited,
Plot No. N-3/135, IRC Village, Nayapalli,
Bhubaneswar, Odisha -751 015

Email: mines@ocpl.org.in

Sub: Transfer of Environmental Clearance of Manoharpur Opencast Coalmine Project of 8 MTPA in ML area of 977.875 ha in Ib Valley, District Sundergarh (Odisha) from M/s Orissa Power Generation Corporation Limited to M/s Odisha Coal and Power Limited- reg.

The Ministry of Environment, Forest and Climate Change (MoEFCC), in accordance with the Environmental Impact Assessment (EIA) Notification, 2006 and subsequent amendment thereto had accorded Environmental Clearance (EC) for **Manoharpur Opencast Coalmine Project of 8 MTPA in ML area of 977.875 ha in Ib Valley, District Sundergarh (Odisha) to M/s Orissa Power Generation Corporation Limited** subject to compliance of terms and conditions stipulated therein vide letter No. **J-11015/139/2008-IA.II (M) dated 21st February, 2014.**

WHEREAS the Hon'ble Supreme Court of India vide judgment dated 25th August, 2014 read with the order dated 24th September, 2014 has cancelled the allocation of 204 coal blocks and issued directions with regard to such coal blocks wherein the Central Government in pursuance of the said directions has to take immediate action to implement the said order.

WHEREAS in pursuance of the judgment and order of the Hon'ble Supreme Court, the nominated authority has, in accordance with provisions of the Coal Mines (Special Provisions) Second Ordinance, 2014 and the Coal Mines (Special Provisions) Rules, 2014 conducted the auction of the mines.

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Transfer: Manoharpur OPSC to OCPL

Page 1 of 3

WHEREAS Ministry of Coal (MOC) vide letter No. 13016/38/2015-CA-III dated 16th September, 2015 has informed that, their Ministry has allotted 8 Coal Mines through allotment routes to 3 different allottees. MOC has requested this Ministry to facilitate transfer of the Environment Clearance and Forest Clearance of these blocks to the successful allottees.

WHEREAS Ministry of Coal vide Allotment Order under clause (c) of sub-rule (2) of rule 7 and sub-rule (1) of rule 13 and Order No. 103/25/2015/NA dated 31st August, 2015 has allotted the Manoharpur Opencast Coalmine Project of 8 MTPA in ML area of 977.875 ha in Ib Valley, District Sundergarh (Orissa) to M/s Odisha Coal and Power Limited as the successful allottee.

WHEREAS vide Gazette Notification S.O. 811 (E) Notification dated 23.03.2015, MOEFCC has made amendments to paragraph 11 in the Gazette Notification S.O.1533 (E) dated 14th September, 2006. Vide the said amendment: where an allocation of coal block is cancelled in any legal proceeding, or by the Government in accordance with law, the environmental clearance granted in respect of such coal block may be transferred, subject to the same validity period as was initially granted, to any legal person to whom such block is subsequently allocated, and in such case, obtaining of "no objection" from either the holder of environment clearance or from the regulatory authority concerned shall not be necessary and no reference shall be made to the Expert Appraisal Committee or the State Level Expert Appraisal Committee concerned.

WHEREAS in light of the MOC Allotment Order No. 103/25/2015/NA dated 31st August, 2015, and MoEFCC Gazette Notification S.O. 811 (E) Notification dated 23.03.2015, the EC granted vide letter No. J-11015/139/2008-IA.II (M) dated 21st February, 2014 to M/s Orissa Power Generation Corporation Limited for Manoharpur Opencast Coalmine Project of 8 MTPA in ML area of 977.875 ha in Ib Valley, District Sundergarh (Odisha) is hereby transferred to M/s Odisha Coal and Power Limited subject to the following conditions:

- (i) Any change in scope of work will attract the provisions of the Environment (Protection) Act, 1986 and Environmental Impact Assessment Notification, 2006 in conjunction with the subsequent amendments / circulars.
- (ii) All conditions stipulated in the EC letter No. J-11015/139/2008-IA.II (M) dated 21st February, 2014 shall remain unchanged.

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- (iii) The allottee shall be liable, if any, for any act of violation of the EP Act, 1986 / EIA Notification 2006/subsequent amendments and circulars which it has inherited during the revalidation/ transfer.
- (iv) Allottee shall be liable for compliance of all court directions, if any.


 30/12/2015
 (S. K. Srivastava)
 Scientist E

Copy to :

1. The Secretary, Ministry of Coal, Shastri Bhawan, New Delhi
2. The Secretary, Department of Environment & Forests, Government of Orissa, Secretariat, Bhubaneswar, Odisha
3. The Chief Conservator of Forests, Regional office (EZ), Ministry of Environment & Forests, A-31, Chandrashekarpur, Bhubaneswar - 751 023, Odisha
4. The Member Secretary, Orissa State Pollution Control Board, Parivesh Bhawan, A/118, Nilkanthanagar, Unit VIII, Bhubaneswar - 751012, Odisha
5. The Member Secretary, Central Pollution Control Board, CBD-cum-Office Complex, East Arjun Nagar, Delhi -110 032
6. The Member-Secretary, Central Ground Water Authority, Ministry of Water Resources, Curzon Road Barracks, A-2, W-3 Kasturba Gandhi Marg, New Delhi
7. The Advisor, Coal India Limited, SCOPE Minar, Core-I, 4th Floor, Vikas Marg, Laxmi nagar, New Delhi
8. The District Collector, Sundergarh, Government of Odisha
9. Monitoring File 10. Guard File 11. Record File 12. Notice Board


 30/12/2015
 (S. K. Srivastava)
 Scientist E

No. J-11015/139/2008-IA.II (M)
Government of India
Ministry of Environment & Forests
IA-II (Coal Mining) Division

Paryavaran Bhawan,
CGO Complex, Lodhi Road,
New Delhi-110003
Dated: 21st February, 2014

To

The Manager (Mechanical)
M/S Orissa Power Generation Corporation Ltd.
Zone-A, 7th floor, Fortune Tower
Bhubaneswar- 751 023
Odisha

Subject: Manoharpur Opencast Coalmine Project (8 MTPA in an ML area of 977.875 ha) of M/s Orissa Power Generation Corp. Ltd. located in Ib Valley, Dist. Sundergarh, Orissa - Environment Clearance -reg.

Sir:

This is with reference to letter no.982/WE dated 18.03.2008 along with the application for Terms of Reference (TOR) and this Ministry's letter of even number dated 11th July, 2008 granting TOR. Reference is also invited to the letter No. 1424 dated 26.05.2012; no. 2837(12)-12 dated 25.10.2012; dt 9.11.2012; no. OPGC/Proj/2975 W/E dated 12.11.2012, nos. 510 dt 26.2.2013; 534 dt 28.02.2013 and 21.12.2013 for Environmental Clearance on the above-mentioned subject.

