

MINUTES OF 4th MEETING OF THE EXPERT APPRAISAL COMMITTEE FOR ENVIRONMENTAL APPRAISAL OF COAL MINING PROJECTS HELD ON 27th NOVEMBER, 2020.

Friday, 27th November, 2020

Confirmation of the Minutes of 3rd Meeting of the EAC (Coal) held on 27th October, 2020:

No comment was made from members of the committee on the minutes of the 3rd meeting of the EAC held during 27th October, 2020, therefore the Minutes of the Meeting (MoM) of 3rd EAC meeting was confirmed.

Opening Remarks of the Chairman: At the outset, the Chairman welcomed the Expert members & other participants and requested to start the proceeding as per the agenda adopted for this meeting.

Consideration of Proposals: The 4th meeting of the Expert Appraisal Committee (EAC) for coal mining projects was held on 27th November, 2020 through video conferencing with support NIC team due to Covid-19 lockdown. The EAC considered proposals as per agenda adopted for the meeting. List of participant attended the meeting is annexed. The details of deliberations held & decisions taken in the meeting are as under.

Agenda No. 4.1

Expansion of Tawa-II UG with production capacity of 0.60 MTPA (Normative) & 0.95 MTPA (Peak) in an area of 523.75 ha (520 ha mining area + 3.75 ha for power line diversion) of M/s Western Coalfields Limited located in Village Hirasalla, Tehsil Ghoradongri, District Betul (MP)- Revalidation and Environment Clearance -reg

[IA/MP/CMIN/103388/2006, F.No. IA-J-11015/53/2006-IA-II(M)]

4.1.1 The proposal is for expansion and revalidation of Tawa-II UG with production capacity of 0.60 MTPA (Normative) & 0.95 MTPA (Peak) in an area of 523.75 ha (520 ha mining area + 3.75 ha for power line diversion) of M/s Western Coalfields Limited located in Village Hirasalla, Tehsil Ghoradongri, District Betul (Madhya Pradesh).

4.1.2 The EAC during deliberations noted the following:

The proposal was earlier considered by the sectoral EAC in its meeting held on 4-5 February, 2013, wherein the Committee recommended the project for environmental clearance subject to submission of additional information with respect to water requirement and Forest Clearance of 201.079 ha.

The project was further considered by EAC in its meeting on 27th September, 2018 for revalidation of earlier environmental clearance dated 2nd August, 2006, wherein the Committee desired for information on various points therein.

Project Proponent submitted the compliance of observation of EAC in its 46th meeting held on 25th June, 2019. The committee noted the compliance of observation and further desired certain submission as deliberated in the meeting mention below:

The EAC, after deliberations on the proposal for revalidation of the environmental clearance dated 8th February, 2006, as mandated under the Ministry's Notification dated 6th April, 2018, insisted for compliance of all its observations.

For the proposed expansion of the project, the Committee desired for detail report on water requirement, fresh one season baseline study, impact assessment and detailed compliance report of issues addressed during the public hearing dated 16th December, 2011.

PP submitted the compliance of observation of EAC. Public Notice through SPCB for information of the stakeholders about present and proposed expansion of coal Mining operation has been published in Dainik Bhaskar (Date - 05.10.2019) & in Navbharat (date – 05.10.2019) giving a time period of 30 days for submission of comments etc by the stakeholders. During the said period of 30 days, no comments / suggestion has been received.

Further, the Impact Assessment study of CSR activities has been carried out, for CSR works being carried out during FY 2014-15 to FY 2019-20 through Gram Bharati Mahila Mandal (NGO), Sarni. The detailed report has been submitted on PARIVESH portal, the summary of the report in terms of activities are listed below:

- A total 150 households were interacted in 8 villages where CSR activities were carried out to find out impact assessment.
- Basic infrastructure development in villages
- Accessibility to Market resulting to Economic Upliftment
- Awareness to Women for their personal Hygiene
- Improve hygiene and Sanitation in School going students
- Arrangement of water for household purpose by installation of Handpump
- Improving awareness among villagers towards Swacchata
- Villagers are learning solid waste management

Also, one Season baseline data for air quality, surface and ground water and noise level was monitored for significant parameters within proposed site and surrounding areas. Numerical modelling has also been carried out by using AERmod View v.16216r Air Quality Model. Air quality model is done considering the Meteorological data as per the baseline data generated during 13.12.2019 to 12.03.2020.

Regarding expansion proposal, Terms of References (ToR) for expansion proposal i.e. from 0.60 MTPA to 0.95 MTPA was granted by Ministry on 23rd December, 2010.

Based on this ToR, Public hearing was conducted as per EIA, 2006 for the project was conducted on 16-12-2011, 11.00 am at Workshop, Tawa-II Mine, Pathakhera Area, Betul District, Madhya Pradesh.

Out of total forest land 396.279 ha, the Forestry Clearance for 195.20 hectares of forest land under Mining Right and 12.708 ha of forest land for surface right has been obtained under FCA 1980 vide MOEF letter dated 22.01.1999 and remaining 201.080 hectares of forest land is applied for forestry clearance under FCA 1980. The earlier recommendation of EAC in its meeting held on 4-5 February, 2013 was subject to submission of Forest Clearance.

The project proponent has obtained Stage-I FC for the remaining forest land of 201.079 ha vide letter dated 8-52/2017-FC dated 14th May, 2018 for expansion of production capacity of 0.6 MTPA to 0.95 MTPA (Peak).

Remaining balance life of the mine is 11 years since EC dated 2nd August, 2006 mentions life of the mine as 25 years.

*4.1.3 The EAC after deliberations was satisfied by the compliance of earlier observation for revalidation of EC dated 2nd August, 2006. However, with respect to expansion proposal, EAC observed that since the ToR was granted in 2010 and it has been 10 years now, it was desired that PP may submit separate proposal for expansion. Further, it was highlighted that EAC may consider to exempt the Public Hearing as PP has already conducted PH for the said expansion capacity and project area, during ToR proposal. The EAC, however, **recommends** the revalidation of EC dated 2nd August, 2006 under Ministry's Notification dated 6th April, 2018 to Tawa-II Underground coal mine expansion with production capacity of 0.60 MTPA (Normative) in an area 520 ha of M/s Western Coalfields Limited located in Village Hirapalla, Tehsil Ghoradongri, District Betul (Madhya Pradesh) subject to terms and conditions stipulated therein remaining the same and with additional condition for environmental safeguards as mentioned below:*

- *PP shall obtain prior permission of Central Ground Water Authority for extraction or intersecting of ground water.*
- *Transportation of coal shall be done only on concrete road instead of kuchcha road-Bogaikhapa (presently being done). Concrete road shall be built within six months and compliance shall be submitted to Ministry's Regional Office.*
- *PP shall be use only High axle trucks of 40-50 tonne capacity for transportation of coal.*

Agenda No. 4.2

New Kathara Coking coal washery of 3 MTPA capacity in an area of 11.33 ha of M/s Central Coalfields Limited located in village Bandh Tehsil Gomia District Bokaro (Jharkhand) - For Reconsideration of Environmental Clearance – reg

[Proposal No. IA/JH/CMIN/77799/2018, F.No. J-11015/98/2018- IA.II(M)]

4.2.1 The proposal is for environmental clearance for New Kathara Coking coal washery of 3 MTPA capacity in an area of 11.33 ha of M/s Central Coalfields Limited located in village Bandh Tehsil Gomia District Bokaro (Jharkhand).

4.2.2 The EAC during deliberations noted the following:

The proposal is for environmental clearance for New Kathara Coking coal washery of 3 MTPA capacity in an area of 11.33 ha of M/s Central Coalfields Limited located in village Bandh Tehsil Gomia District Bokaro (Jharkhand).

The proposal was earlier considered by the sectoral EAC in its 53rd meeting held on 20th February, 2020 and in 1st EAC held on 17-18 August, 2020 wherein the Committee deferred the proposal for want of additional information. Now, the PP has submitted the replies/compliance to observations of EAC, which is tabulated below: -

4.2.3 EAC noted following details with respect to compliance of the observations.

Sr. No.	Observations of EAC	Compliance / Submission of Project Proponent
1	PP shall present the compliance of ToR submitted in EIA/EMP to the EAC	PP submitted the compliance of ToR in detail to the EAC
2	Air pollution modelling due to increase traffic along with presence of habitation shall be produced before EAC	<p>The baseline data generation for New Kathara Coking Coal Washery was done at 06 locations. The contribution of coal transportation from Govindpur Phase II OCP vis-à-vis Baseline data at six locations (carried out with AERMOD (Version 9.4) software of USEPA) was presented</p> <p>The proposed transportation of coal from Govindpur Phase II OCP will be by 30 Tonnes trucks along with additional control measures as given below:</p> <ol style="list-style-type: none"> a. Mist Sprayer is proposed in the primary crusher unit of the washery. b. 02 Numbers of Mobile Mist Sprayers are proposed for the Coal Transportation Road c. 02 Numbers of Sweeping Machines shall also have proposed for the reduction in the particulate matter on the coal transportation road. d. Fixed sprinkling system has been proposed in and around the temporary reject storage site for controlling the fugitive dust emission. e. Washed coal will be transported by covered conveyer belt to the siding. f. Green belt along in two/three tier is proposed for protecting the habitations in the coal transportation route & around Washery premises. The proposed green belt development plan shall be developed in approximately 6 Kms & 0.66 Ha at an approximate cost of Rs. 80 Lakhs.

3	Reason of not proposing to implement conveyor transport from Kathara OCP to washery which is only 3 km away	<ul style="list-style-type: none"> • The distance travelled from mine face to coal washery is about 3 Kms and the road is exclusively within mining project boundary of Kathara OCP, that is no public roads are involved in transportation of coal from Kathara OCP to Kathara Washery. • The existing HEMM of Kathara OCP (100 Tonne off highway dump trucks) will be transporting coal to in pit hopper/receiving station of Kathara Washery. • The difference in RL of Kathara Washery and the mine face is also about 200 meters. The construction of CHP including receiving hopper, belt conveyor & ground bunker will entail a capital expenditure of 150 Crores. • In view of the above facts, it can be concluded that the transportation of coal from Kathara mine to Kathara Washery will be technically and commercially not feasible. <p>The proposed system of transportation of coal from mine face to washery by existing dump trucks of Kathara OCP may be permitted, as the total transportation will be within project boundary without interfering with public road/colony with all proposed mitigation measures for air pollution</p>
4	Ground Water Recharge Estimation of buffer zone submitted in EIA shall be presented	Stage of groundwater development for buffer zone of the project area determined is about 83%, which is also under category as per GEC-2015 methodology
5	Since the area comes under over extracted with regard to ground water and also there are various NGT cases related to this Prior permission of CGWA is must.	<p>Application for obtaining NoC for using mine water for washery was made vide application no-21-4/619/JH/IND/2020 dated - 11/02/2020.</p> <p>The same was considered by CGWA and CGWA stated that the firm has ascertained that no ground water is withdrawn for the project and entire quantity of water required is fulfilled through water from nearby mining discharge or quarry. That OC mine water may be treated as surface water and therefore no NOC may be required</p>
6	Proposed fund allotted for development of green belt is very less and accordingly shall be increased and year wise plantation plan shall be provided	The previous provision of Rs. 15 Lakhs for development of green belt has been increased by an additional provision of Rs. 65 Lakhs. Thus the total proposed expenditure for development of

		green belt is Rs. 80 Lakhs. The details are submitted during presentation Plantation shall be started from Monsoon 2021. It is proposed to carry out the work through Govt. agency including development & maintenance of green belt for 4 years.
7	Proposed utilisation of Washery rejects in 20 MW power plant shall be submitted. MoU stating the utilisation quantity shall be furnished.	The proposed utilization of washery rejects shall be in the nearby Kathara CPP. The copy of contract agreement is submitted.
8	Mine Approval document submitted by PP does not quote anywhere that area of washery has excluded from Kathara OCP instead it has been approved for extension of validity of EC from MoEF. PP must clarify.	A mine plan of Kathara OCP was prepared excluding the area of Kathara Washery, which was approved in the 485 th Board of Directors Meeting of CCL, held on 04.05.2020. It is mentioned in the Chapter 1 Sub-Heading 1.2 of the approved Mining Plan - "Purpose of the report" that the mining plan that the revised mining plan and mine closure plan is prepared excluding area of existing and proposed Kathara Washery.
9	Quality of road as given in EIA/EMP at chapter 7 (section 7.5) is very poor and may increase the dust generation. Plan for improvement of quality of road (if any)	The following control measures has been proposed for improvement of quality of roads & mitigation of pollution generated due to coal transportation by road: a) Additional provision of Rs.110.00 Lakhs has been made for purchase of Sweeping Machine. b) Provision of Rs.175 Lakhs has been made for purchase of Mist Sprinkler. Mist sprinkler will be deployed on Coal transporting road for sprinkling of water. c) In order to mitigate the dust and improve the quality of roads, the roads will be strengthened and regular cleaning & maintenance shall be done. d) It is also proposed to develop green-belt for mitigation of dust generated due to transportation

PP vides letter dated 27th November, 2020 submitted the additional details as sought by EAC during the meeting i.e. regarding Cost Benefit Analysis of implementation of Conveyor Belt vis-a-vis 100 Tonne Dumpers, Cost of Effluent Treatment System in New Kathara Coking Coal Washery and Letter from CGWA indicating non-requirement of No Objection Certificate.

Considering the difficult geo-mining condition and larger cost involved in crushing & conveying, it is more feasible to transport coal from coal mine face to pit head washery by 100 tonne truck.

The total project cost of is approximately Rs.26950 Lakhs out of which Rs.1800 Lakhs is envisaged for Effluent Treatment system. It includes cost of water recirculation and treatment equipment, thickener along with cost of Civil & Electrical works.

Application for Issue of NOC to Abstract Ground Water (NOCAP) vide Application no. 21-4/619/JH/IND/2020 dated 11/02/2020 has been rejected by CGWA and the comments given as below:

The application may be rejected as the firm has ascertained that no ground water is withdrawn for the project and entire quantity of water required is fulfilled through water in nearby mining discharge or quarry. It may be noted that OC mine water may be treated as surface water and therefore no NOC may be required

There is no Migratory corridors, National parks, Sanctuaries, Biosphere Reserves, Wildlife corridors, Tiger/Elephant reserves within 10 km of the project lease area.

During the site visit no endangered fauna was observed in core zone & buffer zone. As per secondary sources, Avifauna Peafowl come under Schedule-I species as per Indian wildlife (protection) Act, 1972 was found in the buffer zone. Conservation plan prepared and submitted to PCCF, CWLW, Govt. of Jharkhand. Budget of ₹ 24 Lakh provided towards conservation plan at (Annexure XII) if EIA/EMP Report.

Baseline data for air quality (PM10, PM2.5, SO2, NOX) (6 stations), noise (day & night) (6 stations), water (surface (2 stations), ground water (2 stations), effluent water (1 station)), have been collected from 24 Apr 2019 to 07 Jun 2019 by M/s Go Green Mechanisms Pvt. Ltd. Jetalpur, Ahmedabad (NABL no.TC-7073 valid upto 08.12.20)

Total fresh water requirement is limited to 1869 cum/day (120 cum/hr that is 0.1472 cum/te). Recirculation of about 7000 cum /day of treated waste water will be ensured.

The traffic assessment study has been carried out for the coal transportation to the New Kathara Coal washery. The coal transportation from Govindpur OC to New Kathara Coking coal washery will add 07 trucks/hr (26 x 2 PCU's) to the existing traffic and the traffic on the existing coal road remains smooth.

Air Quality impact study has been carried out and it is observed that values of incremental PM10 concentration considering 98th percentile baseline data is within permissible limit. The Air Quality Impact Prediction has been carried out with AERMOD (Version 9.4) software of USEPA. Garland drains around the washery shall be provided to carry storm water into slime pond. The slime pond shall be in series. One set of ponds will be for treatment of effluent, second set for drying and third set for cleaning. In addition, there will be one pond to store treated water. Treated Water will be recycled for use as process water. The washery shall be a zero water effluent discharge washery

Public hearing was conducted for M/S New Kathara coking coal washery with proposed production for environmental clearance on dated 16/10/2019 Time-11:00 AM at Officer's club, Kathara Area, CCL, PO-Kathara, District-Bokaro. This public hearing was held with reference to gyapank B-1048 dated 13/09/2019 of Jharkhand Pollution Control Board, Ranchi and in the presence and with permission of Mr Sadat Anwar, Director, District Village Development Board, Bokaro. Major issues raised during PH is employment to the local people, Control measures to be arranged for fire erupted in colliery, fertility of land has been destroyed due to coal dust, Electricity and water facility is not good, Villagers rehabilitation, Reopening of Abndh colony dispensary be arranged, Preference to be given to local people in DAV school and health centers, woman employment opportunity be ensured in new washery and Excavation work is being carried out at about 100 metres from our village.

