

Action Taken Report in light of the directions issued by the Hon'ble NGT (PB), New Delhi in O.A No. 269 of 2021 dated 08.11.2021 in the matter of Vijay Sharma Vs State of Jharkhand

1. In light of the directions issued by the Hon'ble NGT (PB), New Delhi in O.A No. 269 of 2021 dated 08.11.2021 in the matter of Vijay Sharma Vs State of Jharkhand, a Joint Committee **comprising of the following members has been constituted** to ascertain the factual position of the grievance raised by the petitioner against ***“inaction of the authorities in taking steps against air pollution caused by burning of overburden from the open cast mine of Coal India Limited at Bhagmara, Jharkhand”***
 - i. Mr. G.P.Singh, Scientist 'D', Central Pollution Control Board, Regional Directorate, Kolkata
 - ii. Mr. Arun Kumar Chaudhary, Regional Officer, JSPCB Regional Office, Dhanbad.
 - iii. Dr. Kumar Tarachand, A.D.M (Law & Order)- Representative of District Magistrate, Dhanbad.
 - iv. Dr. Raju Kumar, Representative of SEIAA, Jharkhand
2. The Joint Committee has conducted the inspection of M/s Block II, OCP of BCCL, At – Baghmara Area, Dist- Dhanbad on 30.12.2021 as per the direction issued by the Hon'ble NGT in O.A. No. 269/2021 vide its order dated 08.11.2021 and the copy of the inspection report is enclosed herewith as **Annexure 1**. The few of the observation of the same are mentioned below:
 - i. Over burden removal operation were being carried out in the fiery patch for extraction of coal.
 - ii. Water sprinklers and fog-based dust suppression systems are far less in number and is not commensurate with scale of operation.
 - iii. Haul roads in the lease area is made of loose soil. It adds to the fugitive emission for plying of heavy vehicles at high frequency.
 - iv. Tree plantation is very poor in and around the inspection site.
3. The Joint Committee in its inspection report has also incorporated few recommendations for control of fugitive emission, development of green belt, ecological restoration of Over Burden Dumps etc.
4. Based on the recommendation made by the Joint Committee, the representative from BCCL has submitted an “Action taken Report (ATR) on the recommendations of the NGT committee” to the Board vide letter no. BCCL/POABOCP/Env/2021-



2022/2494 dated 21.03.2022 and the copy of the report is enclosed herewith as **Annexure 2**.

5. The Board has directed the Regional Officer, JSPCB Regional Office, Dhanbad to verify the compliances with respect to the Action Taken Report submitted by the M/s BCCL in light of the inspection conducted by the Joint Committee, constituted by Hon'ble NGT. The copy of the report is enclosed herewith as **Annexure 3**.
6. The Regional Officer, JSPCB Regional Office, Dhanbad vide memo no. 361 dated 20.04.2022 has submitted the compliance verification report to the Board with a recommendation to issue a Show Cause notice for submission of Time Bound Action Plan for compliance of the observations and recommendations made by the Joint Committee and also proposed to levy Environmental Compensation for not taking effective measures for control of dust emission from the Over Burden. The copy of the compliance verification report is enclosed herewith as **Annexure 4**.
7. Based on the abovementioned observations, the Board vide letter no. B-936 dated 11.05.2022 has issued a show-cause notice to the Project Officer, M/s Block II OCP, BCCL, At- Baghmara Area, P.O.- Nudkhurkee, Dist- Dhanbad but no one has appeared before the Board nor submitted their reply to explain their part. The copy 1st show cause letter is enclosed herewith as **Annexure 5**.
8. For the aforesaid reason the Board has again given a 2nd opportunity to the Project Officer, M/s Block II OCP, BCCL, At- Baghmara Area, P.O.- Nudkhurkee, Dist- Dhanbad to explain their part. The date of last Show-cause was fixed on 06.07.2022.


(Yatindra Kumar Das)
Member Secretary

Annexure 15



झारखण्ड राज्य प्रदूषण नियंत्रण पर्वद
JHARKHAND STATE POLLUTION CONTROL BOARD
T.A. DIVISION BUILDING (GROUND FLOOR), H.E.C., DHURWA, RANCHI -834004
Phone.: 0651-2400852/2400851/2400850(Fax), Web site : www.jspcb.org

Ref.: B-936
From,

Ranchi, Dated: 11/5/2022

Yatindra Kumar Das,
Member Secretary

To:

Sri K.K. Singh,
The Project Officer, ABOCP Mine,
M/S Block II OCP,
BCCL, At- Bahghmara Area,
P.O.- Nudkharkee, Distt.- Dhanbad- 828307

Sub: Show Cause notice under the section 25 of Water (Prevention and Control of Pollution) Act, 1974 and under the section 21 of Air (Prevention and Control of Pollution) Act, 1981 regarding.

Sir,

Whereas, the unit was inspected on 09.04.2022 by the Regional Officer, JSPCB, Dhanbad and Sri Kumar Mani, CE for the verification of compliance and recommendation of the the committee constituted by the Hon'ble NGT, PB, New Delhi in O.A. No.- 269/2021. The point wise present status as observed during site inspection of the observations and recommendations of the report of the committee constituted by the Hon'ble NGT, PB are tabulated as below :-

Observations		
S. No.	Observations	Present status
2.1	It was observed that the Over Burden removal operations were being carried out in fiery patch for extraction of coal.	At the time of inspection no such activity was being carried out. However, the PP informed that to avoid the fiery patch wetting of the area is being carried out. Moreover, the wetting / sprinkling is also carried out during shovel operations, excavation, material transportation, at T Point, dumping point etc.
2.2	Water sprinklers and fog based dust suppression systems are far less in number and is not commensurate with scale of operation. (Photographs enclosed as Annexure - 'C').	The PP informed that 4 mobile sprinklers of 20 KL capacity, 1 truck mounted fog cannon gun of 40 m radial throw, 1 mist sprinkler of 12 KLD capacities are deployed at mine site.
2.3	Haul roads in the lease area are made of loose soil. It adds to fugitive emission for plying of heavy vehicles at high frequency.	The PP informed that water spraying is being done on the haul roads with the help of the 4 mobile sprinklers of 20 KL capacity which are deployed at the mine site.
2.4	Tree plantation is very poor in and around inspection site. Negligible plantation is	The PP informed that the work order for tree plantation over an area of 8 Ha. (20,000 nos.

	visible in safety zone and along haul roads.	<i>of plants) has already been issued to Forest Department but did not provide the work order copy at the time of inspection.</i>
3.1	Control fugitive emission at source	
a.	Over Burden handling areas – Intensify dust suppression system in place by increasing no. of machines and frequency of dust suppression activity such as water sprinklers coupled with fog based dust suppression system. In case of coal fines, fogs are better suppressant for the nature and size of coal fines.	<i>As informed by the PP, it is under proposal stage.</i>
b.	Steps to prevent spillages from transporting vehicles – The mining authority should ensure compliance of Hon'ble NGT order (OA 284/2019 dated 19.09.2019), The order states that all vehicles used for coal transportation should take necessary action to prevent any spillages from these vehicles. A minimum safe free board (preferably not less than 5 cm) should be maintained in all the loaded vehicles (to prevent the spillages). The loaded material should be properly covered with impervious material to prevent the escape of fines from it under negative draft as well as percolation of rain water which may lead to seepage from it.	<i>As informed by the PP, a free board is being maintained in the loaded vehicles. However, at the time of inspection no transportation was going on.</i>
c.	Vehicles plying on roads – Water spraying on haul roads should be done using chemical dosed water as it strongly binds loose soil particles. This binding of particles has lasting impact. This in turn will help control fugitive emission resulting from plying of vehicles	<i>As informed by the PP, it is under proposal stage.</i>
d.	Installation and Interlocking of Online system with operation of water sprinklers – Minimum 2 no of online systems to be commissioned in the downstream of Over Burden handling area in direction of habitations.1 st to be installed where dust concentration is maximum and second where this is brought within CPCB norms. These should be located between source (Over Burden handling area) and sink (habitations). Operation water sprinklers in the area to be interlocked with Online system such that sprinklers starts as dust concentration exceeds norms and stops as it is brought within norms. Only chemical dosed water spray should be done for dust suppression on roads	<i>As informed by the PP, it is under proposal stage.</i>
e.	Keep multiple handling of Over Burden to minimum – This will reduce fugitive emission proportionately and the resultant	<i>As informed by the PP, at present the OB is being stored at a designated place and it has reached the maximum height.</i>

	dust pollution.	
f.	<u>Over Burden shifting and dumping only in upwind direction away from habitations</u> – Practice will help minimize fugitive dust load reaching to habitations and the resultant impact.	<i>As informed by the PP, at present the OB is being stored at a designated place and it has reached the maximum height and now the OB which is being stored is in upwind direction only.</i>
3.2	<u>Dense green belt development</u> – Tree plantation is negligible in safety zone and along roadsides. Green belts are very effective barrier against fugitive emission generated during handling of burnt Over Burden. Thick green belt developed around dust affected habitations can bring relief to inhabitants by acting as barrier between source and the sink. Extensive and at high density avenue plantation with dust tolerant native tree species to be done along haul roads.	<i>As informed by the PP, it is under proposal stage.</i>
3.3	<u>Ecological restoration of Over Burden dumps</u> – Such a site is very few and poorly maintained. Efforts and performance need to be reinforced for visible results. This can be realized by planting grass, herb, shrub and trees in the area earmarked for the purpose coupled with sustained maintenance.	<i>As informed by the PP, it is under proposal stage.</i>
3.4	<u>All available bare land to be thickly vegetated and properly maintained</u> – This will reduce dust getting air borne and its impact.	<i>As informed by the PP, it is under proposal stage.</i>
3.5	<u>Dedicated team for controlling dust emission</u> – A dedicated team led by an officer not less Manager should be deployed at site for controlling fugitive emission generated in the area.	<i>As informed by the PP, it is under proposal stage.</i>