2. The Ministry of Environment & Forests has considered the application. The proposal was reconsidered in the 59th Expert Appraisal Committee held on 6th -7th November, 2012. It is noted that the proposal is for grant of Environmental Clearance for **Manoharpur Opencast Coalmine Project (8 MTPA in an ML area of 977.875 ha) of M/s Orissa Power Generation Corp. Ltd. located in Ib Valley, Dist. Sundergarh, Orissa.** The proponent has informed that:

- i. Manoharpur Coal Block has been allocated by the Ministry of Coal in July 2007 to M/s Orissa Power Generation Corporation. Manoharpur Opencast coalmine project is an opencast project of 8 MTPA rated capacity in a total project area of 977.875 ha of which 653.509 ha is within the coal block and 324.367 ha is outside the coal block. The coal is captive to two power plants Power plant -2 x 660 MW (Phase II) and 2 x 660 MW (Phase III) of OPGC. EC for the linked Power Plant has been obtained in 2010.
- ii. Of the total project area, 193.739 ha is forestland, 238 ha is agricultural land, 176.839 ha is barren land, 13.189ha is homestead land, 20.040 ha is grassland and 11.611 ha is water body.
- iii. Land Use Pattern as approved in revised mine plan shall be as follows:

S. No.	Classification of Land	Area insider the block ha	Area outside the block ha	Total ha
1	Forest Land	193.739	6.726	200.465
2	Agriculture Land	238.090	165.358	403.448
3	Barren Land	176.839	97.916	274.755
4	Township Land	13.189	2.614	15.803

5	Grazing Land	20.040	45.937	65.977
6	Water Body	11.611	5.815	17.426
		653.509	324.367	977.875

- iv. Of the total 324.677 ha outside the coal block, 6.726 ha is forestland, 165.358 ha is agricultural land, 97.917 ha is barren land, 2.614 ha is homestead land, 45.937 ha is grassland and 5.815 ha is water body. Of the total project area of 653.509 ha, 550.954 ha is for quarry/excavation, 36.952ha is for external OB dump, 3.89ha is for coal stockyard, 20.117ha is for infrastructure, 7.13 ha is for roads, 3.7 ha for road diversion, 5.99 ha is for 100m barrier, 2.34 ha is for nala diversion, 4.659 ha is for safety zone along existing nala, 8.906 ha is for safety zone along project boundary, 8.871 ha is for rationalisation of project boundary.
- v. It was informed that of the 324.677 ha is outside the block, 0.498 ha is for crushing, 156.526ha is for external OB dump, 1.465 ha is for coal stockyard, 3.015 ha is for topsoil, 6.406 ha is for sedimentation pond, 108.367 ha is for allied infrastructure, 48.090 ha is for residential colony. It was clarified that the entire 324.677ha outside the ML area is non-coal bearing.
- vi. Grade of coal is mostly F & G.
- vii. Mining would be by shovel-dumper and surface miner. Mining would be at a depth of 8m-205m. It was informed that a minimum 15m safe distance would be maintained between quarry edge and nala and a 3-tier thick plantation consisting of native species would be developed.
- viii. The total estimated OB generation is 432.11 Mm³, of which 61.73 Mm³ would be stored in external OB dump of 193.478 ha of a max height of 70m, which after re-handling of OB, would be reduced to 50m height. The balance 370.38 Mm³ would be backfilled in an area of 257.11 ha. Backfilling would begin in the 2nd year. At the post mining stage a water body of an area of 13.96 ha would be left, whose depth would be reduced from 140m to 80m. The total water requirement is 3780 m³/d of which 2580 m³/d is for mine operations and 1200 m³/d is for the coal washery.
- ix. Garia Nalla (tributary of Basundhara River) flows along the northern boundary and eastern side of the Block. A stretch of Garia nalla flowing over the south eastern part of the block would be diverted and road passing through the road would be diverted. The nala thereafter, which would flow into NTPC's Dulanga Coal Block, would be further diverted by NTPC. The water from the catchment area in lieu of the nala would be collected in a garland drain and connected downstream of Garia Nala to maintain its flow. An Embankment would be constructed along the Garia Nala which would be 3m above HFL of Garia Nala.
- x. Approval of CGWB has been obtained for drawl of 950 m³/d of groundwater.
- xi. The captive pit-head coal washery in an area of 20 ha would operate in an improved HM Cyclone and would yield 6.4 MTPA of clean coal of 33 + 0.5% ash and the balance 1.6 MTPA of coal of 55% ash content. It is a zero-discharge washery. Crushed coal from mine to pit head washery to be transported through covered conveyor belt then power plant to MGR. Coal rejects would be sent to M/s SV Power Plant for their FBC based TPP.
- xii. The Mining Plan has been approved by MOC in August 2008 and the revised mining plan approved on 11.12.2013. R&R involves 370 PDFs and 385 PAFs. A site of 74 ha has been planned for the resettlement colony and awaiting approval of the State Govt. Budget for CSR is Rs 240 lakhs. Life of the mine is 23 years.
- xiii. There were small and seasonal water ponds exist in the Manoharpur village of the project area. As Manoharpur village will be totally displaced, these ponds will no more be used by the villagers.
- xiv. The proponent informed that the conditions of the approved TOR have become the reasons for revision of Mine Plan. All the points of the TOR have been duly complied in the Revised Mine Plan. The conditions in the approved TOR for revision of Mine Plan are: (a) Relocation of External Dumps, (b) CHP & Washery to be away from the villages (c) Dumps to be maintained at a minimum 100 mtrs away from the villages and Nalla; (d) Relocation of the village.

- xv. It was informed that dumping of fly ash in the mine void was mentioned in ELA/EMP report in the TPP of capacity 2x660 MW (Units no. 3&4). The EC of TPP also permits the back filling of ash in the mine. The same has also been covered in the Revised Mine Plan.
- xvi. The leachability study has been carried out by Water Environment Division, Central Institute of Mining and Fuel Research (CIMFR), Dhanbad with ash and OB material. The CIMFR recommended that use of 30% fly ash as back fill material with OB could be used for the purpose of 100% utilization of generated fly ash. All the leachate parameters are found within the range and have negligible impact on leaching of chemical constituents. It was informed that the leaching will be negligible. However, proper barrier/dyke against aquifers will be provided as per recommendation of CIMFR, Dhanbad. IIT, Bombay has been engaged for Geo Technical Studies including special studies for Ash backfilling. Therefore, the proponent proposed for concurrent filling of fly ash (30%). It was informed that Govt of Odisha, took a decision on 05.07.2012 in the Steering Committee that accorded approval for 324.367 ha. of land outside the Coal Block for OB dumping, infrastructure and other industrial use.
- xvii. The comparison of Opencast vs. Underground mine shows that mining by opencast is the most feasible and viable technology to cater the requirement of the planned OPGC power project. The Proponent provided detailed justification of Opencast mining vs Underground mining. The cost of OCP would be Rs 700/Te with 80% production/recovery of coal whereas the cost for the UG mining would be Rs. 2900/Te with 40 -50% low production.
- xviii. The total Mine closure cost would be Rs. 99 Crores.
- xix. An amount of Rs 385 lakhs has been proposed for a Wildlife Conservation Plan. Site specific WL Conservation Plan has been approved by Govt. of Odisha.
- xx. The CSR cost has been calculated @ Rs 5/Te for 152.12 MT mineable reserves amounting to Rs. 7606 Lakh. The CSR expenditure of Rs. 84.35 Lakh till date has been made on education, health, infrastructure, water, sports & culture, Social welfare etc.
- xxi. **Forestry issues:** Stage-I Forest Clearance have been obtained vide MoEF letter no. 8-63/2011-FC, dated 17.10.2012.
- xxii. There are no ecologically sensitive areas such as National Parks, WL Sanctuaries, biosphere reserves, etc.
- xxiii. **Public Hearing:** The Public Hearing was conducted on 28.02.2012. The proponent assured to take necessary action on the issues raised during public hearing.

3. The proposal was considered in the Expert Appraisal Committee (EAC) (Thermal & Coal Mining) in its 59th meeting held on 6th-7th November, 2012, reconsidered in 9th EAC meeting held on 20-21 January, 2014 and recommended for granting Environmental Clearance. The Ministry of Environment & Forests hereby accords environmental clearance to **Manoharpur Opencast Coalmine Project (8 MTPA in an ML area of 977.875 ha) of M/s Orissa Power Generation Corp. Ltd. located in Ib Valley, Dist. Sundergarh, Orissa** under the provisions of the Environmental Impact Assessment Notification, 2006 and subsequent amendments thereto subject to the compliance of the terms and conditions mentioned below:

A. Specific Conditions:

- i. The maximum production from the mine at any given time shall not exceed the limit as prescribed in the EC.
- ii. Environmental Clearance to the proposal is subject to obtaining clearance under the Wildlife (Protection) Act, 1972 from the Standing Committee of National Board for Wildlife, as applicable.
- iii. The OB should be kept in ML area and there should be no OB dumps at the end of mining.
- iv. The land for OB dumping should be made ready for original use after mine closure.
- v. All the sandstone taken out during mining should be utilized for house construction and given free of cost to locals.
- vi. Since the mining area is total forest land, the sandstones should not be dumped as OB.

