



Government of West Bengal  
Directorate of Forests

Office of the Divisional Forest Officer, Birbhum Division  
Barabagan, Suri, Birbhum, PIN - 731103

Phone - 03462-255262 : Fax - 03462-253863 : e-mail : [dfobirbhum2010@gmail.com](mailto:dfobirbhum2010@gmail.com)  
Visit us at: [www.birbhumforest.in](http://www.birbhumforest.in)



No. \_\_\_\_\_

Dated, Suri, the \_\_\_\_\_

To : The Chief Conservator of Forests,  
South-East Circle, West Bengal

Sub : Proposal for diversion of 101.77 ha of forest land from the establishment of Gangaramchak to Bhadulia block open cast mine in favour of West Bengal Power Development Corporation Limited (WBPDC) under Birbhum Division (Proposal No. FD/WB/MIN/17602/2016) Compliance of conditions for stage -II approval-reg.

Ref : Letter No. WBPDC/Dir (Mining)/591 dated 08.02.2019 from Director (Mining), WBPDC

Sir/Madam

Enclosed please find herewith the compliance report in connection with the subject mentioned. You are hereby requested to give necessary approval for the compliance report and forwarded to Additional Principal Chief Conservator of Forests, CAMPA for further necessary action.

Encl:- All documents as Annexure  
List from Sl No. 1 to 27- 3 Nos.

NO - 3707/800 -  
(2)

Copy to: -

1. The Additional Principal Chief Conservator of Forests, CAMPA, West Bengal.
- ✓ 2. The director (Mining), West Bengal Power Development Corporation Limited.

sd-  
Divisional Forest Officer,  
Birbhum Division  
DT 12.2.2019

  
Divisional Forest Officer,  
Birbhum Division



# WBPDCCL

(A Government of West Bengal Enterprise)

**Amalesh Kumar**  
**Director (Mining)**

Ref : WBPDCCL/Dir(Mining)/ 591

Date : 08.02.2019

To  
The Addl Principal Chief Conservator of Forest / CAMPA &  
&  
Nodal Officer , Forest Conservation , Act 1980  
Aranya Bhawan  
Block - LA - 10A , Saltlake  
Kolkata - 700106

**Sub : Submission of Compliance of Stg- I FC for Gangaramchak & Gangaramchak-Bhadulia coal mine.**

**Ref : Stg - I Forest Clearance F No 8-45/2018-FC dated 29.10.2018**

Sir,

In reference to the letter mentioned above , please find enclosed the compliance of all conditions of Stg- I FC of Gangaramchak & Gangaramchak-Bhadulia coal mine .

Details of the documents as enclosed :

- 1) Compliance of Stg- I FC
- 2) Undertakings
- 3) Reports

You are therefore to kindly accord Stage - II Forest Clearance for Gangaramchak & Gangaramchak-Bhadulia coal mine in favour of The West Bengal Power Development Corporation Ltd.

Thanking you

Sd/-  
**Amalesh Kumar**  
**Director(Mining)**

**Copy to :**

1. The Chairman and Managing Director ,WBPDCCL
2. The Chief Conservator of Forest , South east Circle , West Bengal
3. The DFO - Birbhum
4. The DFO- Baikunthapur , Siliguri

  
**Director(Mining)**

Addl. PCCF, CAMPA  
&  
Nodal Officer, FCA

THE WEST BENGAL POWER DEVELOPMENT CORPORATION LIMITED

Corporate Identity No. : U40104WB1985SGC039154

"Bidyut Unnayan Bhaban", Plot No. 3/C, LA-Block, Sector-III, Bidhannagar, Kolkata-700 098

Phone: No. (91) (33) 2335 0581/2339 3204/3294, Fax: (91) (33) 2335 0524 / 2339 3286, Mobile: 8336900723

E-mail : a.kumar@wbpdcl.co.in, Website : www.wbpdcl.co.in

Received  
13/02/19



**WBPDCCL**

Amalesh Kumar  
Director (Mining)

Ref: WBPDCCL/Dir(Mining)/591

Date : 08.02.2019

To  
The Addl Principal Chief Conservator of Forest / CAMPA &  
&  
Nodal Officer, Forest Conservation, Act 1980  
Aranya Bhawan  
Block - LA - 10A, Saltlake  
Kolkata - 700106

**Sub : Submission of Compliance of Stg- I FC for Gangaramchak & Gangaramchak-Bhadulia coal mine.**

**Ref : Stg - I Forest Clearance F No 8-45/2018-FC dated 29.10.2018**

Sir,

In reference to the letter mentioned above, please find enclosed the compliance of all conditions of Stg- I FC of Gangaramchak & Gangaramchak-Bhadulia coal mine.

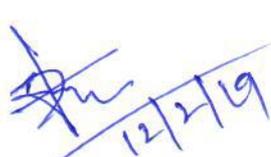
Details of the documents as enclosed :

- 1) Compliance of Stg-I FC
- 2) Undertakings
- 3) Reports

You are therefore, kindly accord Stage - II Forest Clearance for Gangaramchak & Gangaramchak-Bhadulia coal mine in favour of The West Bengal Power Development Corporation Ltd.

Thanking you

  
Amalesh Kumar  
Director(Mining)

  
12/2/19  
Divisional Forest Officer  
Birbhum Division (Suri)

## The WEST BENGAL POWER DEVELOPMENT CORPORATION LTD

### Compliance of Stg- I FC of Gangaramchak & Gangaramchak – Bhadulia coal mine

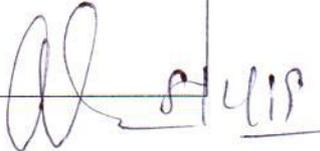
Sl. No.	Conditions of Stg – I FC [ F No 8-45/2018-FC ]	Compliance of WBPDC
1.	Legal status of the diverted forest land shall remain unchanged;	Agreed ; Undertaking submitted. [ Annx 2 ]
2.	Compensatory afforestation shall be raised over 106.795 ha identified non-forest land and at least 1000 plants per hectare shall be planted over identified land as per the working plan prescription with provision for ten years on subsequent maintenance. If it is not possible to plant that many saplings in the area identified for CA, the balance saplings will be planted in any other forests as per prescriptions of approved working plan.	Agreed ; Undertaking already submitted ( Annx 3)
3.	25% of CA cost will be deposited extra by the user agency for soil and moisture conservation (SMC) activities on the CA land.	Rs 8,98,97,344 has been paid through e-challan as the cost of raising Compensatory Afforestation over 106.795 Ha as per demand note of DFO-Birbhum. [ Annx 4 ]
4.	The non-forest land identified for raising compensatory afforestation shall be transferred and mutated in favour of the State Forest Department before issue of the Stage-II clearance and the said non-forest land as identified for raising Compensatory Afforestation shall be notified by the State Government as RF under Section-4 or PF under Section – 20 of the Indian Forest Act, 1927 or under the relevant Section(s) of the local Forest Act, as the case may be, within a period of six months. The Nodal Officer (Forest Conversation) shall report compliance in this regards;	Mutation of CA land of 106.795 Ha ( 263.88 acre ) has been done in favour of forest dept. Information provided to Nodal officer regarding mutation of CA land vide letter no WBPDC/GM(MMC)/590 dated 07.02.19 & [ Annx 5 ]
5.	The land identified for the purpose of CA shall be clearly depicted on a Survey of India toposheet of 1:50,000 scale;	Agreed . Already submitted . ( Annx 6 )
6.	The User Agency shall transfer the cost of raising and maintaining the <b>compensatory afforestation</b> at the current wage rate in consultation with State Forest Department in the account of Ad-hoc CAMPA of the concerned State <b>through online portal</b> . The scheme may include appropriate provision for anticipated cost increase for works scheduled for subsequent years.	Rs 8,98,97,344 has been paid through e-challan as the cost of raising Compensatory Afforestation over 106.795 Ha. [ Annx 4 ]
7.	The User Agency shall transfer the funds for <b>the Net Present Value (NPV)</b> 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 <b>through online portal</b> of Ad-hoc CAMPA account of the State Concerned;	Rs 9,02,69,990 has been paid through e-challan as the cost of NPV of Forest Land. [ Annx 4 ]
8.	At the time of payment of the Net Present Value (NPV) at the present rate, the user agency shall furnish an undertaking to pay the additional amount of NPV, if so determined, as per the final decision of the Hon'ble Supreme Court of India;	Agreed ; Undertaking is hereby submitted. [ Annx 8A ]

  
5/12/19

## The WEST BENGAL POWER DEVELOPMENT CORPORATION LTD

### Compliance of Stg- I FC of Gangaramchak & Gangaramchak – Bhadulia coal mine

9.	User Agency should ensure that the Compensatory levies (CA cost, NPV, etc.) are deposited through challan generated online on web portal and deposited in appropriate bank online only. Amount deposited through other mode will not be accepted as compliance of the Stage-I clearance.	Payment of NPV of forest land and CA cost has been done through E- Challan in MOEF portal. [ Annx 4 ] & [ Annx 9 ]
10.	<p>Following activities shall be undertaken by the user agency at the project cost:</p> <p>a) A plan containing appropriate mitigative measures to minimize soil erosion and choking of streams shall be prepared and implemented;</p> <p>b) Planting of adequate drought hardy plant species and showing of seeds in the appropriate area within the mining lease to arrest soil erosion;</p> <p>c) Construction of check dams, retention / toe walls to arrest sliding down of the excavated material along the contour;</p> <p>d) Stabilize the overburden dumps by appropriate grading / benching so as to ensure that angles of repose at any given place is less than 28<sup>o</sup>; and</p> <p>e) Strict adherence to the prescribed top soil management.</p>	Reports submitted along with undertaking for the mentioned jobs. [ Annx 10 ]
11.	User Agency shall obtain the Environment Clearance as per the provisions of the Environmental (Protection) Act, 1986 (if applicable);	Environmental clearance obtained from MOEF&CC on 20.12.2018. [ Annx 11 ]
12.	The user agency shall prepare a land surrender schedule for surrender of the mined out and biologically reclaimed forest land in accordance with the existing mine plan and progressive mine closure plan and submit an undertaking that mined out and biologically reclaimed forest land will be surrendered to the State Forest Department as per this schedule.	Agreed ; Undertaking submitted. [ Annx 12 ]
13.	Fencing, protection and regeneration of the safety zone area [7.5 meters strip shall be kept within the mining lease boundary and area of the safety zone shall be part of the total area of mining lease as per the Ministry's guidelines dated 27.05.2015] shall be done at the project cost within three years and maintained thereafter as per approved working plan of the State Govt.;	Agreed ; Undertaking submitted. [ Annx 13 ]
14.	User agency either himself or through the State Forest Department shall undertake afforestation on degraded forest land, at project cost, one and half time in extent to the area used for safety zone;	Agreed ; Undertaking submitted. [ Annx 14 ]
15.	The Forest clearance will be for a period co terminus with the lease period specified in the lease agreement. The State Government will submit the lease agreement document specified in the lease agreement;	Agreed ; Undertaking submitted. [ Annx 15 ]
16.	User agency either himself or through the State Forest Department shall undertake gap planting and soil & moisture conservation activities to restock and rejuvenate the degraded open forests (having crown density less than 0.4), if any, located in the area within 100 meters from outer perimeter of the mining lease;	Agreed ; Undertaking submitted. [ Annx 16 ]



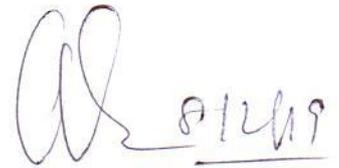
**The WEST BENGAL POWER DEVELOPMENT CORPORATION LTD**  
**Compliance of Stg- I FC of Gangaramchak & Gangaramchak – Bhadulia coal mine**

17.	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. 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 plan for desilting of identified ponds and water bodies to be prepared in consultation with forest department and shall be submitted to MoEF & CC before Stage – II approval;	Report submitted along with Undertaking for the mentioned job. [ Annx 17 ]
18.	The User Agency shall implement the R&R Plan as per the R&R Policy of State Government in consonance with national R&R Policy, Government of India before the commencement of the project work and implementation. The said R&R Plan will be monitored by the State Government / Regional Office of MoEF & CC along with indicators for monitoring and expected observable milestones.	Agreed Undertaking submitted. [ Annx 18 ]
19.	User Agency shall undertake mining in a phased manner only after stage – II clearance and take due care for reclamation of the mined over area. The concurrent reclamation plan shall be executed by the User Agency as per the approved mining plan / scheme and an annual report on implementation thereof shall be submitted to the concern Nodal Officer, Forest (Conservation) Act, 1980, and the Addl. Principal Chief Conservator of Forests (Central), Ministry of Environment & Forests, concern Regional Office. If it is found from the annual report that the activities indicated in the concurrent reclamation plan are not being executed by the user agency, the Nodal Officer or the Addl. Principal Chief Conservator of Forests (Central) may direct that the mining activities shall remain suspended till such time, such reclamation activities are satisfactorily executed;	Agreed ; Undertaking submitted. [ Annx 19 ]
20.	No labour camp shall be established on the forest land;	Agreed ; Undertaking submitted. [ Annx 20 ]
21.	User agency shall provide firewood preferably alternate fuel to the labourers and the staff working at the site so as to avoid any damage and pressure on the adjacent forest areas;	Agreed ; Undertaking submitted. [ Annx 21 ]
22.	Boundary of the mining lease and safety zone shall be demarcated on ground at the project cost, by erecting four feet high reinforced cement concrete pillars, each inscribed with its serial number, forward and back bearing, distance from pillars to pillar and GPS co-ordinates;	Boundary of mining lease and safety zone has been demarcated by erecting 4 feet reinforced cement concrete pillars, each inscribed with its serial number, forward and back bearing , which has been checked by Forest Beat Officer , Birbhum vide letter no 41 k/2019 dt. 10.01.2019 [ Annx 22 ]
23.	Forest land shall not be used for any purpose other than that specified in the proposal;	Agreed ; Undertaking submitted. [ Annx 23 ]

# The WEST BENGAL POWER DEVELOPMENT CORPORATION LTD

## Compliance of Stg- I FC of Gangaramchak & Gangaramchak – Bhadulia coal mine

24.	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 in it's letter No. 11-9/1998-FC(pt.) dated 3 <sup>rd</sup> August 2009 read with 05.07.2013, in support thereof;	There is no forest dwellers .
25.	The user agency shall submit the annual self-compliance report in respect of the above conditions to the State Government, concerned Regional Office and this 'Ministry by the end of March every year regularly.	Agreed ; Undertaking is hereby submitted. [ Annx 25 ]
26.	Any other condition that the concern Regional Office of this Ministry, may stipulate, from time to time, in the interest of conservation, protection and development of forests & wildlife; and	Agreed ; Undertaking is hereby submitted. [ Annx 26 ]
27.	The State Government and user agency shall comply the provisions of the all Acts, Rules, Regulations, Guidelines & Hon'ble Court Order (s) pertaining to this project, if any, for the time being in force, as applicable to the project.	Agreed ; Undertaking submitted. [ Annx 27 ]



**AMALESH KUMAR**  
Director (Mining)  
WBPDCI, Corporate Office,  
'Bidyut Unnayan Bhaban', 2nd Floor  
3/C, LA-Block, Sector-III, Bidhannagar,  
Kolkata-700 098



**Annexure - 2**

**UNDERTAKING :**

**Gangaramchak & Gangaramchak-Bhadulia Coal Mine**

This is to certify that, The West Bengal Power Development Corporation Ltd (WBPDCCL), A Government of West Bengal Enterprise, undertake that Legal status of the diverted forest land shall remain unchanged , in connection of diversion of 101.77 ha Forest land in Birbhum Forest Division , District Birbhum , West Bengal.

**Amalesh Kumar**  
**Director(Mining)**  
**WBPDCCL**

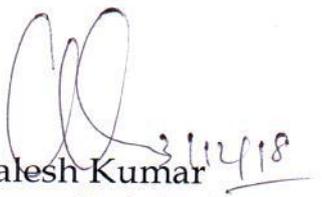


**Annexure - 3**

**UNDERTAKING :**

**Gangaramchak & Gangaramchak-Bhadulia Coal Mine**

This is to certify that, The West Bengal Power Development Corporation Ltd (WBPDCCL), A Government of West Bengal Enterprise, undertake that , Compensatory afforestation shall be raised over 106.795 ha identified non-forest land and at least 1000 plants per hectare shall be planted over identified land as per the working plan prescription with provision for ten years on subsequent maintenance. If it is not possible to plant that many saplings in the area identified for CA, the balance saplings will be planted in any other forests as per prescriptions of approved working plan, in connection of diversion of 101.77 ha Forest land in Birbhum Forest Division , District Birbhum , West Bengal.

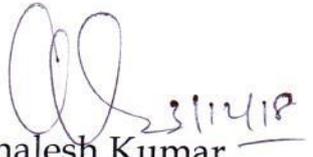
  
Amalesh Kumar  
Director(Mining)  
WBPDCCL



**UNDERTAKING :**

**Gangaramchak & Gangaramchak-Bhadulia Coal Mine**

This is to certify that, The West Bengal Power Development Corporation Ltd (WBPDCCL), A Government of West Bengal Enterprise, undertake that, 25% of CA cost will be deposited extra by the user agency for soil and moisture conservation (SMC) activities on the CA land, in connection of diversion of 101.77 ha Forest land in Birbhum Forest Division , District Birbhum , West Bengal.

  
Amalesh Kumar  
Director(Mining)  
WBPDCCL



# WBPDCCL

(A Government of West Bengal Enterprise)

Amalesh Kumar  
Director (Mining)

Ref : WBPDCCL/Dir(Mining)/ 583

Date : 30.01.2019

The Divisional Forest Officer  
Office of the DFO , Birbhum Division  
Barabagan , Suri  
Birbhum  
Pin - 731103

**Sub : Submission of Rs 18,01,67,344.00 to WEST BENGAL CAMPA for Gangaramchak & Gangaramchak-Bhadulia coal mine.**

**Ref : i) Your letter no 3426(3)/8m dated 22.01.19**

**ii) letter of Nodal Officer No 9862/L&LT/2L-1(1)/2006 dated 21.01.2019**

Sir,

In reference to your letter mentioned above , it is hereby inform that, WBPDCCL has deposited **Rs 18,01,67,344.00** , consisting of Rs 9,02,69,990 as Net present value (NPV) of the forest land and Rs 8,98,97,344 as the cost of raising compensatory afforestation over 106.795 Ha to **WEST BENGAL CAMPA** through e-payment by way of challan generated online in MOEF&CC portal.

The details of payment through e-challan :

Rs : 18,01,67,344.00

Mode of payment : NEFT

Payment Date : 28.01.2019

Bank : Sate Bank of India

UTR No : SBIN519028215020

Application No - 5817602028 [ e -challan ]

Beneficiary Name : WEST BENGAL CAMPA

MOEF/SG File No : 8-45/2018-FC

This is for your kind information and necessary action.