Whereas, Regional Officer, JSPCB, Dhanbad has recommended to ask *show cause to the Unit to submit a time bound action Plan for compliance of the abovementioned observations and recommendations of the Committee constituted by the Hon'ble NGT, PB, New Delhi and Environmental Compensation may be levied for not taking proper effective measures to stop burning of coal and control dust emissions from the Over Burden.*

Now, therefore, in view of the above and by exercising the powers vested under the section 25 of Water (Prevention and Control of Pollution) Act, 1974 and under the section 21 of Air (Prevention and Control of Pollution) Act, 1981 you are given an opportunity to be present in person on **17.05.2022** at 11:30 AM in the office chamber of the Member Secretary to explain why the Environmental Compensation should not be levied upon your unit.

Yours faithfully
Sd/-
(Yatindra Kumar Das)
Member Secretary

Memo No: B-936

Ranchi, Dated: 11/5/2022

Copy to: The Regional Officer, Regional Office, JSPCB, Dhanbad for information and necessary action from his end.

(Yatindra Kumar Das)
Member Secretary
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Verification Report w. r. t. the Action Taken Report on the observations and recommendations of the committee constituted by the Hon'ble NGT, PB, New Delhi in O.A. No. 269/2021 in light of the directions issued vide JSPCB Ref. No. B - 672, Ranchi dated- 01/04/2022.

In light of the directions issued vide JSPCB Ref. No. B - 672, Ranchi dated- 01/04/2022 a site inspection for verification w.r.t. the Action Taken Report on the observations and recommendations of the committee constituted by the Hon'ble National Green Tribunal, Principal Bench, New Delhi in O.A. No. 269/2021 in the matter of Vijay Sharma Vs. State of Jharkhand was carried out by Sri Ram Pravesh Kumar, Regional Officer and Sri Kumar Manibhushan, Consulting Executive, JSPCB Regional Office - Cum - Laboratory, Dhanbad on 09/04/2022 in presence of Sri S. B. Kumar, Additional General Manager (Mining) and Sri Uttam Kumar Jha, Assistant Manager, Environment.

The point wise present status as observed during site inspection of the observations and recommendations of the report of the committee constituted by the Hon'ble NGT, PB are tabulated as follows: -

2.0 Observations		
S. No.	Observations	Present status
2.1	It was observed that the Over Burden removal operations were being carried out in fiery patch for extraction of coal.	At the time of inspection no such activity was being carried out. However, the PP informed that to avoid the fiery patch wetting of the area is being carried out. Moreover, the wetting / sprinkling is also carried out during shovel operations, excavation, material transportation, at T Point, dumping point etc.
2.2	Water sprinklers and fog based dust suppression systems are far less in number and is not commensurate with scale of operation. (Photographs enclosed as Annexure - 'C').	The PP informed that 4 mobile sprinklers of 20 KL capacity, 1 truck mounted fog cannon gun of 40 m radial throw, 1 mist sprinkler of 12 KLD capacities are deployed at mine site.
2.3	Haul roads in the lease area are made of loose soil. It adds to fugitive emission for plying of heavy vehicles at high frequency.	The PP informed that water spraying is being done on the haul roads with the help of the 4 mobile sprinklers of 20 KL capacity which are deployed at the mine site.
2.4	Tree plantation is very poor in and around inspection site. Negligible plantation is visible in safety zone and along haul roads.	The PP informed that the work order for tree plantation over an area of 8 Ha. (20,000 nos. of plants) has already been issued to Forest Department but did not provide the work order copy at the time of inspection.
3.0 Recommendations		
S. No.	Observations	Present status
3.1	Control fugitive emission at source	
a.	Over Burden handling areas - Intensify dust suppression system in place by increasing no. of machines and frequency of dust suppression activity such as water sprinklers coupled with fog based dust suppression system. In case of coal fines, fogs are better suppressant for the nature and size of coal fines.	As informed by the PP, it is under proposal stage.

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b.	<p>Steps to prevent spillages from transporting vehicles - The mining authority should ensure compliance of Hon'ble NGT order (OA 284/2019 dated 19.09.2019), The order states that all vehicles used for coal transportation should take necessary action to prevent any spillages from these vehicles. A minimum safe free board (preferably not less than 5 cm) should be maintained in all the loaded vehicles (to prevent the spillages). The loaded material should be properly covered with impervious material to prevent the escape of fines from it under negative draft as well as percolation of rain water which may lead to seepage from it.</p>	<p><i>As informed by the PP, a free board is being maintained in the loaded vehicles. However, at the time of inspection no transportation was going on.</i></p>
c.	<p>Vehicles plying on roads - Water spraying on haul roads should be done using chemical dosed water as it strongly binds loose soil particles. This binding of particles has lasting impact. This in turn will help control fugitive emission resulting from plying of vehicles</p>	<p><i>As informed by the PP, it is under proposal stage.</i></p>
d.	<p>Installation and Interlocking of Online system with operation of water sprinklers - Minimum 2 no of online systems to be commissioned in the downstream of Over Burden handling area in direction of habitations. 1st to be installed where dust concentration is maximum and second where this is brought within CPCB norms. These should be located between source (Over Burden handling area) and sink (habitations). Operation water sprinklers in the area to be interlocked with Online system such that sprinklers starts as dust concentration exceeds norms and stops as it is brought within norms. Only chemical dosed water spray should be done for dust suppression on roads</p>	<p><i>As informed by the PP, it is under proposal stage.</i></p>
e.	<p>Keep multiple handling of Over Burden to minimum - This will reduce fugitive emission proportionately and the resultant dust pollution.</p>	<p><i>As informed by the PP, at present the OB is being stored at a designated place and it has reached the maximum height.</i></p>
f.	<p>Over Burden shifting and dumping only in upwind direction away from habitations - Practice will help minimize fugitive dust load reaching to habitations and the resultant impact.</p>	<p><i>As informed by the PP, at present the OB is being stored at a designated place and it has reached the maximum height and now the OB which is being stored is in upwind direction only.</i></p>
3.2	<p>Dense green belt development - Tree plantation is negligible in safety zone and along roadsides. Green belts are very effective barrier against fugitive emission</p>	<p><i>As informed by the PP, it is under proposal stage.</i></p>

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	generated during handling of burnt Over Burden. Thick green belt developed around dust affected habitations can bring relief to inhabitants by acting as barrier between source and the sink. Extensive and at high density avenue plantation with dust tolerant native tree species to be done along haul roads.	
3.3	Ecological restoration of Over Burden dumps – Such a site is very few and poorly maintained. Efforts and performance need to be reinforced for visible results. This can be realized by planting grass, herb, shrub and trees in the area earmarked for the purpose coupled with sustained maintenance.	<i>As informed by the PP, it is under proposal stage.</i>
3.4	All available bare land to be thickly vegetated and properly maintained – This will reduce dust getting air borne and its impact.	<i>As informed by the PP, it is under proposal stage.</i>
3.5	Dedicated team for controlling dust emission – A dedicated team led by an officer not less Manager should be deployed at site for controlling fugitive emission generated in the area.	<i>As informed by the PP, it is under proposal stage.</i>

Recommendation: - In light of the present status of the Unit, a show cause notice may be issued to the Unit to submit a time bound action Plan for compliance of the abovementioned observations and recommendations of the Committee constituted by the Hon'ble NGT, PB, New Delhi and Environmental Compensation may be levied for not taking proper effective measures to stop burning of coal and control dust emissions from the Over Burden.

M. Manish
20/04/22
(Kumar Manibhushan)
Consulting Executive,
JSPCB Regional Office – Cum – Laboratory,
Dhanbad

Ram Pravesh Kumar
20/04/2022
(Ram Pravesh Kumar)
Regional Officer,
JSPCB Regional Office – Cum – Laboratory,
Dhanbad

Memo No. 361.....