4.2.4 *The EAC, after deliberations found responses given by PP are satisfactory, EAC recommends the proposal for grant of Environment Clearance to New Kathara Coking coal washery of 3 MTPA capacity in an area of 11.33 ha of M/s Central Coalfields Limited located in village Bandh Tehsil Gomia District Bokaro (Jharkhand), under the provisions of Environment Impact Assessment Notification, 2006 and subsequent amendments/circulars thereto subject to the compliance of the following terms & conditions / specific conditions*

- (i) *The project proponent shall obtain Consent to Establish/Operate from the State Pollution Control Boards for the proposed capacity of 3 MTPA prior to commencement.*
- (ii) *Third party monitoring (by NEERI/CIMFR/IIT/NITs) for air quality shall be carried out at identified locations, both ambient and the process area, to arrive the impact at regular interval of 3 years.*
- (iii) *Transportation of coal from Coal Handling Plant shall be through mechanized covered trucks of capacity 100 tonne.*
- (iv) *All the villages coming under the zone of influence as in hydrology study shall be provided with suitable water supply alongwith sanitation facility*
- (v) *Commitment made during public consultation process shall be adhere to. As proposed, budget earmarked for CER activities shall be considered as part of Environment Management Plan, which shall be accomplished within period of 5 years.*
- (vi) *Water quality and Bioassay test of Damodar River shall be monitored quarterly and submitted to State Pollution Control Board. No wastewater shall be discharged in river.*
- (vii) *Surface runoff from Storage yard of coal, reject dumps shall be stored in settling tank and later treated before any usage and quality shall be check frequently.*
- (viii) *Road inside and at periphery of the washery plant shall be constructed of concrete only.*
- (ix) *Mitigating measures shall be undertaken to control dust and other fugitive emissions all along the roads by providing sufficient fixed type water sprinklers. Adequate corrective measures shall be undertaken to control dust emissions, which would include mechanized sweeping, water sprinkling/mist spraying on haul roads and loading sites, long range misting/fogging arrangement, wind barrier wall and vertical greenery system, green belt, dust suppression arrangement at loading and unloading points, etc.*
- (x) *Continuous monitoring of occupational safety and other health hazards, and the corrective actions need to be ensured.*
- (xi) *The total industrial water demand (peak) in operation phase shall be met by utilizing mine water*

- (xii) *Water storage ponds shall be constructed of appropriate depth in nearby village in collaboration with Gram Panchayats.*
- (xiii) *Fund allocated in Approved Wildlife conservation plan for schedule I species shall be deposited within six months of issue of EC letter. A copy of action plan shall be submitted to the Ministry of Environment, Forest and Climate Change and its Regional Office*
- (xiv) *40% Green belt along the washery periphery/boundary should be developed on priority basis within first 3 years.*
- (xv) *100% washery rejects shall be used only in FBC Power Plants/Thermal Power Plant as proposed by Project Proponent.*
- (xvi) *Transportation of rejects shall only be in 35 to 50 tonne trucks only if railway siding is not present at utilization points. If railway siding is available at FBC Power Plants/Thermal Power Plant, then no transportation shall be allowed by trucks.*
- (xvii) *Persons of nearby villages shall be given training on livelihood and skill development to make them employable.*
- (xviii) *Project proponent to plant 150,000 nos. of native trees with broad leaves along the transportation route (Kathara OCP and Govindpur OCP) in three years to prevent the effect of air pollution. After completion of tree plantation, number of trees shall be duly endorsed from District Forest Officer.*
- (xix) *Quality of road from Govindpur OCP and Kathara OCP to Washery shall be improved and concrete road shall be constructed along the route.*
- (xx) *Proponent shall appoint an Occupational Health Specialist for Regular and Periodical medical examination of the workers engaged in the Project and maintain records accordingly; also, Occupational health check-ups for workers having some ailments like BP, diabetes, habitual smoking, etc. shall be undertaken once in six months and necessary remedial/preventive measures taken accordingly. The Recommendations of National Institute for ensuring good occupational environment for mine workers shall be implemented; The prevention measure for burns, malaria and provision of anti-snake venom including all other paramedical safeguards may be ensured before initiating the mining activities.*
- (xxi) *The illumination and sound at night at project sites disturb the villages in respect of both human and animal population. Consequent sleeping disorders and stress may affect the health in the villages located close to mining operations. Habitations have a right for darkness and minimal noise levels at night. PPs must ensure that the biological clock of the villages is not disturbed; by orienting the floodlights/ masks away from the villagers and keeping the noise levels well within the prescribed limits for day light/night hours.*

Agenda No.4.3

Expansion of Belpahar Opencast Coalmine Project (6 MTPA to 9 MTPA in an ML area of 1444.053 ha + 59.63 Ha outside ML area) total area 1503.683 ha of M/s Mahanadi Coalfields Ltd located in Ib Valley Coalfields, in villages DarlipaliChharla, Tehsil Banaharpali District Jharsuguda (Odisha) - Amendment in Environment Clearance –reg

[IA/OR/CMIN/166026/2020, File No J-11015/189/2008-IA.II(M)]

4.3.1 The EAC during deliberations noted the following:-

The proposal is for extension of validity of Environment Clearance for Belpahar Project of 9 MTPA capacity in an ML area of 1444.053 ha + 59.63 Ha outside ML area) total area 1503.683 ha by M/s Mahanadi Coalfields Ltd located in Ib Valley Coalfields, in villages Darlipali Chharla, Tehsil Banaharpali District Jharsuguda (Odisha)

The proposal was earlier considered by the sectoral EAC in its 2nd EAC meeting held on 28-29 September, 2020 wherein the Committee deferred the proposal for want of additional information. Now, the PP has submitted the replies/compliance to observations of EAC, which is tabulated below

EAC noted following details with respect to compliance of the observations.

Sr. No.	Observations of EAC	Compliance / Submission of Project Proponent
1	Action taken on non-compliance of Certified Compliance Report of EC conditions and its verification with latest report from Ministry's Regional Office, Bhubaneshwar.	<p>The mine has been inspected by official from the Eastern Regional Office, MoEF&CC, Bhubaneswar on 04.11.2020 and the Certified Compliance Report of EC conditions along with status of compliance of observations of previous Certified compliance report dtd 03.12.2013 (provided from page 37 to 40 in the report) has been submitted vide letter no.101-975/16/EPE dt:12-11-2020. A copy of the report is submitted and brief of the same was presented before EAC.</p> <ul style="list-style-type: none"> • Total no of conditions 62 nos • No of conditions complied 55 nos • No of conditions non complied Nil • No of conditions partially complied 7 nos
2	Permission/No Objection Certificate of Central Ground Water Authority for extraction of ground water from mining activity	<p>The application vide no. 21-4/2084/OR/MIN/2018 for permission/No Objection Certificate from Central Ground Water Authority for extraction of ground water for mining activity in Belpahar OCP has been submitted to Regional Director, CGWB Office, South Eastern Region, Bhubaneswar on 21.10.2020.</p> <p>No Objection Certificate issued Central Ground Water Authority vide Reference No. CGWA/NOC/MIN/ORIG/2020/9025 for validity upto 25th November, 2022.</p>
3	Mine Closure Plan for taking environmental safeguard measure as per latest guidelines of Ministry of Coal.	This is a running mine which is going to be integrated with other neighbourhood mines namely Lakhampur OCP and Lilari OCP. The draft EIA/EMP of proposed Integrated Lakhampur, Belpahar & Lilari is under process. In proposed

	<p>Integrated project, part OB of Lakhanpur OCP will be dumped in Belpahar OCP.</p> <p>Therefore, no final closure activity will take place under present Belpahar OCP, only progressive closure activities will take place as per approved Mining Plan of Belpahar OCP.</p> <p>However as desired by the EAC progressive mine closure tables as per the latest guidelines of Ministry of Coal is incorporated and presented</p>
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Earlier, the environment clearance to the project was granted vide Ministry's letter no. No. J-11015/189/2008-IA.II (M) dated 22nd January, 2015 for 9.0 MTPA for a mine life of 6 years. Total mining lease area as per block allotment is 1444.053 ha. Addendum to Mining plan (including Progressive Mine closure plan) has been approved by MCL Board on 28.01.2019

There is no change in existing configuration (area and capacity) of approved Environmental Clearance Only the mine life will get extended till 2022-23 due to availability of more coal reserves

PP submitted that that extractable reserve is greater than earlier estimated reserve. Accordingly, a Mining Plan & Mine Closure Plan has been approved as per the new estimated reserve. An addendum Mining Plan & Mine Closure Plan has been prepared and approved by MCL board on 28th January, 2019, considering actual production till 01-04-18 and other criteria.

4.3.2 *The EAC, after deliberations and considering Ministry's notification dated 29th April, 2015 regarding validity of environmental clearance and its extension and since the project proponent has applied within time limit of said notification **recommends** the extension in validity of Environment Clearance to Belpahar Project of 9 MTPA capacity in an ML area of 1444.053 ha + 59.63 Ha outside ML area) total area 1503.683 ha by M/s Mahanadi Coalfields Ltd located in Ib Valley Coalfields, in villages Darlipali Chharla, Tehsil Banaharpali District Jharsuguda (Odisha) for life of the mine (three years i.e. till 2023 as project proponent committed that evacuation of mineral will be completed in three years during presentation in EAC) or 30 years whichever is earlier as per EIA Notification, 2006 with all the condition stipulated in EC dated 11th January, 2019 shall remain the same and subject to additional conditions as mentioned below for environment safeguards: -*

- (i) *The mining lease holders shall, after ceasing mining operations, undertake re-grassing the mining area and any other area which may have been disturbed due to their mining activities and restore the land to a condition which is fit for growth of fodder, flora, fauna etc*

Agenda No.4.4

Expansion of Gondegaon Extension Opencast Coal Mine Project with Production capacity of 3.50 MTPA in ML Area of 791.40 ha of M/s Western Coalfields Limited, located in Village

Gondegaon, Tehsil Parseoni, Nagpur, (Maharashtra) – For Amendment in Environmental Clearance EC-reg

[IA/MP/CIMIN/157028/2009, File No J-11015/106/2009-IA. II (M)]

4.4.1 The EAC, during deliberations noted the following:

The proposal is for amendment in EC dated 9th March, 2020 of Expansion of Gondegaon Extension Opencast Coal Mine Project with capacity of 3.50 MTPA in ML Area of 791.40 ha M/s Western Coalfields Limited located in Gondegaon Village, Parseoni Tehshil, District Nagpur, (Maharashtra).

The proposal was earlier considered by the sectoral EAC in its 1st EAC meeting held on 17-18 August, 2020 wherein the Committee deferred the proposal for want of additional information. Now, the PP has submitted the replies/compliance to observations of EAC, which is tabulated below

4.4.2 EAC noted following details with respect to compliance of the observations.

Sr. No.	Observations of EAC	Compliance / Submission of Project Proponent
1	Project opponent to submit the Mass balance of Coal production, OB excavation & Sand segregation (Peak excavation per year) year wise during the balance period of mine.	<p>The Mass Balance study of Coal Production, OB Excavation & Sand Segregation (Peak excavation per year) year wise during the balance period of mine for Gondegaon OCP mine was presented. The mass balance study has been carried out (considering the balance life of 5 years from FY 2020-2021)</p> <p>The total mass being handled with existing EC (3.5 MTPA Coal production with corresponding removal of OB) will remain the same with proposed addition of sand segregation activity from the excavated OB @ 2000 cubic metre per day concurrently with the coal production at the rate of already sanctioned EC capacity.</p> <p>The coal transportation will be shifted from road – rail to Pipe Conveyor system. Hence, there will be significant road capacity available for dispatch of about 1.50 Million cubic metre which can be comfortably accommodated initially. From 2022-23, there will be total dispatch by Pipe Conveyor, as such total road- rail capacity will be available for sand dispatch. the total quantity of dispatch of material outside the mine lease area through road will not increase so as adversely affect the</p>

		ambient air quality.
2	Revised Mine Plan including Mine Closure Plan (as per Ministry of Coal latest guidelines).	<p>The modified Mining plan (First Modification) including mine closure plan of Expansion of Gondegaon Extension OC Mine (with Peak Capacity of Coal 3.50 MTY & Sand Segregation – 2000 m³/Day and Project area of 791.40 Ha) as per OM F.No.34011/28/2019-CPAM dated 29/5/2020 of Ministry of Coal is submitted</p> <p>The Mining Plan has since been approved in WCL Board vide: WCL/Office of CS/CR-04/2020-21/505, dated:20.10.2020 and further ratified by WCL Board</p>
3	Detail explanation of process of sand segregation plant with environment pollution mitigation measures.	<p>The works involved in extraction of sand in respect of OB processing plant at Gondegaon OCM of Nagpur area, WCL are as follows.</p> <ul style="list-style-type: none"> • Loading and transportation of OB from OB dumps to Sand plant. • Processing Unit (Screening, Crushing, Scrubbing etc.). • Loading and transportation of Finished product i.e. Sand from plant to Sand stacking yard. • Loading and transportation of by-product clay from clay pond to Stacking yard of clay. • Loading of finished sand into consumer's vehicle. <p>Merits of Processed OB and technology was explained during the meeting</p> <p>The processed OB (sand) and the byproduct clay comes under Minor Minerals, hence permission for Commercial selling of Sand has been obtained from the Department of Revenue & Forests, Govt. of Maharashtra, Mumbai dated 24.12.2018 and subsequently from Office of the District Collector, Nagpur vide letter no Khani-1/karya-21/119/18-19 dated 15.01.2019</p> <p>Following control measures were considered in Air Quality Impact prediction modelling</p> <ol style="list-style-type: none"> 1. Covering of crushing unit 2. Water sprinkling to increase moisture content to 200%. <p>In addition to above, Mist Spray/ Fog cannon may</p>

		be deployed at crushing site and transfer points.
4	Impact on air quality due to generation of dust (rehandling of OB, fugitive dust from plant and transportation of product by trucks)	<p>A detailed study on the impact on air quality due to generation of dust (rehandling of OB, fugitive dust from plant and transportation of product by trucks) due to the operation of Sand segregation plant at Gondegaon OC was presented during the meeting</p> <p>Numerical modelling exercise has been carried out for the additional expected</p> <p>Pollutant due to this sand segregation plant in conjunction with the existing coal production load by AERMOD v16216r. Monitoring values of last one year (July 19' to June20) has been considered as base value.</p>

The proposal is for including the activity of sand segregation from OB dumps with capacity of 2000 m³/day along with regular coal mining activities. There are no changes in Coal Mining Parameters. Coal mining is being done as per the sanctioned EC dated 09-03-2020.

Processed sand from OB dumps can be one of the best alternative of river sand. It will reduce the environment impacts on the river ecosystem. The segregated sand can be made available in all seasons and the cost of is cheaper than river sand mining. If overburden is processed, it generally yields 60-65% sand, 25-30% clay and 5% pebbles. The processed OB (Sand) can be used for construction works

4.4.3 *The EAC, after detailed deliberations and in view of benefits of this project for extracting sand from OB dump recommends the proposal for amendment in Environment Clearance to Expansion of Gondegaon Extension Opencast Coal Mine Project with capacity of 3.50 MTPA in ML Area of 791.40 ha M/s Western Coalfields Limited located in Gondegaon Village, Parseoni Tehsil, District Nagpur, (Maharashtra) for implementing Sand Segregation plant of 2000m³/day based on revised Mine Plan as per EIA Notification, 2006 with all the condition stipulated in EC dated 9th March, 2020 shall remain the same and subject to additional conditions as mentioned below for environment safeguards: -*

- (i) *PP shall install permanent 10 nos of fog cannon for reducing dust emission in sand segregation plan, haul road, OB dump area during unloading.*
- (ii) *PP shall construct atleast 10 mts height metal sheet barricading along the periphery of sand segregation plant*
- (iii) *All mitigation measures for air pollution shall be implemented as submitted during appraisal.*
- (iv) *Coal transportation shall be shifted from road – rail to Pipe Conveyor system at the end of 2023 and no coal will be transported by road transportation.*
- (v) *PP shall do tree plantation on reclaimed OB land.*
- (vi) *The mining lease holders shall, after ceasing mining operations, undertake re-grassing the mining area and any other area which may have been disturbed due to their mining*

activities and restore the land to a condition which is fit for growth of fodder, flora, fauna etc.

Agenda No.4.5

Cluster No. 10 Coal Mining Project of production capacity of 7.70 MTPA in an ML area of 5979 ha of M/s Eastern Coalfields Limited, located in Raniganj Coalfields, District Paschim Bardhaman (West Bengal) – For Amendment in Environmental Clearance – reg

[IA/MP/CMIN/178705/2020, File No J-11015/180/2011-IA-II(M)]

4.5.1 The proposal is for amendment in Environment Clearance of Cluster No. 10 Coal Mining Project of production capacity of 7.70 MTPA in an ML area of 6349 ha of M/s Eastern Coalfields Limited, located in Raniganj Coalfields, District Paschim Bardhaman (West Bengal).

4.5.2 The EAC during deliberations noted the following:

Earlier, the Environment Clearance to the Cluster No. 10 (group of 19 underground and opencast mines) was obtained under EIA Notification, 2006 vide Ministry's letter No J-11015/180/2011-I(A).II(M) dated 20th January, 2015.

Later amendment in Environment Clearance was granted to Cluster 10 (group of 15 underground and opencast mines) vide letter dated 31st May, 2018 without any change in overall production capacity and mine lease area.

Now Project Proponent has submitted further amendment proposal for changes in capacities of constituent mines of the cluster without changing overall production capacity (7.70 MTPA) and leasehold area (5979.00 Ha). The re-assessment of mine capacities has been done to optimize coal production plan within the cluster.

Accordingly, the mine Closure Plans have been revised based on the latest WPI of May'2020 and the guideline issued by Ministry of Coal vide F. No. 34011/28/2019-CPAM dated 29.05.2020. As per this guideline, the rate of Mine Closure per hectare for OC mining has been taken as ₹ 9.0 lakh w.e.f. 01.04.2019. Similarly, the rate of Mine Closure per hectare for UG mining has been taken as ₹ 1.5 lakh w.e.f. 01.04.2019. The PP is advised to undertake the mine closure activity as per the plan to obtain a better land use pot-mining for the communities around through reclamation and re-shaping of land degraded by OC and UG mining.

Cost for Progressive and Final Mine Closure of different mines within the Cluster has been tentatively distributed on different MC activities as per the New Yardstick issued by CMPDI (HQ), Ranchi dated 10.07.2020.

Mining Plan/Supplementary Note to Mining Plan has been approved by Board of Directors, Eastern Coalfields Limited for the proposed changes on 20th October, 2020 vide File No. ECL/CS/4/7853

4.6.3 The production capacity and mine lease area with earlier and proposed is mentioned below:-

S N	As per Existing EC dated 31.05.2018					S N	As per Revised Proposal					Remarks
	Name of Mine	Type	Lease hold Area (Ha)	EC Capacity (MT Y)	Life (Yr)		Name of the Mine	Type	Lease hold Area (Ha)	Proposed EC Capacity (MTY)	Life (Yr)	
1	North Searsole OCP	OC	360	2.0	19	1	North Searsole OCP	OC	360	1.50	10	Capacity & Life reduced
2	Kunustoria & Amrasota UG	UG	383	0.15	> 25	2	Kunustoria & Amrasota UG	UG	510	0.60	>25	Capacity increased
3	Belbaid UG	UG	384	0.12	> 25	Belbaid UG amalgamated with Parasea UG & OC (Sl. 4). Amalgamated Mine named as Parasea-Belbaid UG						
4	Bansra UG & OC	UG & OC	611	0.735	> 25	3	Bansra UG & OC	UG & OC	707	0.70	> 50	Capacity reduced, Life increased
5	Parasea UG & OC Patch	UG & OC	481	0.55	> 25	4	Parasea Belbaid UG & OC	UG & OC	784	2.07	> 25	Parasea & Belbaid mine amalgamated, Capacity increased
6	Jambad UG & OC	UG & OC	323	1.00	>25	5	Naba Jambad Project (Jambad UG, Jambad OC & Nabakajora UG)	UG & OC	664	1.07	>25	Jambad UG, Jambad OC & Nabakajora UG amalgamated to form one mine.