- vii. Fly ash dumping is not permitted in mine void.
- viii. The leachability study may be carried out for chromium, arsenic and mercury that may be present in fly ash.
- ix. The CSR amount should be Rs 4 crores in initial 3 years, and thereafter it should be Rs 5/T of coal/annum till the end of the life of project with the escalation factor every year coal production.
- x. The CSR activity, which had already been carried out by proponent, be audited by a 3rd Party. The audit should be carried out by a reputed agency.
- xi. The proponent shall come back to the Committee for its washery proposal for further consideration.
- xii. Coal transportation from mine to railway siding by conveyor belt and from siding to TPP by MGR through SILO loading of the wagons.
- xiii. The embankment constructed along the river boundary shall be of suitable dimensions and critical patches shall be strengthened by stone pitching on the river front side and stabilised with plantation so as to withstand the peak water flow and prevent mine inundation.
- xiv. There shall be no overflow of OB into the river and into the agricultural fields and massive plantation of native species shall be taken up in the area between the river and the project.
- xv. OB shall be stacked at two earmarked external OB dumpsite(s) only. The ultimate slope of the dump shall not exceed 28°. Monitoring and management of existing reclaimed dumpsites shall continue until the vegetation becomes self-sustaining. Compliance status shall be submitted to the Ministry of Environment & Forests and its Regional office located at Bhopal on yearly basis.
- xvi. Catch drains and siltation ponds of appropriate size shall be constructed to arrest silt and sediment flows from soil, OB and mineral dumps. The water so collected shall be utilised for watering the mine area, roads, green belt development, etc. The drains shall be regularly desilted and maintained properly. Garland drains (size, gradient and length) and sump capacity shall be designed keeping 50% safety margin over and above the peak sudden rainfall and maximum discharge in the area adjoining the mine site. Sump capacity shall also provide adequate retention period to allow proper settling of silt material.
- xvii. Dimension of the retaining wall at the toe of the dumps and OB benches within the mine to check run-off and siltation shall be based on the rainfall data.
- xviii. Crushers at the CHP of adequate capacity for the expansion project shall be operated with high efficiency bag filters, water sprinkling system shall be provided to check fugitive emissions from crushing operations, conveyor system, haulage roads, transfer points, etc.
- xix. Drills shall be wet operated.
- xx. The project authorities shall undertake regular repairing and tarring of roads used for mineral transportation. A 3-tier green belt comprising of a mix of native species shall be developed all along the major approach roads.
- xxi. Controlled blasting shall be practiced with use of delay detonators and only during daytime. The mitigative measures for control of ground vibrations and to arrest the fly rocks and boulders shall be implemented.
- xxii. A Progressive afforestation plan shall be implemented covering an area of 512.584 ha at the end of mining, which includes reclaimed external OB dump (193.478 ha), internal dump (257.11 ha), and Green belt (61.996ha) and in township located outside the lease by planting native species in consultation with the local DFO/Agriculture Department. The density of the trees shall be around 2500 plants per ha. Massive plantation shall be carried out in open spaces in and around the mine and a 3-tier avenue plantation along the main approach roads to the mine.
- xxiii. An estimated 61.73 MCum of OB will be generated during the entire life of the mine. Out of which 29.23 Mm³ of OB will be dumped in four external OB Dump in non-coal bearing area. The maximum height of external OB dump for hard OB will not exceed 30 m each. The maximum slope of the dump shall not exceed 28 degrees. Monitoring and management of reclaimed dump sites shall continue till the vegetation becomes self-sustaining and compliance status shall be submitted to MOEF and its Regional Office on yearly basis.

- xxiv. Of the total quarry area of ha, the backfilled quarry area of 489 ha shall be reclaimed with plantation and a void of 162 ha which is proposed to be converted into a water body shall be gently sloped and the upper benches shall be terraced and stabilised with plantation/afforestation by planting native plant species in consultation with the local DFO/Agriculture Department. The density of the trees shall be around 2500 plants per ha.
- xxv. The proponent should prepare restoration and reclamation plan for the degraded area. The land be used in a productive and sustainable manner.
- xxvi. Compensatory Ecological & Restoration of waste land, other degraded land and OB dumps in lieu of breaking open the land be carried out.
- xxvii. The mining should be phased out in sustainable manner. No extra over burden dumps are permitted.
- xxviii. No groundwater shall be used for mining operations.
- xxix. Regular monitoring of groundwater level and quality shall be carried out by establishing a network of existing wells and construction of new peizometers. The monitoring for quantity shall be done four times a year in pre-monsoon (May), monsoon (August), post-monsoon (November) and winter (January) seasons and for quality in May. Data thus collected shall be submitted to the Ministry of Environment & Forests and to the Central Pollution Control Board quarterly within one month of monitoring.
- xxx. The Company shall put up artificial groundwater recharge measures for augmentation of groundwater resource in case monitoring indicates a decline in water table. The project authorities shall meet water requirement of nearby village(s) in case the village wells go dry due to dewatering of mine.
- xxxi. Sewage treatment plant shall be installed in the existing colony. ETP shall also be provided for workshop and CHP wastewater.
- xxxii. Besides carrying out regular periodic health checkup of their workers, 10% of the workers identified from workforce engaged in active mining operations shall be subjected to health checkup for occupational diseases and hearing impairment, if any, through an specialised agency /institution within the District/State and the results reported to this Ministry and to DGMS.
- xxxiii. There are 370 PDFs and 385 PAFs. Land oustees shall be compensated as per the norms laid out R&R Policy of CIL or the National R&R Policy or R&R Policy of the State Government whichever is higher.
- xxxiv. For monitoring land use pattern and for post mining land use, a time series of landuse maps, based on satellite imagery (on a scale of 1: 5000) of the core zone and buffer zone, from the start of the project until end of mine life shall be prepared once in 3 years (for any one particular season which is consistent in the time series), and the report submitted to MOEF and its concerned Regional Office.
- xxxv. A detailed Final Mine Closure Plan along with details of Corpus Fund shall be submitted to the Ministry of Environment & Forests within 6 months of grant of Environmental Clearance.
- xxxvi. The project authorities shall in consultation with the Panchayats of the local villages and administration identify socio-economic and welfare measures under CSR to be carried out over the balance life of the mine.
- xxxvii. The proponent should implement the assurances given during the Public Hearing.
- xxxviii. Corporate Environment Responsibility:
 - a) The Company shall have a well laid down Environment Policy approved by the Board of Directors.
 - b) The Environment Policy shall prescribe for standard operating process/procedures to bring into focus any infringements/deviation/violation of the environmental or forest norms/conditions.
 - c) The hierarchical system or Administrative Order of the company to deal with environmental issues and for ensuring compliance with the environmental clearance conditions shall be furnished.

- d) To have proper checks and balances, the company shall have a well laid down system of reporting of non-compliances/violations of environmental norms to the Board of Directors of the company and/or shareholders or stakeholders at large.