Copy to: The Member Secretary, JSPCB for information and necessary action please.

Ranchi, dated... 20/04/2022

Ram Pravesh Kumar
20/04/2022
(Ram Pravesh Kumar)
Regional Officer,
JSPCB Regional Office – Cum – Laboratory,
Dhanbad

Annexure-3



JHARKHAND STATE POLLUTION CONTROL BOARD

TOWNSHIP ADMINISTRATION BUILDING, HEC COMPLEX, DHURWA, RANCHI 834004

Telephone: 0651-2400850 (Fax)/ 2400851/2400852/2401847/2400979/240013

By email

Hon'ble NGT Matter
Time Bound (Urgent)

Ref. No. B-672

Ranchi, Dated... 01/04/2022

From,
Yatindra Kumar Das,
Member Secretary.

To,
The Regional Officer,
Regional Office, Dhanbad

Sub: - Submission of verification report with respect to the Action Taken Report submitted in light of Hon'ble NGT, Principal Bench, New Delhi in its order dated 08.11.2021 in O.A. No. 269/2021 (Vijay Sharma Vs State of Jharkhand) – Regarding.

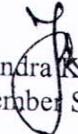
Ref. no.- Yours letter ref. no. 312 dated 22.03.2022

Sir,

With reference to the subject stated and letter referred above, it is directed to submit a verification report on or before 05.04.2021 with respect to Action Taken Report submitted by Head of the Department (Environment), Bharat Coking Coal Ltd. CCL vide letter dated 21.03.2022 in light recommendation made by the Joint Committee constituted by the Hon'ble NGT, Principal Bench, New Delhi in its order dated 08.11.2021 in O.A. No. 269/2021 (Vijay Sharma Vs State of Jharkhand).

Thanking You.

Yours sincerely,


(Yatindra Kumar Das)
Member Secretary



A Mini-Ratna Company
OFFICE OF THE PROJECT OFFICER
AMALGAMATED BLOCK-II OCP MINE
PO: Nudkharkee, Dist :Dhanbad -828307



Ref. No. BCCL/PO/ABOCP/Env /2021-22/ 2494

Dated: 21/03/2022

To,
HOD(Env),
Koyla Bhawan,
BCCL Dhanbad

Subject: "Action taken Report (ATR) on the recommendations of the NGT committee"

Respected Sir,

In view of Hon'able NGT order dated 08.11.2021 in O.A. No 269/2021 a joint committee was constituted to review the Grievance in the application of Sri Vijay Sharma, Convenor, Nagrik Parishad, Baghmara, Dhanbad, against "inaction of authorities in taking steps against air pollution caused by burning of overburden from the opencast mine of Coal India Limited at Baghmara, Benedih section of Block-II Area, BCCL. Inspection for which was conducted on 31.12.2021, following these certain recommendations were prescribed by the committee. The following Actions is being taken considering the recommendations.

Sl No.	Recommendation	Action taken/ Prevailing practice
1. (a)	Over burden handling areas: intensify dust suppression system such as water sprinklers coupled with fogging arrangement.	The working in fiery patch (overburden handling area) has been limited to a particular zone where the dust suppression is properly installed. There are 3 different pipe ranges connected to 2000GPM pump is utilized for quenching fiery benches, 4 Nos of 20KL mobile water sprinkler, 1 no of 50m range Fog cannon & one truck mounted Fog cannon is operational of the complaint site.
1. (b)	Steps to prevent spillage from transporting vehicles	The Overburden (OB) handling dumpers ensured with handling of lesser quantity of OB and wetting with overhead canopy-based shower arrangement. For coal caring vehicles plying on public road is ensured with 100% covered transportation.
1. (c)	Vehicle plying on road: water spraying using chemical dosed water.	The option of use of chemical as dust suppressant is being explored for whole company wide implementation.
1. (d)	Installation and interlocking of online system with operation of water sprinklers	There are 2 Nos of Online PM10 analyzer system already installed near to the complain site. One at East (Kessuragarh siding) and one to the West (KKC Link siding) of complain site. The data for which is instantaneously

Sr. Rajnarayan
21/03/2022

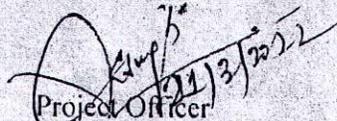
1. (e)	Keep multiple handling of Overburden to minimum	The sanctioned strength of Overburden handling for the site is 13 shovels of 2.4m ³ each while the operational capacity utilization is limited to 5 shovels of 2.4m ³ each i.e., (38.5%)
1. (f)	Overburden burden shifting and dumping only in upwind direction away from habitation	Predominant wind direction is SW/W accordingly there are 2 nos of online PM10 analyzers installed and the dumping is ensured to minimize the dust propagation keeping in view of dominant wind direction.
2.	Dense green belt development	There are total of 45 Ha of plantation/eco-restoration sites in Block2 OCP in which adjacent to the site there is 7.2ha in West while 12.4 in North. Apart from this 8ha in the safety zone adjacent to the site has been chosen for plantation from DFO also 500 nos of gabion plantation along the transportation route have been chosen near to complain site planned for FY 2022-23.
3.	Ecological restoration of Overburden	It is the regular followed practice that the permanent dumps and backfilled areas are 1 st technically reclaimed and then taken up for biological reclamations.
4.	All available bare land to be thickly vegetated and properly maintained	All available bare/barren lands are taken up every year in phased manner. For FY 2022-23 8Ha has been planned to taken up through DFO Dhanbad.
5.	Dedicated team for controlling dust emission	Shri K.K.Dutta, Mines Manager is the assigned person dedicatedly appointed to look after the implementation of active dust control measures.

(17)

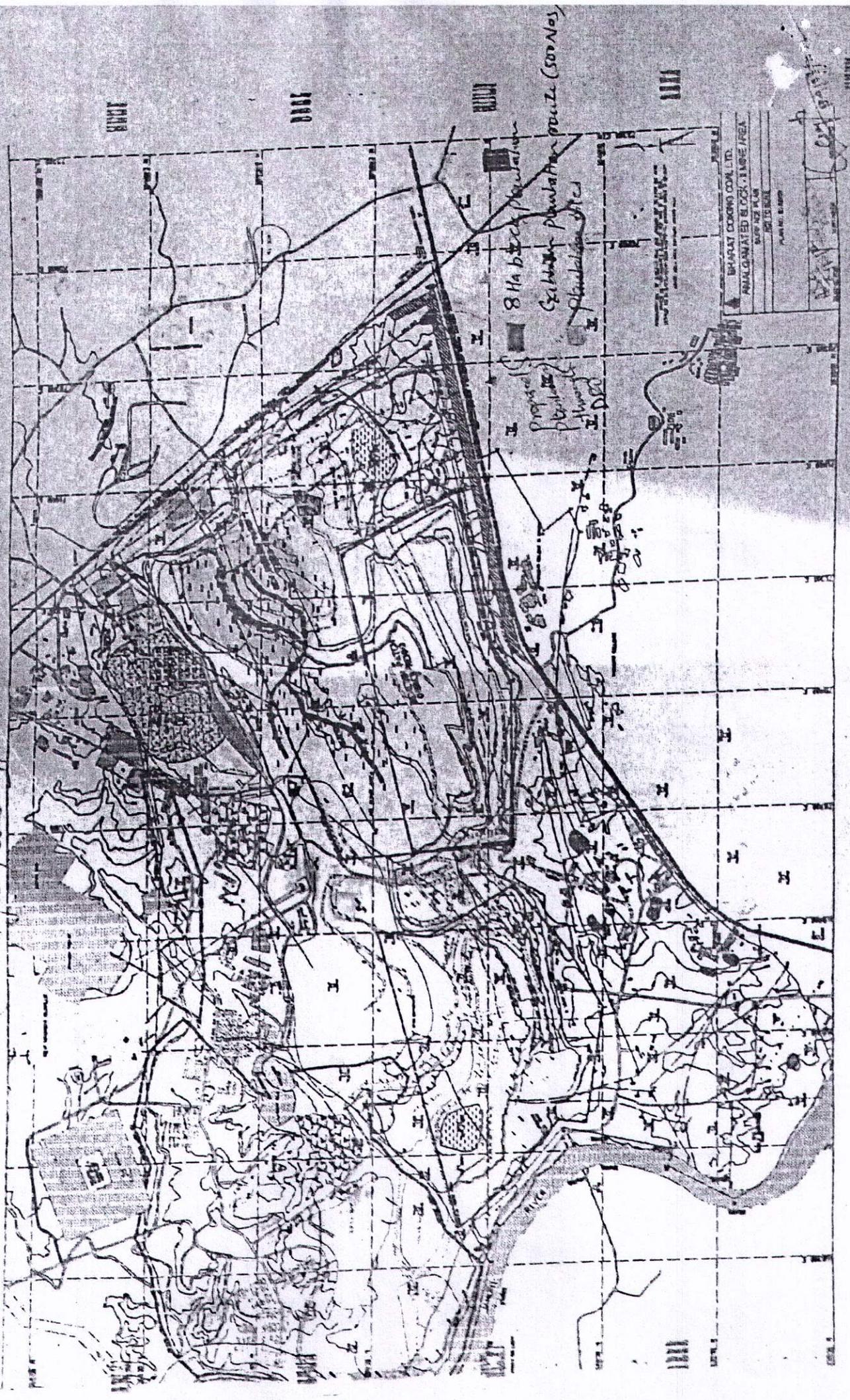
Copy to:

1. General Manager, Block-II Area
2. Addl. General Manager, Block-II Area

Yours faithfully


Project Officer
Block-II OCP
21/3/2022

Attachment for All on recommendations of the NGT committee
for the plan showing the development practice
of regulatory deed system





झारखण्ड राज्य प्रदूषण नियंत्रण पर्वद
Jharkhand State Pollution Control Board
HIG-1, Housing Colony, Dhanbad-826001

PH: 0320-5510074

Annexure - 1

Letter No : 312

Dated : 22/03/2022

From, R.P. Kumar,
Regional Officer,
Dhanbad.

To, The Member Secretary,
Jharkhand State Pollution Control Board,
H.E.C., Dhurwa, Ranchi.

Sub: Inspection report in the light of Hon'ble NGT Principal Bench, New Delhi order dated 08.11.2021 in O.A. No. 269/2021.

Ref: H.Q. Ranchi Memo no. B-2110, dt. 03.12.2021

Sir,

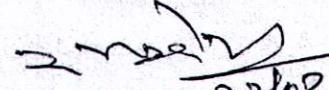
In compliance of Hon'ble NGT, PB, New Delhi order dated 08.11.2021 in O.A. No. 269/2021 in the matter of Vijay Sharma versus State of Jharkhand, Block -II OCP, BCCL at Baghmara Area was inspected on 30.12.2021 by the constituted committee.

In compliance of recommendation made by the committee during inspection, BCCL official has submitted Action Taken Report.

The inspection report & action taken report is being forwarded for information & necessary action.

Env- A/a.

Your's faithfully,


(R.P. Kumar) 24/03/2022
Regional Officer, Dhanbad

(23)

Inspection report in the light of Hon'ble NGT Principal Bench, New Delhi order dated 08.11.2021 in O.A. No. 269/2021

As per the direction of the Hon'ble NGT Principal Bench, New Delhi order dated 08.11.2021 in O.A. No. 269/2021 in the matter of Vijay Sharma versus State of Jharkhand, a joint committee was to be constituted from the below mentioned organization i.e.

- Central Pollution Control Board
- State Pollution Control Board
- District Magistrate, Dhanbad
- SEIAA, Jharkhand.

And accordingly a four member's expert committee had been constituted.

- Mr. G. P. Singh, Scientist 'D', Central Pollution Control Board, Regional Directorate, Kolkata
- Mr. Arun Kumar Chaudhary Regional Officer, Dhanbad, Jharkhand State Pollution Control Board.
- Dr. Kumar Tarachand, A.D.M. (Law and Order) - representative to District Magistrate, Dhanbad.
- Dr. Raju Kumar, Member, SEIAA, Jharkhand.

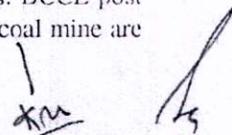
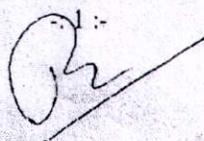
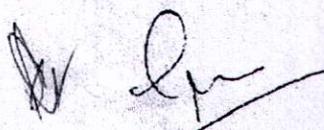
Above committee members assembled at Office of the Dy. Commissioner, Dhanbad. Committee for meeting in the concerned matter. The committee discussed the matter at length and after the discussion the committee members inspected Block-II site of M/s. BCCL, Baghmara, Dhanbad on 30.12.2021 as per the direction issued by Hon'ble NGT in OA no. 269/2021 vide its order dated 08.11.2021.

Environmental Performance of Block-II open cast mines, M/s. BCCL, Baghmara, Dhanbad based on the site visited by joint committee members on 30.12.2021 and subsequent meetings held.

1.0 Background

Hon'ble NGT constituted a joint committee as above based on grievance in the application of Sri Vijay Sharma, Convenor, Nagrik Parishad, Baghmara, Dhanbad, on **"Inaction of authorities in taking steps to control air pollution caused by burning of overburden from the opencast mine of Coal India Limited at Baghmara, Jharkhand"**. In this respect, the followings are to be submitted:

- 1.1 The coal mining and subsequent transport does not involve burning of Over Burden. However the fire affected areas are having hot Over Burden due to burning coal underneath which is cooled down by water before extraction, during transport and at dumping site. The complainant has mentioned that the Over Burden is burnt.
- 1.2 It is evident that old operated coal mines of Jharia coal field are inherited by M/s. BCCL by virtue of nationalization and are affected with fire and subsidence and M/s. BCCL being a Public Sector Undertaking under Government of India has taken necessary steps for controlling fire.
- 1.3 It is prudent to mention that the complainant has further informed vide its letter no 012 dated 14.09.2021 (enclosed as annexure - 'A') that the accelerated action taken by M/s. BCCL post complain to control dust pollution by water spraying on the burnt Over Burden in coal mine are now satisfactory and pollution is since under control.



- 1.4 For carrying out mining operations statutory clearances from the regulatory authorities, DGMS, MoEF&CC (EC granted vide F no. J-11015/35/2011-IA.II (M) dated 06 February 2013, Enclosed as annexure – 'B') and JSPCB are obtained and regular inspection by these bodies for its compliance are also undertaken as a regular procedure.
- 1.5 Due to the coal fire issues, Govt. of India has approved a Master Plan for controlling fire and rehabilitation which is already under implementation. In rehabilitation Non M/s. BCCL person are to be shifted by State Government through JRDA and M/s. BCCL employees by M/s. BCCL management.
- 1.6 Fire dealing is to be carried out by M/s. BCCL as per the Master Plan approved by Govt. of India.
- 1.7 The same is also being monitored by Hon'ble Supreme Court under the case of WPC 381/1997 and by High Power Central Committee chaired by Secretary (Coal) to Govt. of India.
- 1.8 While granting EC, MoEF&CC has also prescribed dovetailing of Master plan with EC. In the process of EC, the prescribed terms of Reference was complied with all the prescribed baseline study requirements, impact assessment and management plan (EIA-EMP) based on ground conditions. The EIA-EMP was duly examined by State Pollution Control Board and stakeholders in duly conducted public hearing before detailed deliberation by expert appraisal committee of MoEF&CC and subsequent grant of EC based on recommendation.
- 1.9 Subsequently, CTO have been obtained as per prescribed guideline laid out by State Authorities and renewed from time to time.

2.0 Observations

- 2.1 It was observed that the Over Burden removal operations were being carried out in fiery patch for extraction of coal.
- 2.2 Water sprinklers and fog based dust suppression systems are far less in number and is not commensurate with scale of operation. (Photographs enclosed as Annexure – 'C')
- 2.3 Haul roads in the lease area is made of loose soil. It adds to fugitive emission for plying of heavy vehicles at high frequency
- 2.4 Tree plantation is very poor in and around inspection site. Negligible plantation is visible in safety zone and along haul roads.

3.0 Recommendations

3.1 Control fugitive emission at source

- a. **Over Burden handling areas-** Intensify dust suppression system in place by increasing no. of machines and frequency of dust suppression activity such as water sprinklers coupled with fog based dust suppression system. In case of coal fines, fogs are better suppressant for the nature and size of coal fines.
- b. **Steps to prevent spillages from transporting vehicles-** The mining authority should ensure compliance of Hon'ble NGT order (OA 284/2019 dated 19.09.2019), The order states that all vehicles used for coal transportation should take necessary action to prevent any spillages from these vehicles. A minimum safe free board (preferably not less than 5 cm) should be maintained in all the loaded vehicles (to prevent the spillages). The loaded material should be properly covered with impervious material to prevent the escape of fines from it under negative draft as well as percolation of rain water which may lead to seepage from it.