7	Nabakajora UG & Nabakajora-Madhabpur UGP & Madhabpur OC	UG	703	2.23	> 25	6	Nabakajora-Madhabpur UGP, Madhabpur UG & Madhabpur OC	UG & OC	678	2.12	>25	Capacity reduced.
8	Lachipur UG	UG	419	-	-	7	Lachipur UG (Western side of Andal Sainthia Railway line) amalgamated with Nabakajora-Madhabpur UG & OC (Sl.6)					
							Lachipur UG (Eastern side of Andal Sainthia Railway line)	UG	193	-	-	Leasehold area reduced as part of the area amalgamated with Nabakajora-Madhabpur UG & OC
9	Central Kajora UG	UG	291	0.12	> 25	8	Central Kajora UG	UG	291	0.25	> 20	Capacity increased
10	Khas Kajora UG	UG	188	0.35	> 25	9	Khas Kajora UG	UG	188	0.30	> 25	Capacity reduced.
11	Moira UG	UG	455	0.06	2	10	Moira UG	UG	455	0.0	-	Production suspended
12	Madhusudanpur UG	UG	338	0.12	2	11	Madhusudanpur UG	UG	338	0.07	5	Capacity reduced, reserve near exhaustion
13	Madhuj	UG	463	-	-	1	Madhujo	UG	463	-	-	Production

	ore UG					2	re UG					suspended
14	Ghanshyam UG	UG	232	-	-		Ghanshyam UG amalgamated with Nabakajora-Madhabpur UG & OC (Sl.6)					Production suspended
15	Parascole East & West	UG	348	0.26	> 25	13	Parascole East & West	UG & OC	348	0.54	>15	Capacity increased, new OC patch in Parascole (East).
Total			5979	7.70			Total		5979	7.70 *		
* Maximum production from the Cluster will not exceed 7.70 MTY												

It is noted that mine lease area of project was 6349 ha in EC dated 20th January, 2015. The area was reduced to 5979 ha (excluding portion of Lachipur UG and Ghanshyam UG) during EC amendment in 2018, however while issuing the EC amendment letter 31st May, 2018, inadvertently mine lease area is mentioned as 6349 ha though in table it is mentioned as 5979 ha.

Permission from Directorate General of Mine Safety, Eastern Zone, Sitarampur, Ministry of Labour & Employment, under regulation 121(1) of the Coal Mines Regulation, 2017 for amalgamation of three mines namely (i) Jambad OCP, (ii) Jambad U/G Colliery and (iii) Nabakajora Colliery by mine boundary adjustment and formed a new mine re-name as Naba Jambad Project of Kajora Area of M/s Eastern Coalfields Limited vide reference no. PERM/RN-1(EZ)/68/2018/1775 dated 20th January, 2018 has been submitted by Project proponent.

Year-wise Implementation plan of Environmental capital expenditure in respect of Air Pollution control measures:

Sl. No	Description	Capacity as per EIA/EMP	Amount (Amount in ₹ Lakhs)	Nos Installed/ Capacity	Future Implementation plan
1	Mobile Water Sprinkler 10 KL / 12 KL	25	750.00	08 (12KL) 02 (08KL) 01 (03 KL) 01 (15 KL) 01 (07 KL) 01 (16 KL)	Additional capacity for Mobile Water Sprinklers will be installed with the increase in production and will be completed by FY 2021-22.
2	Dust Suppression in Mines & Railway siding				
(i)	Fixed type Water Sprinkler at tippler points at mine Pit heads	18	36.00	10 locations	8 nos. Of Fixed type water sprinkler for Rs. 36.00 Lakhs will be installed with the increase in

					production in the Cluster by FY 2021-22.
(ii)	Fixed type Water Sprinkler at Railway Siding	03	60.00	3 Railway Siding	Rs. 212.06 lakh for additional 04 nos. of fixed type water sprinkle to be installed with the increase in production at railway siding by FY 2021-22
(iii)	Fixed type Water Sprinkler at OC Mines & Patches Coal Depot	07	35.00	2 locations	An expenditure of Rs.25 Lakh will be incurred by FY 2021-22
(iv)	Fixed type Water Sprinkler at all UG Mine Coal Depots	18	36.00	2 location	Approx Rs.58 lakh will be utilized for installing remaining capacity of fixed type water sprinklers with the increase in production at Coal depots by FY 2021-22.

4.5.4 The EAC after deliberations **recommends** the proposal for grant of amendment in Environment Clearance as mentioned in para above (at 4.6.3) to Cluster No. 10 Coal Mining Project of production capacity of 7.70 MTPA in an ML area of 5979 ha of M/s Eastern Coalfields Limited located in Raniganj Coalfields, District Paschim Bardhaman (West Bengal) as per EIA Notification, 2006 with all the condition stipulated in EC dated 20th January, 2015 shall remain the same and subject to additional conditions as mentioned below for environment safeguards.

- (ii) PP shall implementation all mitigation submitted during EAC meeting i.e. Year-wise Implementation plan of Environmental capital expenditure in respect of Air Pollution control measures in 2020-2021.
- (iii) Permission for extracting ground water shall be taken from Central Ground Water Authority.
- (iv) Continuous online monitoring system shall be installed for monitoring water quality.
- (v) Source apportionment study by third party shall be conducted by the project proponent to identify the impact of non-mining activities.
- (vi) Mist type mobile water sprinkler arrangement shall be installed for dust suppression in areas like Loading operations, Crusher points, transfer points and CHPs etc.
- (vii) Thick green belt around the mining area and at Railway siding (25000 nos) shall be developed by planting native species.
- (viii) CAQMS to monitor ambient air quality parameters like PM10, PM2.5, SOx, NOx etc. shall be installed at locations in the population / habitation areas/ receptor villages.
- (ix) PM10 Analyser shall be installed Railway siding to monitor the fugitive dust emission from coal transfer activities
- (x) PP shall provide smokeless Chullah to nearby villages under its CSR scheme.
- (xi) PP shall use on 40-50 tonne of trucks/dumpers for transportation of coal till railway siding.
- (xii) PP shall implement conveyor belt to transport coal within 2 years (i.e. 2023)

- (xiii) *The mining lease holders shall, after ceasing mining operations, undertake re-grassing the mining area and any other area which may have been disturbed due to their mining activities and restore the land to a condition which is fit for growth of fodder, flora, fauna etc*
- (xiv) *A subsidence study in Parasea-Belbaid UG (Liquidation Plan) with its environmental management and mitigation measures shall be submitted to Ministry's Regional Office.*

Agenda No.4.6

Wet Type Coal Washery Project based on Heavy Media Cyclone of production capacity 2.5 MTPA in an area of 15 acres of M/s R.K Transport & Constructions Limited located at Village Gorbi, Tehsil Chitrangi, District Singrauli (Madhya Pradesh) - For Term of Reference - reg.

[IA/MP/CMIN/182374/2020, File No J-11015/21/2020-IA-II(M)]

4.6.1 The proposal is for Terms of Reference to Wet Type Coal Washery Project based on Heavy Media Cyclone of 2.5 MTPA in an area of 15 acres of M/s R.K Transport & Constructions Limited located at Village Gorbi, Tehsil Chitrangi, District Singrauli (Madhya Pradesh).

4.6.2. The details of the proposal, as ascertained from the proposal documents and as revealed from the discussions held during the meeting, are given as under:

- (i) Latitude and Longitude of the project: 24°12'24.82"N 82°37'8.78"E, 24°12'22.33"N 82°37'13.25"E, 24°12'15.51"N 82°37'2.49"E, 24°12'16.23"N 82°36'58.86"E. Toposheet No. G44W11 (Project Site) and G44W12
- (ii) Details of coal linkage: The coal washery is not linked to any coal mine. Singrauli area has number of coal mines. It will wash coal supplied by different vendors.
- (iii) The project falls under Category 'A' of Schedule 2 (a), as per the EIA Notification, 2006 & its amendment till date and will be appraised by EAC (Coal Mining), MoEFCC, New Delhi.
- (iv) The project is located in the Critically Polluted Area (CPA) of Singrauli as per CPCB CEPI Score
- (v) Cost of the project: 25 Crores
- (vi) Employment generated/to be generated: 75 persons will get direct employment
- (vii) Benefits of the project: Clean coal containing 30-34% ash is required by steel plants and cement plants. The coal washery will add value to the high ash containing ROM coal extracted from Singrauli area. Local people will get direct and indirect employment. More revenue will be generated by the way of GST.
- (viii) Range of ground water level: the water level at Pre- monsoon varies from 4.13m to 18.50m & Post-monsoon varies from 2.94 m to 15.17 m.

- (ix) 500 m³/day water will be required for the coal washing. Ground Water will be used. Wastewater produced after coal washing will be treated in an elaborate ETP in close circuit. The water after treatment will be reused for coal washing. Water required for the proposed coal Washery will be mainly for Process and domestic purpose. Proposed coal Washery is envisaged to operate on closed circuit water, therefore only make up water requirement has been considered
- (x) Chalki Nadi is Approx. 6.0 km towards WNW and Bijul Nadi is Approx. 2.5 km towards North
- (xi) Whether ambient air quality seasonal data has been documented. If so, from which season to which season and whether the results are within the prescribed limits: To be started from 1st December till 28th February for Winter season
- (xii) The site has good connectivity to railway siding (public siding at Singrauli railway station, about 2.5km away) and road.
- (xiii) Land identified for the project is 15 acres. 5 acres land has been earmarked for greenbelt development.

Sr. No.	Description	Area (Acres)	% Area
1	Plant Area	2.65	17.66
2	Raw Coal Storage Yard	1.60	10.66
3	Washed Coal Storage Yard	1.30	8.66
4	Rejects storage	1.45	9.66
5	Green belt area	5.0	33.33
6	Internal Road	1.5	10.0
7	Parking	0.5	3.33
8	Water reservoir & RWH	1.0	6.66
9	Total	15.0	100

- (xiv) No nalla or drain passes through the project site. Land is flat and no filling or cutting is required for land development.
- (xv) The Washery will produce washed coal of an average ash content of around 34 % (GCV 4200 – 4500 Kcal/Kg) & reject, ash content about 60% (GCV 2200 – 2400 Kcal/Kg), useable as fuel in AFBC/CFBC boilers. It is envisaged that about 0.5 MTPA of Washery Rejects will be generated.
- (xvi) 2.5 MW electricity will be required for the project. It will be supplied by Madhya Pradesh Power Generation Company Limited.
- (xvii) No Forest Land Area is involved in the project area.
- (xviii) There is no village or human settlement in the plant area. No existing infrastructure within the plant area. The proposed site is an undeveloped land which does not include forestry, water bodies (including CRZ) etc.

- (xix) There is no displacement of any houses, habitation or livestock. Thus the project does not require any R & R plan.
- (xx) No court cases are pending.
- (xxi) Name of the consultant who prepared the EIA/EMP report: GRC India Pvt Ltd, Noida, Uttar Pradesh. The consultant has been accredited by the QCI and NABL and whether it is accredited with Quality Council of India (QCI) /National Accreditation Board of Education and Training (NABET) as per the MoEF&CC OM dated 2nd December, 2009 vide Certificate No. NABET/EIA/1821/SA 0110, valid up to 14.02.2021.

4.6.3 The EAC during deliberations noted the following

The proposal is for Terms of Reference to Wet Type Coal Washery Project based on Heavy Media Cyclone of 2.5 MTPA of M/s R.K Transport & Constructions Limited located at Village Gorbi, Tehsil Chitrangi, District Singrauli (Madhya Pradesh).

The project is located in the Critically Polluted Area (CPA) of Singrauli as per CPCB CEPI Score

No Forest Land Area is involved in the project area

Project does not fall in eco-sensitive zones areas

500 m³/day water will be required for the coal washing. Water required for the proposed coal Washery will be mainly for Process and domestic purpose. Proposed coal Washery is envisaged to operate on closed circuit water, therefore only make up water requirement has been considered

4.6.4 *The EAC after deliberations **recommends** the proposal of Terms of Reference to the Wet Type Coal Washery Project based on Heavy Media Cyclone of production capacity 2.5 MTPA in an area of 15 acres of M/s R.K Transport & Constructions Limited located at Village Gorbi, Tehsil Chitrangi, District Singrauli (Madhya Pradesh), for preparation of EIA/EMP reports along with public consultation, subject to compliance of all terms and conditions as specified/notified in the standard ToR applicable, along with the additional conditions as under:-*

- (i) *Public Consultation, including public hearing, shall be conducted through concerned SPCB as per the provisions/procedure contained in the EIA Notification, 2006 for information of the stakeholders about the present coal mining operations inviting comments and their redressal*
- (ii) *No ground water shall be used for any purpose by the Company instead PP shall explore surface water or mine water from nearby areas.*
- (iii) *Total Make up/fresh water for washery operations shall not exceed 500 m³/day*
- (iv) *Study shall be carried for sustenance of water supply to cater to projected demand of the proposed washery throughout planned life of the washery.*
- (v) *Impact of proposed project/activity on hydrological regime of the area shall be assessed and report be submitted.*
- (vi) *The washing technology so chosen should conform to 'Zero Liquid Discharge'.*
- (vii) *Continuous monitoring of occupational safety and other health hazards, and the corrective actions need to be ensured.*

- (viii) *For proper baseline air quality assessment, 8 monitoring stations in the downwind areas based on wind rose pattern of the area with area covering 10 km radius of buffer zone, shall be set up for collection of air quality data and air quality modeling.*
- (ix) *All internal road and connecting road to washery shall be proposed to be constructed of Concrete.*
- (x) *Washery rejects shall be proposed to be used only in FBC based power plant and accordingly, PP should produce MoU with FBC Power plant during EC appraisal*
- (xi) *PP shall provide the details of the raw coal quality / specifications, source of coal supply and long term agreement with coal mine.*
- (xii) *PP shall provide the details of technology to be used for coal washing and a guarantee of minimum ash % reduction by 5-7% of raw coal post washing and the associated environmental benefits of doing so for the consumption of washed coal at the steel and cement plant and rejects at the CFBC power plants from Climate Change perspective.*
- (xiii) *Thick green belt of adequate width to be provided around the washery to mitigate/check the dust pollution. A 3-tier avenue plantation should also be developed along vacant areas, storage yards, loading/transfer points, and also along internal roads/main approach roads. PP shall increase the greenbelt development area from 33.33 to 40% since the project area comes under CPA (Singrauli)*
- (xiv) *PP shall develop railway siding linking from nearby railway line and no road transportation will be allowed for raw and washed coal and rejects and accordingly Time bound Action Plan with fund allotted should be submitted.*
- (xv) *PP shall develop rain water harvesting pond for atleast 15 days storage period within the plant premises.*
- (xvi) *Traffic Impact Assessment study shall be carried out road transportation (if any).*
- (xvii) *Cumulative Impact Assessment Study in the area shall be carried out by project proponent through recognised Institutes with respect to existing mines and industries.*
- (xviii) *Clarification from The Principal Chief Conservator of Forests (PCCF) that washery does not fall under corridors of any National Park and Wildlife Sanctuary*
- (xix) *Project proponent to prepare Environmental Cost Benefit Analysis for the project in EIA/EMP Report.*
- (xx) *Heavy metals including other parameters in surface water quality shall be analyzed and provided in EIA Report.*
- (xxi) *The parameters Arsenic, Lead and Silica shall also be analyzed in ambient air quality*

Agenda No.4.7

Cluster of Godavarikhani No. 1&3 (GDK No.1&3) incline and Godavarikhani coal mine (No.2&2a and No.5) opencast cum underground with a production capacity of 4.134 MTPA (Peak -5.134 MTPA) (OC: 3.00 (Peak: 4.00) MTPA and UG: 1.134 MTPA) in the project of area of 1927.13 ha of M/s Singareni Collieries Company Limited, Ramgundam –I area, near Jangoan & Vithalnagar Villages, Ramagundam Mandal, District Peddapalli (Telangana) - For Term of Reference-reg.

[IA/JH/CMIN/171646/2020, File No 23-78/2018-IA.III(V)]

4.7.1 The proposal is for Terms of Reference for Cluster of Godavarikhani No. 1&3 (GDK No.1&3) incline and Godavarikhani coal mine (No.2&2a and No.5) opencast cum underground with a production capacity of 4.134 MTPA (Peak -5.134 MTPA) (OC: 3.00 (Peak: 4.00) MTPA and UG: 1.134 MTPA) in the project of area of 1927.13 ha of M/s Singareni Collieries Company Limited, Ramgundam –I area, near Jangoan & Vithalnagar Villages, Ramagundam Mandal, District Peddapalli (Telangana).