Thanking you,

*Received*  
*31/01/19*  
**ADDL. PCCF/CAMPA  
&  
Nodal Officer, FCA  
Govt. of West Bengal**

*Received*  
*22/19*  
**Yours faithfully,  
Sd/-  
Amalesh Kumar  
Director(Mining)**

Copy to :

1. The Chairman & Managing Director, WBPDCCL, Kolkata.
2. The Director (F&A) , WBPDCCL
3. Addl PCCF CAMPA & Nodal Officer , Forest , Aranya Bhawan , Kolkata-700106
4. DFO-Baikunthapur , Siliguri

*30/01/19*  
**Director(Mining)**

THE WEST BENGAL POWER DEVELOPMENT CORPORATION LIMITED

Corporate Identity No. : U40104WB1985SGC039154

"Bidyut Unnayan Bhawan", Plot No. 3/C, LA-Block, Sector-III, Bidhannagar, Kolkata-700 098

Phone: No. (91)(33) 2335 0581/2339 3204/3294, Fax: (91) (33) 2335 0524 / 2339 3286, Mobile: 8336900723

E-mail : a.kumar@wbpdcl.co.in, Website : www.wbpdcl.co.in

## AGENCY COPY

## NEFT / RTGS CHALLAN for Ad-HOC CAMPA

Date : 22-01-2019

Agency Name.	THE WEST BENGAL POWER DEVELOPMENT CORPORATION LIMI
Application No.	5817602028
MoEF/SG File No.	8-45/2018-FC
Location.	WEST BENGAL
Address.	BIDYUT UNNAYAN BHABAN ; Plot 3/C , Block - LA, BiKolkata
Amount(in Rs)	180167334/-

Amount in Words :Eighteen Crore One Lakh Sixty-Seven  
Thousand Three Hundred and Thirty-Four Rupees Only

**NEFT/RTGS to be made as per following  
details;**

Beneficiary Name:	WEST BENGAL CAMPA
IFSC Code:	CORP0000371
Pay to Account No.	150915817602028 Valid only for this challan amount.
Bank Name & Address:	Corporation Bank 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
- This challan is valid only for seven days.

## BANK COPY

## NEFT / RTGS CHALLAN for Ad-HOC CAMPA

Date : 22-01-2019

Agency Name.	THE WEST BENGAL POWER DEVELOPMENT CORPORATION LIMI
Application No.	5817602028
MoEF/SG File No.	8-45/2018-FC
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Address:	BIDYUT UNNAYAN BHABAN ; Plot 3/C , Block - LA, Bi Kolkata
Amount(in Rs)	180167334/-

Amount in Words :Eighteen Crore One Lakh Sixty-Seven  
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details;**

Beneficiary Name:	WEST BENGAL CAMPA
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Pay to Account No.	150915817602028 Valid only for this challan amount.
Bank Name & Address:	Corporation Bank 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
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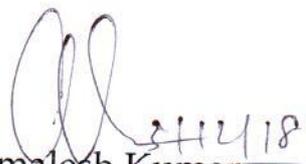
After making successful payment, User Agencies may send a line of confirmation through  
Email: [helpdeskampa@corpbank.co.in](mailto:helpdeskampa@corpbank.co.in)



**UNDERTAKING :**

**Gangaramchak & Gangaramchak-Bhadulia Coal Mine**

This is to certify that, The West Bengal Power Development Corporation Ltd (WBPDCCL), A Government of West Bengal Enterprise, undertake that, the non-forest land identified for raising compensatory afforestation shall be transferred and mutated in favour of the State Forest Department before issue of the Stage-II clearance and the said non-forest land as identified for raising Compensatory Afforestation shall be notified by the State Government as RF under Section-4 or PF under Section - 20 of the Indian Forest Act, 1927 or under the relevant Section(s) of the local Forest Act, as the case may be, within a period of six months, in connection of diversion of 101.77 ha Forest land in Birbhum Forest Division , District Birbhum , West Bengal.

  
Amalesh Kumar  
Director(Mining)  
WBPDCCL



WBPDCCL

THE WEST BENGAL POWER DEVELOPMENT CORPORATION LIMITED  
(A Government of West Bengal Enterprise)

Corporate Identity No. : U40104WB1985SGC039154

:Registered & Corporate Office:

"Bidyut Udayan Bhawan", Plot No. 3/C, LA-Block, Sector-III, Bidhannagar, Kolkata-700 098

• Phone No. (033) 2335-0571/2339-3100 • Fax: (033) 2339 3186 / 2339 3286 /2339 3197

• Website : [www.wbpdcl.co.in](http://www.wbpdcl.co.in) • email : [wbpdclmine2015@gmail.com](mailto:wbpdclmine2015@gmail.com) , [a.kumar@wbpdcl.co.in](mailto:a.kumar@wbpdcl.co.in) , [ambarroy@wbpdcl.co.in](mailto:ambarroy@wbpdcl.co.in)

Ref : WBPDCCL/GM(MMC)/590

Date : 07.02.2019

To  
The Addl Principal Chief Conservator of Forest / CAMPA &  
&  
Nodal Officer , Forest Conservation , Act 1980  
Aranya Bhawan  
Block - LA - 10A , Saltlake  
Kolkata - 700106

Sub : Submission of mutation copy of the CA land of 263.88 acre in favour of Forest dept for Gangaramchak & Gangaramchak-Bhadulia coal mine .

Ref : Stg- I FC of Gangaramchak & Gangaramchak-Bhadulia coal mine  
No F No 8-45/2018-FC dated 29.10.2018.

Sir,

In reference to the Stg- I FC of Gangaramchak & Gangaramchak-Bhadulia coal mine mentioned above , please find enclosed the mutation copy of the Compensatory Afforestation land in Mouza - Purbototagaon , JI No - 2 of 263.88 acre ( 106.795 Ha ) in favour of Forest dept for Gangaramchak & Gangaramchak-Bhadulia coal mine , as per the suitability report of DFO- Baikunthapur .

This mutation copy of CA land is submitted in compliance to point no iv) of Stg- I FC of Gangaramchak & Gangaramchak-Bhadulia coal mine No F No 8-45/2018-FC dated 29.10.2018.

Thanking you,

Received  
07/2/19.  
Addl. PCCF, CAMPA  
&  
Nodal Officer, FCA

Yours faithfully,

A Roy, 7/2/19  
Ambar Roy

Adviser ( Mine Management Cell )

Enco : 1. Mutation copy dated 21.01.2019

2. Suitability report of DFO- Baikunthapur No 2479/8-2 siliguri dated 14.11.2017 .

Burdigh Thermal Power Station  
GM-0334120846399  
E-mail : [gm0334120846399@wbpdcl.co.in](mailto:gm0334120846399@wbpdcl.co.in)  
FAX : 2664 6151

Singur Thermal Power Station  
GM-032811260227250  
E-mail : [gm032811260227250@wbpdcl.co.in](mailto:gm032811260227250@wbpdcl.co.in)  
FAX : 260 217 00X, 260 197

Kolaghat Thermal Power Station  
GM-03322812331110  
E-mail : [gm03322812331110@wbpdcl.co.in](mailto:gm03322812331110@wbpdcl.co.in)  
FAX : 251 280

Bakswan Thermal Power Station  
GM-0346212202010  
E-mail : [gm0346212202010@wbpdcl.co.in](mailto:gm0346212202010@wbpdcl.co.in)  
FAX : 220 214 220 346

Sugarbati Thermal Power Project  
GM-0348312170901 E-mail : [gm0348312170901@wbpdcl.co.in](mailto:gm0348312170901@wbpdcl.co.in)

**Government of West Bengal**  
**Land & Land Reforms and Refugee Relief & Rehabilitation Department**  
**L.R.A-III, GE (M) Branch,**  
**'Nabanna', 6<sup>th</sup> Floor,**  
**325, Sarat Chatterjee Road, Howrah-711102**

**Memo No. 4030 -GE (M)/2L-188/16 (Pt-I)**

**Date: 13/12/2018**

**From:** The Deputy Secretary to the Govt. of West Bengal

**To:** The District Magistrate & Collector, Jalpaiguri,  
Dist. - Jalpaiguri

**Subject:** Modification of the Government Order pertaining to Inter- Departmental Transfer of Govt. land measuring 750.52 acres in favour of Forest Department, Government of West Bengal in the district of Jalpaiguri, West Bengal.

**Ref:** Memo. No. COVC L06110001/F-23/21, dated 06.12.2018 from Chairman & Managing Director, WBPDC

With reference to the above and in continuation of this Department's earlier GO No - 548-GE (M)/2L - 188/16, dtd. 16.02.2017 in the matter, the undersigned is directed to say that the Governor is hereby pleased to accord approval for modification and breakup of the revised quantum of land measuring 750.52 acres in lieu of the quantum of land measuring 764.31 acres as sanctioned therein, towards inter-departmental transfer of the land for Compensatory Afforestation in favour of the Forest Department, Govt. of West Bengal, against implementation of 1) Gangaramchak & Gangaramchak-Bhadulia Coal Mine in the district of Birbhum, and 2) Barjora (North) Coal Mine in the district of Bankura, West Bengal by WBPDC, a stake holder organization under Department of Power and Non-conventional Energy Sources, Government of West Bengal, in the manner as stated in the land schedule below:

**Modified Land Schedule of Compensatory Afforestation for Gangaramchak & Gangaramchak-Bhadulia Coal Mine and Barjora (North) Coal Mine**

District	Project Name	Mouza	Block	J.L.No.	Plot No.	Area (in acre)
Jalpaiguri	(1) Gangaramchak & Gangaramchak-Bhadulia Coal Mine	Purba Totagaon	Mal	02	1 to 2, 18 to 23 & 63	263.88
	(2) Barjora (North) Coal Mine	Purba Totagaon	Mal	02	14 to 15, 17,24, 51 to 54, 56 to 62, 64 to 68, & 70	486.64

Total - 750.52 acres

2. The Forest Department, Govt. of West Bengal will hold the land as sanctioned on the terms and conditions stated in this Department's afore-mentioned order.
3. The portion of surplus land, if any, so sanctioned in the said order in favour of Forest Department, shall be reverted to this Department in due course.
4. This has the approval of the Principal Secretary & LRC, Department of Land & Land Reforms and Refugee Relief & Rehabilitation.
5. All stakeholders in the matter are requested to act accordingly.

PA  
① Land / Mine site  
② SO (Land)  
re

  
Deputy Secretary  
to the Govt. of West Bengal

12/12



**GOVERNMENT OF WEST BENGAL**

Directorate of Forests

Office of the Divisional Forest Officer

Baikunthapur Division

148-Rashbehari Avenue, Rabindranagar, P.O. Rabindra Sarani, Siliguri, Dist: Darjeeling

Phone: 0353-2592442, Fax: 0353-2592445 Email: [dfobkpslg@gmail.com](mailto:dfobkpslg@gmail.com)



**TO WHOM IT MAY CONCERN**

*Certified that the land mass of 263.88 Acres (106.795 Hectares) at Purba Totgaon having the land specification mentioned below have been taken over by the undersigned today i.e. on the forenoon of 08.01.2019 in respect of the Forest Land transferred to WBPDCCL for implementation of Mining Works at Gangaramchak & Gangaram-Bhadulia Coal Mine as per Stage – I Compliance issued by the Ministry of Environment & Forests, Govt. of India vide Memo No. F.No.8-45/2018-FC. The Land details are given hereunder: -*

Mouza	J.L. No.	Khatian No.	Plot No.	Proposed Area in Acres
Targhera	2	1	1	4.101
			2	28.248
			18	0.823
			19	0.12
			20	5.859
			21	166.992
			22	0.51
			23	30.122
			63	27.144
<b>TOTAL</b>				<b>263.88</b>

*Or Say 106.795 Hectares*

  
Divisional Forest Officer  
Baikunthapur Division



Government of West Bengal  
Directorate of Forests  
Office of the Divisional Forest Officer  
Baikunthapur Division  
Rabindranagar, P.O. Rabindra Sarani, Siliguri - 734006

No. 2479 /8-2

Dated, Siliguri, the 14.11.2017.

**From:** The Divisional Forest Officer  
Baikunthapur Division

**To:** The Manager, Mine Management Cell,  
West Bengal Power Development Corporation Ltd.  
Kolkata - 700 098

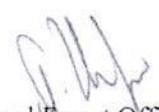
**Sub:** Suitability Report of Land for Compensatory Afforestation for diversion of Forest (101.77 Ha).  
**Ref:** WBPDC/GM (MMC)/398 dated 08.11.2017. This Office Memo No. 1375/8-2 dated 23.05.2017.

In reference to your above noted letter this is to state that a Joint Inspection was undertaken on 13.04.2017 at Purba Totgaon, JL No.2 for the entire 1156.96 Acres by the Committee constituted by the Chief Conservator of Forests, Northern Circle, West Bengal. The report submitted by the concerned Committee clearly endorses suitability for compensatory afforestation. The Land in question i.e. 106.795 Hectares or say 263.88 Acres of your concern falls within the 1156.96 Acres or say 468.405 Hectares. The specification of the area (263.88 Acres) is given herein below: -

Plot No.	Area (Acre)	Plot No.	Area (Acre)
1	4.101	21	166.992
2	28.248	22	0.51
18	0.823	23	30.122
19	0.12	63	27.144
20	5.859		
<b>TOTAL</b>			<b>263.88</b>

Accordingly a separate suitability report is not required. A copy of the Suitability Report is attached herewith for doing the needful from your end.

This is for your kind information and taking necessary action.

  
Divisional Forest Officer  
Baikunthapur Division

Enclosure: As stated

No. 2479 /8-2

Dated, Siliguri, the 14.11.2017

Copy forwarded for information to: -

1. The Chief Conservator of Forests, Northern Circle, West Bengal.

  
Divisional Forest Officer  
Baikunthapur Division

জেলা- জলপাইগুড়ি খতিয়ান নং- ৯

[ ০৭০৫০০২ ]

মৌজা- পূর্ব টোটাগাঁও জে.এল.নং- ২

খানা- মালবাজার



(১) রাজ্য- টাকা

(২) জমির পরিমাণ(এ)- ৬৫৬.৫৩

(৩) মোট দাগের সংখ্যা- ২৪

	(৪) অগ্রস্বত্বের দখলকারের বিবরণ	(৫) স্বত্ব	(৬) মন্তব্য
নাম-	বন	রায়ত	
ঠিকানা-	ডিভিসনাল ফরেস্ট অফিসার এর করন বৈকুন্ঠপুর ডিভিসন শিলিগুড়ি		

(৭) অগ্রস্বত্বের নিজ দখলীয় জমি

দাগ নং	জমির শ্রেণী	মন্তব্য	দাগের মোট পরিমাণ(এ)	দাগের মধ্যে অগ্রস্বত্বের অংশ	দাগের মধ্যে অগ্রস্বত্বের জমির অংশের পরিমাণ	
					একর	হেক্টর
১	জঙ্গল		৪.০৬	১.০০০০	৪.০৬	
১৮	জঙ্গল		০.৮৭	১.০০০০	০.৮৭	
১৯	জঙ্গল		০.০৯	১.০০০০	০.০৯	
২	জঙ্গল		২৭.৮৬	১.০০০০	২৭.৮৬	
২০	জঙ্গল		৫.৮১	১.০০০০	৫.৮১	
২১	ঝালু চর		১৮২.২০	০.৯২৪৩	১৬৮.৪১	
২২	জঙ্গল		০.৪৯	১.০০০০	০.৪৯	
২৩	জঙ্গল		২৯.১০	১.০০০০	২৯.১০	
২৪	ঝালু চর		৪৫.৯৩	০.৫৬২৩	২৫.৮৩	
২৫	জঙ্গল		১.১৭	১.০০০০	১.১৭	
২৬	জঙ্গল		১০.৭৮	১.০০০০	১০.৭৮	
২৭	জঙ্গল		৭৪.৫৮	১.০০০০	৭৪.৫৮	
২৮	জঙ্গল		৭৭.১২	১.০০০০	৭৭.১২	

জেলা- জলপাইগুড়ি খতিয়ান নং- ৯

[ ০৭০৫০০২ ]



মৌজা- পূর্ব চৌপাড়া জে.এল.নং- ২

খানা- মাণবাজার

(১) রাজস্ব- সিকা

(২) জমির পরিমাণ(এ)- ৬৫৬.৫৩

(৩) মোট দাগের সংখ্যা- ২৪

	(৪) অগ্রস্বত্বের দখলকারের বিবরণ	(৫) স্বত্ব	(৬) মন্তব্য
নাম-	বন	রায়ত	
ঠিকানা-	ডিজিটাল ফরেস্ট অফিসার এর করন বৈকুণ্ঠপুর ডিজিটাল শিলিগুড়ি		

দাগ নং	জমির শ্রেণী	মন্তব্য	দাগের মোট পরিমাণ(এ)	দাগের মধ্যে অগ্রস্বত্বের অংশ	দাগের মধ্যে অগ্রস্বত্বের জমির অংশের পরিমাণ একর হেক্টর
২৯	জঙ্গল		৬.২২	১.০০০০	৬.২২
৩০	জঙ্গল		৩২.৬০	১.০০০০	৩২.৬০
৩১	জঙ্গল		১৩.৫২	১.০০০০	১৩.৫২
৩২	জঙ্গল		৯.৫২	১.০০০০	৯.৫২
৩৩	জঙ্গল		২২.৮৯	১.০০০০	২২.৮৯
৩৪	জঙ্গল		১৪.৫৬	১.০০০০	১৪.৫৬
৩৫	জঙ্গল		১৬.০৭	১.০০০০	১৬.০৭
৩৬	জঙ্গল		৮৭.৫০	১.০০০০	৮৭.৫০
৩৭	জঙ্গল		০.১৪	১.০০০০	০.১৪
৩৮	জঙ্গল		০.১৫	১.০০০০	০.১৫
৩৯	জঙ্গল		২৭.১৯	১.০০০০	২৭.১৯

মোট দাগের সংখ্যা- চব্বিশ মাত্র





**Annexure - 8A**

**UNDERTAKING :**

**Gangaramchak & Gangaramchak-Bhadulia Coal Mine**

This is to certify that, The West Bengal Power Development Corporation Ltd (WBPDCCL), A Government of West Bengal Enterprise, undertake to pay the additional amount of NPV, if so determined, as per the final decision of the Hon'ble Supreme Court of India , in connection of diversion of 101.77 ha Forest land in Birbhum Forest Division , District Birbhum , West Bengal.

  
Amalesh Kumar  
Director(Mining)  
WBPDCCL

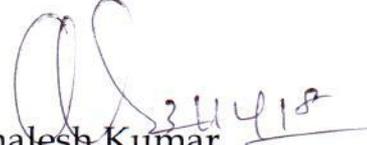


**Annexure - 9**

**UNDERTAKING :**

**Gangaramchak & Gangaramchak-Bhadulia Coal Mine**

This is to certify that, The West Bengal Power Development Corporation Ltd (WBPDCCL), A Government of West Bengal Enterprise, undertake that WBPDCCL should ensure that the Compensatory levies (CA cost, NPV, etc.) are deposited through challan generated online on web portal and deposited in appropriate bank online only. Amount deposited through other mode will not be accepted as compliance of the Stage-I clearance, in connection of diversion of 101.77 ha Forest land in Birbhum Forest Division , District Birbhum , West Bengal.

  
**Amalesh Kumar**  
**Director(Mining)**  
**WBPDCCL**



# WBPDCCL

(A Government of West Bengal Enterprise)

Amalesh Kumar  
Director (Mining)

Ref : WBPDCCL/Dir(Mining)/ 583

Date : 30.01.2019

The Divisional Forest Officer  
Office of the DFO , Birbhum Division  
Barabagan , Suri  
Birbhum  
Pin - 731103

**Sub : Submission of Rs 18,01,67,344.00 to WEST BENGAL CAMPA for Gangaramchak & Gangaramchak-Bhadulia coal mine.**

**Ref : i) Your letter no 3426(3)/8m dated 22.01.19**

**ii) letter of Nodal Officer No 9862/L&LT/2L-1(1)/2006 dated 21.01.2019**

Sir,

In reference to your letter mentioned above , it is hereby inform that, WBPDCCL has deposited **Rs 18,01,67,344.00** , consisting of Rs 9,02,69,990 as Net present value (NPV) of the forest land and Rs 8,98,97,344 as the cost of raising compensatory afforestation over 106.795 Ha to **WEST BENGAL CAMPA** through e-payment by way of challan generated online in MOEF&CC portal.