- (31)
- c. **Vehicles plying on roads**-Water spraying on haul roads should be done using chemical dosed water as it strongly binds loose soil particles. This binding of particles has lasting impact. This in turn will help control fugitive emission resulting from plying of vehicles
- d. **Installation and Interlocking of Online system with operation of water sprinklers**- Minimum 2 no of online systems to be commissioned in the downstream of Over Burden handling area in direction of habitations. 1st to be installed where dust concentration is maximum and second where this is brought within CPCB norms. These should be located between source (Over Burden handling area) and sink (habitations). Operation water sprinklers in the area to be interlocked with Online system such that sprinklers starts as dust concentration exceeds norms and stops as it is brought within norms. Only chemical dosed water spray should be done for dust suppression on roads
- e. **Keep multiple handling of Over Burden to minimum**- This will reduce fugitive emission proportionately and the resultant dust pollution.
- f. **Over Burden shifting and dumping only in upwind direction away from habitations** - Practice will help minimize fugitive dust load reaching to habitations and the resultant impact.

3.2 Dense green belt development

Tree plantation is negligible in safety zone and along roadsides. Green belts are very effective barrier against fugitive emission generated during handling of burnt Over Burden. Thick green belt developed around dust affected habitations can bring relief to inhabitants by acting as barrier between source and the sink. Extensive and at high density avenue plantation with dust tolerant native tree species to be done along haul roads.

3.3 Ecological restoration of Over Burden dumps

Such a site is very few and poorly maintained. Efforts and performance need to be reinforced for visible results. This can be realized by planting grass, herb, shrub and trees in the area earmarked for the purpose coupled with sustained maintenance.

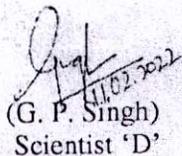
3.4 All available bare land to be thickly vegetated and properly maintained- This will reduce dust getting air borne and its impact.

3.5 Dedicated team for controlling dust emission

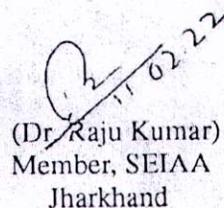
A dedicated team led by an officer not less Manager should be deployed at site for controlling fugitive emission generated in the area.



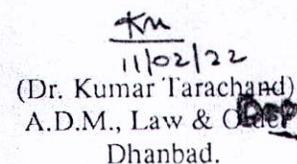
(A.K. Chaudhary)
Regional Officer
JSPCB, Dhanbad



(G. P. Singh)
Scientist 'D'
CPCB, R.D. Kolkata



(Dr. Raju Kumar)
Member, SEIAA
Jharkhand



(Dr. Kumar Tarachand)
A.D.M., Law & Order
Dhanbad.
Deputy Commr
Dhanbad

नागरिक परिषद, बाघमारा, धनबाद
(झारखण्ड)

पत्रांक: - 012-.....

दिनांक: - 14/09/2021

सेवा में,

महाप्रबंधक महोदय,
भा० को० को० लि०,
BCCI Block II जे०।

विषय:- जले हुए ओवर वर्डन के धूल कणों पर अंकुश लगाने के संबंध में।

महाशय,

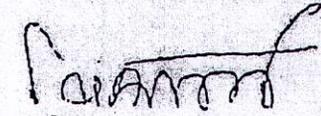
उपरोक्त विषय की ओर आपका ध्यान आकृष्ट करते हुए धन्यवाद ज्ञापित करते हैं कि आपने हमारे पत्रांक 06 दिनांक 17.05.2021 का संज्ञान लेते हुए त्वरित कार्रवाई कर प्रदूषण फैला रहे जले हुए ओवर वर्डन के धूल कणों पर जल छिड़काव कर अंकुश लगाने का सतत प्रयास किया।

भविष्य में भी आपसे इसी तरह के सहयोग की अपेक्षा है ताकि इस कारोना काल में बाघमारा क्षेत्र के नागरिकों को स्वास्थ्य लाभ प्राप्त होता रहे और आपसे एक आग्रह है कि नागरिकों के लिए स्वास्थ्य परीक्षण का कैंप लगाकर उनके स्वास्थ्य की चिंता करेंगे।

सधन्यवाद !

भवदीय

For h: a b
Luman
17/9/21


संयोजक नागरिक परिषद
बाघमारा

प्रतिलिपि:-

1. नेशनल ग्रीन ट्रिब्यूनल (NGT)
2. अध्यक्ष झारखण्ड प्रदूषण बोर्ड।
3. अध्यक्ष सह प्रबंध निदेशक, भा० को० को० लि०।
4. सांसद गिरिडीह।
5. विधायक बाघमारा।

No. J-11015/35 /2011-IA.II (M)
Government of India
Ministry of Environment & Forests

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

To

Dated: 6th February, 2013

The General Manager (E&F)
M/s Bharat Coking Coal Ltd.,
Koyala Bhawan,
Dhanbad-826005
Jharkhand

Sub.: Cluster II (5 Mines of a combined prod. capacity of 15.55 MTPA with a peak prod. of 20.215 MTPA in a combined ML area of 2025.71 ha) of M/s Bharat Coking Coal Ltd., located in Jharia Coalfields, dist. Dhanbad, Jharkhand-Environment Clearance –reg.

Sir,

This is with reference to letter no.43011/3/2011-CPAM dated 04.02.2011 along with the application for Terms of Reference (TOR) and this Ministry's letter dated 23.03.2011 granting the TOR. Reference is also invited to the letters no. BCCL/GM (Env.)/EMP F-2012/270 dated 06.04.2012, 12.05.2012, and 04.07.2012 for environmental clearance for the above-mentioned project. The Ministry of Environment & Forests has considered the application. It is noted that the proposal is for opening of a new cluster II which consists of 5 mines of which 3 are opencast mines and 2 are mixed (OC and UG) of a combined ML area of 2025.71 ha for a production capacity of 15.55 MTPA (normative) and 20.215 MTPA (peak). Of the 5 mines, 2 mines are proposed (new), namely, Block II Colliery UG mine and Muraidih Colliery UG mine. The rest are operating mines. The proponent has informed that:

(i) Details of these mines are as per the following:

MINES IN CLUSTER II							
S.no	Name of Mine		Status	Prod. capacity (MTPA)		ML (ha)	Life of Mine (years)
				Normative	Peak		
1	Block II Colliery	UG Section	Proposed	0.45	0.585	852.00	30
		OCP Section	Operating	4.0	5.2		26
2	Jamunia	OCP	Operating	1.20	1.56	55.0	6
3	Shatabdi	OCP	Operating	1.40	1.82	181.30	28
4.	Shatabdi OCP	OCP Section	Operating	3.50	4.55	536.41	6
		UG Section	Proposed	2.00	2.60		14

5	Phularitand	OCP	Operating	3.00	3.90	401.00	18
	Total			15.55	20.215	2025.75	

(ii) The existing level of production in cluster-II are as per the following:

EXISTING LEVEL OF PRODUCTION IN CLUSTER -II			
Coal production in MT for 2011-12			
NAME OF MINE	Normal production (in MT)	One time Fiery coal availed during execution of Master Plan for dealing with fires and subsidence	Total (in MT)
Block II UG Section	Proposed Mine		
Block II OCP Section	1.481	0.0414	1.522
Jamunia OC	0.940	1.694	2.634
Shatabdi OCP	-	1.539	1.539
Muraidih UG Section	Proposed Mine		
Muraidih OCP Section	1.575	0.547	2.122
Phularitand OCP	0.035	0.416	0.451
Total	4.031	4.2374	8.268

(iii) The cluster-II is bound in the east by Cluster-III mines, in the west by River Jamunia, in the north by metamorphic formations and in the south by Cluster-XV mines of BCCL. The mine area is drained in the west by River Khudia flowing easterly and in the east by seasonal nalas flowing westerly to join River Jamunia which flows along the western boundary of the study area and joins River Damodar which is at a distance of 4 km.

(iv) The major project parameters of the 5 mines of Cluster-II are as per the following:

Details of Cluster - II Mines							
Parameter	Block II Colliery		Jamunia	Shatabdi	Muraidih Colliery		Phularitand
	UG Section	OCP Section			OCP Section	UG Section	
Quarry area							
Max depth(m)	250	200	150	80	115	186	142
Method of mining	B&P & Depillaring (caving) with continuous miner	Shovel-dumper combination with dragline	Shovel-dumper combination	Shovel-dumper combination	Shovel-dumper combination	Long wall & B&P	Shovel-dumper combination

Grade of coal	D/E	W-IV	W-III	W-IV	Gr ?W-IV-W-III	Gr-A to G	W-II to W-IV
Mineable Reserve MT	10.63	102.157	7.279	39.34	18.89	25.166	53.451
Production in MT (1993-94)	0	3.09	0.81	0	1.2		
Production in 2009-10 (MT)	0	2.14	1.18	1.46	2.85	0	0.15
Proposed peak Production (MT)	0.585	5.20	1.56	1.82	4.55	2.6	3.9
Cost of production (Rs/T)	665.19	785.13	608.25	530.50	344.28	605	326.79