4.7.2. The details of the proposal, as ascertained from the proposal documents and as revealed from the discussions held during the meeting, are given as under:

- (i) The project area is covered under Survey of India Topo Sheet No. 56N/9 & 56N/10 and is bounded by the geographical coordinates ranging from Latitudes 18° 43' 21" to 18° 46' 53" N and longitudes 79° 30' 25" to 79° 35' 46" E.
- (ii) Coal linkage of the project is proposed for producing power for Super Thermal Power Station of NTPC, Ramagundam, Peddapalli District, Telangana State.
- (iii) No Joint venture cartel has been formed
- (iv) Project does not fall in the Critically Polluted Area (CPA), where the MoEF&CC vide its OM dated 13th January, 2010 has imposed moratorium on grant of environment clearance.
- (v) Employment generation of 350 Permanent and 550 Contractual will be done for the opencast operation in the proposed project. Existing man power in UG mines is 2230. (GDK 1&3 Incline: 943, GDK 2&2A Inclines: 1277 and GDK 5 Incline: 10)
- (vi) The project is reported to be beneficial in terms of socio-economic and improving living standards.
- (vii) Earlier, the environment clearance to the project was obtained under EIA Notification 2006 vide Ministry's letter No 23-78/2018-IA-III(V) dated 13.11.2020 for 1.734 MTPA in mine lease area of 1356.85 ha.
- (viii) Total mining lease area as per block allotment is 1927.13 ha. Mining Plan (Including Progressive Mine Closure Plan) was approved by MoC, GoI GDK No.1&3 INCLINE: MP & MCP was approved vide Lr. No.13016/2/2006-CA-I, dt.17.10.2014 by MoC, GOI. GDK Coal Mine (No 2 & 2A and No 5): MP& MCP was approved vide Lr. No.38011/12/2017-PCA, dt.22.04.2019 by MoC, GOI.
- (ix) The land usage pattern of the project is as follows:

Pre-mining land use details (Area in ha)

S.No.	Land description	Within the ML area			Outside the ML Area
		GDK 1&3 Inc.	GDK Coal Mine (No 2 & 2A and No 5)	Total	
1	Forest Land	Nil	Nil	Nil	Nil
2	Agricultural Land	232.12	673.88	906	Nil
3	Infrastructure, Build up area and roads	40.38	68.28	108.66	Nil

S.No.	Land description	Within the ML area			Outside the ML Area
		GDK 1&3 Inc.	GDK Coal Mine (No 2 & 2A and No 5)	Total	
4	Grazing Land	58.27	253.7	311.97	Nil
5	Barren Land	165.65	64.57	230.22	Nil
6	Water Bodies	45.24	57.44	102.68	Nil
7	Plantation	Nil	211.73	211.73	Nil
8	Stock Yards	Nil	50.09	50.09	Nil
9	Others	Nil	5.78	5.78	Nil
Total		541.66	1385.47	1927.13	Nil

Post Mining Land Use Details (Area in ha)

Sl. No.	Type	Plantation	Water Body	Public/ Company Use	Undisturbed	Agricultural land	Total
Godavarikhani No.1 & 3 Incline							
1	Underground mine	195.54	-	-	346.12	-	541.66
Sub total		195.54	-	-	346.12	-	541.66
Godavarikhani coal mine(No2&2A and no.5)-							
1	Excavation/Quarry Area: Ha						
	a. Backfilled Area	47.98					47.98
	b. Excavated Void	--	288.16				288.16
	Sub-Total	47.98	288.16				336.14
2	External Dump	590.92					590.92
3	Top soil Dump Area	16.27					16.27
	Sub-Total	607.19					607.19
3	Safety Zone /Rationalisation Area						
	a. Safe barrier & drain along the quarry	8.07	4.13	35.71			47.91
	i. Roads			35.71			
	ii. Garland drains		3.57				
	iii Settling Pond		0.56				
	b. Safe barrier & drain along the external dump	67.21	22.87	59.85			149.93
	i. Roads			59.85			
	ii. Garland drains		13.38				
	iii. Settling Pond		9.49				
4	Sub-Total	75.28	27.0	95.56			197.84
10	Road & Infrastructure area (Service Buildings and CHP)	39.49	1.69	49.52		35.57	126.27
11	Nallah diversion & tanks		29.4				29.4
12	Greenbelt	57.82					57.82

13	Undisturbed/NFL (Exclusive UG Area)				30.81		30.81
Sub total		827.76	346.25	145.08	30.81	35.57	1385.47
Grand Total		1023.30	346.25	145.08	376.93	35.57	1927.13

- (x) Total geological reserve reported in the mine lease area is 333.84 MT with 203.26 MT mineable reserves and 119.34 MT extractable reserves and till 31.03.2020 about 55.84 MT reserves were extracted and the balance extractable reserves of 63.50 MT are balance available for extraction. Percent of extraction is 58 %.
- (xi) 9 No's of seams with thickness ranging from 0.30 m – 8.81 m are workable. Grade of coal is G-8 (5028-5061 Kcal/kg), stripping ratio 1:13.70, while gradient is 1 in 3.0 to 1 in 4.5.
- (xii) Method of mining operations envisages by Opencast cum Underground method.
- (xiii) Life of mines in this cluster project is 57 years for Godavarikhani No.1&3 Incline mine, 13 years for GDK No.2&2A incline mine from 01.04.2020 and 15 years for OC mine from start of the OC operations including construction period.
- (xiv) The project has three external OB dumps in an area of 590.92 ha with 120 m height and 340.27 Mm³ of OB. OB shall be backfilled from 10th year onwards and internal OB dump in an area of 47.98 ha with 111.63 Mm³ of OB is envisaged in project.
- (xv) Total quarry area is 336.14 ha out of which backfilling will be done in 47.98 ha while final mine void will be created in an area of 288.16 ha with a depth of 300 m. Backfilled quarry area of 47.98 ha shall be reclaimed with plantation. Final mine void will be converted into water body.
- (xvi) Transportation of coal from face to the surface will be done by Haulage/Conveyor system in the underground working and in the opencast workings it has been proposed by Dumpers and Conveyor Belts up to mine pit head CHP, from surface to siding by Trucks and at sidings by Rail.
- (xvii) Reclamation Plan in an area 1023.30 ha {195.54 ha (GDK No.1&3) and 827.76 ha (GDK coal mine) comprising of 590.92 ha of external dump, 47.98 ha of internal dump and 253.36 ha of green belt. In addition to this, an area of 75.28 ha, included in the safety zone/rationalization area, has also been proposed for green belt development. In addition to above, 16.27 ha of top soil dump area and 39.49 ha of Road & Infrastructure area are proposed for green belt development. In addition, 35.57 ha will be converted into agriculture land.
- (xviii) No Forest Land for diversion for non-forestry activity is involved in this project.
- (xix) Siwaram (Crocodile) wild life sanctuary falls at a distance of 7.72 km of part the external dump-3 of the project. As per Mining Plan, this dump will be operational in 9th year of project life. Application was submitted for seeking recommendation of standing committee of NBWL on 28.02.2020. Further, Wild life conservation plan and Mitigative measures for Siwaram Wildlife Sanctuary and schedule-I species was prepared by the forest department and approved by PCCF&CWW, Hyd. with a budgetary provision of ₹ 388.214 Lakhs.
- (xx) The ground water level has been reported to be varying between 1.97 m to 12.98 m during pre-monsoon and between 0.95 m to 11.15 m during post-monsoon. Total water requirement for the project is 7720 KLD.

- (xxi) Ground water clearance was obtained vide Lr No.128/SCCL/2019, Dated: 22.02.2020 for existing Cluster of GDK No. 1&3 Inclines, GDK No.2&2A Inclines and GDK No.5 Incline. However, ground water clearance for the proposed expansion applied on 11.06.2019.
- (xxii) Consent to Operate for the GDK No.1&3 incline, GDK No.2&2A incline and GDK No.5 incline underground mines for existing capacity was obtained from the State PCB on 16.03.2017 and is valid till March, 2022, and for the proposed project will be obtained after grant of EC.
- (xxiii) Nallah No.1 and Nallah No.2, are flowing through the lease boundary in the proposed project. Both the nallahs will be diverted along the boundary of the project. NOC from I&CAD department for diversion of both the nallahs was obtained vide Lr. no. Lr. No.EE/IB/PDPL/DB/HD/D3/205/M dated 05.10.2020.
- (xxiv) Regular monitoring of ambient air quality is being carried out on fortnightly basis for existing GDKNo.1&3 incline, GDK No.2&2A Incline and GDK No.5 Incline mines. The results of ambient air quality monitoring data were found within prescribed limits and for the proposed project monitoring of ambient air quality will be done after commissioning of the project.
- (xxv) The present proposal is expansion of the existing GDK No.1&3 incline, GDK No.2&2A incline and GDK No.5 incline underground mines.EC for Cluster of GDK No.1&3 Incline, GDK No.2&2A Incline and GDK No.5 Incline underground mines was obtained under violation category, as per MoEF&CC S.O 804(E), dated 14.03.2017. As, per the S.O 804(E) State government /SPCB should take action against the Project proponent under the provision of the Environment (Protection) Act, 1986. Accordingly, Environment Engineer, RO, Ramagundam, TSPCB filed a case under Section 15 & 19 of the E(P) Act, 1986 in the Court of Hon'ble Additional Judicial Magistrate of F.C. at Godavarikhani on 23.03.2020 with file No. 331/2020.
- (xxvi) EC was obtained for the cluster of GDK No.1&3, GDK No.2&2A and GDK No.5 Incline vide F.No-23-78/2018-IA-III(V) dated 13.11.2020 in accordance with the guidelines issued under MoEF&CC S.O.804(E) dated 14.03.2017.As such, there are no violation cases pending against the existing underground mines. The coal production was started from the year 1961,1962 &1975 (GDK No.1&3, GDK No. 5 and GDK No.2&2A Inclines respectively). The coal production, realized from the project, from 1993-94 onwards, is as under

Year	Actual Production (MTPA) as per 1993-94 base level		
	GDK 1&3	GDK 2&2A	GDK 5
1993 - 94	0.344	0.461	0.356
1994 - 95	0.391	0.485	0.324
1995 - 96	0.349	0.384	0.267
1996 - 97	0.378	0.427	0.300
1997 - 98	0.350	0.385	0.301
1998 - 99	0.369	0.415	0.290
1999 - 2000	0.367	0.385	0.308

Year	Actual Production (MTPA) as per 1993-94 base level		
	GDK 1&3	GDK 2&2A	GDK 5
2000 - 01	0.404	0.426	0.331
2001 - 02	0.376	0.395	0.405
2002 - 03	0.343	0.327	0.443
2003 - 04	0.300	0.336	0.478
2004 - 05	0.337	0.325	0.462
2005 - 06	0.304	0.306	0.512
2006 - 07	0.162	0.307	0.363
2007 - 08	0.271	0.368	0.454
2008 - 09	0.298	0.367	0.478
2009 - 10	0.307	0.451	0.501
2010 - 11	0.342	0.550	0.485
2011 - 12	0.264	0.452	0.437
2012 - 13	0.272	0.467	0.495
2013-14	0.290	0.364	0.475
2014-15	0.287	0.339	0.443
2015-16	0.254	0.337	0.382
2016-17	0.228	0.292	0.303
2017-18	0.210	0.313	0.315
2018-19	0.236	0.294	0.290
2019-20	0.247	0.283	0.000

- (xxvii) The project involves 115 project affected families. R&R of the PAFs will be done as per prevailing Govt. Rules. Compensation to the land losers will be paid as per the directions of the State Govt.
- (xxviii) Total cost of the project is Rs.471.19 Crores {GDK No.1&3 incline :32.21 Cr and GDK coal Mine (No.2&2A and No.5): 438.98 Cr}.
- (xxix) Cost of production: GDK No.1&3 incline (Actual): Rs. 11,750.00 per Tonne *GDK Coal mine (No.2&2A and No.5)* GDK No. 2&2A Incline (Actual): Rs 11,013.00 per Tonne OC mine (estimated): Rs. 2510.23 per Tonne, CSR cost is 2% of average net profits of the company made during last three years and will be allocated for CSR at company level), R&R cost is Rs. 6.96 Crores.
- (xxx) Environment Management Cost:
i) Capital cost : Rs 19.94Crores
ii)Revenue cost : GDK Coal mine (No.2&2A and No.5): Rs.6.61 Cr/ Annum @ Rs. 22.02/T. GDK NO.1&3 Incline: Rs. 0.30 Cr/ Annum @ 6.17/T.
- (xxxi) Consent to Operate for the GDK No.1&3 incline , GDK No.2&2A incline and GDK No.5 incline underground mines for existing capacity was obtained from the State PCB on 16.03.2017 and is valid till March, 2022, and for the proposed project will be obtained after grant of EC.

4.7.2 The EAC during the deliberations noted the following:

The proposal is for Terms of Reference for Cluster of Godavarikhani No. 1&3 (GDK No.1&3) incline and Godavarikhani coal mine (No.2&2a and No.5) opencast cum underground with a production capacity of 4.134 MTPA (Peak -5.134 MTPA) (OC: 3.00 (Peak: 4.00) MTPA and UG: 1.134 MTPA) in the project of area of 1927.13 ha of M/s Singareni Collieries Company Limited, Ramgundam –I area, near Jangoan & Vithalnagar Villages, Ramagundam Mandal, District Peddapalli (Telangana).

Earlier, the environment clearance to the project was obtained under EIA Notification 2006 vide Ministry's letter No 23-78/2018-IA-III(V) dated 13.11.2020 for 1.734 MTPA in mine lease area of 1356.85 ha.

Siwaram (Crocodile) wild life sanctuary falls at a distance of 7.72 km of part the external dump-3 of the project. As per Mining Plan, this dump will be operational in 9th year of project life. Application was submitted for seeking recommendation of standing committee of NBWL on 28.02.2020. Further, Wild life conservation plan and Mitigative measures for Siwaram Wildlife Sanctuary and schedule-I species was prepared by the forest department and approved by PCCF&CWW, Hyd. with a budgetary provision of ₹ 388.214 Lakhs.

Nallah No.1 and Nallah No.2, are flowing through the lease boundary in the proposed project. Both the nallahs will be diverted along the boundary of the project.

Mine Plan and Mine Closure Plan

- GDK No.1&3 INCLINE: MP&MCP was approved vide Lr. No. 13016/2/2006-CA-II, dt.17.10.2014 by MoC, GOI.
- GDK Coal Mine (No 2 & 2A and No 5): MP & MCP was approved vide Lr. No.38011/12/2017-PCA, dt.22.04.2019 by MoC, GOI.

Coal from proposed OC will be dispatched by trucks to Ramagundam-I CHP, Ramagundam Opencast-III CHP for further transportation by Rail to the power plant

*4.7.3 The EAC after deliberation **recommends** the proposal for grant of Terms of Reference to Cluster of Godavarikhani No. 1&3 (GDK No.1&3) incline and Godavarikhani coal mine (No.2&2a and No.5) opencast cum underground with a production capacity of 4.134 MTPA (Peak -5.134 MTPA) (OC: 3.00 (Peak: 4.00) MTPA and UG: 1.134 MTPA) in the project of area of 1927.13 ha of M/s Singareni Collieries Company Limited, Ramgundam –I area, near Jangoan & Vithalnagar Villages, Ramagundam Mandal, District Peddapalli (Telangana), with specific conditions as below and as defined in the Standard ToR issued by this Ministry dated 13th November, 2020, under the provisions of the Environment Impact Assessment Notification, 2006 and subsequent amendments/circulars thereto.*

- (i) *EAC took cognizance of the fact that the present mine and mine closure plan of OC mine has got a severe environmental footprint leaving behind large quantity of overburden dumps in the vicinities of thickly populated habitations. Therefore, it requires a revision of mine and mine closure plan to reduce the environmental footprint due to mining. EAC is of the view that the PP must take a holistic and more scientific approach towards mine planning considering the adjoining OC mining operation, selection of equipment systems for*

production of coal and overburden removal including an option of merging the proposed OC mine with the adjoining OC mining operations so that the requirement external overburden dumps could be minimized. The PP is advised to develop a robust mine closure plan to ensure a better land use post-mining for the communities around through reclamation and re-shaping of land degraded by mining activities.

- (ii) Public Consultation shall be conducted through concerned SPCB as per the provisions/procedure contained in the EIA Notification, 2006 for information of the stakeholders about the present coal mining operations inviting comments and their redressal.*
- (iii) Site visit to be conducted by EAC sub-committee to assess the mechanism for dumping Overburden and other environment management and accordingly additional conditions shall be stipulated.*
- (iv) Time bound Action Plan for railway siding from mining pit to dispatch point.*
- (v) Cumulative Impact Assessment Study of the area shall be carried out by project proponent with respect to existing mines.*
- (vi) The ground water shall be used only for domestic purpose only till initial 2 years of mine development.*
- (vii) Clarification from The Principal Chief Conservator of Forests (PCCF) that mine does not fall under corridors or in the boundary of any National Park and Wildlife Sanctuary.*
- (viii) PP shall prepare Single Mine Plan including Mine Closure Plan for Peak production capacity as per latest guidelines of Ministry of Coal for Godavarikhani No. 1&3 (GDK No.1&3) incline and Godavarikhani coal mine (No.2&2a and No.5) opencast cum underground*
- (ix) PP shall remove/exclude External OB Dump-2 and accordingly revise the Mine Plan and explore possibility of dumping OB in External OB Dump-1 and adjoining mine void of other mines as per the applicable guidelines. Further, sequence of mining operations should be proposed as such that there is no requirement of External OB Dump-2.*
- (x) Proper drainage system shall be prepared to avoid seepage of mining water to water bodies and seepage to ground water.*
- (xi) Wind rose pattern in the area should be reviewed and accordingly location of AAMSQ shall be planned by the collection of air quality data. Monitoring location for collecting baseline data should cover overall the 10 km buffer zone i.e. dispersed in 10 km buffer area*
- (xii) Project proponent to prepare Environmental Cost Benefit Analysis for the project in EIA/EMP Report.*
- (xiii) Permission for ground water withdrawal shall be obtained from Central Ground Water Authority (CGWA), if applicable.*
- (xiv) Impact of proposed project/activity on hydrological regime of the area shall be assessed by diversion of two nallahs (1 & 2) and report be submitted. Hydrological studies as per GEC 2015 guidelines to be prepared and submitted*
- (xv) Heavy metals including other parameters in surface water quality shall be analyzed and provided in EIA Report.*
- (xvi) The parameters Arsenic, Lead and Silica shall also be analyzed in ambient air quality*
- (xvii) PP shall propose progressive greenbelt year wise and fund allotted for the same.*
- (xviii) PP shall study the impact of mining on Godavari River in terms of quality and quantity of water availability*

- (xix) PP shall study the impact of road transportation from instant mine to Ramagundam-I & III CHP (as proposed) for further movement by rail to power plant.*
- (xx) PP shall study the impact of blasting on nearby habitations and propose the mitigation measures by new technology interventions.*
- (xxi) PP shall conduct subsidence study for underground mine*

The meeting ended with thanks to the Chair.

Standard EC Conditions for Coal Mining Project (Opencast mining):

All the projects recommended for grant of environmental clearance by the EAC shall also comply with the following Standard EC conditions as per Ministry's circular issued from time to time:

(a) Statutory compliance

- (i) The project proponent shall obtain forest clearance under the provisions of Forest (Conservation) Act, 1986, in case of the diversion of forest land for non-forest purpose involved in the project.
- (ii) The project proponent shall obtain clearance from the National Board for Wildlife, if applicable.
- (iii) The project proponent shall prepare a Site-Specific Conservation Plan / Wildlife Management Plan and approved by the Chief Wildlife Warden. The recommendations of the approved Site-Specific Conservation Plan/Wildlife Management Plan shall be implemented in consultation with the State Forest Department. The implementation report shall be furnished along with the six-monthly compliance report (in case of the presence of schedule-I species in the study area).
- (iv) The project proponent shall obtain Consent to Establish/Operate under the provisions of Air (Prevention & Control of Pollution) Act, 1981 and the Water (Prevention & Control of Pollution) Act, 1974 from the concerned State pollution Control Board/ Committee.
- (v) The project proponent shall obtain the necessary permission from the Central Ground Water Authority.
- (vi) Solid/hazardous waste generated in the mines needs to addressed in accordance to the Solid Waste Management Rules, 2016/Hazardous & Other Waste Management Rules, 2016.