The details of payment through e-challan :

Rs : 18,01,67,344.00

Mode of payment : NEFT

Payment Date : 28.01.2019

Bank : Sate Bank of India

UTR No : SBIN519028215020

Application No - 5817602028 [ e -challan ]

Beneficiary Name : WEST BENGAL CAMPA

MOEF/SG File No : 8-45/2018-FC

This is for your kind information and necessary action.

Thanking you,

*Received*  
*31/01/19*  
**ADDL. PCCF/CAMPA  
&  
Nodal Officer, FCA  
Govt. of West Bengal**

*Received*  
*22/19*  
**Yours faithfully,  
Sd/-  
Amalesh Kumar  
Director(Mining)**

Copy to :

1. The Chairman & Managing Director, WBPDCCL, Kolkata.
2. The Director (F&A) , WBPDCCL
3. Addl PCCF CAMPA & Nodal Officer , Forest , Aranya Bhawan , Kolkata-700106
4. DFO-Baikunthapur , Siliguri

*30/01/19*  
**Director(Mining)**

THE WEST BENGAL POWER DEVELOPMENT CORPORATION LIMITED

Corporate Identity No. : U40104WB1985SGC039154

"Bidyut Unnayan Bhawan", Plot No. 3/C, LA-Block, Sector-III, Bidhannagar, Kolkata-700 098

Phone: No. (91)(33) 2335 0581/2339 3204/3294, Fax: (91) (33) 2335 0524 / 2339 3286, Mobile: 8336900723

E-mail : a.kumar@wbpdcl.co.in, Website : www.wbpdcl.co.in

## AGENCY COPY

## NEFT / RTGS CHALLAN for Ad-HOC CAMPA

Date : 22-01-2019

Agency Name.	THE WEST BENGAL POWER DEVELOPMENT CORPORATION LIMI
Application No.	5817602028
MoEF/SG File No.	8-45/2018-FC
Location.	WEST BENGAL
Address.	BIDYUT UNNAYAN BHABAN ; Plot 3/C , Block - LA, BiKolkata
Amount(in Rs)	180167334/-

Amount in Words :Eighteen Crore One Lakh Sixty-Seven  
Thousand Three Hundred and Thirty-Four Rupees Only

**NEFT/RTGS to be made as per following  
details;**

Beneficiary Name:	WEST BENGAL CAMPA
IFSC Code:	CORP0000371
Pay to Account No.	150915817602028 Valid only for this challan amount.
Bank Name & Address:	Corporation Bank 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
- This challan is valid only for seven days.

## BANK COPY

## NEFT / RTGS CHALLAN for Ad-HOC CAMPA

Date : 22-01-2019

Agency Name.	THE WEST BENGAL POWER DEVELOPMENT CORPORATION LIMI
Application No.	5817602028
MoEF/SG File No.	8-45/2018-FC
Location.	WEST BENGAL
Address:	BIDYUT UNNAYAN BHABAN ; Plot 3/C , Block - LA, Bi Kolkata
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IFSC Code:	CORP0000371
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Bank Name & Address:	Corporation Bank 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
- This challan is valid only for seven days.

After making successful payment, User Agencies may send a line of confirmation through  
Email: [helpdeskampa@corpbank.co.in](mailto:helpdeskampa@corpbank.co.in)



**Annexure - 10**

**UNDERTAKING :**

**Gangaramchak & Gangaramchak-Bhadulia Coal Mine**

This is to certify that, The West Bengal Power Development Corporation Ltd (WBPDCCL), A Government of West Bengal Enterprise, undertake that :

- a) A plan containing appropriate mitigative measures to minimize soil erosion and choking of streams shall be prepared and implemented .
- b) Planting of adequate drought hardy plant species and showing of seeds in the appropriate area within the mining lease to arrest soil erosion .
- c) Construction of check dams, retention / toe walls to arrest sliding down of the excavated material along the contour ,
- d) Stabilize the overburden dumps by appropriate grading / benching so as to ensure that angles of repose at any given place is less than 28°
- e) Strict adherence to the prescribed top soil management will be done ,

in connection of diversion of 101.77 ha Forest land in Birbhum Forest Division , District Birbhum , West Bengal.

**Amalesh Kumar**  
**Director(Mining)**  
**WBPDCCL**



THE WEST BENGAL POWER DEVELOPMENT  
CORPORATION LTD

**SCHEME FOR MITIGATIVE MEASURE TO MINIMIZE  
SOIL EROSION & CHOCKING OF STREAMS**

**In Compliance with Condition X(a) of Stage-I Forest Clearance  
vide letter No. F No.8-45/2018-FC, Dt.29.10.2018 of Ministry of  
Environment, Forest & Climate Change**

**(FC Division),**

**Govt. of India, New Delhi**

**For**

**Diversion of 101.77 Ha of Forest Land**

**In Favour of The West Bengal Power Development corporation  
limited for**

**Gangaramchak-Bhadulia Block Open Cast Coal Mine**

**The West Bengal Power Development Corporation limited**  
**Gangaramchak-Bhadulia Coal Block Open cast Coal Mine**  
**Under the Birbhum Forest division**

**MITIGATIVE MEASURES TO MINIMIZE SOIL EROSION AND CHOCKING OF**  
**STREAMS**

**1. INTRODUCTION**

Gangaramchak & Gangaramchak-Bhadulia Coal Mines was allotted to WBPDC by the nominated authority,GOI, vide Order. No.103/8/2015/NA Dt. March 31, 2015. Under section 6 of the Coal Mines (special provision ) second ordinary 2014 for captive use its own plants at different locations in WB.

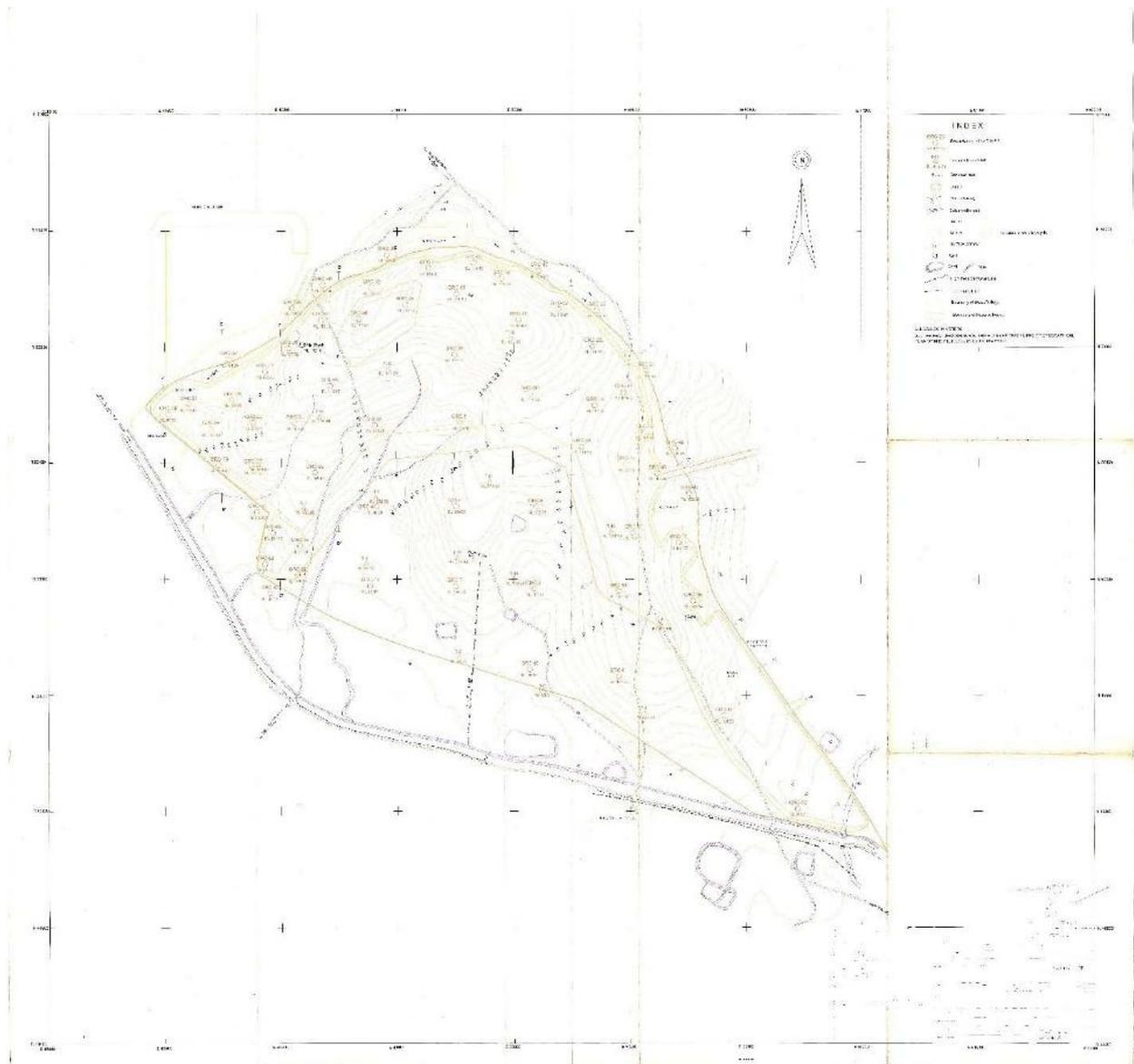
**2. Location of Gangaramchak & Bhadulia Block OCP and Mining Lease area**

The Gangaramchak-Bhadulia Coal block OCP is located in the Raniganj Coalfield in the Birbhum district of West Bengal

**3. Access:**

The area is approachable by road only. The Khayrasole-Panchra road connects the block with the Raniganj-Suri Road, (state high way) at Panchra. Another unmetalled road connects both Gangaramchak and Bhadulia Collieries with Khyarasole.

Raswan railway station, on the Palasthali section of the Eastern Railway, is located about 4 km. south west of the block.



#### 4. Climate:

Humid tropical climate prevails over the area with summer lasting from the months of March to May and winter from the month of November to February. During summer, the temperature generally varies from 30°C to 40°C while in winter it drops down to about 10°C.

The relative humidity varies from 45% to 95%. The major part of which precipitates during the period from June to October.

#### 5. Physiography & Drainage:

The area exhibit generally undulating topography with elevation ranging from 94m to 121m above mean sea level. The general slope of the area is towards south west. The ground slope is rather steep both towards east and west. The block has highest elevation of 121m in the northern part of the block.

A number of ephemeral nalas, drains the area to the Hingla River flowing to the south and west of the block.

## 6. Exacting Land Use:

The requirement of land for the project has been estimated at 187 Ha. Class of different land uses as derived from land cover plan are giving in the table below:

Sl no.	CLASS OF LAND	LAND AFFECT DUE TO		TOTAL (Ha)
		MINING (Ha)	INSFRUCTURE TRUE & OTHERS	
1	Forest	101.77	---	101.77
2	Non- Forest	47.65	37.00	84.65
<b>Total</b>		<b>149.42</b>	<b>37.00</b>	<b>186.42</b>

## 7. Existing Vegetation:

The area proposed for diversion includes Bushes of dominant species as detailed below

Local Name	Botanical Name
Achhu	Morinda tinctoria
Asan	Terminalia tomentosa
Acasia	Acacia nilotica
Bamboo	Dendrocalamus strictus
Char	Buchanania lanzan
Damkurudu	Gardenia latifolia
Dhatuki	Woodfordia fruitcosa
Nilagiri	Eucalyptus terricornis
Jamun	Syzygium cumini
Cashew	Anacardium occidentale
Arjuna	Terminalia arjuna
Karanja	Pongamia pinnata
Kendu	Diospyrus melanoxylon
Kurei	Holoarrhena pubisens
Mahul	Madhuca indica
Mai	Lannea coromandelica
Neem	Azadirachta indica
Palasa	Butea monosperma
Rohini	Soyamida febrifuga
Saguan	Tectona grandis
Sal	Shorea robusta
Siris	Albizzia lebbeck
Sunari	Cassia fistula

**a. Factors responsible for Soil Erosion and Chocking of Streams:**

Due to opencast mining a number of Nala have immerge in the active mining Pit. The water that's runs off from the over burden dump slop and mined out coal deposit area carry substantial amount of solid in the lower order stream and later chock the higher order streams. This lower order streamlet have high erosion capacity due to steep gradient and transportation rough fragments with high velocity and deposition of the same in the connecting high order streams due to velocity drop. It is also evident in the field that a number of nalas have immersed from the periphery of the mining pit, which carry substantial soil. When these undercut material falls in to the Stream the fragments are transported and deposited in the streambed and chokes the stream mouth.

**8. Objective of scheme::**

The objectives of the proposed Scheme are follow :-

- To fulfil condition no. x(a) of stage- I approval granted by MoEF vide their Letter No. F No.8-45/2018-FC, Dt.29.10.2018 which envisage undertaking mitigative measure to minimize soil erosion and chocking of stream.
- Prevention of erosion of surface soil.
- Prevention of abstraction of discharge of water in the streams.
- Proper Management of over burden material so as to prevent siltation in the stream.
- Prevention of overflow of eroded soil from the coal mining area to adjoining agriculture land, Natural stream and habitation.

**9. PROPOSED METHODOLOGY:**

The objective can be achieved in two way approach i.e Biological and Structural works for soil water conservation. The vegetative measures are to be adopted mostly in the upper reaches and structural work in the lower reaches such as Drain. The vegetative measures in the upper reaches will arise the sedimentation load which is ultimately Prevent chocking of stream followed by De- Silting before unset of monsoon. The following activities are proposed to be under taken.

- During Monsoon heavy run-off is carried-with silt and sediments which increase the velocity of water flown above the ground and ultimately chokes the streams. There-fore it is proposed to construct loose boulder structure of 4 meter span of height 1.3 m at an interval of every 10 meter – 20 No.
- Construction of 1 no. of settling tank at the end of Nala where the Nala joints the boundary wall of the MI area. The size of the tank will be 4 m length 3 m width and 1.5 m height.
- Grass seeds will be sown all around the exposed soil of mining pit and on along side of the Nala immersed in the lease area up to the compound wall.
- Plantation will be undertaken from rainwater discharge nala to irrigation canal over 1.5 Ha.

**10. MEASURES ALREADY ADOPTED**

- Catch drain – All along the retaining wall catch drain will be made over a length of 380 m.

**11. MEASURE PROPOSED**

**a. Structural Measures**

- Construction of **loose boulder structure** of 3 m span and height 1.3 meter at an interval of every 10m all along the rain water discharge nala commencing from the Coal deposit yard to main gate over a length of 500 meters, These structures should be made on either side to check the flow of water especially during rains.
- Construction of a **Settling Pond** near the Compound wall of the lease area of 4m length x 3m width x 1.5m height where the flow of rain water can be settled. There will be a provision of outflow of the rain water after sedimentation of the silt to outside of the lease area and join the natural stream. The siltation tank needs to be scoured intermittently.

A retaining wall over length of 30m of height 1.5m will be constructed all around the Coal Storage area near the Weigh Bridge.

#### **b. Biological Measures**

- Plantation will be undertaken in the vacant space on the road side from rain-cut nala to mining pit over 1.5 ha in **Block model**.
- **Grass seed** will be sown all along the exposed soil of the mining pit and alongside the rain cut nala upto end of lease boundary. Length of mining pit all around is 4000 rmt x 1m width = 4000 rmt or 0.4 ha. Length of rain cut nala 2000 mt x 3mt = 6000 rmt or 0.6 Ha. In the rest of the mining area in vacant places grass seed sowing will be over another 1.5 Ha. So altogether grass seed sowing will be over 5.0 Ha..

#### **Species suitable for Block plantation**

Amla	- Embiliza officinalis
Asan	- Terminalia alata
Bamboo	- Dendrocalamus strictus
Bel	- Aegle marmelos
Chakunda	- Casia siamea
Gamhar	- Gemelina arborea
Kurum	- Adina cordifolia
Karanj	- Pongamia pinnata
Neem	- Azadirachta indica
Sissoo	- Dalbergia sissoo

#### **PRE-PLANTING AND PLANTING OPERATION-**

##### **BLOCK MODEL**

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

##### **i) Procurement of Seedlings:**

Seedlings of desired species shall be purchased from the Forest Dept., Nursery located at Suri, Birbhum.

##### **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 dugout pits of size 30cm X 30cm X 30cm with spacing of 2.5mtr X2.5mtr. 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 eachpit 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 carry out two weeding, 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 NFK per plant.

**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.

The Schedule of operation for preparation of site, pre-planting, planting, post-panting is prescribed herewith.

OPERATIONS	PERIOD OF COMPLETION
i. Advance preparation of site.	End of October
ii. Alignment & Digging of pits	End of February
iii. Stacking	End of February
iv. Pre sprouted poly potted stump planting.	1 <sup>st</sup> week of July
v. Casualty replacement	End of July
vi. 1 <sup>st</sup> soil working, weeding, manuring	End of August
vii. Soil & water conservation measuring	End of September
viii. 2 <sup>nd</sup> soil working, weeding	During October
ix. Fire line tracing	During December
x. Watch & ward	July to March

**vi) Post planting operation In 2<sup>nd</sup> Year.**

a. Casualty replacement,

1<sup>st</sup> weeding soil & manuring : End of July Working

b. Fire line tracing : During December

c. Watch & ward : Throughout the year

**vii) 3<sup>rd</sup> Year.**

a. Wedding, soil working and application of manure : End of July

b. Fire line tracing : December

c: Watch & ward : Throughout the year

**viii) 4<sup>th</sup> year to 10<sup>th</sup> year**

a. Fire line tracing : End of December

b. Pruning & Singling : September

c. Watch & Ward : Throughout the year

**ix) Grass Seeding**

Particularly on eroded areas which are susceptible to further erosion should be cover with grasses. The area contains yellowish brown soil and gravelly soil where the pH is below 7. In such area species like *Chrysopogon fulvas*, *Themeda triendra* and *Cynodon dactylon* will be sown broadcast.

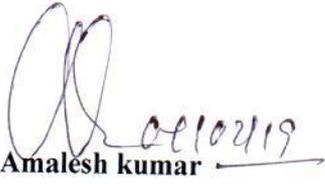
In the first year after a good plowing using country plow weeds will be uprooted. Farmyard manure will be added to the soil 3 truck loaded per hecter. Grass seeds @ 2kg per hecter will be sown broadcast. Science Grass seeds area very light may not be effective in broadcast sowing there-fore palatte preparation with 6:1 ( Soil+ FYM mixture) will be dibbled at a spacing of 1.5m x 1m and weeding of unwanted grasses will be made as and when necessary. In the 2nd the same procedure will be followed in order to establish the grassy land. However, grass seeding will be done over 5.0 ha.

**14. EXECUTING AGENCY**

West Bengal Power Development Corporation being the User Agency will execute the above works at the Project Cost. To facilitate this the User Agency shall establish its own Executive and Supervision cells along with required infrastructural facilities. In order to maintain the quality of the work in-house supervision through competent personnel shall be entrusted. The entire work shall be carried out in coordination with Forest Deptt. (DFO, Suri Division).