- (v) A total area of 1237.48 ha would be reclaimed and afforested. Eco-restoration of BCCL mine areas is to be implemented in two phases over a period of 10 years, of which, Phase-I is from 2011-16 and Phase-II from 2016-2021. During Phase-I, development of a model restoration plantation is being carried out and thereafter 90 ha area of the area would be restored by BCCL in their 3 mining areas. During Phase-II (2016-2021), replication/expansion of proposed restoration models in the 126 ha area spread over 13 mines area of BCCL would be taken up. Opencast mining is proposed before start of underground mining. There would be no external OB dumps. OB from the 5 OC patches would be backfilled. At the end of the mining there would be no void and the entire mined out area re-vegetated. A minimum safety distance of 60m would be maintained between opencast and underground operations. The details of post-mining land use of Cluster-II are as per the following:

Land Use Details of Cluster II			
S.N	Type Land Use	Present Mining Land Use (ha)	Post- mining Land Use (ha)
1.	Running quarry		
	Backfilled	206.86	0
	Not Backfilled	234.39	0
2.	Abandoned quarry		
	Backfilled	14.29	0
	Not Backfilled	42.07	0
3.	External OB dump	49.33	0
4.	Service building/ mine infrastructure	34.25	0
5.	Coal dump	31.24	0
6.	Rail & Road	71.69	66.47
7.	Homestead land	181.58	147.2
8.	Agriculture land	275.32	153.14
9.	Forest land	29.75	29.75

10	Plantation	135.6	1237.48
11.	Water body	49.91	139.23
12	Barren land	669.42	252.44
	Total	2025.71	2025.71

Details of Rehabilitation in Cluster- II		
S.N.	Parameter	Details
1.	Total Voids	41.47 Mm ³
2.	Total OB available	33.45 Mm ³
3.	Total Unstable Sites	15 no.
4.	Total Affected Areas	260800 m ²
5.	No. of Houses to be rehabilitated	1137 no. as per JAP
6.	Land for Resettlement	7.728 ha (BCCL land) 14.23 ha (Non-BCCL land)
7.	Total cost of fire dealing	Rs.18235 Lakhs
8.	Total resettlement Cost	Rs 4508.58 Lakhs

FIRE AFFECTED SITES WITH FIRE DOUSING PROJECTS/PLANS IN CLUSTER-II					
S.no	Colliery	Site name & no.	Area affected Km ²	No of houses	Rehabilitation cost
1.	Phularitand	AshakutiGawalapatti /O8	0.018	24	66.26
2.	Phularitand	Mandra ,Ganeshpur&Barwabera /O5	0.011	76	340.77

Major Issues of Cluster-II		
S.N.	Major Env. Issues	Mitigation measures and Benefit
1.	Voids(276.46 ha) (234.39 operating quarry+ 42.07 abandoned quarry)	187.14 ha backfilling and 89.32 ha water body
2.	Ext.OB Dumps (49.33 ha)	Use for backfilling and plantation.
3.	Fire /Unstable area 15 site with 0.26Sq km consisting of 1137 PAF	Dig out fire at the cost of Rs.182.35 crores and rehabilitate affected families at the cost of Rs 4508.58 lakhs.
4.	Loss of coal (10% locked in barriers)	Recover 25.69 MT from barriers
5.	Reclamation /Mine closure	Additional plantation in 1201.28 ha land at the cost of Rs 12154.25 lakhs. (Funds allocated for mine closure as per MOC guidelines and adopted by BCCL @Rs 1 lakhs /ha in case of U/G mine and Rs 6 lakhs/ha in case of

		OCP mines)
6.	CSR	Rs 77.50 Lakhs per year@ Rs 5/T of coal

(vi) A total area of 276.46 ha would be reclaimed and afforested. Eco-restoration of BCCL mine areas is to be implemented in two phases over a period of 10 years, of which, Phase-I is from 2011-16 and Phase-II from 2016-2021. During Phase-I, development of a model restoration plantation is being carried out and thereafter 90 ha area of the area would be restored by BCCL in their 3 mining areas. During Phase-II (2016-2021), replication/expansion of proposed restoration models in the 126 ha area spread over 13 mines area of BCCL would be taken up.

(vii) Ground water level is in the range from 1.78-14.44m bgl during pre-monsoon and 1.0 -7.90m bgl during post-monsoon in the core zone. Total water requirement is 7265m³/day, of which 4735m³/day is for mining operations and 2530 m³/day is for domestic use. The mine discharge is 8350m³/day. The existing natural water body would be in 49.91 ha area. But in the post- mining stage, void left in an area of 89.32 ha with water at 15-20 mt depth will be used for community /Pisciculture.

(viii) There are four no. of External OB dumps in a total area of 49.33 ha. Total annual OB production will be 26.3Mm³. Total OB production for the whole cluster will be 484.89Mm³ for the life of Cluster II. In post-mining stage it would be reclaimed. Coal transportation would be mainly by rail cum conveyor mode (19.313 MTPA i.e. 95.53%) and the remaining 0.902 MTPA (4.46%) would be by road.

(ix) There are four existing railway sidings, namely, K.K.C Link Railway siding at the distance of 12.95 km, Barora Washery Siding at 3.9 km, Barora NL Railway siding at 3.4km and Kessurgarh siding at 10.13 km from Cluster-II. Maximum subsidence, slope and tensile strain over the mining area due to coal extraction in Muraidih UG would be 3.98m and in Block-II UG (proposed) would be 2.16m and a tensile strain of 41.7634.89 mm/m and 34.89mm/m respectively.

(x) The project involves R&R of 1137 no. PAFs, of 15 sites, displaced and to be rehabilitated as per JAP in new township adjacent to non-coal bearing area in north of Harnabagan Township in an area of 348.21ha at the cost of Rs 45.08crores. Funds allocated for EMP is Rs2.50/T of coal in case of UG mine and Rs5.50/T of coal in case of OC mine.

(xi) The EMP Capital cost would be Rs 13.12 Crores. A provision of Rs5/T of coal has been made for CSR. The life of Block II Colliery OC is 20 years, Block II Colliery underground mine is 26 years, Jamunia OCP is 6 years, Shatabdi OCP is 28 years, Muraidih Colliery OCP is 6 years and underground mine is 14 years, life of Phularit and Colliery is 18 years.

(xii) The Capital Cost of the project is Rs 812.529 Crores. The capital costs of EMP measures would be Rs 612.15 lakhs. The mines falling in Cluster- II, Shatabdi OCP, Muraidih Colliery underground mine, Block II Colliery underground mine were approved by BCCL Board on 26.12.2002, 11.12.2010 and 18.05.2011 respectively. The Company has adopted "Corporate Environmental Policy" which has been approved by its Board of Directors on 21.04.2012.

(xiii) The Public Hearing for Cluster-II group of 5 mines was held on 16.03.2012.

(xiv) The Stage-I forestry clearance for 29.75 ha of forestland involved in Muraidih colliery of Cluster-II has been sought vide letter no BCCL/GM/AR-I/ED/19/318 Dated 27.07.2010.

2. This is a violation case. As per the Office Memorandum dated 12.12.2012, issued by the Ministry of Environment and Forests, with regard to the consideration of proposals for ToR/Environment clearance/CRZ clearance involving violation of the Environment (Protection) Act, 1986/EIA notification,

20056/CRZ notification, 2011, the Environmental Clearance will be granted after the written commitment in the form of a formal resolution by the Board of Directors submitted to the MoEF to ensure that violations will not be repeated and the State Government concerned initiates credible action on the violation by invoking powers under Section 19 of the Environment (Protection) Act, 1986 for taking legal action under section 15 of the Act for the period for which the violation has taken place and evidence provided to the MoEF of the action taken. In this case, the Board's resolution has been received. As regards credible action, Jharkhand State Pollution Control Board, has issued directions of closure of collieries of M/S Bharat Coking Coal Limited under section 31A & 33A of Air (Prevention and Control of Pollution) Act, 1981 & Water (Prevention and Control of Pollution) Act, 1974 respectively for operating without obtaining environmental clearance. M/S BCCL has filed a Writ Petition (No. 4944/11) challenging the Board's directions of closure. The Jharkhand High Court has passed interim order on 25.08.2011 that "Till then, status quo, as on today, shall be maintained by the parties" and passed order on 18.01.2012 that "Until further orders, the interim order dated 25.08.2011 shall continue". In the light of interim orders of the Jharkhand High Court, the State Pollution Control Board is seeking legal opinion for initiating legal action against the collieries of BCCL in the Court of Law in terms of the OM of the MoEF. The State Government has been asked to expedite taking legal opinion and taking action under intimation to the MoEF.