B. General Conditions:

- i. No change in mining technology and scope of working shall be made without prior approval of the Ministry of Environment and Forests.
- ii. No change in the calendar plan of production for quantum of mineral coal shall be made.
- iii. Four ambient air quality monitoring stations shall be established in the core zone as well as in the buffer zone for PM_{10} , $PM_{2.5}$, SO_2 and NO_x monitoring. Location of the stations shall be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets in consultation with the State Pollution Control Board. Monitoring of heavy metals such as Hg, As, Ni, Cd, Cr, etc carried out at least once in six months.
- iv. Data on ambient air quality (PM_{10} , $PM_{2.5}$, SO_2 and NO_x) and heavy metals such as Hg, As, Ni, Cd, Cr and other monitoring data shall be regularly submitted to the Ministry including its concerned Regional Office and to the State Pollution Control Board and the Central Pollution Control Board once in six months. Random verification of samples through analysis from independent laboratories recognised under the EPA rules, 1986 shall be furnished as part of compliance report.
- v. Adequate measures shall be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in blasting and drilling operations, operation of HEMM, etc shall be provided with ear plugs/muffs.
- vi. Industrial wastewater (workshop and wastewater from the mine) shall be properly collected, treated so as to conform to the standards prescribed under GSR 422 (E) dated 19th May 1993 and 31st December 1993 or as amended from time to time before discharge. Oil and grease trap shall be installed before discharge of workshop effluents.
- vii. Vehicular emissions shall be kept under control and regularly monitored. Vehicles used for transporting the mineral shall be covered with tarpaulins and optimally loaded.
- viii. Monitoring of environmental quality parameters shall be carried out through establishment of adequate number and type of pollution monitoring and analysis equipment in consultation with the State Pollution Control Board and data got analysed through a laboratory recognised under EPA Rules, 1986.
- ix. Personnel working in dusty areas shall wear protective respiratory devices and they shall also be provided with adequate training and information on safety and health aspects.
- x. Occupational health surveillance programme of the workers shall be undertaken periodically to observe any contractions due to exposure to dust and to take corrective measures, if needed and records maintained thereof. The quality of environment due to outsourcing and the health and safety issues of the outsourced manpower should be addressed by the company while outsourcing.
- xi. A separate environmental management cell with suitable qualified personnel shall be set up under the control of a Senior Executive, who will report directly to the Head of the company.
- xii. The funds earmarked for environmental protection measures shall be kept in separate account and shall not be diverted for other purpose. Year-wise expenditure shall be reported to this Ministry and its concerned Regional Office.
- xiii. The Project authorities shall advertise at least in two local newspapers widely circulated around the project, one of which shall be in the vernacular language of the locality concerned within seven days of the clearance letter informing that the project has been accorded environmental clearance and a copy of the clearance letter is available with the State Pollution control Board and may also be seen at the website of the ministry of Environment & Forests at <http://envfor.nic.in>.
- xiv. A copy of the environmental clearance letter shall be marked to concern Panchayat/Zila Parishad, Municipal Corporation or Urban local body and local NGO, if any, from whom any suggestion/representation has been received while processing the proposal. A copy of the clearance letter shall also be displayed on company's website.

- xv. A copy of the environmental clearance letter shall be shall also be displayed on the website of the concerned State Pollution Control Board. The EC letter shall also be displayed at the Regional Office, District Industry Sector and Collector's Office/Tehsildar's Office for 30 days.
- xvi. The clearance letter shall be uploaded on the company's website. The compliance status of the stipulated environmental clearance conditions shall also be uploaded by the project authorities on their website and updated at least once every six months so as to bring the same in public domain. The monitoring data of environmental quality parameter (air, water, noise and soil) and critical pollutant such as PM₁₀, PM_{2.5}, SO₂ and NO_x (ambient) and critical sectoral parameters shall also be displayed at the entrance of the project premises and mine office and in corporate office and on company's website.
- xvii. The project proponent shall submit six monthly compliance reports on status of compliance of the stipulated environmental clearance conditions (both in hard copy and in e-mail) to the respective Regional Office of the Ministry, respective Zonal Office s of CPCB and the SPCB.
- xviii. The Regional Office of this Ministry located in the Region shall monitor compliance of the stipulated conditions. The Project authorities shall extend full cooperation to the office(s) of the Regional Office by furnishing the requisite data/ information/monitoring reports.
- xix. The Environmental statement for each financial year ending 31 March in For -V is mandated to be submitted by the project proponent for the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be uploaded on the company's website along with the status of compliance of EC conditions and shall be sent to the respective Regional Offices of the MoEF by e-mail.

4. The proponent shall abide by all the commitments and recommendations made in the EIA/EMP report so also during their presentation to the EAC.

5. The proponent is required to obtain all necessary clearances/approvals that may be required before the start of the project. The Ministry or any other competent authority may stipulate any further condition for environmental protection.

6. The Ministry or any other Competent Authority may stipulate any further condition for environmental protection.

7. The Proponent shall setup an Environment Audit cell with responsibility and accountability to ensure implementation of all the EC Conditions.

8. Failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract the provisions of the Environment (Protection) Act, 1986.

9. The above conditions will be enforced *inter-alia*, under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986 and the Public Liability Insurance Act, 1991 along with their amendments and Rules. The proponent shall ensure to undertake and provide for the costs incurred for taking up remedial measures in case of soil contamination, contamination of groundwater and surface water, and occupational and other diseases due to the mining operations.

(Dr. Manoranjan Hota)
Director

Copy to:

- 1. Secretary, Ministry of Coal, New Delhi.
- 2. Secretary, Department of Environment, Government of Orissa, Sachivalaya, Bhubaneswar, Odisha.

3. Chief Conservator of Forests, Regional office (EZ), Ministry of Environment & Forests, Bhubaneswar
4. Member Secretary, Orissa State Pollution Control Board, Unit -8, Neelkanth Nagar, Bhubaneswar-
5. Chairman, Central Pollution Control Board, CBD-cum-Office Complex, East Arjun Nagar, New Delhi -110032.
6. Member-Secretary, Central Ground Water Authority, Ministry of Water Resources, Curzon Road Barracks, A-2, W-3 Kasturba Gandhi Marg, New Delhi.
8. District Collector, Sundargarh, Orissa.
9. IG (Wild life), Ministry of Environment and Forests, New Delhi
10. Monitoring File 11. Guard File 12. Record File. 13. Notice Board

(Dr. Manoranjan Hota)
Director

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ANNEXURE - X



Odisha
Coal and
Power
Limited

Odisha Coal and Power Limited

(A Government of Odisha Company)

CIN : U10100OR20155GC018623

Website : www.ocpl.org.in

**“Manoharpur Coal Mine Block at Hemgir, Dist. Sundargarh, Odisha” of
Odisha Coal and Power Limited (OCPL)**

UNDERTAKING REGARDING STAGE I ORDER COMPLIANCE OF 15.701 HA

I, **Mr. Lella Ramachandra Reddy**, on behalf of Odisha Coal and Power Limited (OCPL), do hereby solemnly affirm, declare and undertake as under;

- (i) That no labour camp will be established on the forest land and alternate fuel such as cooking gas will be provided to the labourers and the staff working at the site to avoid any damage and pressure on the nearby forest areas.

For Odisha Coal and Power Ltd.

Lella Ramachandra Reddy

Authorized Signatory

Addl. General Manager (Mines)
Odisha Coal and Power Ltd.

**DIVISIONAL FOREST OFFICER
SUNDARGARH FOREST DIVISION**

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**Odisha
Coal and
Power
Limited**

ANNEXURE-Y

Odisha Coal and Power Limited

(A Government of Odisha Company)

CIN : U10100OR2015SGC018623

Website : www.ocpl.org.in

**“Manoharpur Coal Mine Block at Hemgir, Dist. Sundargarh, Odisha” of
Odisha Coal and Power Limited (OCPL)**

UNDERTAKING REGARDING STAGE I ORDER COMPLIANCE OF 15.701 HA

I, **Mr. Lella Ramachandra Reddy**, on behalf of Odisha Coal and Power Limited (OCPL), do hereby solemnly affirm, declare and undertake as under;

- (i) That boundary of the diverted forest land, mining lease and safety zone, as applicable, have already been demarcated on ground at the project cost, by erecting four feet high reinforced cement concrete pillars and each pillar has inscribed with its serial number, distance from pillar to pillar and DGPS coordinates.

For Odisha Coal and Power Ltd.

Lella Ramachandra Reddy
Authorized Signatory
Addl. General Manager (Mines)
Odisha Coal and Power Ltd.