### 15. SPECIALIZED CELL

Name of Executive	Educational Qualification	Present Designation	Expertise
Sir Sukanta Ghosh	Mining Engineer	Agent	Years of Service Experience in mining
Sri Upendra Kumar	Surveyor	Surveyor	Years of service



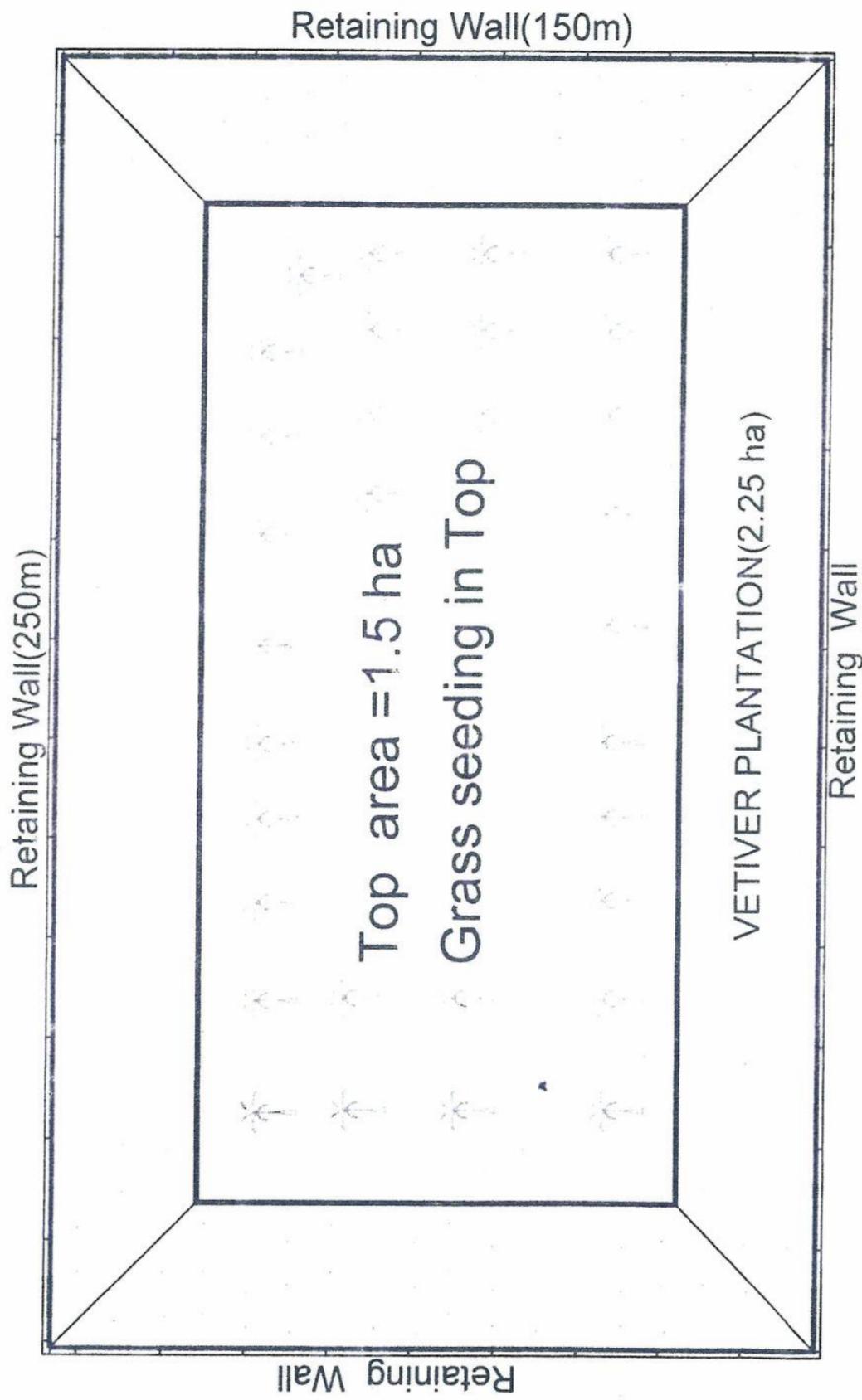
Amalesh Kumar

Director (Mining)

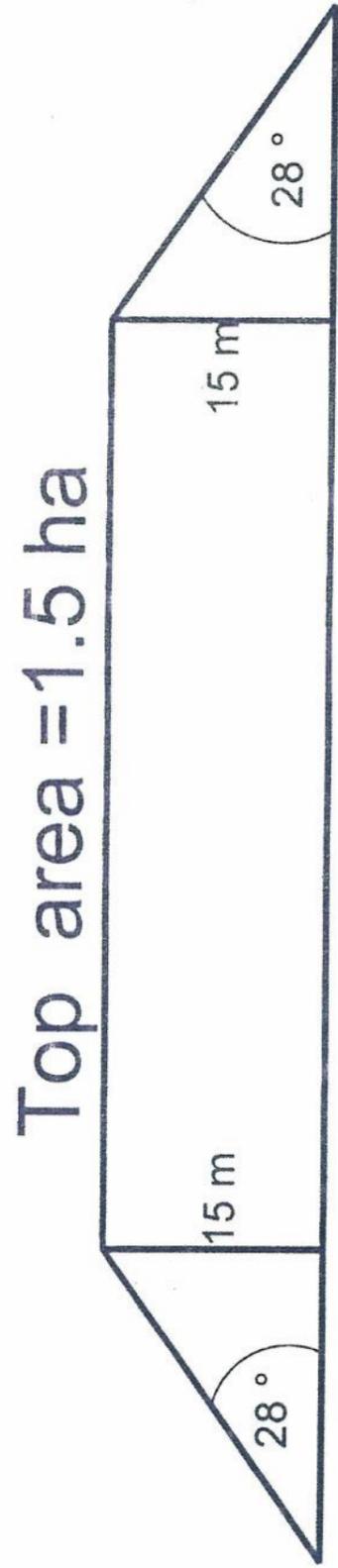
West Bengal Power Development Corporation Ltd.

Kolkata-

### TOP VIEW

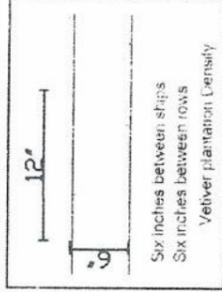


### CROSS-SECTIONAL VIEW



### TOP-SOIL DUMP

Grass seeding- 1.5 ha ( 15kg/ha)  
Vetiver plantation- (2.25 ha)  
Retaining wall - 800 m.



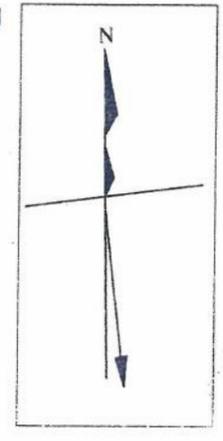
12/15/2019  
Survey  
Jhargramchak & Gargaramchak  
Bhadula Coal Mine  
WBPDCL

  
12/2/19  
Divisional Forest Officer  
Birbhum Division (Suri)

E-172500 E-173000 E-173500 E-174000 E-174500 E-175000 E-175500 E-176000

N-111000 N-110500 N-110000 N-109500 N-109000 N-108500 N-108000

GANGARAMCHAK- BHADULIA BLOCK OPEN CAST COAL MINES



LEGEND:-

RETAINING WALL	—
TOE WALL	—
NEW GARLAND DRAIN	—
CHECK DAM	□
SETTLING TANK	□
RENOVATION GARLAND DRAIN	□
BLOCK PLANTATION	□
GRASS SEEDING	□
LOOSE BOULDER STRUCTURE	○



- Activity under this scheme in compliance in the condition X(a)
- (i) BLOCK PLANTATION - 1.5 ha (1600 plants/ha)
  - (ii) GRASS SEEDING - 2.5 ha (15kg/ha)
  - (iii) LOOSE BOULDER STRUCTURE 30 nos. 1.3h X 3m on every 10 mtr for 500m ( coal stock yard to main gate)
  - (iv) SETTLING TANK - 01 (4m X 3m X 1.5m)
  - (v) RETAINING WALL - 380m. (Coal stock yard)

*[Signature]*  
Surveyor

Gangaramchak & Gangaramchak  
Bhadulia Coal Mine  
WBPDCCL

*[Signature]*  
12/2/19  
Divisional Forest Officer  
Birbhum Division (Suri)



**THE WEST BENGAL POWER DEVELOPMENT CORPORATION  
LTD**

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

**In Compliance with Condition X(b) of Stage-I Forest Clearance  
vide letter No. F No.8-45/2018-FC, Dt.29.10.2018 of Ministry of  
Environment, Forest & Climate Change**

**(FC Division),**

**Govt. of India, New Delhi**

**For**

**Diversion of 101.77 Ha of Forest Land**

**In Favour of WB Power Development corporation limited for  
Gangaramchak-BhaduliaBlock Open Cast Coal Mines**

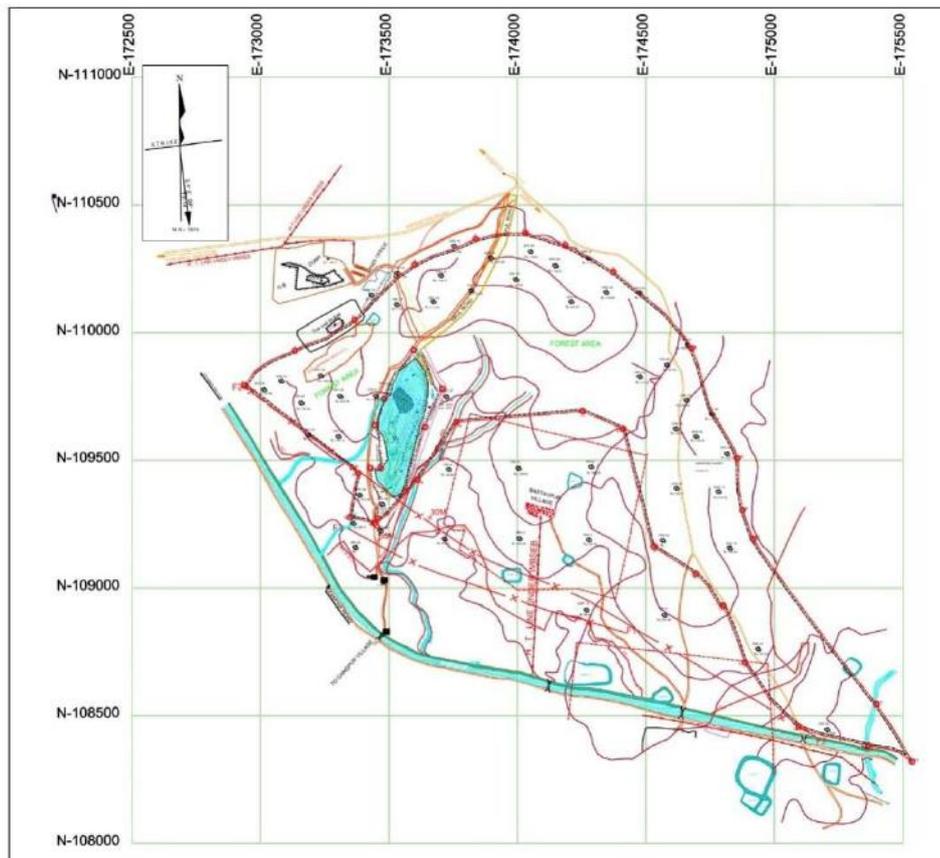
**West Bengal Power Development Corporation limited**  
**Gangaramchak-Bhadulia Coal Block Open cast Coal Mines**  
**Under the Birbhum Forest division**

**SCHEME FOR CONSTRUCTION OF CHECK DAM, RETENTION/TOE WALL TO**  
**ARREST SLIDING DOWN.**

**1. INTRODUCTION**

Gangaramchak & Gangaramchak-Bhadulia Coal Mines was allotted to WBPDCCL by the nominated authority, GOI, vide Order. No.103/8/2015/NA Dt. March 31, 2015. Under section 6 of the Coal Mines (special provision) second ordinary 2014 for captive use its own plants at different locations in WB.





## 2. Location of Gangaramchak & Bhadulia Block OCP and Mining Lease area

The Gangaramchak -Bhadualia Block OCP is located in the Raniganj Coalfield in the Birbhum district of West Bengal

### 3. Access:

The area is approachable by road only. The Khayrasole-Panchra road connects the block with the Raniganj-Suri Road, (state high way) at Panchra. Another unmetalled road connects both Gangaramchak and Bhadulia Collieries with Khyarasole.

Raswan railway station, on the Palasthali section of the Eastern Railway, is located about 4 km. south west of the block.

### 4. Climate:

Humid tropical climate prevails over the area with summer lasting from the months of March to May and winter from the month of November to February. During summer, the temperature generally varies from 30°C to 40°C while in winter it drops down to about 10°C.

The relative humidity varies from 45% to 95%. The major part of which precipitates during the period from June to October.

### 5. Physiography & Drainage:

The area exhibit generally undulating topography with elevation ranging from 94m to 121m above mean sea level. The general slope of the area is towards south west. The ground slope is rather steep both towards east and west. The block has highest elevation of 121m in the northern part of the block.

A number of ephemeral nalas, drains the area to the Hinglo River flowing to the south and west of the block.

**6. Soil Type:** The soil type in the study area is acidic i.e. pH below 7. The soil in the study area is having sufficient nitrates, high phosphorous and potassium and therefore moderately fertile. Soil structure is generally loose but well drained.

### **Mine Development Strategy**

The gestation period required in this OCP before the commencement of the coal production is low. The quarry will be opened up from the edge of the existing old quarry where coal is already exposed. Initial access trench will be the continuation of existing haul road of the quarry leading to the exposed coal floor.

Mine will be opened with box-cut development in quarry-I by extending/excavating the existing OB bench of the quarry along the strike as well as dip. When coal will be sufficiently exposed, coal mining operation will be started. The proposed will start coal production from the 1<sup>st</sup> year of operation. During this period the production will be 0.5 MTe.

After box-cut the quarry face will be advancing along strike direction as well as towards dip. Schedule of mine development is such that the target of production will be achieved during the 2<sup>nd</sup> year of project life.

The strategy of development is to take the advantage of the exposed quarry face, to reduce the gestation period so that the mine will be under revenue without much delay.

### **Objective of the Plan:**

The objectives of the proposed plan are as follows:

- i) One of the stipulation [Condition No.X (d)] to "stabilize the over burden dumps by appropriate grading/ benching so as to ensure that, the angle of repose at any given place is less than 28° given by the Ministry of Environment & Forest and climate change, GOI vide their letter no, F NO 8-45/2018 FC, Dt:29.10.2018 during approval of Stage-I forest clearance.
- ii) Proper Management and Stages of dumping overburden in the place space specified in the land use plan.
- iii) To provide methodology and implement the proposed actions in time bound manner to prevent slop failures, thereby providing stable OB dump slopes.
- iv) To stabilize of the over burden dumps by plantation in terraces.
- v) To Prevent of overflow of eroded soils from the fines, OB dump, areas leading to situation in the natural streams.

### **Stabilisation of waste Dump:**

The following methodology is adopted for stabilization of waste dump and preventing erosion and sedimentation of solid waste.

- i) In the land use plan non-coal bearing area over 37 ha of non- forest land has been year marked for OB dumping.
- ii) The waste dumping done in a planned manner layer by layer maintaining a maximum bench height of 20 m and bench width of 30m to maintain on overall slop of 1: 1.5.
- iii) The bench slope has to be terraced and green cover has to be wrapped to consolidate bench slop.
- iv) It is planned to have retaining wall all along the toe of the waste dump to prevent possible flow of solid waste from the dump.
- v) It is also planned to have garland drains all along the retaining wall to regulate the water discharge from the waste dump.
- vi) Progressive high density plantation is envies over the dump to protect soil erosion.
- vii) Ultimately at the conceptual stage the overburden will be backfill in to the mining pit, covered by top soil and biologically reclaimed.

**Silent features of waste dump Management:**

- a) All the waste dumping site and coal stacking site are proposed to be surrounded by retaining wall and Garland drains.
- b) All the waste dumping is proposed to be done by terracing method, Terraces are proposed to be made in all dumps. The height of the terrace will varying from 10 to 12 mt. with slope varying from 28° to 37.5°. The width of the terrace will vary from 10mt to 15mt.
- c) All the terraces are proposed to be made inwardly sloping. A soil bund is proposed to be made at the edge of each terrace. At the toe of each terrace, a small channel is proposed to be made. All this above arrangement will help the rain water to go inside the dump instead flowing through the surface of the dump.
- d) Any rain cut which is developed in old dump sloped is proposed to be checked by small check dams/Catch drain.
- e) All the garland drains at that toe of the dumps are proposed to be connected with settling tanks which will ultimately allow the settling of silt from the water in it and silt free water wilt ultimately go out of the lease hold.
- f) All the dead slope of the dumps are proposed to be covered with plantation. The dump slopes in which plantations are already developed are proposed to be maintained properly. Re-plantation in proposed to fill up the vacant area.

**Proposed Methodology:**

**A. Biological Measures:**

- a) Indigenous species like Neem (Azadirachta indica), Badachakunda (Samania saina), Karanja (Pongamia pinnata), Siris (Albizia procera), Kuruma (Adina cordifolia), Kusum (Schleichera oleosa), Sunari (Cassia fistula), Amla (Emblica officinalis), Augasti (Sesbania grandiflora), Babul (Acacia nilotica), Gohira (Acacia leucophloea), Ashoka (Saraca asoka), Biza (Pterocarpus marcupium) etc will be planted on the teraces @ 1600 per hacter. Over approximatly 5 ha.

b) By means of cultivating vetiver which is a bunch grass has a gregarious habit and grows in tufts. Several aspects of vetiver makes it an excellent erosion control plant in warmer climates. Vetiver's root grow almost exclusively downward 2m to 4m which is deeper than some free roots. This makes vetiver an excellent stabilizing hedge for stream banks terraces etc and protect, soil from sheet-erosion. The roots bind to the soil, therefore it cannot dislodge. Vetiver has been used to stabilize embankment, dump slopes in geologically challenging situations in an attempt to prevent mudslides in rainfall. The plant also penetrates and loosens compacted soils. Vetiver mulch increase water infiltration and reduce evaporation, then protects soil moisture under hot and dry conditions. This mulch also protects against splash erosion.

- i) To maintain the moisture % into the soil.
- ii) It can grow in hot & dry condition.
- iii) It protects soil from erosion.



**VETIVER PLANT**

### **7. Existing Land Use:**

The requirement of land for the project has been estimated at 187 Ha. Class of different land uses as derived from land cover plan are giving in the table below:

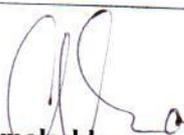
Sl no.	CLASS OF LAND	LAND AFFECT DUE TO		TOTAL (Ha)
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1	Forest	101.77	---	101.77
2	Non- Forest	47.65	37.00	84.65
<b>Total</b>		<b>149.42</b>	<b>37.00</b>	<b>186.42</b>

### 8. EXECUTING AGENCY

West Bengal Power Development Corporation being the User Agency will execute the above works at the Project Cost. To facilitate this the User Agency shall establish its own Executive and Supervision cells along with required infrastructural facilities. In order to maintain the quality of the work in-house supervision through competent personnel shall be entrusted. The entire work shall be carried out in coordination with Forest Deptt. (DFO, Suri Division).