3. The proposal was considered in the Expert Appraisal Committee (EAC) (Thermal & Coal Mining) and recommended in its 53rd meeting held on 16-17 July, 2012 for granting Environmental Clearance. The Ministry of Environment & Forests has examined the application in accordance with the EIA Notification 2006 and under the provisions thereof, hereby accords environmental clearance for the above-mentioned **Cluster II (5 Mines of a combined prod. capacity of 15.55 MTPA with a peak prod. of 20.215 MTPA in a combined ML area of 2025.71 ha) of M/s Bharat Coking Coal Ltd., located in Jharia Coalfields, dist. Dhanbad, Jharkhand** under the provisions of the Environmental Impact Assessment Notification, 2006 and amendments thereto and Circulars issued thereon and subject to the compliance of the terms and conditions as mentioned below:

A. Specific Conditions

- (i) The maximum production by opencast mining shall not exceed beyond that for which environmental clearance has been granted for the 5 mine of Cluster- II as below:

S.No	Mines in Cluster II	Normative Prod. Capacity (MTPA)	Peak Prod. Capacity (MTPA)
1	Block II Colliery OC & UG Mine	4.45	5.785
2	Jamunia OCP	1.20	1.56
3	Shatabdi OCP	1.40	1.82
4.	Muraidih Colliery (OC & UG Mine)	5.50	7.15
5	Phularitand OCP	3.00	3.90
	Total	15.55	20.215

- (ii) The measure to identify in the Environmental Plan for Cluster- II groups of mine and the conditions given in this environmental clearance letter shall be dovetailed to the implementation of the Jharia Action Plan.
- (iii) The proponent shall prepare time -series maps of the Jharia Coalfields through NRSA to monitor and prevent fire problems in the Jharia Coalfields by Isothermal mapping /imaging and

(21)

monitoring temperatures of the coal seams (whether they are close to spontaneous ignition temperatures) and based on which, areas with potential fire problems shall be identified. Measures to prevent ingress of air (Ventilation) in such areas, to prevent restart fresh/spread fires in other areas including in mines of cluster II shall be undertaken. Expertise available internationally could also be utilised for control of fire in Jharia Coalfields and for their reclamation and to further minimize time for fire and subsidence control. Monitoring of fire should be carried out regularly.

- (iv) Underground mining should be taken up after completion of reclamation of Opencast mine area.
- (v) The embankment constructed along the river boundary shall be of suitable dimensions and critical patches shall be strengthened by stone pitching on the river front side and stabilised with plantation so as to withstand the peak water flow and prevent mine inundation.
- (vi) The rejects of washeries in Cluster -II should be sent to FBC based plant.
- (vii) No mining shall be undertaken where underground fires continue. Measure shall be taken to prevent/ check such fire including in old OB dump areas where the fire could start due to presence of coal /shale with sufficient carbon content.
- (viii) There shall be no external OB dumps. OB produce from the whole cluster will be 484.89M³. OB from 3 OCP and 2 patches in mixed mine shall be backfilled. At the end of the mining there shall be no void and the entire mined out area shall be re-vegetated. Areas where opencast mining was carried out and completed shall be reclaimed immediately thereafter.
- (ix) A detailed calendar plan of production with plan for OB dumping and backfilling (for OC mines) and reclamation and final mine closure plan for each mine of cluster-II shall be drawn up and implemented.
- (x) Mining shall be carried out as per statuette from the streams/nalas flowing within the lease and maintaining a safe distance from the Nalas flowing along the lease boundary. A safety barrier of a minimum 60m width shall be maintained along the nalas/water bodies. The small water bodies in OC shall be protected to the extent feasible and the embankment proposed along water body shall be strengthened with stone pitching taking into account the highest flood level, based on past data, so as to guard against mine inundation. The slope of the embankment shall at least 2:1 towards the ML. The height of the embankment shall be at least 3 m higher than the HFL. The embankment to be constructed by OB /solid waste shall be strengthened with stone pitching. Slope stability of the embankment shall be done by planting suitable grass and shrubs using native species selected from the study area.
- (xi) Active OB dumps near water bodies and rivers should be rehandled for backfilling abandoned mine voids. However, those which have been biologically reclaimed need not be disturbed.
- (xii) Thick green belt shall be developed along undisturbed areas, mine boundary and in mine reclamation. A total area of 1237.48ha shall be reclaimed and afforested.
- (xiii) The road should be provided with avenue plantation on both side as trees act as sink of carbon and other pollutant.
- (xiv) Specific mitigative measures identified for the Jharia Coalfields in the Environmental Action Plan prepared for Dhanbad as a critically polluted area and relevant for Cluster- II shall be implemented.
- (xv) The locations of monitoring stations in the Jharia Coalfields should be finalised in consultation with the Jharkhand State Pollution Control Board. The Committee stated that smoke/dust emission vary from source to source (fuel wood, coal, flyash from TPPs, silica from natural dust, etc) and a Source Apportionment Study should be got carried out for the entire Jharia Coalfields. Mineralogical composition study should be undertaken on the composition of the suspended particulate matter (PM₁₀ and PM_{2.5}) in Jharia Coalfields and also quantified. These studies would help ascertain source and extent of the air pollution, based on which appropriate mitigative measures could be taken.

- (xvi) The Transportation Plan for conveyor-cum-rail for Cluster-II should be dovetailed with Jharia Action Plan. Road transportation of coal during Phase-I should be by mechanically covered trucks, which should be introduced at the earliest.
- (xvii) R&R of 1137 nos of PAF's involved. They should be rehabilitated at cost of **Rs 45.08 Crores** per the approved Jharia Action Plan.
- (xviii) Regular monitoring of groundwater level and quality of the study area shall be carried out by establishing a network of existing wells and construction of new peizometers. The monitoring for quantity shall be done four times a year in pre-monsoon (May), monsoon (August), post-monsoon (November) and winter (January) seasons and for quality including Arsenic and Fluoride during the month of May. Data thus collected shall be submitted to the Ministry of Environment & Forest and to the Central Pollution Control Board/SPCB quarterly within one month of monitoring. Rainwater harvesting measures shall be undertaken in case monitoring of water table indicates a declining trend.
- (xix) Regular monitoring of subsidence movement on the surface over and around the working area and impact on natural drainage pattern, water bodies, vegetation, structure, roads, and surroundings shall be continued till movement ceases completely. In case of observation of any high rate of subsidence movement, appropriate effective corrective measures shall be taken to avoid loss of life and material. Cracks shall be effectively plugged with ballast and clayey soil/suitable material.
- (xx) Sufficient coal pillars shall be left unextracted around the air shaft (within the subsidence influence area) to protect from any damage from subsidence, if any.
- (xxi) High root density tree species shall be selected and planted over areas likely to be affected by subsidence.
- (xxii) Depression due to subsidence resulting in water accumulating within the low lying areas shall be filled up or drained out by cutting drains.
- (xxiii) Solid barriers shall be left below the roads falling within the blocks to avoid any damage to the roads.
- (xxiv) No depillaring operation shall be carried out below the township/colony.
- (xxv) A detailed CSR Action Plan shall be prepared for Cluster II group of mines. Specific activities shall be identified for CSR for the budget of Rs 77.50 Lakhs per year @ Rs 5/T of coal provided for CSR for 2012-2013 and Rs. 5/T of coal as recurring expenditure. The 416.98 ha of area within Cluster II ML existing as waste land and not being acquired shall be put to productive use under CSR and developed with fruit bearing and other useful species for the local communities. In addition to afforesting 1237.48 ha of area at the post-mining stage, the 122.18ha of fallow/abandoned land and 416.98 ha waste land /barren land within Cluster- II mining lease area shall be rehabilitated/reclaimed as forest/agricultural land under CSR Plan in consultation with local communities. Third party evaluation shall be got carried out regularly for the proper implementation of activities undertaken in the project area under CSR. Issue raised in the Public Hearing shall also be integrated with activities being taken up under CSR. The details of CSR undertaken along with budgetary provisions for the village-wise various activities and expenditure thereon shall be uploaded on the company website every year. The company must give priority to capacity building both within the company and to the local youth, who are motivated to carry out the work in future.
- (xxvi) Details of transportation, CSR, R&R and implementation of environmental action plan for the clusters-II should be brought out in a booklet form within a year and regularly updated.
- (xxvii) Mine discharge water shall be treated to meet standards prescribed standards before discharge into natural water courses/agriculture. The quality of the water discharged shall be monitored at the outlet points and proper records maintained thereof and uploaded regularly on the company website.
- (xxviii) No groundwater shall be used for the mining activities. Additional water required, if any, shall be met from mine water or by recycling/reuse of the water from the existing activities and from