**DIVISIONAL FOREST OFFICER,
SUNDARGARH FOREST DIVISION**

CO-ORDINATE AND DISTANCE OF 15.701 Ha ADDITIONAL FOREST LAND OF MANOHARPUR COAL MINE PROJECT (MCMP), OCPL

PILLAR NO	CO-ORDINATES (UTM)		FROM PILLAR	TO PILLAR	DIST (M)	REMARKS
	EASTING	NORTHING				

Village : DULINGA, PLOT No- 180

1	X=788612.2902	Y=2429938.5994	1	2	40.32	
2	X=788593.9596	Y=2429974.0949	2	3	50.00	
3	X=788570.9265	Y=2430018.7460	3	4	89.10	
4	X=788529.9317	Y=2430098.0787	4	5	52.00	
5	X=788480.9483	Y=2430115.3002	5	6	35.00	
6	X=788448.6828	Y=2430102.7428	6	7	17.15	
7	X=788456.3729	Y=2430087.2911	7	8	58.00	
8	X=788505.4056	Y=2430049.9122	8	9	88.10	
9	X=788533.5896	Y=2429998.0739	9	10	69.00	
10	X=788563.0971	Y=2429944.4844	10	11	23.80	
11	X=788585.4894	Y=2429945.9506	11	1	30.00	

Village : DULINGA, PLOT No- 423 & 425

12	X=790258.1138	Y=2430217.0577	12	13	64.75	
13	X=790193.7406	Y=2430224.0427	13	14	51.04	
14	X=790142.8611	Y=2430229.2021	14	15	74.16	
15	X=790083.0916	Y=2430273.4141	15	16	45.41	
16	X=790042.3192	Y=2430292.1466	16	17	54.54	
17	X=789988.1903	Y=2430298.0291	17	18	50.81	
18	X=789937.4775	Y=2430302.1744	18	19	52.96	
19	X=789935.1416	Y=2430355.3980	19	20	49.94	
20	X=789983.8956	Y=2430366.2283	20	21	51.19	
21	X=790027.4175	Y=2430339.0307	21	22	49.80	
22	X=790071.7903	Y=2430316.7511	22	23	35.83	
23	X=790079.8337	Y=2430351.6762	23	24	43.57	
24	X=790123.2254	Y=2430347.6545	24	25	52.86	
25	X=790175.9305	Y=2430348.9378	25	26	37.30	
26	X=790180.9576	Y=2430312.0283	26	27	47.38	
27	X=790224.0848	Y=2430306.4720	27	28	12.00	
28	X=790227.9213	Y=2430295.0949	28	29	39.31	
29	X=790267.2120	Y=2430294.1689	29	30	16.82	
30	X=790282.8375	Y=2430300.4191	30	31	47.10	
31	X=790256.6148	Y=2430338.1939	31	32	41.40	
32	X=790234.5773	Y=2430373.0631	32	33	66.30	
33	X=790169.7984	Y=2430388.3035	33	34	23.31	
34	X=790160.9869	Y=2430366.7666	34	35	55.45	
35	X=790106.7833	Y=2430378.4606	35	36	47.68	
36	X=790065.1189	Y=2430375.9902	36	37	44.82	
37	X=790020.7020	Y=2430381.9496	37	38	58.69	
38	X=789962.0013	Y=2430384.5375	38	39	37.40	
39	X=789954.6870	Y=2430419.1040	39	40	36.18	
40	X=789937.9124	Y=2430387.6926	40	41	49.82	
41	X=789888.5623	Y=2430381.4927	41	42	52.29	
42	X=789882.9212	Y=2430356.2498	42	43	42.70	
43	X=789849.8371	Y=2430329.2677	43	44	56.69	

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44	X=789812.3218	Y=2430291.3438	44	45	39.54	
45	X=789799.2269	Y=2430261.3861	45	46	46.28	
46	X=789799.3810	Y=2430216.3418	46	47	48.42	
47	X=789847.0238	Y=2430218.4378	47	48	46.80	
48	X=789893.7093	Y=2430218.8489	48	49	33.13	
49	X=789918.0142	Y=2430239.8234	49	50	41.73	
50	X=789959.7261	Y=2430240.7740	50	51	55.22	
51	X=790013.7936	Y=2430249.8776	51	52	72.68	
52	X=790083.9062	Y=2430229.6642	52	53	43.27	
53	X=790057.5593	Y=2430263.7832	52	54	44.27	
54	X=790123.1422	Y=2430209.1555	54	55	43.44	
55	X=790166.4355	Y=2430208.0751	55	56	51.44	
56	X=790217.8706	Y=2430208.8688	56	57	38.00	
57	X=790255.6003	Y=2430203.8391	57	58	14.00	
Village : DULINGA, PLOT No- 318, 319, 321, 393 & 406						
58	X=789559.3949	Y=2430147.5202	58	59	16.64	
59	X=789561.6732	Y=2430163.9774	59	60	41.73	
60	X=789577.0733	Y=2430202.7210	60	61	41.13	
61	X=789593.1394	Y=2430240.6370	61	62	45.09	
62	X=789635.3156	Y=2430225.5348	62	63	39.28	
63	X=789674.5357	Y=2430223.9299	63	64	33.47	
64	X=789686.2497	Y=2430255.1590	64	65	25.72	
65	X=789695.1941	Y=2430279.2902	65	66	21.53	
66	X=789694.0784	Y=2430300.7592	66	67	18.52	
67	X=789691.4773	Y=2430318.7278	67	68	24.50	
68	X=789714.9484	Y=2430316.2670	68	69	29.35	
69	X=789743.0650	Y=2430308.2389	69	70	35.57	
70	X=789778.2710	Y=2430312.7839	70	71	4.16	
71	X=789780.0992	Y=2430316.5250	71	72	29.82	
72	X=789751.0591	Y=2430322.8600	72	73	24.82	
73	X=789726.8030	Y=2430328.1514	73	74	26.36	
74	X=789700.7474	Y=2430332.8212	74	75	26.78	
75	X=789710.3694	Y=2430357.7427	75	76	31.83	
76	X=789713.1962	Y=2430389.4536	76	77	33.26	
77	X=789681.2679	Y=2430380.4360	77	78	28.55	
78	X=789654.2591	Y=2430370.9889	78	79	23.28	
79	X=789644.9286	Y=2430392.1193	79	80	21.78	
80	X=789639.2368	Y=2430412.2424	80	81	16.40	
81	X=789623.0456	Y=2430409.8186	81	82	17.25	
82	X=789616.4499	Y=2430393.8764	82	83	40.93	
83	X=789578.1063	Y=2430408.2193	83	84	36.08	
84	X=789544.6098	Y=2430421.4350	84	85	50.21	
85	X=789494.7258	Y=2430421.5064	85	86	54.40	
86	X=789442.5677	Y=2430407.8809	86	87	56.13	
87	X=789392.2108	Y=2430410.6552	87	88	29.23	
88	X=789376.6180	Y=2430385.8867	88	89	21.61	
89	X=789380.2300	Y=2430364.6751	89	90	45.74	
90	X=789421.6166	Y=2430345.2274	90	91	36.40	
91	X=789455.8142	Y=2430332.7672	91	92	35.74	
92	X=789487.9152	Y=2430317.4857	92	93	24.96	