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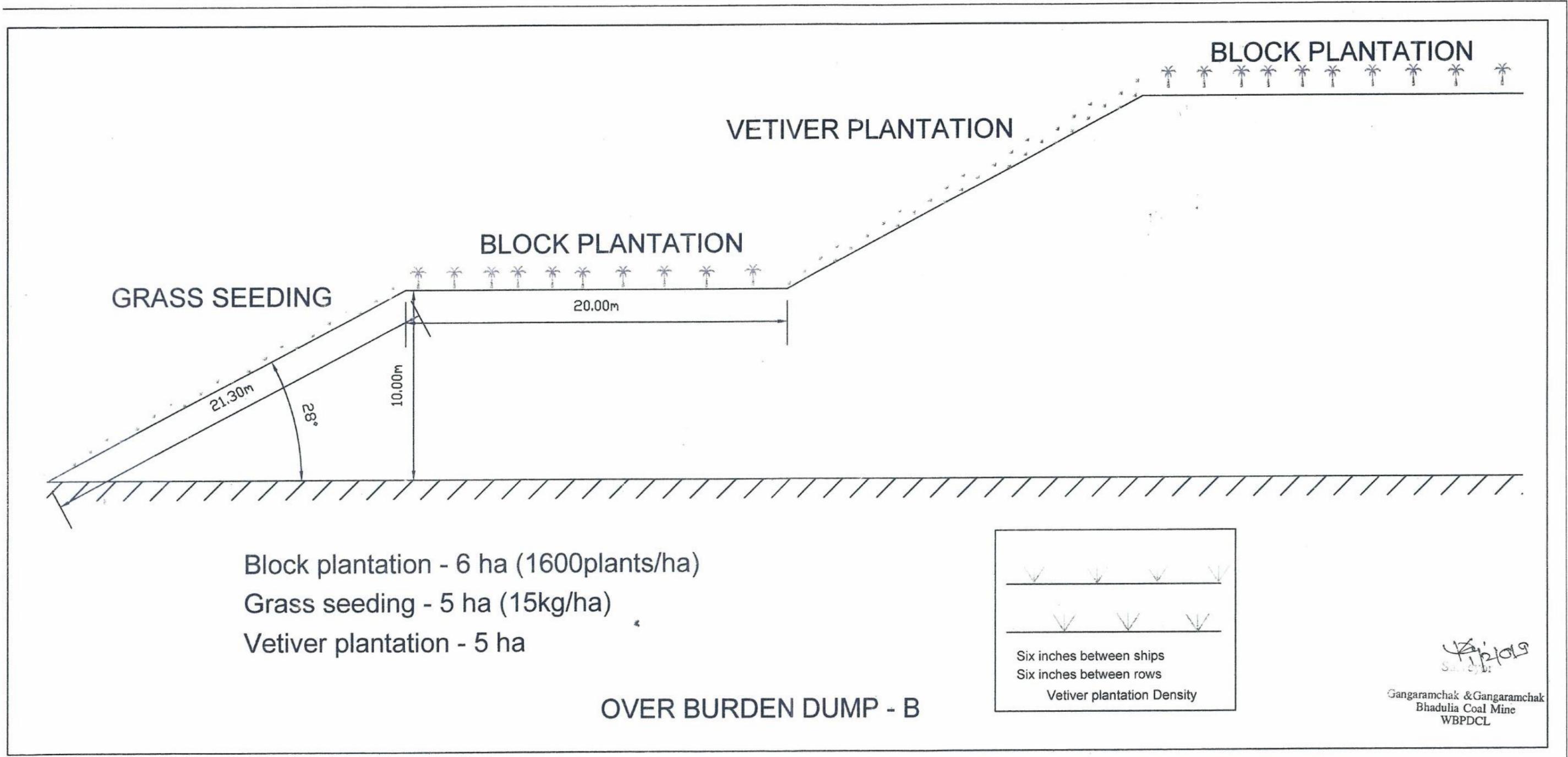
Name of Executive	Educational Qualification	Present Designation	Expertise
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Sri Upendra Kumar	Surveyor	Surveyor	Years of experience

  
Amalesh Kumar 01/02/19

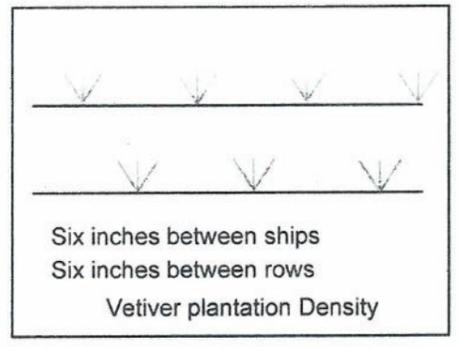
Director (Mining)

West Bengal Power Development Corporation Ltd.

Kolkata



Block plantation - 6 ha (1600plants/ha)  
 Grass seeding - 5 ha (15kg/ha)  
 Vetiver plantation - 5 ha



**OVER BURDEN DUMP - B**

*[Signature]*  
 Gangaramchak & Gangaramchak  
 Bhadulia Coal Mine  
 WBPDCCL

*[Signature]*  
 12/2/19  
 Divisional Forest Officer  
 Birbhum Division (Suri)



**THE WEST BENGAL POWER DEVELOPMENT CORPORATION  
LTD**

**SCHEME FOR CONSTRUCTION OF CHECK DAM,  
RETENTION/TOE WALL TO ARREST SLIDING DOWN OF  
THE EXCAVATED MATERIAL ALONG THE CONTOUR**

**In Compliance with Condition X(c) of Stage-I Forest Clearance  
vide letter No. F No.8-45/2018-FC, Dt.29.10.2018 of Ministry of  
Environment, Forest & Climate Change**

**(FC Division),**

**Govt. of India, New Delhi**

**For**

**Diversion of 101.77 Ha of Forest Land**

**In Favour of WB Power Development corporation limited for  
Gangaramchak-Bhadulia Block Open Cast Coal Mines**

**West Bengal Power Development Corporation limited**  
**Gangaramchak-Bhadulia Coal Block Open cast Coal Mines**  
**Under the Birbhum Forest division**

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**ARREST SLIDING DOWN.**

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#### 6. Objective of 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 dams, retention walls/toe walls at specified location in the mining lease. Location are judiciously selected within the leasehold and plans have been prepared. Photograph of the OB Dump is furnished below:



Existing Dump

#### **7. The Salient features of the drainage management plan:**

i) The overall drainage planning has been done in such a manner which follows the existing pre mining & pre mining drainage routing to the extent possible, maintaining the overall slope in the direction of pre mining flow direction so that run off distribution is not affected.

ii) Garland drains have been planned on the sides of 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 purified water will be discharged to natural water source.

iii) Grass and bushes in drains hold back solid particles during the flow of water in the drain. Small stone barriers constructed across the drain will check water flow and arrest solid.

iv) Stone pitching will be made at suitable places to regulate the slope and hence water flow will not be obstructed.

v) Settling pits and drains shall be cleaned intermittently, especially during monsoon.

vi) Outer side of the cross-check dams on the drainage lines shall be reinforced with green cover of non-browsable species like *Jatropha curcas*, *Vitex negundo*, *Gliricidia maculata*.

vii) The mining lease area is at close proximity of Hinglo Dam .In order to protect the area from surface inundation during high flood an embankment has been constructed in the south-western sector on the lease hold.

#### **8. Measure Proposed to be adopted:**

##### **Structural Measure:**

a) Construction of retaining wall: the proposed retaining wall will be constructed all around the over burden dump A,B excepting the northern aspect which is facing to the active mining pit. The length of the retaining wall be 1976 m.

b) Construction of toewall: On the southern aspect of the dump toe wall has to be constructed to prevent erosion of soil from over burden dump. The length of the toe wall be 380m.

c) Continuance of excavation garland drain on the southern aspect of dump be as per details given below.The Garland Drain dug earlier has been silted which needs renovation over a length of 500m. Siltation pond at an interval of every 10 meter and/ or and every curvature will be provided with a dimension of 1 m<sup>3</sup> which will scoured at an interval of every 15 day particularly during rains.

Garland drain to be renovated over 500m L x 2.00m W x 1.00m H.

New Garland drain to be made over 8503m L x 2.00m W x1.000 m.H.

d) Check Dam : The garland drain will be connected to a check dam of dimension 10 meter X 4 mt X 3mt depth with a provision of spill way. The whole purpose is that the rain water passing through garland drain will ultimately be deposited in the check dam for a considerable period and the clean water will pass through the spill way to the natural drain.The silt deposited at the base check dam will dam be cleaned at a interval of every 15 days.



EXISTING DRAIN

## 9. EXECUTING AGENCY

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## 10. SPECIALIZED CELL

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Sir Sukanta Ghosh	Mining Engineer	Agent	Years of Service Experience in mining
Sri Upendra Kumar	Surveyor	Surveyor	Years of service

SL NO	Number of Dump	Capacity Lakh M <sup>3</sup>	Area in Ha
1	Dump A	3.2	14.36
2	Dump B	2.3	7.14

  
Amalesh Kumar 0410219

Director (Mining)

The West Bengal Power Development Corporation Ltd.

Kolkata

E-172500 E-173000 E-173500 E-174000 E-174500 E-175000 E-175500 E-176000

N-111000

N-110500

N-110000

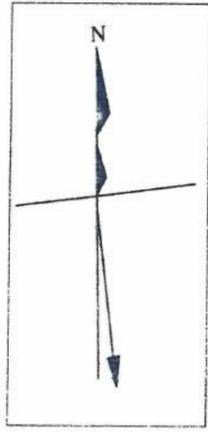
N-109500

N-109000

N-108500

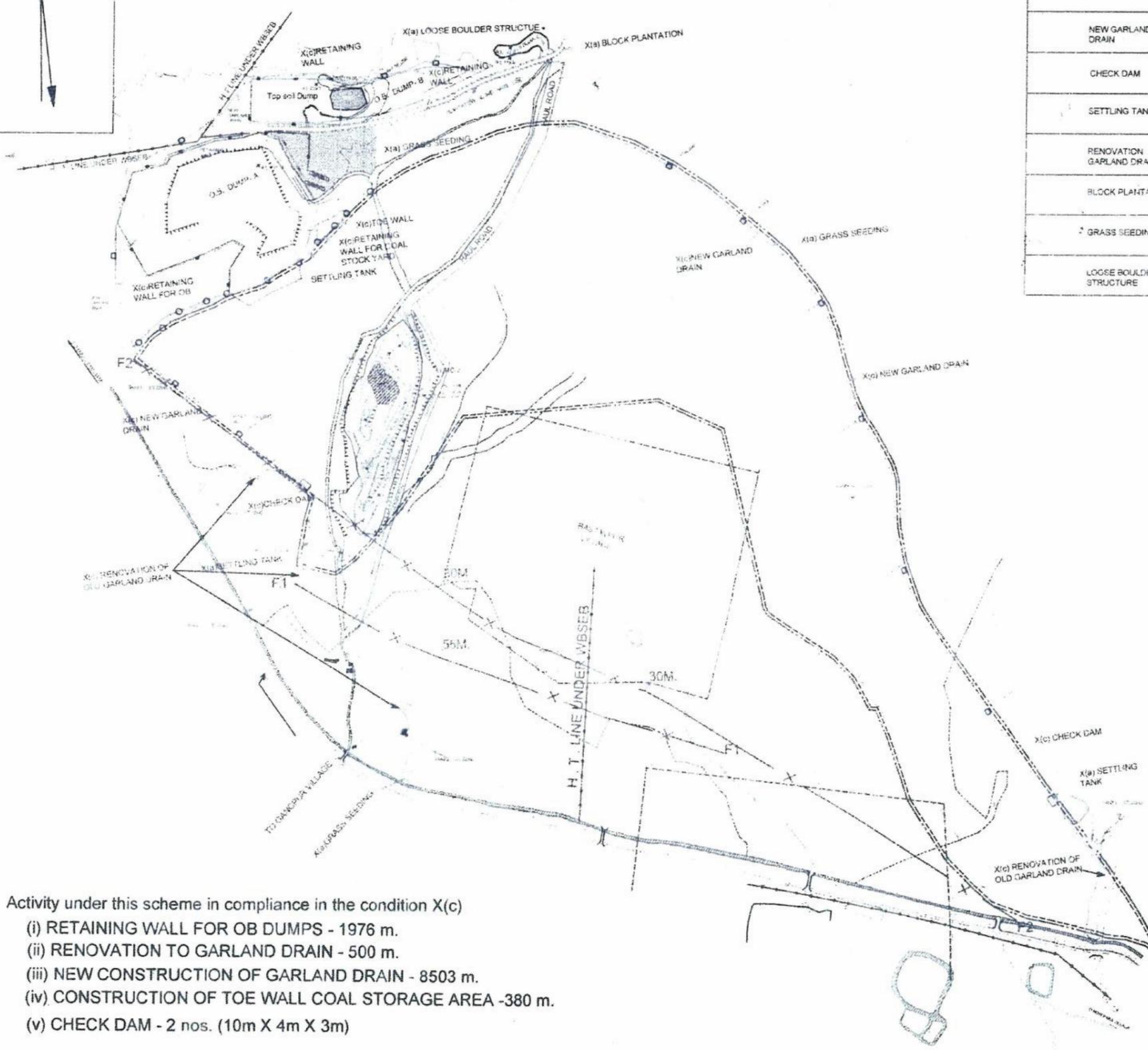
N-108000

GANGARAMCHAK- BHADULIA BLOCK OPEN CAST COAL MINES



LEGEND:-

RETAINING WALL	==
TOE WALL	==
NEW GARLAND DRAIN	—
CHECK DAM	□
SETTLING TANK	○
RENOVATION GARLAND DRAIN	—
BLOCK PLANTATION	⊕ ⊖
GRASS SEEDING	—
LOOSE BOULDER STRUCTURE	○



- Activity under this scheme in compliance in the condition X(c)
- (i) RETAINING WALL FOR OB DUMPS - 1976 m.
  - (ii) RENOVATION TO GARLAND DRAIN - 500 m.
  - (iii) NEW CONSTRUCTION OF GARLAND DRAIN - 8503 m.
  - (iv) CONSTRUCTION OF TOE WALL COAL STORAGE AREA -380 m.
  - (v) CHECK DAM - 2 nos. (10m X 4m X 3m)

12/2/19  
 Divisional Forest Officer  
 Birbhum Division (Suri)

12/2/19  
 Gangaramchak & Gangaramchak  
 Bhadulia Coal Mine  
 WBPDCCL



**THE WEST BENGAL POWER DEVELOPMENT CORPORATION  
LTD**

**SCHEME FOR**

**STABILIZE THE OVER BURDEN DUMPS BY APPROPRIATE  
GRADING/BENCHING SO AS TO ENSURE THAT, THE ANGLE  
OF REPOSE AT ANY GIVEN PLACE IS LESS THAN 28°**

**In Compliance with Condition No. X(d) of Stage-I Forest Clearance  
vide letter No. F No.8-45/2018-FC, Dt.29.10.2018 of Ministry of  
Environment, Forest & Climate Change**

**(FC Division),**

**Govt. of India, New Delhi**

**For**

**Diversion of 101.77 Ha of Forest Land**

**In Favour of The WB Power Development corporation limited for  
Gangaramchak-Bhadulia Block Open Cast Coal Mines**

**The West Bengal Power Development Corporation limited**  
**Gangaramchak-Bhadulia Coal Block Open cast Coal Mines**  
**Under the Birbhum Forest division**

**1. INTRODUCTION**

Gangaramchak & Gangaramchak-Bhadulia Coal Mines was allotted to WBPDC by the nominated authority,GOI, vide Order. No.103/8/2015/NA Dt. March 31, 2015. Under section 6 of the Coal Mines (special provision ) second ordinary 2014 for captive use its own plants at different locations in WB.

**2. Location of Gangaramchak & Bhadulia Block OCP and Mining Lease area**

The Gangaramchak & Bhadulia Block OCP is located in the Raniganj Coalfield in the Birbhum district of West Bengal

**3. Access:**

The area is approachable by road only. The Khayrasole-Panchra road connects the block with the Raniganj-Suri Road, (state high way) at Panchra. Another unmetalled road connects both Gangaramchak and Bhadulia Collieries with Khyarasole.

Raswan railway station, on the Palasthali section of the Eastern Railway, is located about 4 km. south west of the block.

**4. Climate:**

Humid tropical climate prevails over the area with summer lasting from the months of March to May and winter from the month of November to February. During summer, the temperature generally varies from 30°C to 40°C while in winter it drops down to about 10°C.

The relative humidity varies from 45% to 95%. The major part of which precipitates during the period from June to October.

**5. Physiography & Drainage:**

The area exhibit generally undulating topography with elevation ranging from 94m to 121m above mean sea level. The general slope of the area is towards south west. The ground slope is rather steep both towards east and west. The block has highest elevation of 121m in the northern part of the block.

A number of ephemeral nalas, drains the area to the Hingla River flowing to the south and west of the block.

**6. Soil Type:**The soil type in the study area is acidic i.e. pH below 7. The soil in the study area is having sufficient nitrates, high phosphorous and potassium and therefore moderately fertile. Soil structure is generally loose but well drained.

## Mine Development Strategy

The gestation period required in this OCP before the commencement of the coal production is low. The quarry will be opened up from the edge of the existing old quarry where coal is already exposed. Initial access trench will be the continuation of existing haul road of the quarry leading to the exposed coal floor.

Mine will be opened with box-cut development in quarry-I by extending/excavating the existing OB bench of the quarry along the strike as well as dip. When coal will be sufficiently exposed, coal mining operation will be started. The proposed will start coal production from the 1<sup>st</sup> year of operation. During this period the production will be 0.5 MTe.

After box-cut the quarry face will be advancing along strike direction as well as towards dip. Schedule of mine development is such that the target of production will be achieved during the 2<sup>nd</sup> year of project life.

The strategy of development is to take the advantage of the exposed quarry face, to reduce the gestation period so that the mine will be under revenue without much delay.

### Schedule of Quantities:

The Schedule of quantities has been estimated stage wise as per the sequential development of the open cast mine.

The quarry has been divided into three stages for better utilization of internal dumping as well as to minimize average lead of the transporting equipment. The year wise distribution of coal and overburden has been shown in table below:

YEAR	COAL(MTe)	O.B.(Mcum)	S.R. (cum/te)
1 **	0.5	2.90	5.80
2 **	0.5	2.90	5.80
3	0.5	2.90	5.80
4	0.5	2.90	5.80
5	0.5	2.90	5.80
6	0.76	3.88	5.11
7	1.0	5.10	5.10
8	1.0	5.10	5.10
9	1.0	5.10	5.10
10	1.0	5.10	5.10
11	1.0	5.10	5.10
12	0.89	2.70	3.03
<b>TOTAL</b>	<b>9.15 **</b>	<b>46.58</b>	<b>5.09</b>

**\*\* The mine was operated by previous allottee for 2 years (2013-14 & 2014-15) . Out of total 9.15 MT of mineable reserve 0.425 MT have been extracted and 8.725 MT are remaining as on 01.04.2015 . As there was no production during 2016-17 ,2017-18,2018-19 the remaining reserve have not changed.**

### Objective of the Plan:

The objectives of the proposed plan are as follows:

- One of the stipulation [Condition No.X (d)] to "stabilize the over burden dumps by appropriate grading/ benching so as to ensure that, the angle of repose at any given place is less than 98

given by the Ministry of Environment & Forest and climate change, GOI vide their letter no, F NO 8-45/2018 FC, Dt:29.10.2018 during approval of Stage-I forest clearance.

- ii) Proper Management and Stages of dumping overburden in the place space specified in the land use plan.
- iii) To provide methodology and implement the proposed actions in time bound manner to prevent slope failures, thereby providing stable OB dump slopes.
- iv) To stabilize of the over burden dumps by plantation in terraces.
- v) To Prevent of overflow of eroded soils from the fines, OB dump, areas leading to situation in the natural streams.

#### **Stabilisation of waste Dump:**

The following methodology is adopted for stabilization of waste dump and preventing erosion and sedimentation of solid waste.

- i) In the land use plan non-coal bearing area over 37 ha of non- forest land has been year marked for OB dumping.
- ii) The waste dumping done in a planned manner layer by layer maintaining a maximum bench height of 20 m and bench width of 30m to maintain on overall slope of 1: 1.5.
- iii) The bench slope has to be terraced and green cover has to be wrapped to consolidate bench slope.
- iv) It is planned to have retaining wall all along the toe of the waste dump to prevent possible flow of solid waste from the dump.
- v) It is also planned to have garland drains all along the retaining wall to regulate the water discharge from the waste dump.
- vi) Progressive high density plantation is envisaged over the dump to protect soil erosion.
- vii) Ultimately at the conceptual stage the overburden will be backfill in to the mining pit, covered by top soil and biologically reclaimed.