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- rainwater harvesting measures. The project authorities shall meet water requirement of nearby village(s) in case the village wells go dry to dewatering of mine.
- (xxix) The void shall be converted into a water reservoir of a maximum depth of 15-20 m and shall be gently sloped and the upper benches of the reservoir shall be stabilised with plantation and the periphery of the reservoir fenced. The abandoned pits and voids should be backfilled with OB and reclaimed with plantation and or may be used for pisciculture.
 - (xxx) Regular monitoring of groundwater level and quality of the study area shall be carried out by establishing a network of existing wells and construction of new peizometers. The monitoring for quantity shall be done four times a year in pre-monsoon (May), monsoon (August), post-monsoon (November) and winter (January) seasons and for quality including Arsenic and Fluoride during the month of May. Data thus collected shall be submitted to the Ministry of Environment & Forest and to the Central Pollution Control Board/SPCB quarterly within one month of monitoring. Rainwater harvesting measures shall be undertaken in case monitoring of water table indicates a declining trend.
 - (xxxii) ETP shall also be provided for workshop, and CHP, if any. Effluents shall be treated to conform to prescribed standards in case discharge into the natural water course
 - (xxxiii) The location of monitoring stations in the Jharia coalfield should be finalized in consultation with Jharkhand State Pollution Control Board.
 - (xxxiiii) For monitoring land use pattern and for post mining land use, a time series of land use maps, based on satellite imagery (on a scale of 1: 5000) of the core zone and buffer zone, from the start of the project until end of mine life shall be prepared once in 3 years (for any one particular season which is consistent in the time series), and the report submitted to MOEF and its Regional office at Bhubaneswar.
 - (xxxv) A Final Mine Closure Plan along with details of Corpus Fund shall be submitted to the Ministry of Environment & Forests five year before mine closure for approval. Habitat Restoration Plan of the mine area shall be carried out using a mix of native species found in the original ecosystem, which were conserved in-situ and ex-situ in an identified area within the lease for reintroduction in the mine during mine reclamation and at the post mining stage for habitat restoration.
 - (xxxvi) A separate management structure for implementing environment policy and socio-economic issues and the capacity building required in this regard.
 - (xxxvii) Corporate Environment Responsibility:
 - a) The Company shall have a well laid down Environment Policy approved by the Board of Directors.
 - b) The Environment Policy shall prescribe for standard operating process/procedures to bring into focus any infringements/deviation/violation of the environmental or forest norms/conditions.
 - c) The hierarchical system or Administrative Order of the company to deal with environmental issues and for ensuring compliance with the environmental clearance conditions shall be furnished.
 - d) To have proper checks and balances, the company shall have a well laid down system of reporting of non-compliances/violations of environmental norms to the Board of Directors of the company and/or shareholders or stakeholders at large.

B. General Conditions:

- (i) No change in mining technology and scope of working shall be made without prior approval of the Ministry of Environment and Forests.
- (ii) No change in the calendar plan of production for quantum of mineral coal shall be made.
- (iii) Four ambient air quality monitoring stations shall be established in the core zone as well as in the buffer zone for PM₁₀, PM_{2.5}, SO₂ and NO_x monitoring. Location of the stations shall be decided based on the meteorological data, topographical features and environmentally and ecologically

- sensitive targets in consultation with the State Pollution Control Board. Monitoring of heavy metals such as Hg, As, Ni, Cd, Cr, etc carried out at least once in six months.
- (iv) Data on ambient air quality (PM₁₀, PM_{2.5}, SO₂ and NO_x) and heavy metals such as Hg, As, Ni, Cd, Cr and other monitoring data shall be regularly submitted to the Ministry including its Regional Office at Bhubaneswar and to the State Pollution Control Board and the Central Pollution Control Board once in six months. Random verification of samples through analysis from independent laboratories recognised under the EPA rules, 1986 shall be furnished as part of compliance report.
 - (v) Adequate measures shall be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in blasting and drilling operations, operation of HEMM, etc shall be provided with ear plugs/muffs.
 - (vi) Industrial wastewater (workshop and wastewater from the mine) shall be properly collected, treated so as to conform to the standards prescribed under GSR 422 (E) dated 19th May 1993 and 31st December 1993 or as amended from time to time before discharge. Oil and grease trap shall be installed before discharge of workshop effluents.
 - (vii) Vehicular emissions shall be kept under control and regularly monitored. Vehicles used for transporting the mineral shall be covered with tarpaulins and optimally loaded.
 - (viii) Monitoring of environmental quality parameters shall be carried out through establishment of adequate number and type of pollution monitoring and analysis equipment in consultation with the State Pollution Control Board and data got analysed through a laboratory recognised under EPA Rules, 1986.
 - (ix) Personnel working in dusty areas shall wear protective respiratory devices and they shall also be provided with adequate training and information on safety and health aspects.
 - (x) Occupational health surveillance programme of the workers shall be undertaken periodically to observe any contractions due to exposure to dust and to take corrective measures, if needed and records maintained thereof. The quality of environment due to outsourcing and the health and safety issues of the outsourced manpower should be addressed by the company while outsourcing.
 - (xi) A separate environmental management cell with suitable qualified personnel shall be set up under the control of a Senior Executive, who will report directly to the Head of the company.
 - (xii) The funds earmarked for environmental protection measures shall be kept in separate account and shall not be diverted for other purpose. Year-wise expenditure shall be reported to this Ministry and its Regional Office at Bhubaneswar.
 - (xiii) The Project authorities shall advertise at least in two local newspapers widely circulated around the project, one of which shall be in the vernacular language of the locality concerned within seven days of the clearance letter informing that the project has been accorded environmental clearance and a copy of the clearance letter is available with the State Pollution control Board and may also be seen at the website of the ministry of Environment & Forests at <http://envfor.nic.in>.
 - (xiv) A copy of the environmental clearance letter shall be marked to concern Panchayat/Zila Parishad, Municipal corporation or Urban local body and local NGO, if any, from whom any suggestion/representation has been received while processing the proposal. A copy of the clearance letter shall also be displayed on company's website.
 - (xv) A copy of the environmental clearance letter shall be shall also be displayed on the website of the concerned State Pollution Control Board. The EC letter shall also be displayed at the Regional Office, District Industry Sector and Collector's Office/Tehsildar's Office for 30 days.
 - (xvi) The clearance letter shall be uploaded on the company's website. The compliance status of the stipulated environmental clearance conditions shall also be uploaded by the project authorities on their website and updated at least once every six months so as to bring the same in public domain. The monitoring data of environmental quality parameter (air, water, noise and soil) and critical pollutant such as PM₁₀, PM_{2.5}, SO₂ and NO_x (ambient) and critical sectoral parameters shall also

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be displayed at the entrance of the project premises and mine office and in corporate office and on company's website.

- (xvii) The project proponent shall submit six monthly compliance reports on status of compliance of the stipulated environmental clearance conditions (both in hard copy and in e-mail) to the respective Regional Office of the Ministry, respective Zonal Office s of CPCB and the SPCB.
- (xviii) The Regional Office of this Ministry located at Bhubaneswar shall monitor compliance of the stipulated conditions. The Project authorities shall extend full cooperation to the office(s) of the Regional Office by furnishing the requisite data/ information/monitoring reports.
- (xix) The Environmental statement for each financial year ending 31 March in For -V is mandated to be submitted by the project proponent for the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be uploaded on the company's website along with the status of compliance of EC conditions and shall be sent to the respective Regional Offices of the MoEF by E-mail

4. The Ministry or any other Competent Authority may stipulate any further condition(s) for environmental protection.
5. Failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract the provisions of the Environment (Protection) Act, 1986.
6. The above conditions will be enforced *inter-alia*, under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986 and the Public Liability Insurance Act, 1991 along with their amendments and Rules. The proponent shall ensure to undertake and provide for the costs incurred for taking up remedial measures in case of soil contamination, contamination of groundwater and surface water, and occupational and other diseases due to the mining operations.
7. The Environmental Clearance is subject to the outcome of the Writ Petition filed by M/S Bharat Coking Coal Limited (BCCL) in response to the closure orders issued by the Jharkhand State Pollution Control Board which is pending in the Jharkhand High Court.

(Dr. Manoranjan Hota)
 Director
hota@nic.in

Copy to:

1. The Secretary, Ministry of Coal, Shastri Bhawan, New Delhi.
2. Secretary, Department of Environment & Forests, Government of Jharkhand, Secretariat, Ranchi.
3. Chief Conservator of Forests, Regional office (EZ), Ministry of Environment & Forests, A-31, Chandrashekarapur, Bhubaneshwar – 751023.
4. Chairman, Jharkhand State Pollution Control Board, T.A. Division Building (Ground Floor), H.E.C., Dhurwa, Ranchi – 834004.
5. Chairman, Central Pollution Control Board, CBD-cum-Office Complex, East Arjun Nagar, New Delhi -110032.
6. Member-Secretary, Central Ground Water Authority, Ministry of Water Resources, Curzon Road Barracks, A-2, W-3 Kasturba Gandhi Marg, New Delhi.
7. District Collector, dist. Dhanbad Government of Jharkhand.
8. Monitoring File 9. Guard File 10. Record File

(Dr. Manoranjan Hota)
 Director
hota@nic.in

Fire Dealing in Fire affected Area.