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93	X=789509.7237	Y=2430321.0588	93	94	29.90
94	X=789520.1140	Y=2430344.7173	94	112	33.72
95	X=789551.9885	Y=2430323.7432	95	96	20.36
96	X=789554.9711	Y=2430304.1970	96	97	43.58
97	X=789547.9602	Y=2430261.3740	97	98	40.52
98	X=789537.9756	Y=2430222.5855	98	99	49.28
99	X=789490.3245	Y=2430235.0386	99	100	38.51
100	X=789494.6953	Y=2430215.4178	100	101	42.88
101	X=789494.5350	Y=2430172.5549	101	102	36.55
102	X=789526.3440	Y=2430154.2689	102	103	17.21
103	X=789539.8028	Y=2430164.9323	103	58	26.33
104	X=789595.7547	Y=2430285.2131	104	105	63.00
105	X=789656.1150	Y=2430303.5948	105	67	38.51
106	X=789638.2701	Y=2430343.7691	106	107	53.61
107	X=789622.5754	Y=2430308.8857	107	108	18.13
108	X=789605.4664	Y=2430302.8767	108	109	42.16
109	X=789584.6140	Y=2430321.4168	109	95	37.00
110	X=789597.6683	Y=2430331.1069	110	95	46.10
111	X=789598.2966	Y=2430355.9051	111	112	24.83
112	X=789553.3663	Y=2430347.0824	112	113	45.85
Village : DULINGA, PLOT No- 387					
113	X=789460.0478	Y=2430543.3075	113	114	33.72
114	X=789434.7693	Y=2430551.3667	114	115	26.53
115	X=789434.8544	Y=2430581.7445	115	116	30.37
116	X=789414.5420	Y=2430598.6914	116	117	26.45
117	X=789409.5483	Y=2430591.3152	117	118	8.88
118	X=789412.7629	Y=2430576.8044	118	119	14.86
119	X=789411.4210	Y=2430560.4783	119	120	16.38
120	X=789423.1152	Y=2430554.1086	120	121	12.77
121	X=789425.3270	Y=2430538.3424	121	122	15.92
122	X=789453.1601	Y=2430531.3075	122	123	28.78
Village : DULINGA, PLOT No- 382					
123	X=789200.9815	Y=2430738.3967	123	124	17.77
124	X=789220.9615	Y=2430797.9833	124	125	12.85
125	X=789214.0530	Y=2430808.8285	125	126	63.39
126	X=789271.2964	Y=2430835.5016	126	127	48.30
127	X=789308.7152	Y=2430864.0121	127	128	22.49
128	X=789288.2460	Y=2430873.3414	128	129	55.55
129	X=789233.4694	Y=2430882.6232	129	130	86.20
130	X=789153.9570	Y=2430871.3528	130	131	52.46
131	X=789180.5335	Y=2430833.0650	131	132	57.03
132	X=789159.1807	Y=2430781.3044	132	133	37.30
133	X=789154.4226	Y=2430744.2502	133	134	47.11
Village : GHUMUDASAN, PLOT No- 1092 & 1107					
134	X=788808.5681	Y=2430594.1097	134	135	56.29
135	X=788858.2353	Y=2430620.6996	135	136	44.32
136	X=788896.9557	Y=2430642.2823	136	137	34.81
137	X=788927.6928	Y=2430658.6278	137	138	8.57
138	X=788931.5555	Y=2430666.2471	138	139	22.49
139	X=788953.8196	Y=2430669.4150	139	140	27.9

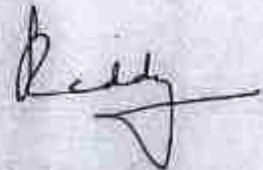
Kaly

140	X=788945.4915	Y=2430696.1622	140	141	21.68	
141	X=788925.5897	Y=2430701.1028	141	142	33.04	
142	X=788892.4774	Y=2430699.9540	142	143	30	
143	X=788878.8989	Y=2430676.4785	143	144	23	
144	X=788874.7762	Y=2430653.7976	144	145	23.05	
145	X=788861.1249	Y=2430649.1306	145	146	32.77	
146	X=788848.1947	Y=2430680.1860	146	147	13.62	
147	X=788848.2893	Y=2430693.8088	147	148	28.75	
148	X=788827.4967	Y=2430713.4925	148	149	29.34	
149	X=788795.6106	Y=2430720.0888	149	150	27	
150	X=788768.7594	Y=2430723.6479	150	151	27.42	
151	X=788743.3187	Y=2430734.5956	151	152	22.32	
152	X=788724.5171	Y=2430745.6347	152	153	28.68	
153	X=788713.8659	Y=2430739.5799	153	154	37.48	
154	X=788687.4850	Y=2430732.0110	154	155	31.75	
155	X=788655.8604	Y=2430733.5336	155	156	33.19	
156	X=788625.0586	Y=2430715.7497	156	157	32.7	
157	X=788597.1668	Y=2430698.6113	157	158	25.5	
158	X=788597.9416	Y=2430673.4744	158	159	27.65	
159	X=788606.5499	Y=2430649.7833	159	160	21.78	
160	X=788621.1629	Y=2430636.2237	160	161	28.8	
161	X=788641.9544	Y=2430635.8008	161	162	20	
162	X=788661.9457	Y=2430635.8551	162	163	38.7	
163	X=788672.4952	Y=2430671.8922	163	164	49.5	
164	X=788721.6815	Y=2430665.2974	164	165	46.67	
165	X=788761.9347	Y=2430660.2297	165	166	56.19	
166	X=788817.6640	Y=2430651.8132	166	167	43.13	
Village : GHUMUDASAN, PLOT No- 1019						
167	X=788364.7735	Y=2430644.9803	167	168	42.96	
168	X=788344.6491	Y=2430682.9449	168	169	26.25	
169	X=788318.4848	Y=2430684.6229	169	170	28.35	
170	X=788289.6437	Y=2430688.2482	170	171	13.92	
171	X=788287.9057	Y=2430674.4312	171	172	32.21	
172	X=788313.4345	Y=2430654.7513	172	173	29.25	
173	X=788333.6929	Y=2430633.8739	173	174	33	
Village : GHUMUDASAN, PLOT No- 924						
174	X=788127.8630	Y=2430704.9347	174	175	16.85	
175	X=788113.0819	Y=2430713.2785	175	176	36.68	
176	X=788082.0564	Y=2430693.7035	176	177	21.56	
177	X=788102.4747	Y=2430686.4255	177	178	31.2	
Village : GHUMUDASAN, PLOT No- 987,997 & 998						
178	X=788065.0303	Y=2430517.4203	178	179	39.87	
179	X=788101.5732	Y=2430503.4070	179	180	32.86	
180	X=788132.2839	Y=2430491.6970	180	181	26.92	
181	X=788157.4404	Y=2430482.1136	181	182	23.17	
182	X=788152.4289	Y=2430504.0967	182	183	17.95	
183	X=788149.4011	Y=2430521.8989	183	184	28.87	
184	X=788155.0041	Y=2430550.2282	184	185	18.09	
185	X=788163.0601	Y=2430565.4542	185	186	10.89	
186	X=788154.6228	Y=2430572.3545	186	187	24.23	