#### **Silent features of waste dump Management:**

- a) All the waste dumping site and coal stacking site are proposed to be surrounded by retaining wall and Garland drains.
- b) All the waste dumping is proposed to be done by terracing method, Terraces are proposed to be made in all dumps. The height of the terrace will vary from 10 to 12 mt. with slope varying from 28° to 37.5°. The width of the terrace will vary from 10mt to 15mt.
- c) All the terraces are proposed to be made inwardly sloping. A soil bund is proposed to be made at the edge of each terrace. At the toe of each terrace, a small channel is proposed to be made. All this above arrangement will help the rain water to go inside the dump instead flowing through the surface of the dump.
- d) Any rain cut which is developed in old dump slope is proposed to be checked by small check dams/Catch drain.
- e) All the garland drains at that toe of the dumps are proposed to be connected with settling tanks which will ultimately allow the settling of silt from the water in it and silt free water will ultimately go out of the lease hold.
- f) All the dead slope of the dumps are proposed to be covered with plantation. The dump slopes in which plantations are already developed are proposed to be maintained properly. Re-plantation is proposed to fill up the vacant area.



-Existing dump -

**Proposed Methodology:**

**A. Biological Measures:**

- a) The overburden dump will be covered by top soil.
- b) Terrace of 10m H and 20 m W will be done.
- c) Construction of retaining wall and garland land has already been included in the scheme for **condition no. X (C)**. Therefore repetition of the same has not been made here.
- d) Indigenous species like Neem (*Azadirachta indica*), Badachakunda (*Samanea saman*), Karanja (*Pongamia pinnata*), Siris (*Albizia procera*), Kuruma (*Adina cordifolia*), Kusum (*Schleichera oleosa*), Sunari (*Cassia fistula*), Amla (*Emblica officinalis*), Augasti (*Sesbania grandiflora*), Babul (*Acacia nilotica*), Gohira (*Acacia leucophloea*), Ashoka (*Saraca asoka*), Biza (*Pterocarpus marsupium*) etc will be planted on the terraces @ 1600 per hecter. Over approximatly 11.845 ha. In block model at a

spacing of 2.5 m<sup>2</sup>. On the upper slope of the OB dump particularly in OB dump no. 1 grass seeding will be done over 10.875 ha using seeds of stylohamata, styloscabra, Chrysopogon montana etc.

**B. Structural Measure:**

- a) Particularly on the OB dump slope of dump on the Northern aspect where Gullies have been formed, in order to prevent further expending-loose boulder Check dam of size 3m x 3m x 1.5m will be constructed alternatively over 200 m.

**EXECUTING AGENCY**

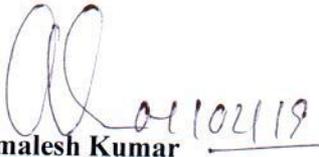
West Bengal Power Development Corporation Limited being the User Agency will execute the above works at the Project cost. To facilitate this, the user Agency shall establish its own Executive and Supervision cells along with required infrastructural facilities. In order to maintain the quality of the work in house supervision through competent personnel shall be entrusted. The entire work shall be carried out in coordination with Forest Department (DFO, Suri Division).

**SPECIALIZED CELL**

Name of Executive	Educational Qualification	Present Designation	Expertise
Sri Sukanta Ghosh	Mining Engineer	Agent	Year of service experience in mining
Sri Upendra Kumar	Surveyor	Surveyor	Year of service.

**SPECIALIZED CELL**

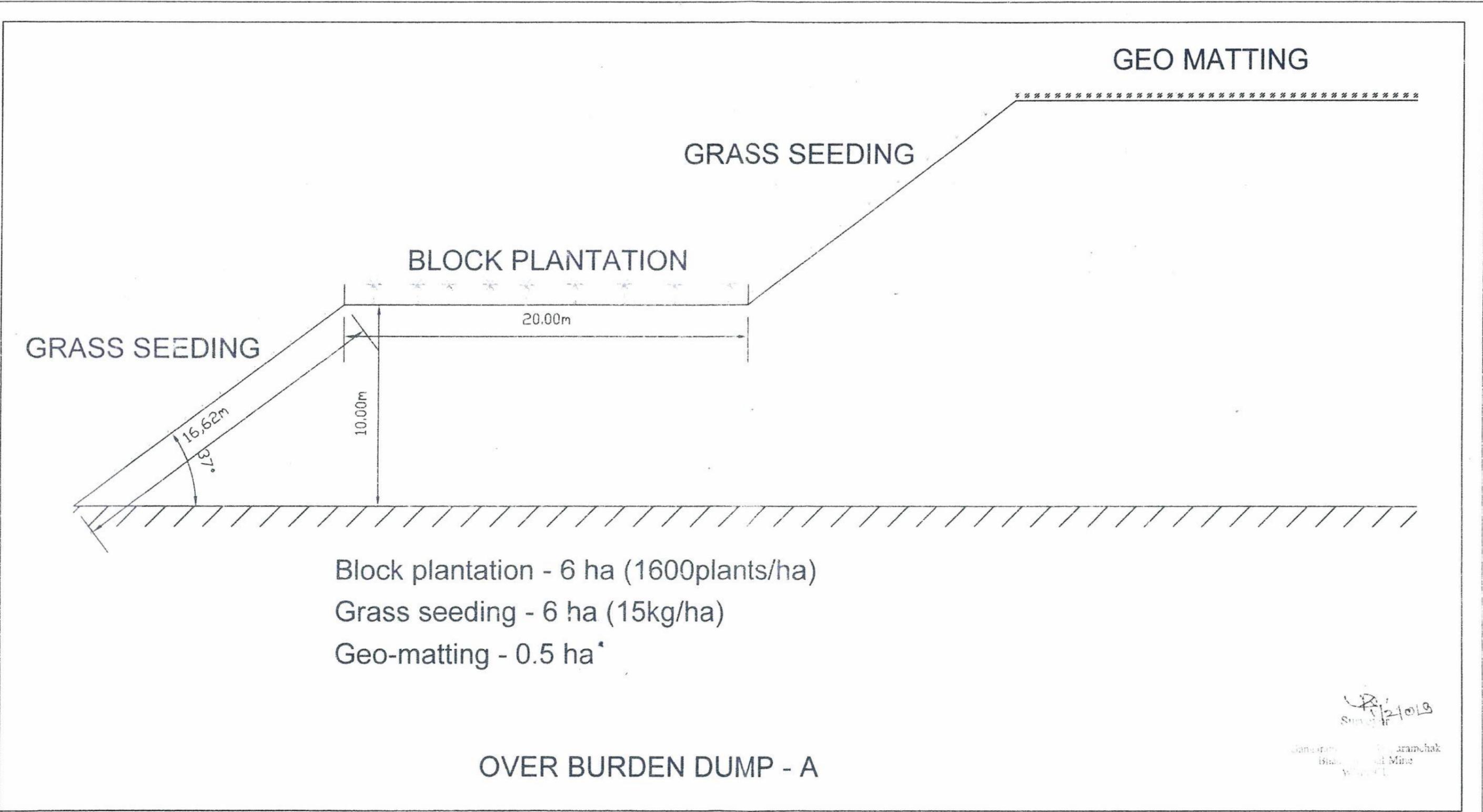
<b>Name of Executive</b>	<b>Educational Qualification</b>	<b>Present Designation</b>	<b>Expertise</b>
Sri Sukanta Ghosh	Mining Engineer	Agent	Year of service experience in mining
Sri Upendra Kumar	Surveyor	Surveyor	Year of service.

  
Amalesh Kumar

**Director (Mining)**

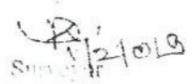
**West Bengal Power Development Corporation Ltd.**

**Kolkatta-**



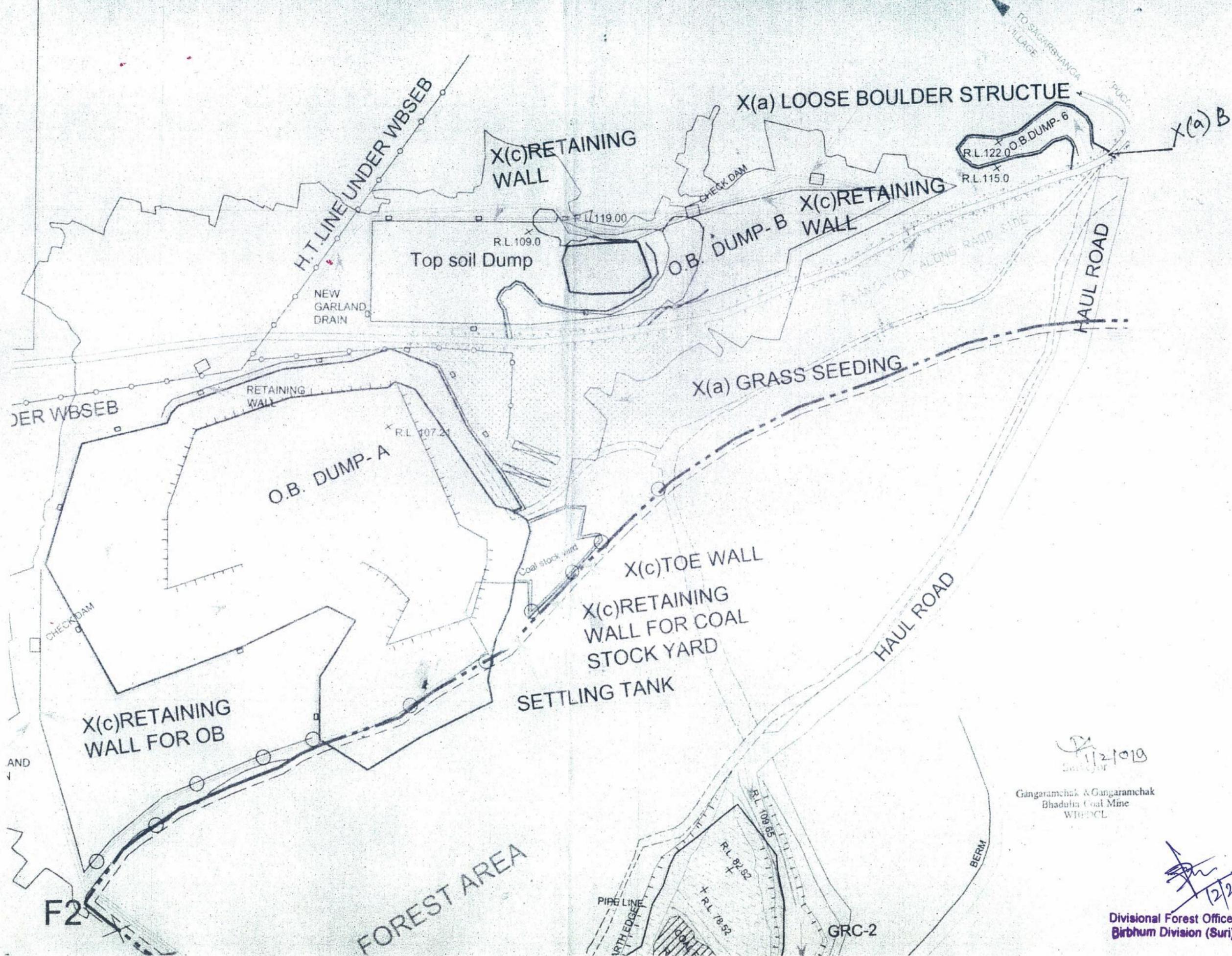
Block plantation - 6 ha (1600plants/ha)  
 Grass seeding - 6 ha (15kg/ha)  
 Geo-matting - 0.5 ha\*

**OVER BURDEN DUMP - A**

  
 12/2/19  
 Jangam, Paramchak  
 Bhandari Mine  
 West Bengal

  
 12/2/19  
 Divisional Forest Officer  
 Birbhum Division (Suri)

# GANGARAMCHAK- BHADULIA BLOCK OPEN CAST COAL MINES



11/2/19  
 Gangaramchak & Gangaramchak  
 Bhadulia Coal Mine  
 WBSECL

12/2/19  
 Divisional Forest Officer  
 Birbhum Division (Suri)



**THE WEST BENGAL POWER DEVELOPMENT CORPORATION  
LTD**

**Scheme  
For  
Strict Adherence to the prescribed Top soil management**

**In Compliance with Condition No. X(e) of Stage-I Forest  
Clearance vide letter No. F No.8-45/2018-FC, Dt.29.10.2018 of  
Ministry of Environment, Forest & Climate Change  
(FC Division),  
Govt. of India, New Delhi**

**For  
Diversion of 101.77 Ha of Forest Land  
In Favour of The WB Power Development corporation limited for  
Gangaramchak-Bhadulia Block Open Cast Coal Mines**

# **The West Bengal Power Development Corporation limited Gangaramchak -Bhadulia Coal Block Open cast Coal Mines Under the Birbhum Forest division**

## **1. INTRODUCTION**

Gangaramchak & Gangaramchak-Bhadulia Coal Mines was allotted to WBPDC by the nominated authority,GOI, vide Order. No.103/8/2015/NA Dt. March 31, 2015. Under section 6 of the Coal Mines (special provision ) second ordinary 2014 for captive use its own plants at different locations in WB.

## **2. Location of Gangaramchak & Bhadulia Block OCP and Mining Lease area**

The Gangaramchak & Bhadulia Block OCP is located in the Raniganj Coalfield in the Birbhum district of West Bengal (Refer Plate I Location map and plate II key map)

## **3. Access:**

The area is approachable by road only. The Khayrasole-Panchra road connects the block with the Raniganj-Suri Road, (state high way) at Panchra. Another unmetalled road connects both Gangaramchak and Bhadulia Collieries with Khyarasole.

Raswan railway station, on the Palasthali section of the Eastern Railway, is located about 4 km. south west of the block.

## **4. Climate:**

Humid tropical climate prevails over the area with summer lasting from the months of March to May and winter from the month of November to February. During summer, the temperature generally varies from 30°C to 40°C while in winter it drops down to about 10°C.

The relative humidity varies from 45% to 95%. The major part of which precipitates during the period from June to October.

## **5. Physiography & Drainage:**

The area exhibit generally undulating topography with elevation ranging from 94m to 121m above mean sea level. The general slope of the area is towards south west. The ground slope is rather steep both towards east and west. The block has highest elevation of 121m in the northern part of the block.

A number of ephemeral nalas, drains the area to the Hingla River flowing to the south and west of the block.

## **PLAN FOR TOP SOIL MANAGEMENT**

There is a veneer of alluvium as top soil in this mines which will be very carefully been collected and preserved in the top soil stockyard over an area of 3.75 ha demarcated in the north of the mine. 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 reclamation within the Mining lease. Topsoil is to be stripped in areas proposed to be disturbed including the proposed mining on virgin forest lands, outside mines areas and infrastructure areas (including roads). A comprehensive top soil management plan has been prepared keeping in the view of conservation, regeneration and afforestation in and around the top soil to be stored.

In the non-mineralized area there exist very thin layers of top soil say 0.5cm, which is very difficult to slice down and stored separately for use during future reclamation. However, grass

seed will be sown over this area to prevent erosion of the top soil. The thickness of top soil in these mines is thin, red to brownishness in colour and lateritic nature. This lateritic soil is mostly devoid of fertility gradient, organic content as well as moisture retaining capacity.

Soil pH plays an important role in the availability of nutrients on the contrary the microbial activities are also depended on pH. The soil sample collected from the mining lease area tested and the pH appears to the neutral.

**SOIL SAMPLING LOCATION:**

Location ID	Name of location	Direction from Core Zone	Distance from Core Zone(Km)
S1		S	
S2		W	
S3		SW	

## OBJECTIVES

The objectives of top soil management are to:

1. Provide sufficient stable topsoil material for reclamation work of dumps, back filled areas and degraded lands;
2. Identify soil resources and stripping guidelines & optimize the recovery of topsoil resource;
3. Identify surface areas requiring stripping (to minimize over clearing);
4. Manage topsoil reserves so as to not degrade the resource;
5. Identify stockpile locations and dimensions;

## MANAGEMENT PLAN FOR TOP SOIL GENERATED FROM MINING

The top soil inside the M area is scanty. Whatever top soil is available that is to be excavated during the development of the mine pits is rocky in nature, Precautionary measures will be taken so that this valuable resource is not wasted, This excavated top-soil will be utilized for covering the over burden dump over which concurrent plantation works in the mine as per this plan. Some of the top soil will be stored temporarily until it can be used for plantation works / dump reclamation. Minimum storage time shall be attempted to avoid nutrient loss. A combination of check dams, diversion ditches and garland drain etc. shall be constructed around the Top Soil stack yard to minimize soil loss.

During the current diversion period, a total of 149.42 hectares virgin area is going to be disturbed for mining and allied activities.

## 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 but within the mining lease area;
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 re-vegetation by sowing of grass seeds on the trapezoidal surface;
5. To utilize stripped top soil as soon as possible for reclamation of mined-out area in phased manner in accordance with the final mine closure plan.

## **MANAGEMENT PLAN OF EXCAVATED TOP-SOIL:**

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, the following will be ensured:

1. Appropriate delineation of areas to be stripped/mined; an area of 3.75 hectares has been demarcated for storage of top soil in lease area. The perimeter of this top soil stock pile is 1040 meter.
2. Appropriate delineation of the above suitable Topsoil stockpile areas.
3. 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.
4. Stockpiles will have sediment control measures such as toe/retaining wall.
5. 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.
6. Permanent measures include establishment of vegetation and broadcasting sowing of grass seeds over the surface the top soil will be ensured to prevent erosion.
7. 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.

## **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 in-situ 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.

## **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. At the base of the top soil storage place will be provided with a retaining wall of length 800m and 1.4 m height.

## **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 programme. Infrastructural facilities like GIS software along with GPS equipment, Research & Development woks, will be provided by the user agency for the above post implementation monitoring.

## **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.

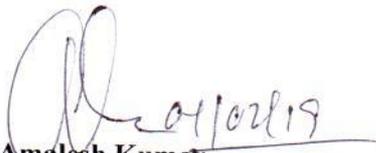
## **MEASURES PROPOSED**

- a) Structural method:
- b) A retaining wall over a perimeter of 800m will be constructed all around the top Soil Storage area as shown in the land use plan of the coal mine.
- c) Biological measure the surface of the top soil will be a trapezoidal shape. The surface needs to be covered by grassy cover in order to avoid erosion of soil. The total surface area will be 1.5 Ha.