(b) Air quality monitoring and preservation

- (i) Continuous ambient air quality monitoring stations as prescribed in the statute be established in the core zone as well as in the buffer zone for monitoring of pollutants, namely PM₁₀, PM_{2.5}, SO₂ and NO_x. 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. Online ambient air quality monitoring stations may also be installed in addition to the regular monitoring stations as per the requirement and/or in consultation with the SPCB. Monitoring of heavy metals such as Hg, As, Ni, Cd, Cr, etc to be carried out at least once in six months.
- (ii) The Ambient Air Quality monitoring in the core zone shall be carried out to ensure the Coal Industry Standards notified vide GSR 742 (E) dated 25th September, 2000 and as amended from time to time by the Central Pollution Control Board. Data on ambient air quality and heavy metals such as Hg, As, Ni, Cd, Cr and other monitoring data shall be regularly reported to the Ministry/Regional Office and to the CPCB/SPCB.
- (iii) Transportation of coal, to the extent permitted by road, shall be carried out by covered trucks/conveyors. Effective control measures such as regular water/mist sprinkling/rain gun etc shall be carried out in critical areas prone to air pollution (with higher values of PM₁₀/PM_{2.5}) such as haul road, loading/unloading and transfer points. Fugitive dust emissions from all sources shall be controlled regularly. It shall be ensured that the

Ambient Air Quality parameters conform to the norms prescribed by the Central/State Pollution Control Board.

- (iv) The transportation of coal shall be carried out as per the provisions and route envisaged in the approved Mining Plan or environment monitoring plan. Transportation of the coal through the existing road passing through any village shall be avoided. In case, it is proposed to construct a 'bypass' road, it should be so constructed so that the impact of sound, dust and accidents could be appropriately mitigated.
- (v) Vehicular emissions shall be kept under control and regularly monitored. All the vehicles engaged in mining and allied activities shall operate only after obtaining 'PUC' certificate from the authorized pollution testing centres.
- (vi) Coal stock pile/crusher/feeder and breaker material transfer points shall invariably be provided with dust suppression system. Belt-conveyors shall be fully covered to avoid air borne dust. Side cladding all along the conveyor gantry should be made to avoid air borne dust. Drills shall be wet operated or fitted with dust extractors.
- (vii) Coal handling plant shall be operated with effective control measures w.r.t. various environmental parameters. Environmental friendly sustainable technology should be implemented for mitigating such parameters.

(c) Water quality monitoring and preservation

- (i) The effluent discharge (mine waste water, workshop effluent) shall be monitored in terms of the parameters notified under the Water Act, 1974 Coal Industry Standards vide GSR 742 (E) dated 25th September, 2000 and as amended from time to time by the Central Pollution Control Board.
- (ii) The monitoring data shall be uploaded on the company's website and displayed at the project site at a suitable location. The circular No.J-20012/1/2006-IA.11 (M) dated 27th May, 2009 issued by Ministry of Environment, Forest and Climate Change shall also be referred in this regard for its compliance.
- (iii) Regular monitoring of ground water level and quality shall be carried out in and around the mine lease area by establishing a network of existing wells and constructing new piezometers during the mining operations. The monitoring of ground water levels shall be carried out four times a year i.e. pre-monsoon, monsoon, post-monsoon and winter. The ground water quality shall be monitored once a year, and the data thus collected shall be sent regularly to MOEFCC/RO.
- (iv) Monitoring of water quality upstream and downstream of water bodies shall be carried out once in six months and record of monitoring data shall be maintained and submitted to the Ministry of Environment, Forest and Climate Change/Regional Office.
- (v) Ground water, excluding mine water, shall not be used for mining operations. Rainwater harvesting shall be implemented for conservation and augmentation of ground water resources.
- (vi) Catch and/or garland drains and siltation ponds in adequate numbers and appropriate size shall be constructed around the mine working, coal heaps & OB dumps to prevent run off of water and flow of sediments directly into the river and water bodies. Further, dump material shall be properly consolidated/ compacted and accumulation of water over dumps shall be avoided by providing adequate channels for flow of silt into the drains. The drains/ ponds so constructed shall be regularly de-silted particularly before onset of monsoon and maintained properly. Sump capacity should provide adequate retention period to allow

proper settling of silt material. The water so collected in the sump shall be utilised for dust suppression and green belt development and other industrial use. Dimension of the retaining wall constructed, if any, at the toe of the OB dumps within the mine to check run-off and siltation should be based on the rainfall data. The plantation of native species to be made between toe of the dump and adjacent field/habitation/water bodies.

- (vii) Adequate groundwater recharge measures shall be taken up for augmentation of ground water. The project authorities shall meet water requirement of nearby village(s) after due treatment conforming to the specific requirement (standards).
- (viii) Industrial waste water generated from CHP, workshop and other waste water, shall be properly collected and treated so as to conform to the standards prescribed under the standards prescribed under Water Act 1974 and Environment (Protection) Act, 1986 and the Rules made there under, and as amended from time to time. Adequate ETP /STP needs to be provided.
- (ix) The water pumped out from the mine, after siltation, shall be utilized for industrial purpose viz. watering the mine area, roads, green belt development etc. The drains shall be regularly desilted particularly after monsoon and maintained properly.
- (x) The surface drainage plan including surface water conservation plan for the area of influence affected by the said mining operations, considering the presence of river/rivulet/pond/lake etc, shall be prepared and implemented by the project proponent. The surface drainage plan and/or any diversion of natural water courses shall be as per the approved Mining Plan/EIA/EMP report and with due approval of the concerned State/GoI Authority. The construction of embankment to prevent any danger against inrush of surface water into the mine should be as per the approved Mining Plan and as per the permission of DGMS or any other authority as prescribed by the law.
- (xi) The project proponent shall take all precautionary measures to ensure riverine/riparian ecosystem in and around the coal mine up to a distance of 5 km. A riverine/riparian ecosystem conservation and management plan should be prepared and implemented in consultation with the irrigation / water resource department in the state government.

(d) Noise and Vibration monitoring and prevention

- (i) Adequate measures shall be taken for control of noise levels as per Noise Pollution Rules, 2016 in the work environment. Workers engaged in blasting and drilling operations, operation of HEMM, etc shall be provided with personal protective equipments (PPE) like ear plugs/muffs in conformity with the prescribed norms and guidelines in this regard. Adequate awareness programme for users to be conducted. Progress in usage of such accessories to be monitored.
- (ii) Controlled blasting techniques shall be practiced in order to mitigate ground vibrations, fly rocks, noise and air blast etc., as per the guidelines prescribed by the DGMS.
 - (i) The noise level survey shall be carried out as per the prescribed guidelines to assess noise exposure of the workmen at vulnerable points in the mine premises, and report in this regard shall be submitted to the Ministry/RO on six-monthly basis.

(e) Mining Plan

- (i) Mining shall be carried out under strict adherence to provisions of the Mines Act 1952 and subordinate legislations made there-under as applicable.

- (ii) Mining shall be carried out as per the approved mining plan(including Mine Closure Plan) abiding by mining laws related to coal mining and the relevant circulars issued by Directorate General Mines Safety (DGMS).
- (iii) No mining shall be carried out in forest land without obtaining Forestry Clearance as per Forest (Conservation) Act, 1980.
- (ii) Efforts should be made to reduce energy and fuel consumption by conservation, efficiency improvements and use of renewable energy.

(f) Land reclamation

- (i) Digital Survey of entire lease hold area/core zone using Satellite Remote Sensing survey shall be carried out at least once in three years for monitoring land use pattern and report in 1:50,000 scale or as notified by Ministry of Environment, Forest and Climate Change(MOEFCC) from time to time shall be submitted to MOEFCC/Regional Office (RO).
- (ii) The final mine void depth should preferably be as per the approved Mine Closure Plan, and in case it exceeds 40 m, adequate engineering interventions shall be provided for sustenance of aquatic life therein. The remaining area shall be backfilled and covered with thick and alive top soil. Post-mining land be rendered usable for agricultural/forestry purposes and shall be diverted. Further action will be treated as specified in the guidelines for Preparation of Mine Closure Plan issued by the Ministry of Coal dated 27th August, 2009 and subsequent amendments.
- (iii) The entire excavated area, backfilling, external OB dumping (including top soil) and afforestation plan shall be in conformity with the “during mining”/”post mining” land-use pattern, which is an integral part of the approved Mining Plan and the EIA/EMP submitted to this Ministry. Progressive compliance status vis-a-vis the post mining land use pattern shall be submitted to the MOEFCC/RO.
- (iv) Fly ash shall be used for external dump of overburden, backfilling or stowing of mine as per provisions contained in clause (i) and (ii) of subparagraph (8) of fly ash notification issued vide SO 2804 (E) dated 3rd November, 2009 as amended from time to time. Efforts shall be made to utilize gypsum generated from Flue Gas Desulfurization (FGD), if any, along with fly ash for external dump of overburden, backfilling of mines. Compliance report shall be submitted to Regional Office of MoEF&CC, CPCB and SPCB.
- (v) Further, it may be ensured that as per the time schedule specified in mine closure plan it should remain live till the point of utilization. The topsoil shall temporarily be stored at earmarked site(s) only and shall not be kept unutilized. The top soil shall be used for land reclamation and plantation purposes. Active OB dumps shall be stabilised with native grass species to prevent erosion and surface run off. The other overburden dumps shall be vegetated with native flora species. The excavated area shall be backfilled and afforested in line with the approved Mine Closure Plan. Monitoring and management of rehabilitated areas shall continue until the vegetation becomes self-sustaining. Compliance status shall be submitted to the Ministry of Environment, Forest and Climate Change/ Regional Office.
- (vi) The project proponent shall make necessary alternative arrangements, if grazing land is involved in core zone, in consultation with the State government to provide alternate areas for livestock grazing, if any. In this context, the project proponent shall implement the directions of Hon'ble Supreme Court with regard to acquiring grazing land.

(g) Green Belt

- (i) The project proponent shall take all precautionary measures during mining operation for conservation and protection of endangered/endemic flora/fauna, if any, spotted/reported in the study area. The Action plan in this regard, if any, shall be prepared and implemented in consultation with the State Forest and Wildlife Department.
- (ii) Greenbelt consisting of 3-tier plantation of width not less than 7.5 m shall be developed all along the mine lease area as soon as possible. The green belt comprising a mix of native species (endemic species should be given priority) shall be developed all along the major approach/ coal transportation roads.

(h) Public hearing and Human health issues

- (i) Adequate illumination shall be ensured in all mine locations (as per DGMS standards) and monitored weekly. The report on the same shall be submitted to this ministry & it's RO on six-monthly basis.
- (ii) The project proponent shall undertake occupational health survey for initial and periodical medical examination of the personnel engaged in the project and maintain records accordingly as per the provisions of the Mines Rules, 1955 and DGMS circulars. Besides regular periodic health check-up, 20% of the personnel identified from workforce engaged in active mining operations shall be subjected to health check-up for occupational diseases and hearing impairment, if any, as amended time to time.
- (iii) Personnel (including outsourced employees) working in core zone shall wear protective respiratory devices and shall also be provided with adequate training and information on safety and health aspects.
- (iv) Implementation of the action plan on the issues raised during the public hearing shall be ensured. The project proponent shall undertake all the tasks/measures as per the action plan submitted with budgetary provisions during the public hearing. Land oustees shall be compensated as per the norms laid down in the R&R policy of the company/State Government/Central Government, as applicable.
- (v) The project proponent shall follow the mitigation measures provided in this Ministry's OM No.Z-11013/5712014-IA.II (M) dated 29th October, 2014, titled 'Impact of mining activities on habitations-issues related to the mining projects wherein habitations and villages are the part of mine lease areas or habitations and villages are surrounded by the mine lease area'.

(i) Corporate Environment Responsibility

- (i) The project proponent shall comply with the provisions contained in this Ministry's OM vide F.No.22-65/2017-IA.III dated 1st May 2018, as applicable, regarding Corporate Environment Responsibility.
- (ii) The company shall have a well laid down environmental policy duly approved by the Board of Directors. The environmental policy should prescribe for standard operating procedures to have proper checks and balances and to bring into focus any infringements/deviation/violation of the environmental/forest/wildlife norms/conditions. The company shall have defined system of reporting infringements/deviation/violation of the environmental/forest/wildlife norms/conditions and/or shareholders/stake holders.
- (iii) A separate Environmental Cell both at the project and company head quarter level, with qualified personnel shall be set up under the control of senior Executive, who will directly report to the head of the organization.

- (iv) Action plan for implementing EMP and environmental conditions along with responsibility matrix of the company shall be prepared and shall be duly approved by competent authority. The year wise funds earmarked for environmental protection measures shall be kept in separate account and not to be diverted for any other purpose. Year wise progress of implementation of action plan shall be reported to the Ministry/Regional Office along with the Six Monthly Compliance Report.
- (v) Self environmental audit shall be conducted annually. Every three years third party environmental audit shall be carried out.
- (j) Miscellaneous**
- (i) The project proponent shall make public the environmental clearance granted for their project along with the environmental conditions and safeguards at their cost by prominently advertising it at least in two local newspapers of the District or State, of which one shall be in the vernacular language within seven days and in addition this shall also be displayed in the project proponent's website permanently.
- (ii) The copies of the environmental clearance shall be submitted by the project proponents to the Heads of local bodies, Panchayats and Municipal Bodies in addition to the relevant offices of the Government who in turn has to display the same for 30 days from the date of receipt.
- (iii) The project proponent shall upload the status of compliance of the stipulated environment clearance conditions, including results of monitored data on their website and update the same on half-yearly basis.
- (iv) The project proponent shall monitor the criteria pollutants level namely; PM₁₀, SO₂, NO_x (ambient levels) or critical sectoral parameters, indicated for the projects and display the same at a convenient location for disclosure to the public and put on the website of the company.
- (v) The project proponent shall submit six-monthly reports on the status of the compliance of the stipulated environmental conditions on the website of the ministry of Environment, Forest and Climate Change at environment clearance portal.
- (vi) The project proponent shall follow the mitigation measures provided in this Ministry's OM No.Z-11013/5712014-IA.II (M) dated 29th October, 2014, titled 'Impact of mining activities on habitations-issues related to the mining projects wherein habitations and villages are the part of mine lease areas or habitations and villages are surrounded by the mine lease area'.
- (vii) The project proponent shall submit the environmental statement for each financial year in Form-V to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently and put on the website of the company.
- (viii) The project authorities shall inform to the Regional Office of the MOEFCC regarding commencement of mining operations.
- (ix) The project authorities must strictly adhere to the stipulations made by the State Pollution Control Board and the State Government.
- (x) The project proponent shall abide by all the commitments and recommendations made in the EIA/EMP report, commitment made during Public Hearing and also that during their presentation to the Expert Appraisal Committee.
- (xi) No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment, Forests and Climate Change.

- (xii) Concealing factual data or submission of false/fabricated data may result in revocation of this environmental clearance and attract action under the provisions of Environment (Protection) Act, 1986.
- (xiii) The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.
- (xiv) The Ministry reserves the right to stipulate additional conditions if found necessary. The Company in a time bound manner shall implement these conditions.
- (xv) The Regional Office of this Ministry shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data / information/monitoring reports.
- (xvi) The above conditions shall 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, Hazardous and Other Wastes (Management and Trans-boundary Movement) Rules, 2016 and the Public Liability Insurance Act, 1991 along with their amendments and Rules and any other orders passed by the Hon'ble Supreme Court of India / High Courts and any other Court of Law relating to the subject matter.

Standard EC Conditions for Coal Mining Project (Underground mining):

All the projects recommended for grant of environmental clearance by the EAC shall also comply with the following Standard EC conditions as per Ministry's circular issued from time to time:

I. Statutory compliance:

- (i) The Environmental clearance shall be subject to orders of Hon'ble Supreme Court of India, Hon'ble High Courts, NGT and any other Court of Law, from time to time, and as applicable to the project
- (ii) The project proponent shall obtain forest clearance under the provisions of Forest (Conservation) Act, 1986, in case of the diversion of forest land for non-forest purpose involved in the project.
- (iii) The project proponent shall obtain clearance from the National Board for Wildlife, if applicable.
- (iv) The project proponent shall prepare a Site-Specific Conservation Plan / Wildlife Management Plan and approved by the Chief Wildlife Warden. The recommendations of the approved Site-Specific Conservation Plan / Wildlife Management Plan shall be implemented in consultation with the State Forest Department. The implementation report shall be furnished along with the six-monthly compliance report. (incase of the presence of schedule-I species in the study area)
- (v) The project proponent shall obtain Consent to Establish / Operate under the provisions of Air (Prevention & Control of Pollution) Act, 1981 and the Water (Prevention & Control of Pollution) Act, 1974 from the concerned State Pollution Control Board/ Committee.
- (vi) The project proponent shall obtain the necessary permission from the Central Ground Water Authority.
- (vii) Solid waste/hazardous waste generated in the mines needs to addressed in accordance to the Solid Waste Management Rules, 2016 / Hazardous & Other Waste Management Rules, 2016

II. Air quality monitoring and preservation

- i. Adequate ambient air quality monitoring stations shall be established in the core zone as well as in the buffer zone for monitoring of pollutants, namely particulates, SO₂ and NO_x. Location of the stations shall be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive receptors in consultation with the State Pollution Control Board. Monitoring of heavy metals such as Hg, As, Ni, Cd, Cr, etc. to be carried out at least once in six months. Online ambient air quality monitoring station/stations may also be installed in addition to the regular air monitoring stations as per the requirement and/or in consultation with the SPCB
- ii. The Ambient Air Quality monitoring in the core zone shall be carried out to ensure the Coal Industry Standards notified vide GSR 742 (E) dated 25.9.2000 and as amended from time to time by the Central Pollution Control Board. Data on ambient air quality and heavy metals such as Hg, As, Ni, Cd, Cr and other monitoring data shall be regularly reported to the Ministry/Regional Office and to the CPCB/SPCB.
- iii. Transportation of coal, to the extent permitted by road, shall be carried out by covered trucks/conveyors. Effective control measures such as regular water sprinkling/rain gun/mist sprinkling etc., shall be carried out in critical areas prone to air pollution with higher

level of particulate matter all through the coal transport roads, loading/unloading and transfer points. Fugitive dust emissions from all sources shall be controlled regularly. It shall be ensured that the ambient air quality parameters conform to the norms prescribed by the Central/State Pollution Control Board.