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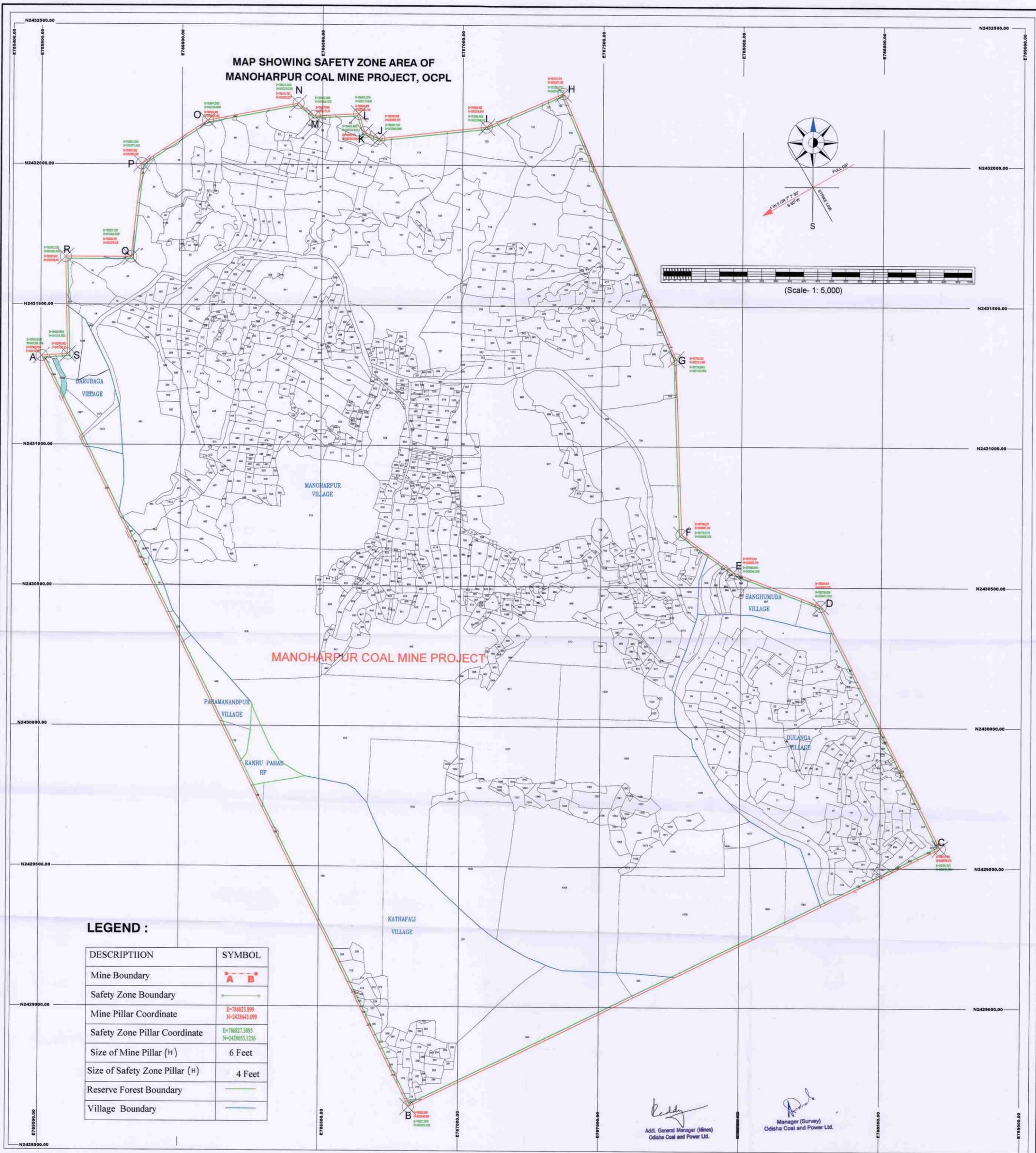
187	X=788140.1395	Y=2430552.9277	187	188	17.21
188	X=788126.0178	Y=2430543.0889	188	189	21.56
189	X=788142.5415	Y=2430529.0177	189	190	8
190	X=788137.8317	Y=2430522.6081	190	192	21.4
191	X=788130.7237	Y=2430512.5391	191	180	20.90
192	X=788119.0504	Y=2430531.5655	192	191	22.25
193	X=788080.8366	Y=2430528.4218	192	193	39.37
193	X=788080.8366	Y=2430528.4218	193	178	19.25
Village : MANOHARPUR, PLOT No- 710					
194	X=787802.2978	Y=2430819.8054	194	195	42.52
195	X=787800.5555	Y=2430862.3845	195	196	20.61
196	X=787780.1855	Y=2430859.2384	196	197	32.87
197	X=787781.3974	Y=2430826.4735	197	198	22
Village : GHUMUDASAN, PLOT No- 911					
198	X=787781.3974	Y=2430826.4735	198	199	33.38
199	X=788448.6825	Y=2430978.0697	199	200	24.59
200	X=788429.6910	Y=2430980.0456	200	201	22
201	X=788408.3217	Y=2430974.8413	201	202	39
202	X=788417.0704	Y=2430939.5614	202	203	24.28
Village : GHUMUDASAN, PLOT No- 752					
203	X=788938.2939	Y=2431075.7824	203	204	51.82
204	X=788930.1430	Y=2431126.9640	204	205	16.82
205	X=788913.9378	Y=2431126.2572	205	206	50.06
206	X=788920.6882	Y=2431077.2902	206	207	17.67
Village : GHUMUDASAN, PLOT No- 566					
207	X=788639.7397	Y=2432275.3909	207	207(A)	53.43
207(A)	X=788687.4154	Y=2432251.2561	207(A)	208	48.22
208	X=788730.1751	Y=2432228.6060	208	208(A)	49.5
208(A)	X=788775.0121	Y=2432207.6305	208(A)	209	51.75
209	X=788821.7640	Y=2432185.4330	209	210	5
210	X=788819.6297	Y=2432180.9386	210	211	67
211	X=788744.8400	Y=2432197.1294	211	212	53.87
212	X=788690.9697	Y=2432197.4636	212	213	75.75
213	X=788617.9078	Y=2432179.2967	213	214	55.91
214	X=788562.3005	Y=2432184.4846	214	215	67.23
215	X=788605.7700	Y=2432235.4050	215	216	52.45
Village : GHUMUDASAN, PLOT No- 7					
216	X=787944.8928	Y=2432475.4324	216	217	20.55
217	X=787935.9552	Y=2432453.6730	217	218	21.38
218	X=787940.0877	Y=2432432.7193	218	219	22.16
219	X=787935.3352	Y=2432411.0697	219	220	25
220	X=787931.4009	Y=2432386.4160	220	221	22.28
221	X=787921.7444	Y=2432366.3318	221	222	19.27
222	X=787917.0586	Y=2432350.1616	222	223	37.85
223	X=787879.2142	Y=2432351.7793	223	224	28.59
224	X=787852.7342	Y=2432360.8753	224	225	10.1
225	X=787855.3618	Y=2432370.5477	225	226	25.92
226	X=787877.9456	Y=2432378.3423	226	227	18.62
227	X=787892.7930	Y=2432389.5822	227	228	46.51
228	X=787904.8128	Y=2432434.5223	228	229	29.5

229	X=787895.7271	Y=2432462.5960	229	230	25.53	
230	X=787919.9973	Y=2432470.5360	230	231	25.39	
Village : MANOHARPUR, PLOT No- 22						
231	X=787846.8545	Y=2431870.8310	231	232	19.25	
232	X=787833.0816	Y=2431857.2807	232	233	47.65	
233	X=787878.2997	Y=2431841.4040	233	234	40.21	
Village : MANOHARPUR, PLOT No- 125,127						
234	X=787426.7685	Y=2432303.3201	234	235	17.81	
235	X=787444.5740	Y=2432302.8871	235	236	14	
236	X=787436.7430	Y=2432291.2864	236	237	15.05	
237	X=787423.5877	Y=2432298.6079	237	238	5.86	
238	X=787409.4281	Y=2432282.5817	238	239	13.01	
239	X=787418.6724	Y=2432273.4256	239	240	29.03	
240	X=787398.0362	Y=2432253.0041	240	241	38.36	
241	X=787370.7666	Y=2432226.0180	241	242	13.76	
242	X=787365.3324	Y=2432238.6640	242	243	38.11	
243	X=787387.3803	Y=2432260.6232	243	244	38.11	
Village : GHUMUDASAN, PLOT No- 924						
244	X=787956.2784	Y=2430583.0053	244	245	4.37	
245	X=787953.6861	Y=2430579.3341	245	246	11.55	
246	X=787964.4872	Y=2430575.6925	246	247	3.16	
247	X=787967.2737	Y=2430578.9444	247	248	11.5	



Head of Mines
Odisha Coal and Power Ltd.

**MAP SHOWING SAFETY ZONE AREA OF
MANOHARPUR COAL MINE PROJECT, OCPL**



LEGEND :

DESCRIPTION	SYMBOL
Mine Boundary	
Safety Zone Boundary	
Mine Pillar Coordinate	E=786823.899 N=2428643.099
Safety Zone Pillar Coordinate	E=786827.3095 N=2428653.1256
Size of Mine Pillar (H)	6 Feet
Size of Safety Zone Pillar (H)	4 Feet
Reserve Forest Boundary	
Village Boundary	

Roddy
Addl. General Manager (Mines)
Odisha Coal and Power Ltd.

Roddy
Manager (Survey)
Odisha Coal and Power Ltd.