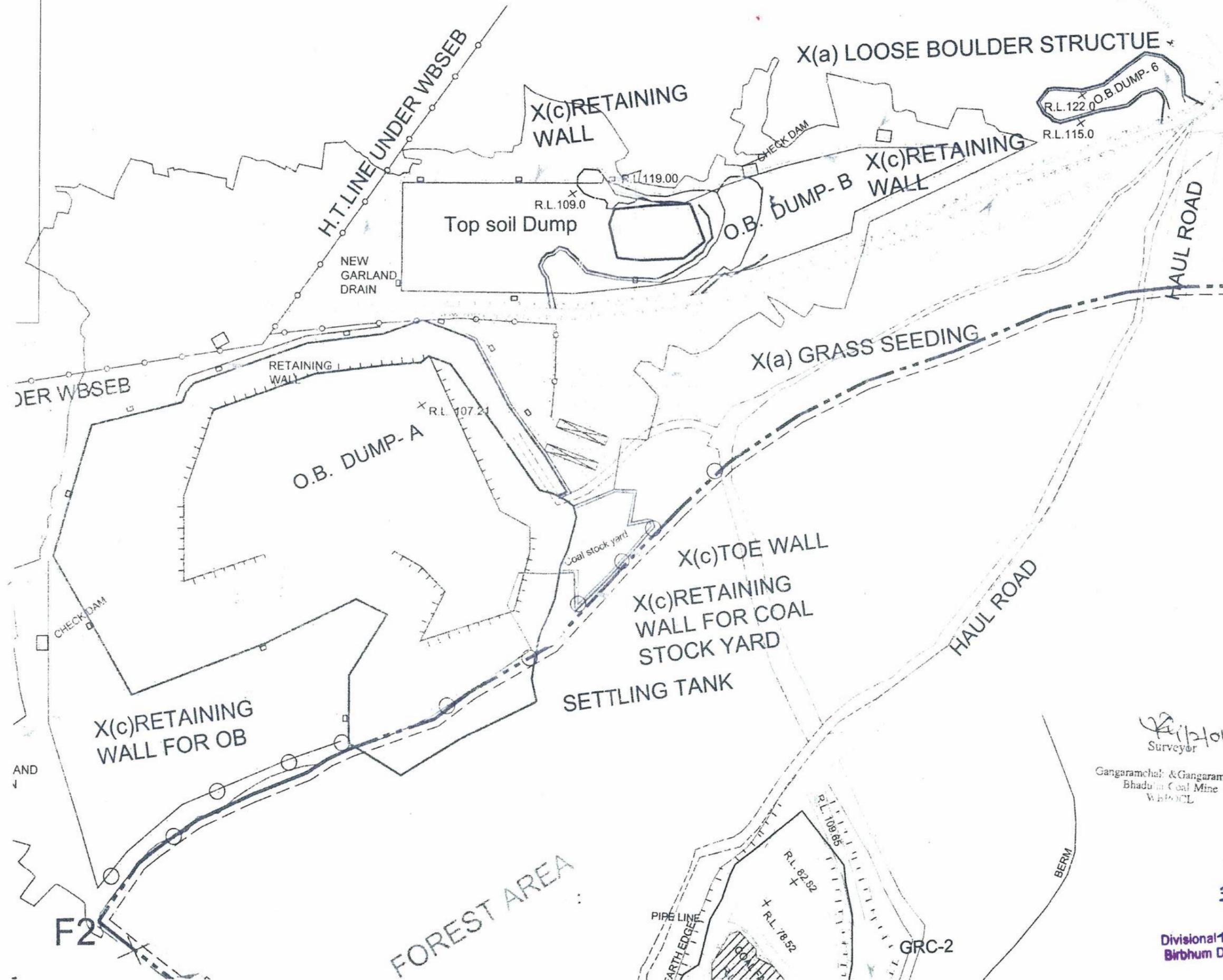
SPECIALIZED CELL

Name of Executive	Educational Qualification	Present Designation	Expertise
Sir Sukanta Ghosh	Mining Engineer	Agent	Years of Service Experience in mining
Sri Upendra Kumar	Surveyor	Surveyor	Years of service

  
**Amalesh Kumar**  
**Director (Mining)**

**West Bengal Power Development Corporation Ltd.**  
**Kolkatta-**

# GANGARAMCHAK- BHADULIA BLOCK OPEN CAST COAL MINES

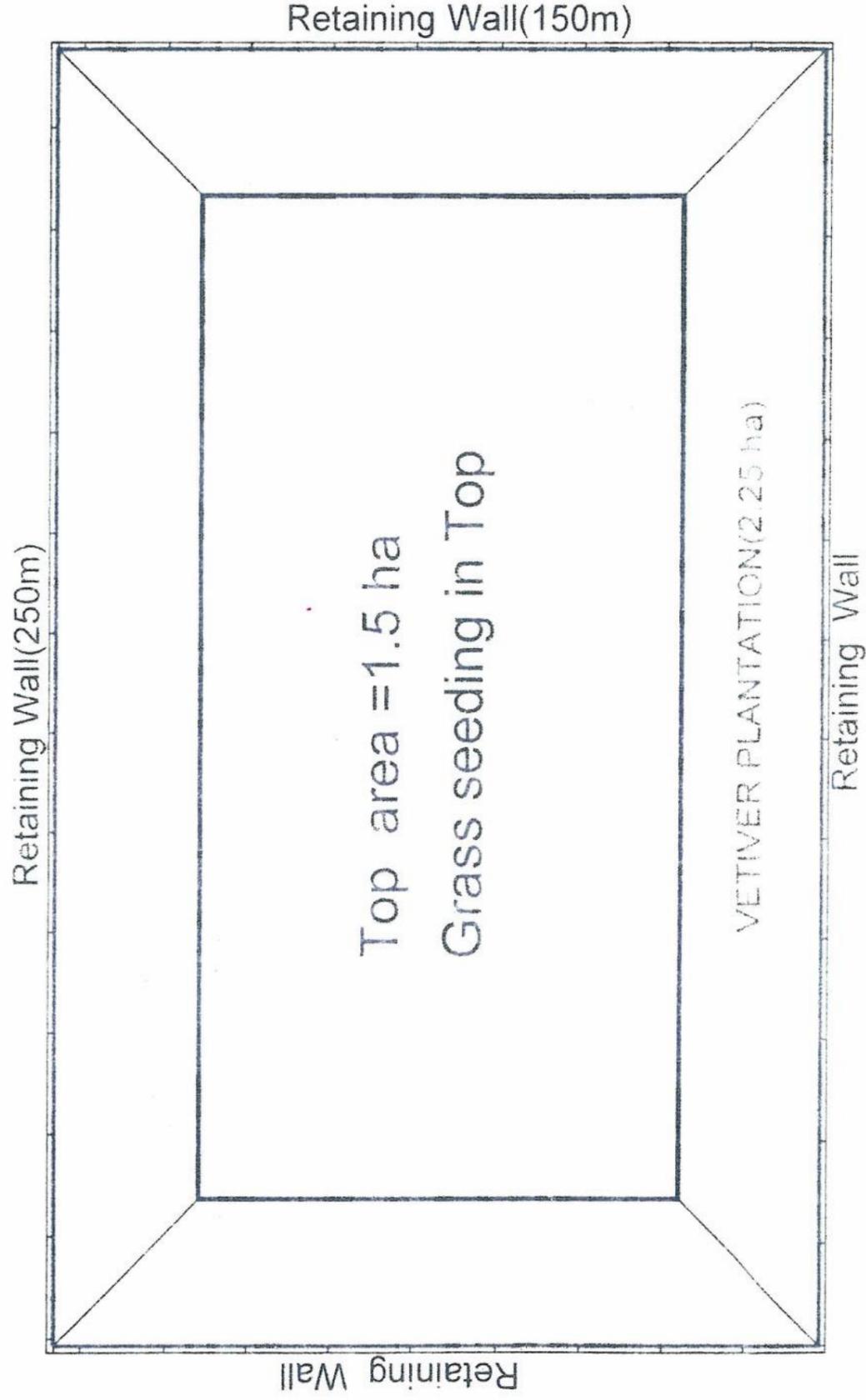


*[Signature]*  
Surveyor

Gangaramchak & Gangaramchak  
Bhadulia Coal Mine  
WBSECL

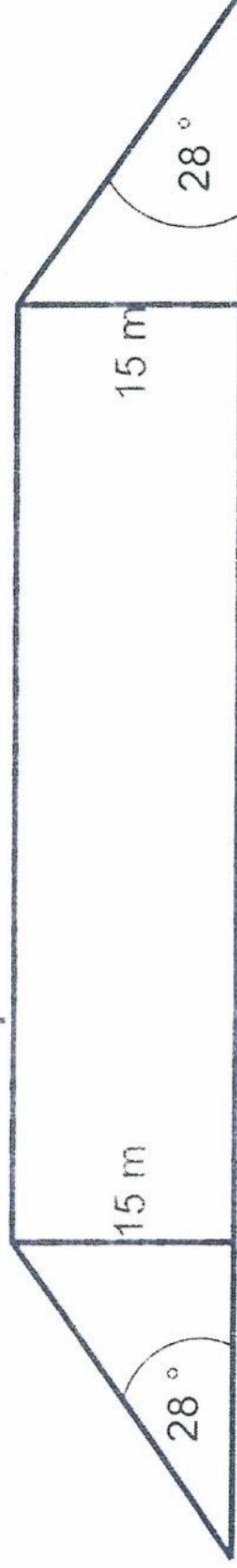
*[Signature]*  
12/2/19  
Divisional Forest Officer  
Birbhum Division (Suri)

### TOP VIEW



### CROSS-SECTIONAL VIEW,

Top area = 1.5 ha



### TOP-SOIL DUMP

- Grass seeding- 1.5 ha ( 15kg/ha)
- Vetiver plantation- (2.25 ha)
- Retaining wall - 800 m.



Signature  
Date

Signature  
12/2/19  
Divisional Forest Officer  
Birbhum Division (Surt)

No.J-11015/375/2006-IA-II.(M)  
Government of India  
Ministry of Environment, Forest and Climate Change  
IA-II Division

Indira Paryavaran Bhawan  
Jor Bagh, New Delhi-3  
Dated: 20<sup>th</sup> December, 2018

To

M/s The West Bengal Power Development Corporation Limited  
Bidyut Unnayan Bhaban;  
Plot No. 3/C, LA-Block, Sector-III,  
Salt Lake, **Kolkata** - 700 098 (West Bengal)  
Email: [wbpdcl@wbpdcl.co.in](mailto:wbpdcl@wbpdcl.co.in)

**Sub: Integrated Gangaramchak & Gangaramchak Bhadulia Block Opencast Coal Mining Project of 1 MTPA in mine lease area of 150 ha located in village Basantpur, Tehsil Khoyrasole District Birbhum (West Bengal) - Transfer of Environmental Clearance from M/s Bengal Emta Coal Mines Ltd to M/s The West Bengal Power Development Corporation Limited - reg.**

WHEREAS the Ministry of Environment, Forest and Climate Change (MoEF&CC), in accordance with the Environmental Impact Assessment (EIA) Notification, 2006 and subsequent amendment thereto had accorded Environmental Clearance to Integrated Gangaramchak & Gangaramchak Bhadulia Block Opencast Coal Mining Project of capacity 1 MTPA in mine lease area of 150 ha located at village Basantpur, Tehsil Khoyrasole, District Birbhum (West Bengal) to M/s Bengal Emta Coal Mines Ltd vide letter dated 17<sup>th</sup> May, 2007, subject to compliance of certain terms and conditions.

AND WHEREAS Hon'ble Supreme Court of India vide judgment dated 25<sup>th</sup> August, 2014, read with order dated 24<sup>th</sup> September, 2014 cancelled 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.

AND WHEREAS in pursuance of the judgment and order of Hon'ble Supreme Court, the Nominated Authority in the Ministry of Coal, in accordance with the provisions of the Coal Mines (Special Provisions) Second Ordinance, 2014 and the Coal Mines (Special Provisions) Rules 2014, has conducted auction of coal mines.

AND WHEREAS Ministry of Coal vide Allotment Order No.103/8/2015/NA dated 31<sup>st</sup> March, 2015 under clause (c) of sub-rule (2) of rule 7 and sub-rule (1) of rule 13 has allotted the Integrated Gangaramchak & Gangaramchak Bhadulia Block Opencast Coal Mining Project of 1 MTPA in mine lease area of 150 ha located in village Basantpur, Tehsil Khoyrasole District Birbhum West Bengal to M/s The West Bengal Power Development Corporation Limited.

AND WHEREAS vide Gazette Notification S.O.811(E) Notification dated 23<sup>rd</sup> March, 2015, MOEF&CC has made amendment in paragraph 11 of the Gazette Notification S.O.1533 (E) dated 14<sup>th</sup> September, 2006. The said Notification quotes

*'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*

*SKJ*

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.

AND WHEREAS Stage-I forest clearance for diversion of 101.77 ha of forest land for its non-forestry use has been obtained under the Forest (Conservation) Act, 1980 vide letter No.8-45/2018-FC dated 29<sup>th</sup> October, 2018.

AND WHEREAS pursuant to the MOC Allotment Order No.103/8/2015/NA dated 31<sup>st</sup> March, 2015 and MoEF&CC Gazette Notification S.O.811(E) Notification dated 23<sup>rd</sup> March, 2015, the environmental clearance granted by the Ministry in favour of M/s Bengal Emta Coal Mines Ltd vide letter dated 17<sup>th</sup> May, 2007 to Integrated Gangaramchak & Gangaramchak Bhadulia Block Opencast Coal Mining Project of 1 MTPA in mine lease area of 150 ha located in village Basantpur, Tehsil Khoyrasole, District Birbhum (West Bengal), is hereby transferred to M/s The West Bengal Power Development Corporation Limited subject to the following conditions:-

- (i) Any change in scope of work will attract the provisions of the Environment (Protection) Act, 1986, and the EIA Notification, 2006 read with subsequent amendments therein.
- (ii) All conditions stipulated in the EC dated 17<sup>th</sup> May, 2007 shall remain unchanged.
- (iii) The allottee/project proponent shall be liable, if any, for any act of violation of the Environment (Protection) Act, 1986 and the EIA Notification, 2006 read with subsequent amendments therein, which it has inherited during transfer of the said environmental clearance.
- (iv) The allottee/project proponent shall be liable for compliance of all court directions, if any.

SKJ  
20/12/2018

(S. K. Srivastava)  
Scientist E

Copy to:

1. The Secretary, Ministry of Coal, Shastri Bhawan, New Delhi.
2. The Additional PCCF (Central), Regional office (EZ), MoEF&CC, A-31, Chandrashekarapur, Bhubaneswar - 751023
3. The Secretary, Department of Environment & Forests, Government of West Bengal, Secretariat, Kolkata
4. The Member Secretary, Central Pollution Control Board, CBD-cum-Office Complex, East Arjun Nagar, New Delhi - 32
5. The Member-Secretary, Central Ground Water Authority, Ministry of Water Resources, Curzon Road Barracks, A-2, W-3 Kasturba Gandhi Marg, New Delhi
6. The Member Secretary, West Bengal State Pollution Control Board, Paribesh Bhawan, 10A, Block LA, Sector-III, Salt Lake City, Kolkata - 700098
7. The District Collector, Birbhum, Government of West Bengal.
8. Monitoring File    9. Guard File    10. Record File    11. Notice Board.

SKJ  
20/12/2018

(S. K. Srivastava)  
Scientist E



**Annexure - 12**

**UNDERTAKING :**

**Gangaramchak & Gangaramchak-Bhadulia Coal Mine**

This is to certify that, The West Bengal Power Development Corporation Ltd (WBPDCCL), A Government of West Bengal Enterprise, undertake that, mined out and biologically reclaimed forest land will be surrendered to the State Forest Department as per land surrender schedule to be prepared by WBPDCCL for surrender of the mined out and biologically reclaimed forest land in accordance with the existing mine plan and progressive mine closure plan , in connection of diversion of 101.77 ha Forest land in Birbhum Forest Division , District Birbhum , West Bengal.

  
Amalesh Kumar  
Director(Mining)  
WBPDCCL

Encl : calendar plan of approved mine closure plan

### 2.3.4 Mine Development strategy

Out of the 12 year operation of the mine as per AMP, the mine was operated by the prior allottee for 2 years (2013-2014 and 2014-15).

As per Schedule of mine development of AMP, coal production starts in the year 1 and the targeted production of 1 MTPA is achieved during the year 7 of project life. Now, for development strategy, scheduling the operation and mining parameters, the 3rd year of AMP has been considered to correspond to the first year of operation by the current allottee and further description is for balance 10 year of operation.

The sequence of operation of the opencast mine is shown in the Plates X to XII.

The strategy of development is to take the advantage of the exposed quarry face, to reduce the gestation period.

### 2.3.5 Scheme of Mining

The quarry-1 was envisaged to exhaust in the 4<sup>th</sup> year and quarry-2 is to start operation in the same year to meet production schedule.

### 2.3.6 Calendar programme of production

The details of Calendar Program of Year wise and cumulative Coal and OB quantities as per approved Mining Plan are given in Table 17.

**TABLE 17  
CALENDAR PROGRAM OF YEAR WISE AND CUMULATIVE COAL AND  
OB QUANTITIES AS PER APPROVED MINING PLAN**

Year As per AMP	Balance Years (ref. Para 1.04D)	Coal (Mt)		Overburden (M cum)		Stripping Ratio (cum/t)	
		Year wise	Cumulative	Year wise	Cumulative	Year wise	Cumulative
1*	Mine	0.5	0.5	2.90	2.90	5.80	5.80
2*	operation for 2 years by previous Allottee	0.5	1.0	2.90	5.80	5.80	5.80
3	1 (2015-16)	0.5	1.5	2.90	8.70	5.80	5.80
4	2 (2016-17)	0.5	2.0	2.90	11.60	5.80	5.80
5	3 (2017-18)	0.5	2.5	2.90	14.50	5.80	5.80
6	4 (2018-19)**	0.76	3.26	3.88	18.38	5.11	5.64

Year As per AMP	Balance Years (ref. Para 1.04D)	Coal (Mt)		Overburden (M cum)		Stripping Ratio (cum/t)	
		Year wise	Cumulative	Year wise	Cumulative	Year wise	Cumulative
7	5 (2019-20)	1.0	4.26	5.10	23.48	5.10	5.51
8	6 (2020-21)	1.0	5.26	5.10	28.58	5.10	5.43
9	7 (2021-22)	1.0	6.26	5.10	33.68	5.10	5.38
10	8 (2022-23)	1.0	7.26	5.10	38.78	5.10	5.34
11	9 (2023-24)	1.0	9.15	5.10	43.88	5.10	5.31
12	10 (2024-25)	0.89	9.15*	2.70	46.58	3.03	5.09

\* The mine was operated by the Previous Allottee for 2 years (2013-14 and 2014-15). Out of total 9.15 Mt of Mineable reserves, 0.425 Mt have been extracted and 8.725 Mt are remaining as on 01-04-2015. As there was no production during 2016-17, the remaining reserves have not changed. (Refer Present working plan Plate VIII).

\*\* Considering the fact that the production schedule as per AMP, the mining operations were to be carried out till 2018-19 (Life 12 years), the present Allottee will submit a Revised Mining Plan along with the Mine Closure Plan during 2018-19 to continue operation beyond 2018-19 for extracting remaining reserves.

### 2.3.7 Waste Disposal

Mine was in operation for 2 years by previous Allottee. For the balance years of operation, the OB from 1<sup>st</sup> year to 5<sup>th</sup> year will be dumped over the de-coaled area as well as on the external dump as per AMP. From 6<sup>th</sup> year and onwards, all the OB generated will get accommodated internally in the voids as per AMP.

Year wise distribution of OB in external and internal dumps (cumulative) is shown in the Table 18.

**TABLE 18**  
**YEAR WISE DISTRIBUTION OF WASTE (OB+TS) IN DUMPS**  
**(CUMULATIVE) (REFER TABLE 7.4 OF AMP)**

Balance Years	External Dump		Internal Dump		Total Dump	
	Area* (Ha)	Vol (Mm <sup>3</sup> )	Area (Ha)	Vol (Mm <sup>3</sup> )	Area (Ha)	Vol (Mm <sup>3</sup> )
Operation for 2 years by previous allottee	5.00	0.50	0.00	0.02	5.70	0.52
1	26	7.3	7	1.4	33	8.7
2	27	7.8	12	3.8	39	11.6
3	27	8.5	18	6.0	45	14.5



**Annexure - 13**

**UNDERTAKING :**

**Gangaramchak & Gangaramchak-Bhadulia Coal Mine**

This is to certify that, The West Bengal Power Development Corporation Ltd (WBPDCCL), A Government of West Bengal Enterprise, undertake that, Fencing, protection and regeneration of the safety zone area [7.5 meters strip shall be kept within the mining lease boundary and area of the safety zone shall be part of the total area of mining lease as per the Ministry's guidelines dated 27.05.2015] shall be done at the project cost within three years and maintained thereafter as per approved working plan of the State Govt, in connection of diversion of 101.77 ha Forest land in Birbhum Forest Division , District Birbhum , West Bengal.