- iv. Major approach roads shall be black topped and properly maintained.
- v. The transportation of coal shall be carried out as per the provisions and route proposed in the approved mining plan. Transportation of the coal through the existing road passing through any village shall be avoided. In case, it is proposed to construct a 'bypass' road, it should be so constructed that the impact of sound, dust and accidents could be appropriately mitigated.
- vi. Vehicular emissions shall be kept under control and regularly monitored. All the vehicles engaged in mining and allied activities shall operate only after obtaining 'PUC' certificate from the authorized pollution testing centres.
- vii. Coal stock pile/crusher/feeder and breaker material transfer points shall invariably be provided with dust suppression system. Belt-conveyors shall be fully covered to avoid air borne dust. Side cladding all along the conveyor gantry should be made to avoid air borne dust. Drills shall be wet operated or fitted with dust extractors.
- viii. Coal handling plant shall be operated with effective control measures w.r.t. various environmental parameters. Environmental friendly sustainable technology should be implemented for mitigating such parameters.

III. Water quality monitoring and preservation

- i. The effluent discharge (mine waste water, workshop effluent) shall be monitored in terms of the parameters notified under the Water Act, 1974 Coal Industry Standards vide GSR 742 (E) dated 25.9.2000 and as amended from time to time by the Central Pollution Control Board.
- ii. The monitoring data shall be uploaded on the company's website and displayed at the project site at a suitable location. The circular No. J-20012/1/2006-IA.11 (M) dated 27.05.2009 issued by Ministry of Environment, Forest and Climate Change shall also be referred in this regard for its compliance.
- iii. Regular monitoring of ground water level and quality shall be carried out in and around the mine lease area by establishing a network of existing wells and constructing new piezometers during the mining operations. The monitoring of ground water levels shall be carried out four times a year i.e. pre-monsoon, monsoon, post-monsoon and winter. The ground water quality shall be monitored once a year, and the data thus collected shall be sent regularly to MOEFCC/RO.
- iv. Monitoring of water quality upstream and downstream of water bodies shall be carried out once in six months and record of monitoring data shall be maintained and submitted to the Ministry of Environment, Forest and Climate Change/Regional Office.
- v. Ground water, excluding mine water, shall not be used for mining operations. Rainwater harvesting shall be implemented for conservation and augmentation of ground water resources.
- vi. The project proponent shall not alter major water channels around the site. Appropriate embankment shall be provided along the side of the river/nallah flowing near or adjacent to the mine. The embankment constructed along the river/nallah boundary shall be of suitable dimensions and critical patches shall be strengthened by stone pitching on the river front

side, stabilized with plantation so as to withstand the peak water pressure preventing any chance of mine inundation.

- vii. Garland drains (of suitable size, gradient and length) around the critical areas i.e. mine shaft and low lying areas, shall be designed keeping at least 50% safety margin over and above the peak sudden rainfall and maximum discharge in the area adjoining the mine sites. The sump capacity shall also provide adequate retention period to allow proper settling of silt material of the surface runoff
- viii. The water pumped out from the mine, after siltation, shall be utilized for industrial purpose viz. watering the mine area, roads, green belt development etc. The drains shall be regularly desilted particularly after monsoon and maintained properly.
- ix. Industrial waste water from coal handling plant and mine water shall be properly collected and treated so as to conform to the standards prescribed under the Environment (Protection) Act, 1986 and the Rules made thereunder, and as amended from time to time. Oil and grease trap shall be installed before discharge of workshop effluent. Sewage treatment plant of adequate capacity shall be installed for treatment of domestic waste water.
- x. Adequate groundwater recharge measures shall be taken up for augmentation of ground water. The project authorities shall meet water requirement of nearby village(s) in case the village wells go dry due to dewatering of mine.
- xi. The surface drainage plan including surface water conservation plan for the area of influence affected by the said mining operations shall be prepared, considering the presence of any river/rivulet/pond/lake etc., with impact of mining activities on it, and implemented by the project proponent. The surface drainage plan and/or any diversion of natural water courses shall be as per the provisions of the approved Mining Plan/ EIA-EMP submitted to this Ministry and the same should be done with due approval of the concerned State/GoI Authority. The construction of embankment to prevent any danger against inrush of surface water into the mine should be as per the approved mining plan and as per the permission of DGMS.
- xii. The project proponent shall take all precautionary measures to ensure reverian/ riparian ecosystem in and around the coal mine upto a distance of 5 km. A reverian /riparian ecosystem conservation and management plan should be prepared and implemented in consultation with the irrigation / water resource department in the state government.

IV. Noise and Vibration monitoring and prevention

- i. Adequate measures shall be taken for control of noise levels below 85 dB(A) in the work environment. Workers engaged in underground mining operations, operation of HEMM, etc. shall be provided with personal protective equipments (PPE) like ear plugs/muffs in conformity with the prescribed norms/guidelines in this regard. Progress in usage of such accessories to be monitored. Adequate awareness programme for users to be conducted.
- ii. The noise level survey shall be carried out as per the prescribed guidelines to assess noise exposure of the workmen at vulnerable points in the mine premises, and report in this regard shall be submitted to the Ministry/RO on six-monthly basis.

V. Mining Plan

- i. Mining shall be carried out under strict adherence to provisions of the Mines Act 1952 and subordinate legislations made there-under as applicable.

- ii. No change in mining method i.e. UG to OC, calendar programme and scope of work shall be made without obtaining prior approval of the Ministry of Environment, Forests and Climate Change (MoEFCC).
- iii. Mining shall be carried out as per the approved mining plan (including mine closure plan) abiding by mining laws related to coal mining and the relevant circulars issued by Directorate General Mines Safety (DGMS).
- iv. Underground work place environmental conditions shall be rendered ergonomic and air breathable with adequate illumination in conformance with DGMS standards.
- v. No mining activity shall be carried out in forest land without obtaining Forestry Clearance as per Forest (Conservation) Act, 1980 and also adhering to The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 read with provisions of Indian Forest Act, 1927.
- vi. Efforts should be made to reduce energy and fuel consumption by conservation, efficiency improvements and use of renewable energy.

VI. Land reclamation

- i. Digital Survey of entire lease hold area/core zone using Satellite Remote Sensing survey shall be carried out at least once in three years for monitoring land use pattern and report in 1:50,000 scale or as notified by Ministry of Environment, Forest and Climate Change(MOEFCC) from time to time shall be submitted to MOEFCC/Regional Office (RO).
- ii. Post-mining land be rendered usable for agricultural/forestry purposes and shall be handed over to the respective State Government, as specified in the Guidelines for Preparation of Mine Closure Plan, issued by the Ministry of Coal dated 27th August, 2009 and subsequent amendments.
- iii. Regular monitoring of subsidence movement on the surface over and around the working areas and its 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 beyond the limit prescribed, appropriate effective mitigation measures shall be taken to avoid loss of life and materials. Cracks should be effectively plugged in with ballast and clay soil/suitable material.
- iv. Fly ash shall be used for external dump of overburden, backfilling or stowing of mine as per provisions contained in clause (i) and (ii) of subparagraph (8) of fly ash notification issued vide SO 2804 (E) dated 3rd November, 2009 as amended from time to time. Efforts shall be made to utilize gypsum generated from Flue Gas Desulfurization (FGD), if any, alongwith fly ash for external dump of overburden, backfilling or stowing of mines. Compliance report shall be submitted to Regional Office of MoEF&CC, CPCB and SPCB.
- v. A separate team for subsidence monitoring and surface mitigation measures shall be constituted and continuous monitoring & implementation of mitigation measures be carried out.
- vi. Thorough inspection of the mine lease area for any cracks developed at the surface due to mining activities below ground shall be carried out to prevent inrush of water in the mine.
- vii. Native tree species shall be selected and planted over areas affected by subsidence.
- viii. The project proponent shall make necessary alternative arrangements, if grazing land is involved in core zone, in consultation with the State government to provide alternate areas for livestock grazing, if any. In this context, the project proponent shall implement the directions of Hon'ble Supreme Court with regard to acquiring grazing land.

VII. Green Belt

- i. The project proponent shall take all precautionary measures during mining operation for conservation and protection of endangered flora/fauna, if any, spotted/reported in the study area. Action plan, in this regard, if any, shall be prepared and implemented in consultation with the State Forest and Wildlife Department.
- ii. Greenbelt, consisting of three-tier plantation, of width not less than 7.5 m, shall be developed all along the mine lease area in a phased manner. The green belt comprising of a mix of native species shall be developed all along the major approach roads/ coal transportation roads.

VIII. Public hearing and Human health issues

- i. Adequate illumination shall be ensured in all mine locations (as per DGMS standards) and monitored.
- ii. The Project Proponent shall undertake Occupational Health survey for initial and Periodical medical examination of the workers engaged in the Project and maintain records accordingly as per the provisions of the Mines Rules, 1955 and DGMS Circulars. Besides carrying out regular periodic health check-up of their workers, 20% of the workers engaged in active mining operations shall be subjected to health check-up for occupational diseases and hearing impairment, if any.
- iii. Personnel (including outsourcing employees) working in dusty areas shall wear protective respiratory devices and shall also be provided with adequate training and information on safety and health aspects.
- iv. Skill training as per safety norms specified by DGMS shall be provided to all workmen including the outsourcing employees to ensure high safety standards in mines.
- v. Effective arrangement shall be made to provide and maintain at suitable points conveniently situated, a sufficient supply of drinking water for all the persons employed.
- vi. Implementation of Action Plan on the issues raised during the Public Hearing shall be ensured. The Project Proponent shall undertake all the tasks as per the Action Plan submitted with budgetary provisions during the Public Hearing. Land oustees shall be compensated as per the norms laid out R&R Policy of the Company/ or the National R&R Policy/ R&R Policy of the State Government, as applicable
- vii. The project proponent shall follow the mitigation measures provided in this Ministry's OM No.Z-11013/5712014-IA.II (M) dated 29th October, 2014, titled 'Impact of mining activities on habitations-issues related to the mining projects wherein habitations and villages are the part of mine lease areas or habitations and villages are surrounded by the mine lease area'.

IX. Corporate Environment Responsibility

- i. The project proponent shall comply with the provisions contained in this Ministry's OM vide F.No. 22-65/2017-IA.III dated 1st May 2018, as applicable, regarding Corporate Environment Responsibility.
- ii. The company shall have a well laid down environmental policy duly approve by the Board of Directors. The environmental policy should prescribe for standard operating procedures to have proper checks and balances and to bring into focus any infringements/deviation/violation of the environmental / forest / wildlife norms / conditions. The company shall have defined system of reporting infringements / deviation / violation of the environmental / forest / wildlife norms / conditions and / or shareholders /

- stake holders. The copy of the board resolution in this regard shall be submitted to the MoEF&CC as a part of six-monthly report.
- iii. A separate Environmental Cell both at the project and company head quarter level, with qualified personnel shall be set up under the control of senior Executive, who will directly to the head of the organization.
 - iv. Action plan for implementing EMP and environmental conditions along with responsibility matrix of the company shall be prepared and shall be duly approved by competent authority. The year wise funds earmarked for environmental protection measures shall be kept in separate account and not to be diverted for any other purpose. Year wise progress of implementation of action plan shall be reported to the Ministry/Regional Office along with the Six Monthly Compliance Report.
 - v. Self environmental audit shall be conducted annually. Every three years third party environmental audit shall be carried out.

X. Miscellaneous

- i. The project proponent shall make public the environmental clearance granted for their project along with the environmental conditions and safeguards at their cost by prominently advertising it at least in two local newspapers of the District or State, of which one shall be in the vernacular language within seven days and in addition this shall also be displayed in the project proponent's website permanently.
- ii. The copies of the environmental clearance shall be submitted by the project proponents to the Heads of local bodies, Panchayats and Municipal Bodies in addition to the relevant offices of the Government who in turn has to display the same for 30 days from the date of receipt.
- iii. The project proponent shall upload the status of compliance of the stipulated environment clearance conditions, including results of monitored data on their website and update the same on half-yearly basis.
- iv. The project proponent shall submit six-monthly reports on the status of the compliance of the stipulated environmental conditions on the website of the ministry of Environment, Forest and Climate Change at environment clearance portal.
- v. The project proponent shall submit the environmental statement for each financial year in Form-V to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently and put on the website of the company.
- vi. The project authorities shall inform to the Regional Office of the MOEFCC regarding commencement of mining operations.
- vii. The project authorities must strictly adhere to the stipulations made by the State Pollution Control Board and the State Government.
- viii. The project proponent shall abide by all the commitments and recommendations made in the EIA/EMP report, commitment made during Public Hearing and also that during their presentation to the Expert Appraisal Committee.
- ix. No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment, Forests and Climate Change (MoEF&CC).
- x. Concealing factual data or submission of false/fabricated data may result in revocation of this environmental clearance and attract action under the provisions of Environment (Protection) Act, 1986.
- xi. The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.

- xii. The Ministry reserves the right to stipulate additional conditions if found necessary. The Company in a time bound manner shall implement these conditions.
- xiii. The Regional Office of this Ministry shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data / information/monitoring reports.
- xiv. The above conditions shall 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, Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 and the Public Liability Insurance Act, 1991 along with their amendments and Rules and any other orders passed by the Hon'ble Supreme Court of India / High Courts and any other Court of Law relating to the subject matter.
- xv. Any appeal against this EC shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.

Standard EC Conditions for Coal Washery Project

I. Statutory compliance:

- (i) The project proponent shall obtain forest clearance under the provisions of Forest (Conservation) Act, 1986, in case of the diversion of forest land for non-forest purpose involved in the project.
- (ii) The project proponent shall obtain clearance from the National Board for Wildlife, if applicable.
- (iii) The project proponent shall prepare a Site-Specific Conservation Plan / Wildlife Management Plan and approved by the Chief Wildlife Warden. The recommendations of the approved Site-Specific Conservation Plan / Wildlife Management Plan shall be implemented in consultation with the State Forest Department. The implementation report shall be furnished along with the six-monthly compliance report. (in case of the presence of schedule-I species in the study area)
- (iv) The project proponent shall obtain Consent to Establish / Operate under the provisions of Air (Prevention & Control of Pollution) Act, 1981 and the Water (Prevention & Control of Pollution) Act, 1974 from the concerned State pollution Control Board/ Committee.
- (v) The project proponent shall obtain the necessary permission from the Central Ground Water Authority.
- (vi) Solid waste/hazardous waste generated in the washery needs to be addressed in accordance to the Solid Waste Management Rules, 2016 / Hazardous & Other Waste Management Rules, 2016.
- (vii) Coal beneficiation practices shall be carried out under strict adherence to provisions of the Factories Act, 1957 and subordinate legislations made there under.

II. Air quality monitoring and preservation

- i. Adequate ambient air quality monitoring stations shall be established in the core zone as well as in the buffer zone for monitoring of pollutants, namely particulates, SO₂ and NO_x. Location of the stations shall be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive receptors 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.
- ii. Continuous ambient air quality monitoring stations as prescribed in the statute be established in the core zone as well as in the buffer zone for monitoring of pollutants, namely PM₁₀, PM_{2.5}, SO₂ and NO_x. 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. Online ambient air quality monitoring stations may also be installed in addition to the regular monitoring stations as per the requirement and/or in consultation with the SPCB. Monitoring of heavy metals such as Hg, As, Ni, Cd, Cr, etc to be carried out at least once in six months.
- iii. Transportation of coal by road shall be carried out by covered trucks/conveyors. The transportation of clean coal and rejects shall be by rail with wagon loading through silo. Effective measures such as regular water sprinkling shall be carried out in critical areas prone to air pollution and having high levels of particulates such as roads, belt conveyors,

loading/unloading and transfer points. Fugitive dust emissions from all sources shall be controlled at source. It shall be ensured that the ambient air quality parameters conform to the norms prescribed by the Central/State Pollution Control Board

- iv. All approach roads shall be black topped and internal roads shall be concreted. The roads shall be regularly cleaned. Coal transportation shall be carried out by covered trucks.
- v. Covered trucks shall be engaged for mineral transportation outside the washery upto the railway siding, shall be optimally loaded to avoid spillage en-route. Trucks shall be adequately maintained and emissions shall be below notified limits.
- vi. Facilities for parking of trucks carrying raw material from linked mine shall be created within the unit.
- vii. Vehicular emissions shall be kept under control and regularly monitored. The vehicles having 'PUC' certificate from authorized pollution testing centres shall be deployed for washery operations.
- viii. Hoppers of the coal crushing unit and other washery units shall be fitted with high efficiency bag filters/mist spray water sprinkling system shall be installed and operated effectively at all times of operation to check fugitive emissions from crushing operations, transfer points of closed belt conveyor systems and from transportation roads.
- ix. The raw coal, washed coal and coal wastes (rejects) shall be stacked properly at earmarked site (s) within stockyards fitted with wind breakers/shields. Adequate measures shall be taken to ensure that the stored mineral does not catch fire.
- x. The temporary reject sites should appropriate planned and designed to avoid air and water pollution from such sites.

III. **Water quality monitoring and preservation**

- i. The effluent discharge (mine waste water, workshop effluent) shall be monitored in terms of the parameters notified under the Water Act, 1974 Coal Industry Standards vide GSR 742 (E) dated 25.9.2000 and as amended from time to time by the Central Pollution Control Board.
- ii. The monitoring data shall be uploaded on the company's website and displayed at the project site at a suitable location. The circular No. J-20012/1/2006-IA.11 (M) dated 27.05.2009 issued by Ministry of Environment, Forest and Climate Change shall also be referred in this regard for compliance.
- iii. Industrial waste water shall be properly collected and treated so as to conform to the standards prescribed under the Environment (Protection) Act, 1986 and the Rules made there under, and as amended from time to time.
- iv. The project proponent shall not alter major water channels around the site. Appropriate embankment shall be provided along the side of the river/nallah flowing near or adjacent to the washery. The embankment constructed along the river/nallah boundary shall be of suitable dimensions and critical patches shall be strengthened by stone pitching on the river front side stabilised with plantation so as to withstand the peak water pressure preventing any chance of inundation.
- v. Heavy metal content in raw coal and washed coal shall be analysed once in a year and records maintained thereof.
- vi. The rejects should preferably be utilized in FBC power plant or disposed off through sale for its gainful utilization. If the coal washery rejects are to be disposed off, it should be done in a safe and sustainable manner with adequate compaction and post closure

arrangement to avoid water pollution due to leachate from rejects and surface run off from reject dumping sites.