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ANNEXURE-Z

Odisha Coal and Power Limited
(A Government of Odisha Company)
CIN : U10100OR20155GC018623
Website : www.ocpl.org.in

**“Manoharpur Coal Mine Block at Hemgir, Dist. Sundargarh, Odisha” of
Odisha Coal and Power Limited (OCPL)**

UNDERTAKING REGARDING STAGE I ORDER COMPLIANCE OF 15.701 HA

I, **Mr. Lella Ramachandra Reddy**, on behalf of Odisha Coal and Power Limited (OCPL), do hereby solemnly affirm, declare and undertake as under;

- (i) That layout plan of the mining plan/ proposal will not be changed without the prior approval of the Central Government and the forest land shall not be used for any purpose other than that specified in the proposal.

For Odisha Coal and Power Ltd.

Lella Ramachandra Reddy

Authorized Signatory

Addl. General Manager (Mines)
Odisha Coal and Power Ltd.

**DIVISIONAL FOREST OFFICER
SUNDARGARH FOREST DIVISION**

103



Odisha
Coal and
Power
Limited

ANNEXURE- A1

OCPL

Odisha Coal and Power Limited

(A Government of Odisha Company)

CIN : U10100OR20155GC018623

Website : www.ocpl.org.in

**“Manoharpur Coal Mine Block at Hemgir, Dist. Sundargarh, Odisha” of
Odisha Coal and Power Limited (OCPL)**

UNDERTAKING REGARDING STAGE I ORDER COMPLIANCE OF 15.701 HA

I, **Mr. Lella Ramachandra Reddy**, on behalf of Odisha Coal and Power Limited (OCPL), do hereby solemnly affirm, declare and undertake as under;

- (i) That forest land to be diverted will under no circumstances be transferred to any other agency, department or person without prior approval of the Central Government.

For Odisha Coal and Power Ltd.

Lella Ramachandra Reddy

Authorized Signatory

Addl. General Manager (Mines)
Odisha Coal and Power Ltd.

**DIVISIONAL FOREST OFFICER
SUNDARGARH FOREST DIVISION**

ANNEXURE A2



Odisha Coal and Power Limited
(A Government of Odisha Company)
CIN : U10100OR20155GC018623
Website : www.ocpl.org.in

**“Manoharpur Coal Mine Block at Hemgir, Dist. Sundargarh, Odisha” of
Odisha Coal and Power Limited (OCPL)**

UNDERTAKING REGARDING STAGE I ORDER COMPLIANCE OF 15.701 HA

I, **Mr. Lella Ramachandra Reddy**, on behalf of Odisha Coal and Power Limited (OCPL), do hereby solemnly affirm, declare and undertake as under;

- (i) No damage will be caused to the flora and fauna of the adjoining area. Further, OCPL is committed to implement all the precautionary measures as stated in approved site specific wildlife conservation plan within the project area. OCPL had already deposited the approved amount i.e. 220 lakhs in CAMPA fund for implementation of the plan in project impact area by the concerned authority.

For Odisha Coal and Power Ltd.

Lella Ramachandra Reddy
Authorized Signatory

Addl. General Manager (Mines)
Odisha Coal and Power Ltd.

**DIVISIONAL FOREST OFFICER
SUNDARGARH FOREST DIVISION**

ANNEXURE - A3



105
Odisha
Coal and
Power
Limited

Odisha Coal and Power Limited

(A Government of Odisha Company)

CIN : U10100OR20155GC018623

Website : www.ocpl.org.in

**“Manoharpur Coal Mine Block at Hemgir, Dist. Sundargarh, Odisha” of
Odisha Coal and Power Limited (OCPL)**

UNDERTAKING REGARDING STAGE I ORDER COMPLIANCE OF 15.701 HA

I, **Mr. Lella Ramachandra Reddy**, on behalf of Odisha Coal and Power Limited (OCPL), do hereby solemnly affirm, declare and undertake as under;

- (i) That OCPL will submit the annual self-compliance report to the State Government, concerned Regional Office and Ministry by the end of March every year.

For Odisha Coal and Power Ltd.

Lella Ramachandra Reddy

Authorized Signatory

Addl. General Manager (Mines)
Odisha Coal and Power Ltd.

**DIVISIONAL FOREST OFFICER
SUNDARGARH FOREST DIVISION**

ANNEXURE- A4



Odisha
Coal and
Power
Limited

106

Odisha Coal and Power Limited

(A Government of Odisha Company)

CIN : U10100OR20155GC018623

Website : www.ocpl.org.in

**“Manoharpur Coal Mine Block at Hemgir, Dist. Sundargarh, Odisha” of
Odisha Coal and Power Limited (OCPL)**

UNDERTAKING REGARDING STAGE I ORDER COMPLIANCE OF 15.701 HA

I, **Mr. Lella Ramachandra Reddy**, on behalf of Odisha Coal and Power Limited (OCPL), do hereby solemnly affirm, declare and undertake as under;

- (i) That any other condition may be stipulated by the concerned Regional Office of Ministry with the approval of competent authority in the interest of conservation, protection and development of forests & wildlife will be complied.

For Odisha Coal and Power Ltd.

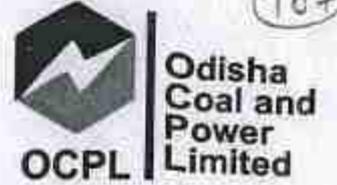
Lella Ramachandra Reddy

Authorized Signatory

Add. General Manager (Mines)
Odisha Coal and Power Ltd.

**DIVISIONAL FOREST OFFICER
SUNDARGARH FOREST DIVISION**

ANNEXURE- A 5



Odisha Coal and Power Limited

(A Government of Odisha Company)

CIN : U10100OR2015GC018623

Website : www.ocpl.org.in

**“Manoharpur Coal Mine Block at Hemgir, Dist. Sundargarh, Odisha” of
Odisha Coal and Power Limited (OCPL)**

UNDERTAKING REGARDING STAGE I ORDER COMPLIANCE OF 15.701 HA

I, **Mr. Lella Ramachandra Reddy**, on behalf of Odisha Coal and Power Limited (OCPL), do hereby solemnly affirm, declare and undertake as under;

- (i) That OCPL will 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.

For Odisha Coal and Power Ltd.

A handwritten signature in black ink, appearing to read 'Lella Reddy', with a horizontal line underneath it.

Lella Ramachandra Reddy

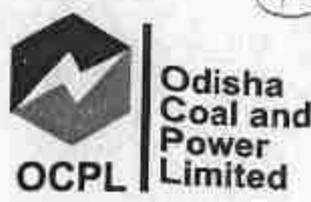
Authorized Signatory

Addl. General Manager (Mines)
Odisha Coal and Power Ltd.

A handwritten signature in black ink, appearing to read 'D. Prasad', with a horizontal line underneath it.

**DIVISIONAL FOREST OFFICER
SUNDARGARH FOREST DIVISION**

ANNEXURE- AG



Odisha Coal and Power Limited
(A Government of Odisha Company)
CIN : U10100OR20155GC018623
Website : www.ocpl.org.in

**“Manoharpur Coal Mine Block at Hemgir, Dist. Sundargarh, Odisha” of
Odisha Coal and Power Limited (OCPL)**

UNDERTAKING REGARDING STAGE I ORDER COMPLIANCE OF 15.701 HA

I, **Mr. Lella Ramachandra Reddy**, on behalf of Odisha Coal and Power Limited (OCPL), do hereby solemnly affirm, declare and undertake as under;

- (i) That the violation of any conditions will amount to violation of Forest (Conservation) Act, 1980 and action would be taken as prescribed in para 1.21 of Chapter 1 of the Handbook of comprehensive guidelines of Forest (Conservation) Act,1980.

For Odisha Coal and Power Ltd.

Lella Ramachandra Reddy
Authorized Signatory
Addl. General Manager (Mines)
Odisha Coal and Power Ltd.

**DIVISIONAL FOREST OFFICER
SUNDARGARH FOREST DIVISION**