  
Amalesh Kumar  
Director(Mining)  
WBPDCCL



**Annexure - 14**

**UNDERTAKING :**

**Gangaramchak & Gangaramchak-Bhadulia Coal Mine**

This is to certify that, The West Bengal Power Development Corporation Ltd (WBPDCCL), A Government of West Bengal Enterprise, either himself or through the State Forest Department shall undertake afforestation on degraded forest land, at project cost, one and half time in extent to the area used for safety zone , in connection of diversion of 101.77 ha Forest land in Birbhum Forest Division , District Birbhum , West Bengal.

  
**Amalesh Kumar**  
**Director(Mining)**  
**WBPDCCL**

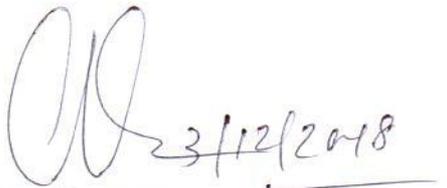


Annexure - 15

**UNDERTAKING :**

**Gangaramchak & Gangaramchak-Bhadulia Coal Mine**

This is to certify that, The West Bengal Power Development Corporation Ltd (WBPDCCL), A Government of West Bengal Enterprise, undertake that, the Forest clearance will be for a period co terminus with the lease period [ period for which the forest land is proposed to be diverted is 11 years ] in connection of diversion of 101.77 ha Forest land in Birbhum Forest Division , District Birbhum , West Bengal.



**Amalesh Kumar**  
**Director(Mining)**  
**WBPDCCL**



**Annexure - 16**

**UNDERTAKING :**

**Gangaramchak & Gangaramchak-Bhadulia Coal Mine**

This is to certify that, The West Bengal Power Development Corporation Ltd (WBPDCCL), A Government of West Bengal Enterprise, either himself or through the State Forest Department shall undertake gap planting and soil & moisture conservation activities to restock and rejuvenate the degraded open forests (having crown density less than 0.4), if any, located in the area within 100 meters from outer perimeter of the mining lease, in connection of diversion of 101.77 ha Forest land in Birbhum Forest Division , District Birbhum , West Bengal.

**Amalesh Kumar**  
**Director(Mining)**  
**WBPDCCL**



**Annexure - 17**

**UNDERTAKING :**

**Gangaramchak & Gangaramchak-Bhadulia Coal Mine**

This is to certify that, The West Bengal Power Development Corporation Ltd (WBPDCCL), A Government of West Bengal Enterprise, 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. WBPDCCL 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 plan for desilting of identified ponds and water bodies will be prepared in consultation with forest department and shall be submitted to MoEF & CC before Stage - II approval, in connection of diversion of 101.77 ha Forest land in Birbhum Forest Division , District Birbhum , West Bengal.

  
Amalesh Kumar  
Director(Mining)  
WBPDCCL



THE WEST BENGAL POWER DEVELOPMENT CORPORATION LTD

**SCHEME FOR DESILTING OF VILLAGE TANKS AND OTHER WATER BODIES LOCATED WITHIN 5KM FROM THE MINE LEASE BOUNDARY SO AS TO MITIGATE THE IMPACT OF SILTATION OF SUCH TANKS/ WATER BODIES, WHENEVER REQUIRED**

**In Compliance with Condition No. XVII of Stage-I Forest Clearance vide letter No. F No.8-45/2018-FC, Dt.29.10.2018 of Ministry of Environment, Forest & Climate Change**

**(FC Division),**

**Govt. of India, New Delhi**

**For**

**Diversion of 101.77 Ha of Forest Land**

**In Favour of WB Power Development corporation limited for  
Gangaramchak-Bhadulia Block Open Cast Coal Mines**

**West Bengal Power Development Corporation limited**  
**Gangaramchak-Bhadulia Coal Block Open cast Coal Mines**  
**Under the Birbhum Forest division**

**1. INTRODUCTION**

Gangaramchak & Gangaramchak-Bhadulia Coal Mines was allotted to WBPDC by the nominated authority,GOI, vide Order. No.103/8/2015/NA Dt. March 31, 2015.Under section 6 of the Coal Mines (special provision ) second ordinary 2014 for captive use its own plants at different locations in WB.

**2. Location of Gangaramchak-Bhadulia Block OCP and Mining Lease area**

Gangaramchak-Bhadulia Block OCP is located in the Raniganj Coalfield in the Birbhum district of West Bengal.

**3. Access:**

The area is approachable by road only. The Khayrasole-Panchra road connects the block with the Raniganj-Suri Road, (state high way) at Panchra. Another metalled road connects both Gangaramchak and Bhadulia Collieries with Khyarasole.

Raswan railway station, on the Palasthali section of the Eastern Railway, is located about 4 km. south west of the block.

**4. Climate:**

Humid tropical climate prevails over the area with summer lasting from the months of March to May and winter from the month of November to February. During summer, the temperature generally varies from 30°C to 40°C while in winter it drops down to about 10°C.

The relative humidity varies from 45% to 95%. The major part of which precipitates during the period from June to October.

**5. Physiography & Drainage:**

The area exhibit generally undulating topography with elevation ranging from 94m to 121m above mean sea level. The general slope of the area is towards south west. The ground slope is rather steep both towards east and west. The block has highest elevation of 121m in the northern part of the block.

A number of ephemeral nalas, drains the area to the Hingla River flowing to the south and west of the block.

Name of Pond	Length (M)	Width(M)	Area (SqM.)
A	35	29	1015
B	41	20	820
C	32	20	640
D	78	44	3432
E	47	25	1175
F	158	93	14694
G	70	36	2520



LOCATION- LATITUDE 23°48'56.22"N LONGITUDE 87°13'6.48"E  
NEAR VILLAGE GANGARAMPUR



LOCATION- LATITUDE 23°48'49.47"N LONGITUDE 87°12'54.98"E

NEAR VILLAGE GANGARAMPUR



LOCATION- LATITUDE 23°48'48.22"N LONGITUDE 87°13'5.44"E

NEAR VILLAGE GANGARAMPUR



LOCATION- LATITUDE23°48'46.08"N LONGITUDE 87°12'59.89"E  
NEAR VILLAGE GANGARAMPUR



LOCATION- LATITUDE23°48'44.26"N LONGITUDE87°12'57.66"E  
NEAR VILLAGE GANGARAMPUR



LOCATION- LATITUDE 23°48'31.50"N LONGITUDE 87°13'7.81"E  
NEAR VILLAGE GANGARAMPUR



LOCATION- LATITUDE 23°48'26.82"N LONGITUDE 87°13'27.88"E  
NEAR VILLAGE GANGARAMPUR

### **Factor for Siltation:**

Siltation is an inherent problem with ponds and almost all types of water reservoir. Siltation occurs due to deposition or settling of soil eroded from the shore line, decaying fallen leaves, grass and other vegetative materials and decomposed organic materials settled on pond bottoms. Soil erosion may be attributed as the primary factor responsible for pond siltation in this area. Higher gradient and excess rainfall are the most common reasons of soil erosion. Erosion of Soil occurs from the waste dumps, excavated area and naturally denuded ground surface of coal mine. However, looking into the current problem of siltation of the adjoining village ponds, the major factors are surface runoff containing silt particles entering the pond. As the age of the pond increases, new layers of silt accumulate on the older ones and the silt layer becomes thicker. Finally the depth of the pond decreases and it loses its water storage capacity. At this time it needs to be de-silted. The best practice against siltation is to de-silt the pond bottom at regular intervals (5 years) as well as taking adequate preventive measures.

### **Methodology:**

It is proposed to carry out the total de-siltation of the selected ponds as the above in every five years preferably in the dry to the summer when ponds shall dry up exposing the silts. The dried silt shall be removed manually or mechanically based on the ground condition. In case of mechanical removal of silt, small excavators such as back-hoe/ small hydraulic shovels or pay loader, depending upon the quantity of silt accumulation shall be used. For the purpose of evaluation of work required for de-siltation, an estimate of de-siltation in the individual ponds was made, which has been summarized in Annexure-1,2,3& 4.

The work shall comprise:

- a) Total de-siltation in the five year period.
- b) Implementing preventive measure over following four years to minimize re-siltation of the ponds.
- c) To prevent of slowdown future siltation, the embankment stability by grass turfing/ stone pitching, plantation of suitable species and constructing ghat is also included in the de-silting and improvement plan.

It is proposed that all the ponds shall be de-silted by mechanical means, It by deploying one 0.9 m<sup>3</sup> back hoe with one 10 tonne for de silting of the pond in period of two-three days. The machines shall be deployed in a planned manner to complete the work in a shortest time frame.

The ponds shall be allowed to dry up completely during the early summer i.e during March and April followed by siltation in the above described manner.

The first year work shall also comprise of the following preventive measures to minimize siltation.

Providing embankment to the ponds where ever necessary.

Strengthening the existing pond embankment to check external flow of surface run off in to the pond.

Regular removal of aquatic weeds.

Plantation of trees on the top of the embankment and stone pitching on the slopes to prevent bank erosion.

Plantation of non-seeding economic trees like Lemon, Custard Apple, Guava, Papaya, Mango, Litchi, That will be taken up by our CSR wing by involving the villagers.

The detail estimate of plantation programme is furnished below: -

#### **Management Initiative/ Action plan:**

Initiative has been already taken for renovation & de-siltation of pond situated in the surrounding villages from the lease, excluding the village bond / water bodies, which are within five km radius of Gangaramchak and Gangaramchak Bhadulia Coal block mines, Also with the help of the government, local representative and public, lessee has planned for development of micro watershed structures for harvesting & ground water recharge, This environmental safe guard measures will be taken with an objective to meet the domestic need for the local people as well as to recharge the water table for enhancement of ground water potential. The following seven ponds have been selected for renovation by the User Agency which area situated in the southern side of the mine in between the mine of the canal and topographically at lower RL.

#### **Cost Involvement:**

Based on the soil strata & dimension of the pond/watershed structures and the scope of the work, detail costs have been estimated for renovation of these village ponds & water bodies within 5 kms radius of the lease boundary.

Cost estimation is prepared considering the following activities.

1. **Dewatering of village pond:** This will be carried out by engaging dewatering pump wherever required.
2. **De-silting:** After pumping out the water from the pond, silts are to be removed either manually by deploying labour or excavator & dumper combination.
3. **Earthwork Excavation:** Wherever required, soil has to be removed for deepening the bond to increase water holding capacity of the pond.
4. **Plantation:** To arrest soil erosion from the embankment of the pond or watershed structure, plantation to be grown over there.

The above schemes will be executed in a phased manner. Where ever required, necessary assistance will be taken from the local villagers along with local administration for effective implementation of the scheme.

The detail estimation for the said work is given in the separate sheet as table – I

## **INSPECTION AND MONITORING**

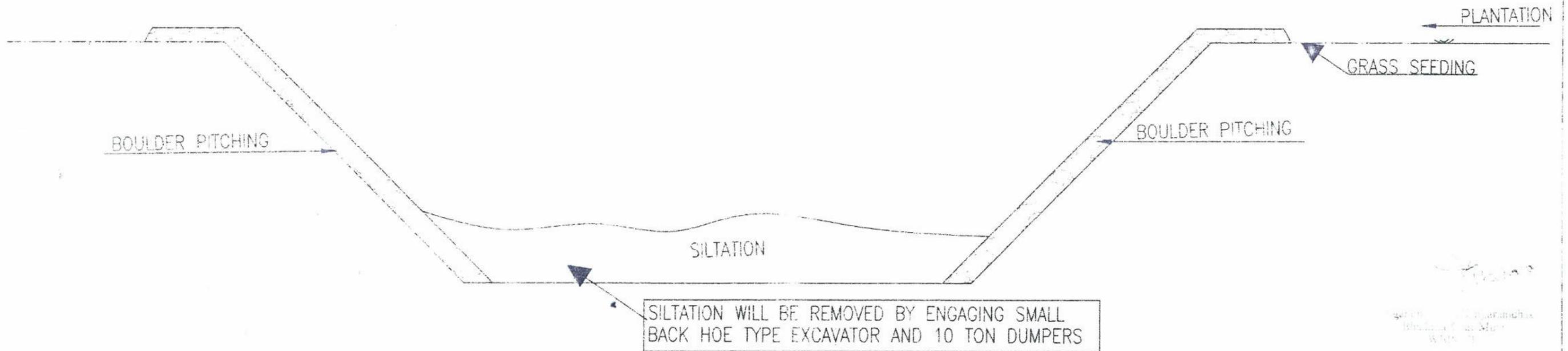
In all the cases, the work shall be executed by the User Agency with outsourced man and machinery. To facilitate this, the user agency shall establish its own executing and supervision cells along with required Infrastructural facilities. In order to maintain the quality of work, in house supervision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

  
Amalesh Kumar 07/02/19  
**Director (Mining)**

West Bengal power Development Corporation Limited  
Kolkata

THE FOLLOWING ACTIVITIES WILL BE UNDERTAKEN FOR DESILTATION OF VILLAGE POND UNDER THIS SCHEME

- A) EXCAVATION OF SILTED MATERIAL -- 27731 CUM.
- B) ROUGH STONE PACKING --- 3745 CUM.
- C) PLANTATION --- 2 HECTARE AREA



*[Signature]*  
12/2/19  
Divisional Forest Officer  
Birbhum Division (Suri)

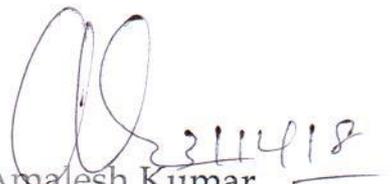


**Annexure - 18**

**UNDERTAKING :**

**Gangaramchak & Gangaramchak-Bhadulia Coal Mine**

This is to certify that, The West Bengal Power Development Corporation Ltd (WBPDCCL), A Government of West Bengal Enterprise, undertake that , there is no existence of dwellers in the Forest land for which R&R plan is required, in connection of diversion of 101.77 ha Forest land in Birbhum Forest Division , District Birbhum , West Bengal.

  
Amalesh Kumar  
Director(Mining)  
WBPDCCL

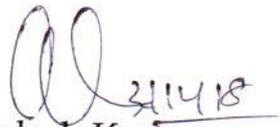


**Annexure - 19**

**UNDERTAKING :**

**Gangaramchak & Gangaramchak-Bhadulia Coal Mine**

This is to certify that, The West Bengal Power Development Corporation Ltd (WBPDCCL), A Government of West Bengal Enterprise, will do mining in a phased manner only after stage - II clearance and take due care for reclamation of the mined over area. The concurrent reclamation plan shall be executed by WBPDCCL as per the approved mining plan / scheme and an annual report on implementation thereof shall be submitted to the concern Nodal Officer, Forest (Conservation) Act, 1980, and the Addl. Principal Chief Conservator of Forests (Central), Ministry of Environment & Forests, concern Regional Office. If it is found from the annual report that the activities indicated in the concurrent reclamation plan are not being executed by WBPDCCL, the Nodal Officer or the Addl. Principal Chief Conservator of Forests (Central) may direct that the mining activities shall remain suspended till such time, such reclamation activities are satisfactorily executed, in connection of diversion of 101.77 ha Forest land in Birbhum Forest Division, District Birbhum, West Bengal.

  
**Amalesh Kumar**  
**Director(Mining)**  
**WBPDCCL**

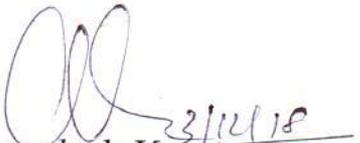


**Annexure - 20**

**UNDERTAKING :**

**Gangaramchak & Gangaramchak-Bhadulia Coal Mine**

This is to certify that, The West Bengal Power Development Corporation Ltd (WBPDCCL), A Government of West Bengal Enterprise, undertake that , no labour camp shall be established on the forest land, in connection of diversion of 101.77 ha Forest land in Birbhum Forest Division , District Birbhum , West Bengal.

  
Amalesh Kumar  
Director(Mining)  
WBPDCCL



**Annexure -21**

**UNDERTAKING :**

**Gangaramchak & Gangaramchak-Bhadulia Coal Mine**

This is to certify that, The West Bengal Power Development Corporation Ltd (WBPDCCL), A Government of West Bengal Enterprise, shall provide firewood preferably alternate fuel to the labourers and the staff working at the site so as to avoid any damage and pressure on the adjacent forest areas , in connection of diversion of 101.77 ha Forest land in Birbhum Forest Division , District Birbhum , West Bengal.

  
**Amalesh Kumar**  
**Director(Mining)**  
**WBPDCCL**



**Annexure - 22**

**UNDERTAKING :**

**Gangaramchak & Gangaramchak-Bhadulia Coal Mine**

This is to certify that, The West Bengal Power Development Corporation Ltd (WBPDCCL), A Government of West Bengal Enterprise, undertake that Boundary of the mining lease and safety zone shall be demarcated on ground at the project cost, by erecting four feet high reinforced cement concrete pillars, each inscribed with its serial number, forward and back bearing, distance from pillars to pillar and GPS co-ordinates, in connection of diversion of 101.77 ha Forest land in Birbhum Forest Division , District Birbhum , West Bengal.

**Amalesh Kumar**  
**Director(Mining)**  
**WBPDCCL**

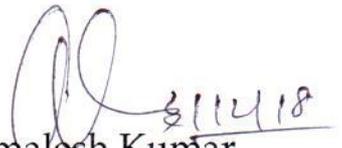


**Annexure - 23**

**UNDERTAKING :**

**Gangaramchak & Gangaramchak-Bhadulia Coal Mine**

This is to certify that, The West Bengal Power Development Corporation Ltd (WBPDCCL), A Government of West Bengal Enterprise, undertake that Forest land shall not be used for any purpose other than that specified in the proposal, in connection of diversion of 101.77 ha Forest land in Birbhum Forest Division , District Birbhum , West Bengal.

  
**Amalesh Kumar**  
**Director(Mining)**  
**WBPDCCL**



**Annexure - 25**

**UNDERTAKING :**

**Gangaramchak & Gangaramchak-Bhadulia Coal Mine**

This is to certify that, The West Bengal Power Development Corporation Ltd (WBPDCCL), A Government of West Bengal Enterprise, undertake that, WBPDCCL shall submit the annual self-compliance report in respect of conditions of Stage I forest Clearance to the State Government concerned Regional Office and Ministry of Environment & Forest by the end of March every year regularly , in connection of diversion of 101.77 ha Forest land in Birbhum Forest Division , District Birbhum , West Bengal.

  
**Amalesh Kumar**  
**Director(Mining)**  
**WBPDCCL**



**Annexure - 26**

**UNDERTAKING :**

**Gangaramchak & Gangaramchak-Bhadulia Coal Mine**

This is to certify that, The West Bengal Power Development Corporation Ltd (WBPDCCL), A Government of West Bengal Enterprise, undertake to comply any other condition that the concern Regional Office of Ministry of Environment & Forest, may stipulate, from time to time, in the interest of conservation, protection and development of forests & wildlife , in connection of diversion of 101.77 ha Forest land in Birbhum Forest Division , District Birbhum , West Bengal.

  
**Amalesh Kumar**  
**Director(Mining)**  
**WBPDCCL**



**Annexure - 27**

**UNDERTAKING :**

**Gangaramchak & Gangaramchak-Bhadulia Coal Mine**

This is to certify that, The West Bengal Power Development Corporation Ltd (WBPDCCL), A Government of West Bengal Enterprise, shall comply the provisions of the all Acts, Rules, Regulations, Guidelines & Hon'ble Court Order (s) pertaining to this project, if any, for the time being in force, as applicable to the project, in connection of diversion of 101.77 ha Forest land in Birbhum Forest Division , District Birbhum , West Bengal.

  
Amalesh Kumar  
Director(Mining)  
WBPDCCL