- vii. An Integrated Surface Water Management Plan for the washery area up to its buffer zone considering the presence of any river/rivulet/pond/lake etc. with impact of coal washing activities on it, shall be prepared, submitted to MoEFCC and implemented.
- viii. Waste Water shall be effectively treated and recycled completely either for washery operations or maintenance of green belt around the plant.
- ix. Rainwater harvesting in the washery premises shall be implemented for conservation and augmentation of ground water resources in consultation with Central Ground Water Board.
- x. No ground water shall be used for coal washing unless otherwise permitted in writing by competent authority (CGWA) or MoEFCC. The make-up water requirement of washery should not exceed 1.5 m³/tonne of raw coal.
- xi. Regular monitoring of ground water level and quality shall be carried out in and around the mine lease area by establishing a network of existing wells and constructing new piezometers during the mining operations. The monitoring of ground water levels shall be carried out four times a year i.e. pre-monsoon, monsoon, post-monsoon and winter. The ground water quality shall be monitored once a year, and the data thus collected shall be sent regularly to MOEFCC/RO.
- xii. Monitoring of water quality upstream and downstream of water bodies shall be carried out once in six months and record of monitoring data shall be maintained and submitted to the Ministry of Environment, Forest and Climate Change/Regional Office.
- xiii. The project proponent shall take all precautionary measures to ensure riverine/ riparian ecosystem in and around the coal mine up to a distance of 5 km. A riverine/riparian ecosystem conservation and management plan should be prepared and implemented in consultation with the irrigation / water resource department in the state government

IV. Noise and Vibration monitoring and prevention

- i. The noise level survey shall be carried out as per the prescribed guidelines to assess noise exposure of the workmen at vulnerable points in the mine premises, and report in this regard shall be submitted to the Ministry/RO on six-monthly basis
- ii. Adequate measures shall be taken for control of noise levels as per noise pollution Rules, 2016 in the work environment. Workers engaged in blasting and drilling operations, operation of HEMM, etc shall be provided with personal protective equipments (PPE) like ear plugs/muffs in conformity with the prescribed norms and guidelines in this regard. Adequate awareness programme for users to be conducted. Progress in usage of such accessories to be monitored.

V. Coal beneficiation

- i. Coal stacking plan shall be prepared separately for raw coal, clean coal, middling and rejects.
- ii. Efforts should be made to reduce energy consumption by conservation, efficiency improvements and use of renewable energy.

VI. Green Belt

- i. Three tier greenbelt comprising of a mix of native species, of minimum 30 m width shall be developed all along the washery area to check fugitive dust emissions and to render aesthetic to neighbouring stakeholders. A 3-tier green belt comprising of a mix of native species or tree species with thick leaves shall be developed along vacant areas, storage yards, loading/transfer points and also along internal roads/main approach roads.

- ii. The project proponent shall make necessary alternative arrangements, if grazing land is involved in core zone, in consultation with the State government to provide alternate areas for livestock grazing, if any. In this context, the project proponent shall implement the directions of Hon'ble Supreme Court with regard to acquiring grazing land.

VII. Public hearing and Human health issues

- i. Adequate illumination shall be ensured in all mine locations (as per DGMS standards) and monitored weekly. The report on the same shall be submitted to this ministry & its RO on six-monthly basis.
- ii. The project proponent shall undertake occupational health survey for initial and periodical medical examination of the personnel engaged in the project and maintain records accordingly as per the provisions of the Mines Rules, 1955 and DGMS circulars. Besides regular periodic health check-up, 20% of the personnel identified from workforce engaged in active mining operations shall be subjected to health check-up for occupational diseases and hearing impairment, if any. as amended time to time.
- iii. Personnel (including outsourced employees) working in core zone shall wear protective respiratory devices and shall also be provided with adequate training and information on safety and health aspects.
- iv. Implementation of the action plan on the issues raised during the public hearing shall be ensured. The project proponent shall undertake all the tasks/measures as per the action plan submitted with budgetary provisions during the public hearing. Land oustees shall be compensated as per the norms laid down in the R&R policy of the company/State Government/Central Government, as applicable.
- v. The project proponent shall follow the mitigation measures provided in this Ministry's OM No.Z-11013/5712014-IA.II (M) dated 29th October, 2014, titled 'Impact of mining activities on habitations-issues related to the mining projects wherein habitations and villages are the part of mine lease areas or habitations and villages are surrounded by the mine lease area'.

VIII. Corporate Environment Responsibility

- i. The project proponent shall comply with the provisions contained in this Ministry's OM vide F.No. 22-65/2017-IA.III dated 1st May 2018, as applicable, regarding Corporate Environment Responsibility.
- ii. The company shall have a well laid down environmental policy duly approve by the Board of Directors. The environmental policy should prescribe for standard operating procedures to have proper checks and balances and to bring into focus any infringements/deviation/violation of the environmental / forest / wildlife norms / conditions. The company shall have defined system of reporting infringements / deviation / violation of the environmental / forest / wildlife norms / conditions and / or shareholders / stake holders. The copy of the board resolution in this regard shall be submitted to the MoEF&CC as a part of six-monthly report.
- iii. A separate Environmental Cell both at the project and company head quarter level, with qualified personnel shall be set up under the control of senior Executive, who will directly to the head of the organization.
- iv. Action plan for implementing EMP and environmental conditions along with responsibility matrix of the company shall be prepared and shall be duly approved by competent authority. The year wise funds earmarked for environmental protection measures shall be kept in separate account and not to be diverted for any other purpose. Year wise progress of

implementation of action plan shall be reported to the Ministry/Regional Office along with the Six Monthly Compliance Report.

- v. Self environmental audit shall be conducted annually. Every three years third party environmental audit shall be carried out.

IX. Miscellaneous

- i. The project proponent shall make public the environmental clearance granted for their project along with the environmental conditions and safeguards at their cost by prominently advertising it at least in two local newspapers of the District or State, of which one shall be in the vernacular language within seven days and in addition this shall also be displayed in the project proponent's website permanently.
- ii. The copies of the environmental clearance shall be submitted by the project proponents to the Heads of local bodies, Panchayats and Municipal Bodies in addition to the relevant offices of the Government who in turn has to display the same for 30 days from the date of receipt.
- iii. The project proponent shall upload the status of compliance of the stipulated environment clearance conditions, including results of monitored data on their website and update the same on half-yearly basis.
- iv. The project proponent shall monitor the criteria pollutants level namely; PM₁₀, SO₂, NO_x (ambient levels) or critical sectoral parameters, indicated for the projects and display the same at a convenient location for disclosure to the public and put on the website of the company.
- v. The project proponent shall submit six-monthly reports on the status of the compliance of the stipulated environmental conditions on the website of the ministry of Environment, Forest and Climate Change at environment clearance portal.
- vi. The project proponent shall submit the environmental statement for each financial year in Form-V to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently and put on the website of the company.
- vii. The project authorities shall inform to the Regional Office of the MOEFCC regarding commencement of mining operations.
- viii. The project authorities must strictly adhere to the stipulations made by the State Pollution Control Board and the State Government.
- ix. The project proponent shall abide by all the commitments and recommendations made in the EIA/EMP report, commitment made during Public Hearing and also that during their presentation to the Expert Appraisal Committee.
- x. No change in coal beneficiation process and scope of work shall be made without obtaining prior approval of the Ministry of Environment, Forests and Climate Change (MoEFCC) with such conditions mentioned therein. No change in the maximum quantum of raw material feed per annum against the approved washery capacity shall be made
- xi. Concealing factual data or submission of false/fabricated data may result in revocation of this environmental clearance and attract action under the provisions of Environment (Protection) Act, 1986.
- xii. The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.

- xiv. The Ministry reserves the right to stipulate additional conditions if found necessary. The Company in a time bound manner shall implement these conditions.
- xv. The Regional Office of this Ministry shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data / information/monitoring reports.
- xvi. The above conditions shall 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, Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 and the Public Liability Insurance Act, 1991 along with their amendments and Rules and any other orders passed by the Hon'ble Supreme Court of India / High Courts and any other Court of Law relating to the subject matter.
- xvii. Any appeal against this EC shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.

Generic ToR for coal washery

- i. Siting of washery is critical considering to its environmental impacts. Preference should be given to the site located at pit head; in case such a site is not available, the site should be as close to the pit head as possible and coal should be transported from mine to the washery preferably through closed conveyer belt to avoid air pollution.
- ii. The washery shall not be located in eco-sensitive zones areas.
- iii. The washery should have a closed system and zero discharge. The storm drainage should be treated in settling ponds before discharging into rivers/streams/water bodies.
- iv. A thick Green belt of about 50 m width should be developed surrounding the washery.
- v. A brief description of the plant alongwith a layout, the specific technology used and the source of coal should be provided.
- vi. The EIA-EMP Repot should cover the impacts and management plan for the project of the capacity for which EC is sought and the impacts of specific activities, including the technology used and coal used, on the environment of the area (within 10km radius), and the environmental quality of air, water, land, biotic community, etc. through collection of data and information, generation of data on impacts for the rated capacity. Cumulative impacts for air and water should be a part of EIA in case coal mine, TPP and other washeries are located within 10km radius. The EIA should also include mitigative measures needed to minimize adverse environmental impacts.
- vii. A Study Area Map of the core zone as well as the 10km area of buffer zone showing major industries/mines and other polluting sources should be submitted. These maps shall also indicate the migratory corridors of fauna, if any and areas of endangered fauna; plants of medicinal and economic importance; any ecologically sensitive areas within the 10 km buffer zone; the shortest distance from the National Park/WL Sanctuary Tiger Reserve, etc. alongwith the comments of the Chief Wildlife Warden of the State Govt.
- viii. Data of one-season (non-monsoon) primary- base-line data on environmental quality of air (PM₁₀, PM_{2.5}, SO_x and NO_x, noise, water (surface and groundwater), soil be submitted.
- ix. The wet washery should generally utilize mine water only. In case mine water is not available, the option of storage of rain water and its use should be examined. Use of surface water and ground water should be avoided.
- x. Detailed water balance should be provided. The break-up of water requirement as per different activities in the mining operations vis-a-vis washery should be given. If the source of water is from surface water and/or ground water, the same may be justified besides obtaining approval of the Competent Authority for its drawl.
- xi. The entire sequence of mineral production, transportation, handling, transfer and storage of mineral and waste, if any, and their impacts on air quality should be shown in a flow chart with specific points where fugitive emissions can arise and specific pollution control/mitigative measures proposed to be put in place. The washed coal and rejects should be transport by train as far as possible. Road transport of washed coal and rejects should generally be avoided. In case, the TPP is within 10km radius, it should be through conveyer belt. If transport by rail is not feasible because of the topography of the area, the option for transport by road be examined in detail and its impacts along with the mitigation

measures should be clearly brought out in EIA/EMP report.

- xii. Details of various facilities proposed to be provided in terms of parking, rest areas, canteen etc. to the personnel involved in mineral transportation, workshop and effluents/pollution load from these activities should be provided.
- xiii. Impacts of CHP, if any, on air and water quality should also be spelt out alongwith Action Plan.
- xiv. O.M.no.J-11013/25/2014-IA.I dated 11th August, 2014 to be followed with regard to CSR activities.
- xv. Details of Public Hearing, Notice(s) issued in newspapers, proceedings/minutes of Public Hearing, points raised by the general public and response/commitments made by the proponent along with the Action Plan and budgetary provisions be submitted in tabular form. If the Public Hearing is in the regional language, an authenticated English translation of the same should be provided. Status of any litigations/ court cases filed/pending, if any, against the project should be mentioned in EIA.
- xvi. Analysis of samples indicating the following be submitted:
 - Characteristics of coal prior to washing (this includes grade of coal, other characteristics of ash, S and heavy levels of metals such as Hg, As, Pb, Cr etc).
 - Characteristics and quantum of coal after washing.
 - Characteristics and quantum of coal rejects.
- xvii. Details of management/disposal/use of coal rejects should be provided. The rejects should be used in TPP located close to the washery as far as possible. If TPP is within a reasonable distance (10 km), transportation should be by conveyor belt. If it is far away, the transportation should be by rail as far as possible.
- xviii. Copies of MOU/Agreement with linkages (for stand-alone washery) for the capacity for which EC is being sought should be submitted.
- xix. Corporate Environment Responsibility:
 - a) The Company must have a well laid down Environment Policy approved by the Board of Directors.
 - b) The Environment Policy must 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 must be furnished.
 - d) To have proper checks and balances, the company should 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.
- xx. A detailed action Plan for Corporate Social Responsibility for the project affected people and people living in and around the project area should be provided.
- xxi. Permission of drawl of water shall be pre-requisite for consideration of EC.
- xxii. Wastewater /effluent should confirm to the effluent standards as prescribed under Environment (Protection) Act, 1986
- xxiii. Details of washed coal, middling and rejects along with the MoU with the end-users should be submitted.

ANNEXURE-V

GENERIC TOR FOR AN OPENCAST COALMINE PROJECT for EC

- (i) An EIA-EMP Report shall be prepared for..... MTPA rated capacity in an ML/project area of.....ha based on the generic structure specified in Appendix III of the EIA Notification, 2006.
- (ii) An EIA-EMP Report would be prepared for..... MTPA rated capacity to cover the impacts and environment management plan for the project specific activities on the environment of the region, and the environmental quality encompassing air, water, land, biotic community, etc. through collection of data and information, generation of data on impacts including prediction modeling for..... MTPA of coal production based on approved project/Mining Plan for.....MTPA. Baseline data collection can be for any season (three months) except monsoon.
- (iii) A toposheet specifying locations of the State, District and Project site should be provided.
- (iv) A Study area map of the core zone (project area) and 10 km area of the buffer zone (1: 50,000 scale) clearly delineating the major topographical features such as the land use, surface drainage pattern including rivers/streams/nullahs/canals, locations of human habitations, major constructions including railways, roads, pipelines, major industries/mines and other polluting sources. In case of ecologically sensitive areas such as Biosphere Reserves/National Parks/WL Sanctuaries/ Elephant Reserves, forests (Reserved/Protected), migratory corridors of fauna, and areas where endangered fauna and plants of medicinal and economic importance found in the 15 km study area should be given.
- (v) Land use map (1: 50,000 scale) based on a recent satellite imagery of the study area may also be provided with explanatory note on the land use.
- (vi) Map showing the core zone delineating the agricultural land (irrigated and un-irrigated, uncultivable land as defined in the revenue records, forest areas (as per records), along with other physical features such as water bodies, etc should be furnished.
- (vii) A contour map showing the area drainage of the core zone and 25 km of the study area (where the water courses of the core zone ultimately join the major rivers/streams outside the lease/project area) should also be clearly indicated in the separate map.
- (viii) A detailed Site plan of the mine showing the proposed break-up of the land for mining operations such as the quarry area, OB dumps, green belt, safety zone, buildings, infrastructure, CHP, ETP, Stockyard, township/colony (within and adjacent to the ML), undisturbed area -if any, and landscape features such as existing roads, drains/natural water bodies to be left undisturbed along with any natural drainage adjoining the lease /project areas, and modification of thereof in terms of construction of embankments/bunds, proposed diversion/re-channelling of the water courses, etc., approach roads, major haul roads, etc should be indicated.
- (ix) In case of any proposed diversion of nallah/canal/river, the proposed route of diversion /modification of drainage and their realignment, construction of embankment etc. should also be shown on the map as per the approval of Irrigation and flood control Department of the concerned state.
- (x) Similarly if the project involves diversion of any road/railway line passing through the

ML/project area, the proposed route of diversion and its realignment should be shown in the map along with the status of the approval of the competent authority.

- (xi) Break up of lease/project area as per different land uses and their stage of acquisition should be provided.

LANDUSE DETAILS FOR OPENCAST PROJECT should be given as per the following table:

Sl. No.	Landuse	Within ML area (ha)	Outside ML area (ha)	Total
1.	Agricultural land			
2.	Forest land			
3.	Wasteland			
4.	Grazing land			
5.	Surface water bodies			
6.	Settlements			
7.	Others (specify)			
	TOTAL			

- (xii) Break-up of lease/project area as per mining plan should be provided.
- (xiii) Impact of changes in the land use due to the project if the land is predominantly agricultural land/forestland/grazing land, should be provided.
- (xiv) One-season (other than monsoon) primary baseline data on environmental quality - air (PM₁₀, PM_{2.5}, SO_x, NO_x and heavy metals such as Hg, Pb, Cr, As, etc), noise, water (surface and groundwater), soil - along with one-season met data coinciding with the same season for AAQ collection period should be provided.
- (xv) Map (1: 50, 000 scale) of the study area (core and buffer zone) showing the location of various sampling stations superimposed with location of habitats, other industries/mines, polluting sources, should be provided. The number and location of the sampling stations in both core and buffer zones should be selected on the basis of size of lease/project area, the proposed impacts in the downwind (air)/downstream (surface water)/groundwater regime (based on flow). One station should be in the upwind/upstream/non-impact/non-polluting area as a control station. The monitoring should be as per CPCB guidelines and parameters for water testing for both ground water and surface water as per ISI standards and CPCB classification wherever applicable. Observed values should be provided along with the specified standards.
- (xvi) Study on the existing flora and fauna in the study area (10km) should be carried out by an institution of relevant discipline. The list of flora and fauna duly authenticated separately for the core and study area and a statement clearly specifying whether the study area forms a part of the migratory corridor of any endangered fauna should be given. If the study area has endangered flora and fauna, or if the area is occasionally visited or used as a habitat by Schedule-I species, or if the project falls within 15 km of an ecologically sensitive area, or used as a migratory corridor then a Comprehensive Conservation Plan along with the appropriate budgetary provision should be prepared and submitted with EIA-EMP Report; and comments/observation from the CWLW of the State Govt. should also be obtained and furnished.

- (xvii) Details of mineral reserves, geological status of the study area and the seams to be worked, ultimate working depth and progressive stage-wise working scheme until the end of mine life should be provided on the basis of the approved rated capacity and calendar plans of production from the approved Mining Plan. Geological maps and sections should be included. The Progressive mine development and Conceptual Final Mine Closure Plan should also be shown in figures. Details of mine plan and mine closure plan approval of Competent Authority should be furnished for green field and expansion projects.
- (xviii) Details of mining methods, technology, equipment to be used, etc., rationale for selection of specified technology and equipment proposed to be used vis-à-vis the potential impacts should be provided.
- (xix) Impact of mining on hydrology, modification of natural drainage, diversion and channeling of the existing rivers/water courses flowing through the ML and adjoining the lease/project and the impact on the existing users and impacts of mining operations thereon.
- (xx) Detailed water balance should be provided. The break-up of water requirement for the various mine operations should be given separately.
- (xxi) Source of water for use in mine, sanction of the Competent Authority in the State Govt. and impacts vis-à-vis the competing users in the upstream and downstream of the project site. should be given.
- (xxii) Impact of mining and water abstraction from the mine on the hydrogeology and groundwater regime within the core zone and 10 km buffer zone including long-term monitoring measures should be provided. Details of rainwater harvesting and measures for recharge of groundwater should be reflected in case there is a declining trend of groundwater availability and/or if the area falls within dark/grey zone.
- (xxiii) Impact of blasting, noise and vibrations should be given.
- (xxiv) Impacts of mining on the AAQ and predictions based on modeling using the ISCST-3 (Revised) or latest model should be provided.
- (xxv) Impacts of mineral transportation within the mining area and outside the lease/project along with flow-chart indicating the specific areas generating fugitive emissions should be provided. Impacts of transportation, handling, transfer of mineral and waste on air quality, generation of effluents from workshop etc, management plan for maintenance of HEMM and other machinery/equipment should be given. Details of various facilities such as rest areas and canteen for workers and effluents/pollution load emanating from these activities should also be provided.
- (xxvi) Effort be made to reduce/eliminate road transport of coal inside and outside mine and for mechanized loading of coal through CHP/ Silo into wagons and trucks/tippers.
- (xxvii) Details of waste OB and topsoil generated as per the approved calendar programme, and their management shown in figures as well explanatory notes tables giving progressive development and mine closure plan, green belt development, backfilling programme and conceptual post mining land use should be given. OB dump heights and terracing based on slope stability studies with a max of 28° angle as the ultimate slope should be given. Sections of final dumps (both longitudinal and cross section) with relation to the adjacent area should be shown.
- (xxviii) Efforts be made for maximising progressive internal dumping of O.B., sequential mining, external dump on coal bearing area and later rehandling into the mine void.--to reduce land degradation.

- (xxix) Impact of change in land use due to mining operations and plan for restoration of the mined area to its original land use should be provided.
- (xxx) Progressive Green belt and ecological restoration /afforestation plan (both in text, figures and in the tabular form as per the format of MOEFCC given below) and selection of species (native) based on original survey/land-use should be given.

Table 1: Stage-wise Landuse and Reclamation Area (ha)

S.N.	Land use Category	Present (1 st Year)	5 th Year	10 th Year	20 th Year	24 th Year (end of mine life)*
1.	Backfilled Area(Reclaimed with plantation)					
2.	Excavated Area (not reclaimed)/void					
3.	External OB dump Reclaimed with plantation)					
4.	Reclaimed Top soil dump					
5.	Green Built Area					
6.	Undisturbed area (brought under plantation)					
7.	Roads (avenue plantation)					
8.	Area around buildings and Infrastructure					
	TOTAL					

* As a representative example

Table 2 : Stage Wise Cumulative Plantation

S. No.	YEAR*	Green Belt	External Dump	Backfilled Area	Others(Undisturbed Area/etc)	TOTAL
1.	1 st year					
2.	3 rd year					
3.	5 th year					
4.	10 th year					
5.	15 th year					
6.	20 th year					
7.	25 th year					
8.	30 th year					
9.	34 th year(end of mine life)					
10.	34- 37 th Year (Post-mining)					

* As a representative example

(xxxix) Conceptual Final Mine Closure Plan and post mining land use and restoration of land/habitat to the pre- mining status should be provided. A Plan for the ecological restoration of the mined out area and post mining land use should be prepared with detailed cost provisions. Impact and management of wastes and issues of re-handling (wherever applicable) and backfilling and progressive mine closure and reclamation should be furnished.

Table 3: Post-Mining Landuse Pattern of ML/Project Area (ha)

S.N.	Land use during Mining	Land Use (ha)				
		Plantation	Water Body	Public Use	Undisturbed	TOTAL
1.	External OB Dump					
2.	Top soil Dump					
3.	Excavation					
4.	Roads					
5.	Built up area					
6.	Green Belt					
7.	Undisturbed Area					
	TOTAL					

(xxxix) Flow chart of water balance should be provided. Treatment of effluents from workshop, township, domestic wastewater, mine water discharge, etc. should be provided. Details of STP in colony and ETP in mine should be given. Recycling of water to the max. possible extent should be done.

(xxxix) Occupational health issues. Baseline data on the health of the population in the impact zone and measures for occupational health and safety of the personnel and manpower in the mine should be given.

(xxxix) Risk Assessment and Disaster Preparedness and Management Plan should be provided.

(xxxix) Integration of the Env. Management Plan with measures for minimizing use of natural resources - water, land, energy, etc. should be carried out.

(xxxix) Cost of EMP (capital and recurring) should be included in the project cost and for progressive and final mine closure plan.

(xxxix) Details of R&R. Detailed project specific R&R Plan with data on the existing socio-economic status of the population (including tribals, SC/ST, BPL families) found in the study area and broad plan for resettlement of the displaced population, site for the resettlement colony, alternate livelihood concerns/employment for the displaced people, civic and housing amenities being offered, etc and costs along with the schedule of the implementation of the R&R Plan should be given.

(xxxix) CSR Plan along with details of villages and specific budgetary provisions (capital and recurring) for specific activities over the life of the project should be given.

(xxxix) Corporate Environment Responsibility:

- a) The Company must have a well laid down Environment Policy approved by the Board of Directors.
 - b) The Environment Policy must 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 must be furnished.
 - d) To have proper checks and balances, the company should 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.
- (xl) Details on Public Hearing should cover the information relating to notices issued in the newspaper, proceedings/minutes of Public Hearing, the points raised by the general public and commitments made by the proponent and the action proposed with budgets in suitable time frame. These details should be presented in a tabular form. If the Public Hearing is in the regional language, an authenticated English Translation of the same should be provided.
- (xli) In built mechanism of self-monitoring of compliance of environmental regulations should be indicated.
- (xlii) Status of any litigations/ court cases filed/pending on the project should be provided.
- (xliii) Submission of sample test analysis of Characteristics of coal: This should include details on grade of coal and other characteristics such as ash content, S and heavy metals including levels of Hg, As, Pb, Cr etc.
- (xliv) Copy of clearances/approvals such as Forestry clearances, Mining Plan Approval, mine closer plan approval. NOC from Flood and Irrigation Dept. (if req.), etc. wherever applicable.

FOREST CLEARANCE: Details on the Forest Clearance should be given as per the format given:

TOTAL ML/PROJECT AREA (ha)	TOTAL FORESTLAND (ha)	Date of FC	Extent of forestland	Balance area for which FC is yet to be obtained	Status of appl for. diversion of forestland
		If more than , provide details of each FC			

GENERIC TORs FOR AN UNDERGROUND COALMINE PROJECT

- (i) An EIA-EMP Report shall be prepared for..... MTPA rated capacity in an ML/project area of.....ha based on the generic structure specified in Appendix III of the EIA Notification, 2006.
- (ii) An EIA-EMP Report would be prepared for..... MTPA rated capacity to cover the impacts and environment management plan for the project specific activities on the environment of the region, and the environmental quality encompassing air, water, land, biotic community, etc. through collection of data and information, generation of data on impacts including prediction modeling for..... MTPA of coal production based on approved project/Mining Plan for.....MTPA. Baseline data collection can be for any season (three months) except monsoon.
- (iii) A Study area map of the core zone (project area) and 10 km area of the buffer zone (1: 50,000 scale) clearly delineating the major topographical features such as the land use, surface drainage pattern including rivers/streams/nullahs/canals, locations of human habitations, major constructions including railways, roads, pipelines, major industries/mines and other polluting sources. In case of ecologically sensitive areas such as Biosphere Reserves/National Parks/WL Sanctuaries/ Elephant Reserves, forests (Reserved/Protected), migratory corridors of fauna, and areas where endangered fauna and plants of medicinal and economic importance found in the 15 km study area should be given.
- (iv) Map showing the core zone delineating the agricultural land (irrigated and un-irrigated, uncultivable land as defined in the revenue records, forest areas (as per records), along with other physical features such as water bodies, etc should be furnished.
- (v) A contour map showing the area drainage of the core zone and 25 km of the study area (where the water courses of the core zone ultimately join the major rivers/streams outside the lease/project area) should also be clearly indicated in the separate map.
- (vi) A detailed Site plan of the mine showing the proposed break-up of the land for mining operations such as the quarry area, OB dumps, green belt, safety zone, buildings, infrastructure, CHP, ETP, Stockyard, township/colony (within and adjacent to the ML), undisturbed area -if any, and landscape features such as existing roads, drains/natural water bodies to be left undisturbed along with any natural drainage adjoining the lease /project areas, and modification of thereof in terms of construction of embankments/bunds, proposed diversion/re-channelling of the water courses, etc., approach roads, major haul roads, etc should be indicated.
- (vii) Original land use (agricultural land/forestland/grazing land/wasteland/water bodies) of the area should be provided as per the tables given below. Impacts of project, if any on the land use, in particular, agricultural land/forestland/grazing land/water bodies falling within the lease/project and acquired for mining operations should be analyzed. Extent of area under surface rights and under mining rights should be specified.

S.N	ML/Project Land use	Area under Surface Rights(ha)	Area Under Mining Rights (ha)	Area Under Rights	Area under Both (ha)

1.	Agricultural land			
2.	Forest Land			
3.	Grazing Land			
4.	Settlements			
5.	Others (specify)			

Area under Surface Rights

S.N.	Details	Area (ha)
1.	Buildings	
2.	Infrastructure	
3.	Roads	
4.	Others (specify)	
	TOTAL	

- (viii) Study on the existing flora and fauna in the study area (10km) should be carried out by an institution of relevant discipline. The list of flora and fauna duly authenticated separately for the core and study area and a statement clearly specifying whether the study area forms a part of the migratory corridor of any endangered fauna should be given. If the study area has endangered flora and fauna, or if the area is occasionally visited or used as a habitat by Schedule-I species, or if the project falls within 15 km of an ecologically sensitive area, or used as a migratory corridor then a Comprehensive Conservation Plan along with the appropriate budgetary provision should be prepared and submitted with EIA-EMP Report; and comments/observation from the CWLW of the State Govt. should also be obtained and furnished.
- (ix) Details of mineral reserves, geological status of the study area and the seams to be worked, ultimate working depth and progressive stage-wise working scheme until the end of mine life should be provided on the basis of the approved rated capacity and calendar plans of production from the approved Mining Plan. Geological maps and sections should be included. The Progressive mine development and Conceptual Final Mine Closure Plan should also be shown in figures. Details of mine plan and mine closure plan approval of Competent Authority should be furnished for green field and expansion projects.
- (x) Details of mining methods, technology, equipment to be used, etc., rationale for selection of specified technology and equipment proposed to be used vis-à-vis the potential impacts should be provided.
- (xi) Impact of mining on hydrology, modification of natural drainage, diversion and channeling of the existing rivers/water courses flowing through the ML and adjoining the lease/project and the impact on the existing users and impacts of mining operations thereon.
- (xii) One-season (other than monsoon) primary baseline data on environmental quality - air (PM₁₀, PM_{2.5}, SO_x, NO_x and heavy metals such as Hg, Pb, Cr, As, etc), noise, water (surface and groundwater), soil - along with one-season met data coinciding with the same season for AAQ collection period should be provided.
- (xiii) Map (1: 50, 000 scale) of the study area (core and buffer zone) showing the location of various sampling stations superimposed with location of habitats, other industries/mines, polluting sources, should be provided. The number and location of the sampling stations in

both core and buffer zones should be selected on the basis of size of lease/project area, the proposed impacts in the downwind (air)/downstream (surface water)/groundwater regime (based on flow). One station should be in the upwind/upstream/non-impact/non-polluting area as a control station. The monitoring should be as per CPCB guidelines and parameters for water testing for both ground water and surface water as per ISI standards and CPCB classification wherever applicable. Observed values should be provided along with the specified standards.

- (xiv) Impact of mining and water abstraction from the mine on the hydrogeology and groundwater regime within the core zone and 10 km buffer zone including long-term monitoring measures should be provided. Details of rainwater harvesting and measures for recharge of groundwater should be reflected in case there is a declining trend of groundwater availability and/or if the area falls within dark/grey zone.
- (xv) Study on subsidence including modeling for prediction, mitigation/prevention of subsidence, continuous monitoring measures, and safety issues should be carried out.
- (xvi) Detailed water balance should be provided. The break up of water requirement as per different activities in the mining operations, including use of water for sand stowing should be given separately. Source of water for use in mine, sanction of the Competent Authority in the State Govt. and impacts vis-à-vis the competing users should be provided.
- (xvii) Impact of choice of mining method, technology, selected use of machinery and impact on air quality, mineral transportation, coal handling & storage/stockyard, etc, Impact of blasting, noise and vibrations should be provided.
- (xviii) Impacts of mineral transportation within the mining area and outside the lease/project along with flow-chart indicating the specific areas generating fugitive emissions should be provided. Impacts of transportation, handling, transfer of mineral and waste on air quality, generation of effluents from workshop etc, management plan for maintenance of HEMM and other machinery/equipment should be given. Details of various facilities such as rest areas and canteen for workers and effluents/pollution load emanating from these activities should also be provided.
- (xix) Effort be made to reduce/eliminate road transport of coal inside and outside mine and for mechanized loading of coal through CHP/ Silo into wagons and trucks/tippers.
- (xx) Details of various facilities to be provided to the workers in terms of parking, rest areas and canteen, and effluents/pollution load resulting from these activities should also be given.
- (xxi) The number and efficiency of mobile/static water sprinkling system along the main mineral transportation road inside the mine, approach roads to the mine/stockyard/siding, and also the frequency of their use in impacting air quality should be provided.
- (xxii) Impacts of CHP, if any on air and water quality should be given. A flow chart showing water balance along with the details of zero discharge should be provided.
- (xxiii) Conceptual Final Mine Closure Plan and post mining land use and restoration of land/habitat to the pre- mining status should be provided. A Plan for the ecological restoration of the mined out area and post mining land use should be prepared with detailed cost provisions. Impact and management of wastes and issues of re-handling (wherever applicable) and backfilling and progressive mine closure and reclamation should be furnished.
- (xxiv) Greenbelt development should be undertaken particularly around the transport route and CHP. Baseline data on the health of the population in the impact zone and measures for

occupational health and safety of the personnel and manpower for the mine should be submitted.

- (xxv) Cost of EMP (capital and recurring) should be included in the project cost and for progressive and final mine closure plan.
- (xxvi) Details of R&R. Detailed project specific R&R Plan with data on the existing socio-economic status of the population (including tribals, SC/ST, BPL families) found in the study area and broad plan for resettlement of the displaced population, site for the resettlement colony, alternate livelihood concerns/employment for the displaced people, civic and housing amenities being offered, etc and costs along with the schedule of the implementation of the R&R Plan should be given.
- (xxvii) CSR Plan along with details of villages and specific budgetary provisions (capital and recurring) for specific activities over the life of the project should be given.
- (xxviii) Corporate Environment Responsibility:
 - a) The Company must have a well laid down Environment Policy approved by the Board of Directors.
 - b) The Environment Policy must 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 must be furnished.
 - d) To have proper checks and balances, the company should 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.
- (xxix) Details on Public Hearing should cover the information relating to notices issued in the newspaper, proceedings/minutes of Public Hearing, the points raised by the general public and commitments made by the proponent and the action proposed with budgets in suitable time frame. These details should be presented in a tabular form. If the Public Hearing is in the regional language, an authenticated English Translation of the same should be provided.
- (xxx) In built mechanism of self-monitoring of compliance of environmental regulations should be indicated.
- (xxxi) Status of any litigations/ court cases filed/pending on the project should be provided.
- (xxxii) Submission of sample test analysis of Characteristics of coal: This should include details on grade of coal and other characteristics such as ash content, S and heavy metals including levels of Hg, As, Pb, Cr etc.
- (xxxiii) Copy of clearances/approvals such as Forestry clearances, Mining Plan Approval, mine closer plan approval. NOC from Flood and Irrigation Dept. (if req.), etc. wherever applicable.

Details on the Forest Clearance should be given as per the format given:

Total /Project (ha)	ML Area	Total Forest Land (ha)	Date of FC	Extent of Forest Land	Balance area for which FC is yet to be obtained	Status of appl. For diversion of forest land

		If more than one provide details of each FC			
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GENERIC TORs FOR AN OPENCAST-CUM-UNDERGROUND COALMINE PROJECT

- (i) An EIA-EMP Report would be prepared for a combined peak capacity ofMTPA for OC-cum-UG project which consists of MTPA in an ML/project area of ha for OC and MTPA for UG in an ML/project area of ha based on the generic structure specified in Appendix III of the EIA Notification 2006.
- (ii) An EIA-EMP Report would be prepared for..... MTPA rated capacity to cover the impacts and environment management plan for the project specific activities on the environment of the region, and the environmental quality encompassing air, water, land, biotic community, etc. through collection of data and information, generation of data on impacts including prediction modeling for..... MTPA of coal production based on approved project/Mining Plan for.....MTPA. Baseline data collection can be for any season (three months) except monsoon.
- (iii) The ToRs prescribed for both opencast and underground mining are applicable for opencast – cum-underground mining.

12/10/2020

Email

Email

munna.shah@gov.in

Re: Draft MoM of EAC 4th meeting held on 27th November, 2020 - Revised

From : gpkundargi@gmail.com

Thu, Dec 10, 2020 11:46 AM

Subject : Re: Draft MoM of EAC 4th meeting held on 27th
November, 2020 - Revised

To : Munna Kumar Shah <munna.shah@gov.in>

Cc : lk.bokolia <lk.bokolia@nic.in>

Dear Munna Kumar Shah ji

I have gone through the revised draft minutes &
noted the corrections. They are fine.

The minutes are fine & approved for further needful at your end.

Thank you

G P Kundargi

LIST OF PARTICIPANTS OF EAC (COAL) IN 4th MEETING OF HELD DURING 27th NOVEMBER, 2020 THROUGH VIDEO CONFERENCING

1.	Shri G.P Kundargi			DAY-1
		-	Chairman	P
2.	Dr. N. P. Shukla	-	Member	P
3.	Shri Suramya Dolarray Vora, IFS (Retd)	-	Member	P
4.	Dr. Umesh Jagannathrao Kahalekar	-	Member	P
5.	Shri K.B. Biswas	-	Member	P
6.	Dr. Nandini.N	-	Member	P
7.	Dr. Unmesh Patnaik	-	Member	P
8.	Shri Prasant Kumar Mohapatra	-	Member	P
9.	Professor S S Rai, Representative of IIT/ISM Dhanbad	-	Member	P
10.	Shri M.P Singh, Representative of CEA	-	Member	P
11.	Dr. Santosh Kumar Hampannavar	-	Member	P
12.	Prof R.K. Giri Representative of IMD	-	Member	A
13.	Dr. S.K. Paliwal Representative of Central Pollution Control Board	-	Member	A
14.	Shri Lalit Bokolia, Director, MoEFCC	-	Member Secretary	P